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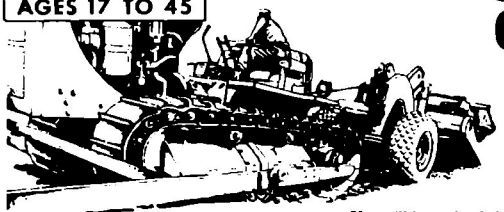

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love and the stars— today!

by Kate Wilhelm

illustrated by EMSH

"Tomorrow's the day for love, tomorrow's the day for the stars above," the song ran. But that wasn't enough — men had to have the stars now!

IT WAS A stupid party. Sammy couldn't remember afterward why there had even been one in the first place. Maybe someone had got a raise, or engaged, or had a birthday. Or died. He didn't know.

He laughed at the couple he stumbled over in the dark hallway on his way to the bath-

Suddenly Sammy found himself choking her. He couldn't tell why — only that in some way he felt that she was responsible for it all

room, where he was very sick. After that he went back to the living room and retrieved his glass from Miriam, who giggled slightly at him.

"What's a matter, Sammy? Can't take it any more? Finest whiskey money can buy you know." She leaned against him and whispered meaningless words, and he pushed her aside and sought his wife.

Sally wasn't in the living room, so he shrugged and returned to the long table where the whiskey bottles ranged alongside melting ice cubes and soggy crackers, repugnant with their spreads of green and pink. Quickly he turned from the revolting mess and found himself staring at a renewed glass someone was waving back and forth before his eyes. He reached out for it, and gulped down the transparent liquid fire.

"Gotta be going," someone was saying monotonously over and over. "Got to get to work tomorrow, you know."

"All through for the week, myself," someone else answered thickly and it might have been the same person, so alike were the voices.

Me too, thought Sammy. For ever. Tonight he'd tell them. Later when he was feeling better. Three days he'd waited, but now he would tell them.

He saw Melvin and Freddy, apparently sober, in one corner and he weaved toward them. Good old Freddy. Trust him to stay sober when the moonshine was out. Fraid of it, that's what. He'd tell Freddy first. Then he'd get Sally and they'd go out to the Patch for awhile.

"Have a drink, Fred, old man." He extended his own glass and for the first time realized it was empty again.

"Better leave it alone, Sammy. You look like you've had plenty already." Freddy was his friend. They had the same shift, ten to four, Wednesday, Thursday and Friday. And they partied and drank the rest of the week together at the same places. Good old Freddy. Only he never got drunk.

MELVIN was declaring in a voice pitched too high, and words spoken too quickly, "I still say it's better to work the four days and get to see what you're making than it is to sit punching buttons all day for

three, and never know what comes out."

"Well, then name me one job that you can stick with from start to finish."

Sammy nodded sagely, "That's right, name me one."

"Take the construction men, for instance. At least they can see the houses they build." Melvin refused to give it up, once he had taken a side. Next party he might just as easily be arguing the other way.

"Hah! Carpenters! You got that old-fashioned notion that they know what they are doing. Well, I'll tell you something: My wife's uncle is a carpenter, and never once in his life did he know what he was working on until it was completed and he went past and looked. Rumors, nothing but rumors. The super knows, but do you think he goes around telling the hammer men? That's a good one. All Ellen's uncle does is fit the left rear panel to the left side panel. Then he goes to the next one and fits the left rear panel to a left side panel. Period. And on that he works four days a week, while I sit at my control board and manipulate the buttons that assemble the brakes for a tri-wheel. Do I know what I'm making? I ask you?"

"That's right." Sammy joined him making a stand against the outsider. "We make tri-wheels. Everyday we see tri-wheels. You got one, I got one, Freddy's got one. Whole world's got a tri-wheel. Three days we make tri-wheels, and now whole world's got one." He frowned at his glass again and abruptly left them arguing over whether or not the whole world's got one. For the moment he'd forgotten what he'd wanted to tell Freddy.

Gotta have another drink. Moonshine, bonded, who cares? Whole world's got moonshine, too. He looked vaguely about for Sally, but didn't see her yet, and he continued toward the kitchen. He felt that he couldn't face the table with its reek of cheese and sardines.

THE MUSIC was too loud and he wondered briefly why no one turned it down; but it was unimportant. Probably no one remembered just where the panel was. Hayward had passed out hours ago, and it was his apartment. Family gone, he'd said, come on over.

Maybe that's why he had the party. Family gone for the long weekend. Father, Mother, Carol and the kids gone—come on over. That's what he'd said. That was a good enough reason for a party, Sammy thought, and laughed telling it to the others who would listen.

There were three couples necking on the couch. He looked at them closely, but Sally wasn't there. They waved him away; two of them did, anyway—the other couple didn't even notice his vacantly-peering eyes.

"God, how I wish my family would go away for awhile," Jackson said bitterly. "Three aunts yet! Mother said they gotta stay with us—nowhere else for them to go."

"Hayward's the lucky one. His wife has four brothers to visit. All execs, I hear. Wonder how she got messed up with a mechanic like Hayward?"

"Didn't you hear?.. "

Sammy passed on. He'd heard, with variations.

" .always got the best. Carol can get it through her r. One in the government." The speaker remained nameless although his face was familiar. Sammy became one of the group.

"You know, Sammy? Where Hayward gets his liquor?"

"Look, I'm telling you the government puts it out. You ever hear about a still going?" Nameless poked Sammy with an aggressive finger, "Tell 'em, Sammy. You know Hayward."

Sammy shrugged dully. Hayward was a name—a man with a wife named Carol. That was all he knew about Hayward.

Somewhere a girl laughed hysterically, and it turned into a deep sobbing.

They didn't glance around. Nameless was saying patiently, in a blurry voice, "The government wants us to get drunk. What else is there for us to do with three, four, five days at a time?" He hiccupped, ruining whatever effect this solemn announcement might have otherwise made. The small group dissolved in laughter to reform with new companions, new drinks, new thoughts to express. new desires to fulfill or quell as the case might be.

SAMMY REMEMBERED his goal of the kitchen and

started again. It was as full as the living room had been, and gayer. Someone was frying eggs, and some of it had run on the burner of the stove and was smoking and burning. It was Miriam, dressed in an apron and her spike heels and wide smile. She waved at him with a spatula.

"I knew you'd think it over, honey." She left the eggs and tossed the apron to one of the men standing eyeing her.

Sammy watched her as she hipped her way toward him, and the earlier feeling of revulsion wrenched his insides. "My dear child," he said pontifically, "you'll catch your death of cold running around in all that skin. Here." He jerked the curtain from the window and carefully tied it about her, ignoring her protests.

Miriam was single, living with her older widowed brother and his children. She was his housekeeper when he could keep her there. Mostly she was with one or another of the men who shared the bachelors' quarters in the housing area. She worked somewhere four days of the week, as did most of the single girls. He supposed that she stayed sober while she worked, but he had never seen her that way. Never completely intoxicated, but never entirely sober. She moved away from him disgustedly, and swayed from the room. He watched her lithe back and smooth legs until they were lost among the forest of wobbling legs in the living room. He wished he had asked her if she ever went to the Patch.

He sat down on one of the bar stools and buried his face in his hands, trying to remember what it was that he had wanted to tell Freddy. The party swirled and eddied about him, unaware of him, ready to readmit him when he was through with the lost soul act.

"I went to work Wednesday," he mumbled unheard in the din of laughter and raucous voices. "I had a headache. The buttons were dancing and wouldn't hold still. I didn't touch them once. Not once. I was afraid that I'd ruin something by pushing the wrong one." And his voice grew louder, but still unnoticed, "I didn't do a damn thing all day. I just sat there. No one said anything. Nothing happened."

THEY WERE singing now. They always did after a certain length of time passed. They sang together about happy days that were coming. About happy days that were over. He listened trying to comprehend the meaning of the words suddenly gone strange. "Tomorrow's the day for love, Tomorrow's the day for stars above. 'Til then, my dear, 'til then I'll dream." And another nostalgic song about the joys of yesterday. And a n o t h e r about the loves of the past, when the stars shone and the world was mine and yours. Or something like that.

Why not about today? Nothing to sing about today? It was a new thought. But they were only songs, put out by empty-headed rhymsters who worked at it from two until eight, three days a week, at union scale.

He had been frightened for a moment, seeing in foolish songs the frustration that had been gripping him for the week. Everyone knew songs were nonsense. What did it mean, happy yesterdays? Yesterdays were todays, and todays were tomorrow.

First you were a kid along with a few more, and parents and grandparents, and maybe an aunt or uncle or so. Then you went to school for awhile and got married and had your own kids and your parents, or her, and the kids were you—only now it was today instead of yesterday. He shook his head sharply and jerked upright. Nearly asleep, he realized, and dreaming at that.

He heard the strangled sobbing before he was fully awake. He blinked his eyes open and located the source. It was Jackson's wife weeping on the shoulder of an unidentified woman. "What could I do? She's my only sister, and the baby coming and all. She had to leave the dorm. Jackson says that if they come in, he'll leave. What else could I do?"

Bleakly Sammy surveyed her, but he said nothing when she turned her red-rimmed eyes toward him. He was one of the lucky ones; only nine in his apartment, and no more to come straggling in as the years went by, until his own daughters began marrying, at any rate. He shrugged and poured

another drink for himself. The Patch—he'd nearly forgotten about it again.

HE FINALLY located Sally in one of the bedrooms, as he should have known from the first. He waited for her to wake up sufficiently to hear what he was saying. She was his age, nearing forty, and looked it. She hadn't been with a man, he knew; just asleep. The liquor put her to sleep, the way formula did a baby. She slept most of the time anyway, even without it. Must be something wrong with her, he thought with surprise, and once more shrugged it off. She was better off than most, however. Curious how clear his mind had become after dozing for the small interval out there in the kitchen. Most of them couldn't sleep without pills, or whiskey, or both. But Sally? She curled up as soon as she got to a party and was gone for the evening. It should have made her the butt of jokes, but instead, strangely enough, they seemed to envy her; before the evening would be over nearly every one of them would at one time or another creep in to look at her sleeping like a child amidst all the noise.

Now she yawned and stretched, "Is it over? Time to go home?"

"Sally, let's go to the Patch?"

"What? Tonight? Are you insane?"

"No, really, let's do it. I just want to." He pleaded, but he knew from the set of her mouth that she wouldn't.

'Look, Sammy, just because you are off for the next four days doesn't mean that I don't have anything to do. If we go out there tonight, we'll not get in before eight or nine in the morning, and you know Mother will worry. Anyway, I'm tired. I want to get home and get to bed. I don't see how Carol stands this lump she sleeps on."

"You go on home, Sally. I'm going out. See you later," he said dully.

"Sammy, what in heaven's name has come over you lately? For the past six months, you've been grumpier than an old bear. And this past week you've been positively unbearable."

"I've been thinking. That's all, just thinking. Something

you never indulge in, I'm sure." The earlier distaste he had felt for Miriam's exhibitionism now reached and engulfed his wife. He felt the nausea welling up within him, and he turned and ran from the room.

FREDDY grinned at him amiably, "At it again, friend?" He chuckled at the look on Sammy's face, "You look like someone swiped your candy." He started to pass on, and seemed surprised at the intensity of Sammy's voice as he muttered,

"Not just my candy. Everything."

"Hey, you're too serious for a party. What's the trouble?"

"Freddy, did you ever not push your buttons?"

Freddy's face dropped its habitual grin. "Huh? Say that again. Fraid I must not have understood. What buttons didn't I push?"

"Look, Freddy, I'm serious. This week at work I didn't push a single button; not one. But the brakes kept on coming, and the parts were assembled just as they always were. Who did it if I didn't?"

Freddy resumed his geniality then and asked, "OK, who?"

"No, Freddy, I mean it. Didn't you ever miss? And did anything happen?"

"Sure I've messed up; everyone does once in awhile. You know the super is right there like a shot. Caught you once or twice hasn't he?"

"Sure he has; but those times I would have been willing to swear that I had done my job. But this whole week, I did not do one blasted thing. I kept my hands on the board, but I didn't push the button. Don't you understand what I'm saying. It wasn't my turn to get caught loafing, so no one said or even noticed anything. Who ever heard of anyone not pushing the buttons?"

But Freddy was moving away with a patronizing smile that said, *so you've had too much to drink, but that doesn't excuse a bad joke.* Sammy had heard those words so many times from Freddy's lips. Never before directed at himself, but neither had they been this time; only in his mind did he hear them.

ANGRILY, he stamped toward the door. OK, he'd

told someone. Now what? Nothing. What if the world knew? Still nothing. He was striding down the street before he realized that someone was following closely behind him. Scowling, he turned, expecting to see a thoughtful Freddy ready to ask for details. It was Miriam.

"Can I come, too?" she asked plaintively. In her full cape and hood she looked especially young, and her smile was a tentative thing that wasn't sure of its welcome yet.

"I'm going to the Patch," he announced.

"I know. I heard you ask Sally. I'd love to go to the Patch. I go there every week."

"If you want to." He didn't look at her again as they walked toward the transit belt that tied the city together—that was its arteries and its veins, and served, and all the while dominated its every phase. Without the belt, the city would end in ruin, its workers unable to get from one end to the other, unable to get to the stores and hospitals and factories. How many millions, he wondered—thirty, forty? They never told any more. It could be fifty or even seventy. No one knew, or cared.

There was always a majority of them working, or sleeping, so that those seen at a time were always just a minor part of the population. Around the clock they worked to produce the goods consumed daily. Indispensible; every man must w o r k or thousands would starve. Or so he had always thought, had been taught since childhood. All must serve diligently so that all could live. So he had believed with all his soul. But now, for the first time he knew: All must *think* they worked, all must be kept occupied or drunk so that a few could really live. As for him and his kind, they drank bootleg whiskey and stared at pointless buttons that didn't care if they got pushed or not.

SAMMY and Miriam boarded the belt, still deep in their silence, and left it again at the outer station where they would catch the projectile. The teardrop-shaped rocket-driven car took them to the station where Sammy rented space for his trihweel. Only when he was at the controls did he speak to the girl beside him.

"Why did you want to come?" His voice was harsh as he thought to himself that it should have been Sally.

"I don't know. I like you for some strange reason. Maybe because you're so busy thinking your own thoughts that you never had time to notice how much and how often I've thrown myself at you." She said the words simply, but so matter-of-factly that he stared at her. "Oh, yes. It's true enough."

"Why me? I'm getting old. I don't have anything for a girl like you."

"You mean money. No one else does either, you know. Before they're married, they don't make it; and after, they need all they get for their families and their families' families. I know all about that. But you're different. You like the Patch for one thing—and I do, too." She lowered her face and he couldn't see it beneath the wide hood of her cape.

The houses and apartments were finally thinning out, and they were coming to the broad cultivated fields. There was a pattern, he thought. The tightly-packed city with its factories going all day and night; the apartments and houses; the carefully-measured-out ground for the recreational areas, each one so precisely laid out that not one inch was wasted. And then the fields with cattle grazing and corn growing and wheat and vegetables. Again not an inch wasted. And finally the Patch. And on the other side, the pattern reversed itself, starting with the fields working toward the next city. Only the Patch was unchanged. In some places, he had heard, it was fifty miles or more across, but theirs was a scant five miles in width. He didn't know how long it was. No one else did, since they all interwound and formed the overall background for the cities. Like a patchwork quilt, the simile had been made and the background had become the Patch.

THE PATCH was primeval. It was unkempt and dangerous, the hangout for the mobs of teen-agers who scorned the planned recreations of the government. The proving grounds for the gangs that formed and dispersed as the members matured and took jobs and fami-

lies. The lovers lane, bootleg rendezvous, assassination alley. That was the Patch.

Nature ruled the Patch. Her vines and shrubs crowded one another for possession of the ground, and the trees fought their silent battles for the sun and air above. Here and there polluted streams trickled or thundered madly searching for the sea. They were as devoid of life as was the rest of the Patch. Occasionally, Sammy would shut his eyes and try to imagine life in the Patch with wild animals roaming, and the creeks alive with fish, but he failed to conjure the picture. Instead in his imaginary view there would be smooth-shaven heads of the gangs' scouts peering around the trees to see if he were worth robbing. Thus far, they hadn't molested him.

He drove surely, confidently through the dark, rough, potholed road that wound upwards through the tangle of growth. Miriam sat beside him quietly, motionless, waiting.

"There's a hill where I go sometimes," he said suddenly, and was pleased that the sound of his voice startled her from her reverie. "I look at the stars." That was all. It sounded asinine and futile, but it meant a good deal to him to be able to see the stars. They at least were unsullied by man as yet.

"I know," she agreed, knowing what he meant.

"This will all be gone by the time my kids are grown." Every year the Patch retreated grudgingly to the relentless machinery of man, tearing at its trees, uncovering its accumulated layers of history with monsters that scooped clean an area the size of a city block at one bite. The farm lands edged forward, and the city bulged outward converting a field into a row of plastic homes or a towering skyscraper with carefully-planned streets radiating out from it to converge with other rays from other buildings in the master plan that left finally only the city.

"IT WILL all be gone," Miriam intoned. Then more animatedly, "But there are others out west that are much wider than this. They won't be gone."

"Eventually, they too will be gone. What else is there?" He braked in sharply and swung

open his door stepping out. He didn't offer to help her out, nor did he turn to see if she followed. He continued, "I have four living grandparents; two living great-grandparents; three children; two parents; three sisters and one brother. They all have their own children, three, four or five. I don't know how many. What else is there to do but reach out and take the land for the living?"

She had come after and stood slightly behind him in the shadows of the scrubby pine trees that grew in the poor rocky soil of the hill top. "They should have controlled the birth rate, starting two hundred years ago."

"They should have," he conceded, "but they didn't." He turned slightly to see her face. He would tell her This girl would know at "And it doesn't matter to world, or anyone in it, if any of us lives or dies."

She watched him, waiting passively for the rest.

"I didn't push a single button all last week, and the brake assemblies were made anyway." There was an urgency in his voice now. Someone had to understand and be concerned even as he was. "Have you ever seen the line?"

She tried to say something, but he overrode her in his haste to be heard. "You know the operators have their backs to it, facing the control boxes. We're supposed to push our little buttons according to the signals on the screen above the boxes. But all last week—three days—I just sat there watching the signals, and I didn't touch a button. I looked again and again at the line, and the parts kept moving along. I could have got up any time, and it wouldn't have mattered a bit. The whole line is automatic. The government guarantees us twenty five years of work, with a lifetime pension afterward, and they give it to us. Only we could stay home and accomplish just as much as we do there."

He laughed wildly and pointed to the starry skies that were never visible in the city. "Have you ever heard of the old dream men used to have about traveling to the stars? Mankind was supposed to be dedicated to the principal that the stars were his. But it took too long after Mars and Venus. Men couldn't

get used to the planets, and before we learned how to get to the stars, the birth rate caught up with us. Now all we're dedicated to is the principal of staying alive and getting enough food in our bellies to beget children and stare at buttons."

SHE WANTED to talk, but suddenly his hands were grasping her throat. He couldn't tell why—only that she was in some way responsible for it all. She and her kind, his kind, blind stupid fools who drank away their time so they wouldn't think of the futility of life. She cried out and his hands dropped limply, the passion spent. He felt drained as if he had been in a fight for survival and had only managed to emerge.

He stared at her crumpled body at his feet dumbly and wondered why she was there. She didn't move, and he turned and walked with leaden feet toward the edge of the hill where the rock was. "It should have been Sally," he murmured once as he paused clinging to the side of the great rock. He lifted his eyes to the stars after he had dragged his body to the top of the boulder. They were the last things he wanted to see before he plunged down the bare, weather-cleaned side of the hill to the pit below. He sensed rather than heard the girl stir and moan.

"Sammy," she whispered, "wait!" It was a voice only. A distorted, croaking voice that floated up from the black of the ground. "There is hope still for the stars."

Her voice was muffled by the sound of her dragging feet, and he knew she was pulling herself up the boulder also. He waited, outlined against the faintly-luminous sky until she was gasping for breath beside him.

"What do you mean?" he rasped.

"Listen to me, Sammy. The execs and scientists haven't given up; only the people They are still trying to get the drive. Every year is a little closer to seeing all the problems solved. Carol's brothers know; I know; there are many of us, but they —the ones in the city—just don't care."

"Why aren't they told?" He wanted to believe, but the memory of the party was too fresh. "We're living in squalid mis-

ery, crowded, hating, wasting away. Why?"

"Sammy, think. When did you first begin objecting to your life? This year?" She filled the silence with a rush of words, "Security. That's all anyone desires any more. Pensions, hospitalization, jobs, homes. Seven years ago did you vote for the population control bill?"

HE SHOOK his head mutely recalling. That had been before he'd had a son. A man wants a son somehow, to carry on after he's gone.

Bitterly, the girl continued, "Every ten years—for over a hundred years now—the world has faced the population problem; each time the bill gets voted down. Unless the Eastern countries will accept, the Western countries are afraid to, so the population is cubed every one hundred years. Only now, and during the past twenty years or so, has the fear of starvation begun to be realized. And science! Never enough money for research; always being forced into playing stupid war games, into trying to cope with not enough food and ways to get around it—ways to crowd fifty million people into land meant for five million, ways to manufacture climates for uninhabitable planets.

"And always having to fight off those who claim that man was put on this planet, Earth—and on Earth he must stay. Maybe the people are wise, Sammy—maybe those who oppose population control in God's name are right; but if they are, then God must have meant for us to spread beyond this planet."

Sammy said softly, "He said, *'Be fruitful and multiply...'*" How many years had it been since he had heard those words?

"And we always have to contend with those who claim to have proved conclusively that no drive can be made which will approach the speed of light, much less exceed it.... But now an opening is appearing. What do you think would happen if man knew?"

"We want love and the stars—today! Not in some vague tomorrow."

"But if man learned that his children might be able to migrate to the stars, there would

never be a bill passed and enforced to control population, and we would all die before the first stellar ship was made."

"I wonder. The people will never vote for population control—not enough to make a majority." Sammy looked at the stars and asked, "You work for them?"

"Yes. Mostly, like your work, the machines do it, but I transcribe findings into English, and more important, I mingle and try to catch up with guys like you. There are a lot of us, and we give a lot of people a reason to keep trying. When we find one ready to learn the truth, we tell it to him. Your friend Freddy knows."

FREDDY! But he was no different from anyone else, except that he didn't get drunk. "Why him?"

"He reached this stage." Dimly he could see her hand gesture toward the rocky chasm below. "It was several years ago. We try to prevent it. Sometimes we do, sometimes we don't." Then quietly she slipped her hand in his and began making her way carefully down the rock.

It might not come in his lifetime; it might come next year. Sammy knew that he, himself, probably wouldn't get off earth. Certainly it would be harder living with the knowledge and not showing it than it had been not knowing. He wondered who else knew, besides Freddy, among those he saw.

The quiet ones, the peaceful ones. The ones who could watch a board of blinking buttons, who didn't care whether or not they got pushed simply to keep their fellow men buried under an illusion that he was an indispensable part of the society —until the day came when he would be just that, in actuality.

Sammy smiled calmly, and gave the approving stars one last glance before stepping back into the tri-wheel.

— ★ — ★ —

illustrated
by
EMSH

The legal situation was s i m p l e enough: everything was forbidden except that which was specifically permitted!

SIGNS OF THE TIMES

by Brent Howell

IT WAS GOOD to be back, much better than it had been to be here ever before. There was a smell in the air of freedom, and he found himself breathing for the pleasure of taking in delicious lungfuls of air, scented with smoke and dust and pollen and cooking odors.

Other rocket men were in the habit of r e f e r r i n g to E a r t h's ground-level atmos-

GOBBLE-DE GOOK
ON
WEDNESDAY

phere as "dirty air." And it was dirty compared to the synthetic air of the big explorer ships.

The difference in air was just one more thing to make rocket men impatient to be up and away, up into the blue and beyond the blue into the colorless space that led to other worlds. Other rocket men disliked Earth.

Not Skip.

Skip was back home for good, rich for life with his ten-year space pay and tired of adventuring.

"No re-enlisting for me," he told his commanding officer. "I've been imitating a comet for a full decade, and that's enough. I'm going to find me a nice tight orbit."

"I had you figured out from your first day in space school, Skip," the C. O. said with a sneer. "You're no spaceman. You never were."

Skip had to admit that the old man was right. He never developed that love of space-flight—you couldn't feel it, anyhow, except at take-offs and landings—that the career rocket pilots had. There were a number of things about space life that Skip had a strong dislike for: boredom, military discipline, tasteless food and the metallic sanitary air he had to breathe in his rocket cabin.

AIR! REAL air! Skip savored the air of the city, his home town, and wondered why it gave him that strong freedom sense that he'd never felt before.

"What do they put in this air nowadays?" he asked his wife. "It feels like it's about one hundred proof."

Emilie, seated next to him on the bus, put a finger to her lips. "Shh!" she said.

Skip turned his head from Emilie to look out the window at his city.

"I used to tour this city in my head when rocket routine settled down to absolute normal," he said.

"Shhh!" said Emilie.

"Yep" he continued, "every night before I went to sleep I made a mental visit to some section of this town. It's as familiar to me as if I'd never been away."

"Shhhh!" hissed Emilie.

Skip made a mental note to chastise his wife—later—about

this bossy shushing as his own spoken words echoed in his mind: "It's as familiar to me as if..."

He blinked, and on the upblink his eyes widened to let in a surprise: it was not quite as familiar as he thought.

Skip studied the scene through the bus window, beginning to realize that the sense of freedom was not in the air but in the city itself. Shoe store, cigar store, pool room, laundromat, music store, corner drugstore. They all looked the same except for added wear and slightly different displays in the windows. Or was there more of a difference than that?

Gift shop, book store, dime store, dress shop, hat shop, dress shop, shoe store, auto parts store, stationery store. No big difference.

SKIP LOOKED into his memory and recalled the federal, state and city signs that all but covered the telephone polls, buildings and sidewalks throughout the town:

No parking, No Spitting on Public Sidewalks and Gutters; No Loitering; No Loud Conversations; No Talking; No Running; No Admittance; No Bathing Suits Allowed on Public Sidewalks; No Eating on Sidewalk; Post No Bills; No Profane Language Permitted; Do Not Litter; Dump No-Garbage; No Flirting; No Whistling; No Singing.

No Nothing.

"What happened to all the 'No' signs?" Skip boomed.

Emilie took hold of his right arm and squeezed. "You must be quiet, dear," she whispered.

A conductor strode up to Skip and tapped him on the shoulder. "Conversation on buses is strictly illegal, sir," he said.

"He's just in from space," Emilie told the conductor.

"Welcome home," the conductor said. "I won't report you to the police if you'll hold your tongue, sir."

Skip nodded. Somebody had taken down all those old "don't do it" signs—that was what had given him that feeling of freedom. Temporarily, anyhow. His eyes scanned the interior of the bus. None of the signs said "No This" or "No That."

Finding no prohibitive

signs on walls, windows and ceiling of the bus, Skip let his vision drop to the floor. Why, even the "Do Not Litter Floor of Bus" signs were missing.

But he could just b a r e l y make out traces of paint here and there on the floor where some government worker had got tired of scrubbing hard and had eased up. Very faintly marked on the floor in the aisle near Skip's seat was a fragment of one of those signs. It said "Litter Floor."

THE CRACKLING of his peanut bag was loud and clear in the bus as Skip wadded it up. The bag made a ptt! sound as it hit the floor.

"I'm going to have you placed under arrest, sir," the conductor said indignantly. "It's against the law to litter public floors."

"Ridiculous," said Skip. He pointed to the faint inscription on the floor. "It plainly says, 'litter floor.' I littered the floor."

The conductor whipped out his Manual for Public Conveyance Conductors and thumbed through its probably five thousand pages. He searched. He searched.

"Abraham Lincoln Street," the streetman called. Emilie poked an elbow into Skip's side. They both arose and filed with others out of the bus, leaving the transfixed conductor to his research.

"I'll drive," Skip said, eyeing his car at the curb.

"No, no, I'll drive," Emilie said firmly, sliding under the wheel. "Only licensed operators are permitted to drive."

"I. . .!" Skip began to say.

"Don't argue, dear," Emilie said tiredly. "Licenses are renewable every Saturday, and the fine, oh dear, is five hundred dollars for driving without a valid license."

"Well, I'll be. . ."

"Don't be! It's i l l e g a l. Someone might hear you cuss. Someone always hears and it's a fifty dollar offense."

"To swear? To just swear?"

"On Sundays it's a one hundred fifty dollar offense."

Skip began to lose some of his enthusiasm for good old Earth. What did some of the spaceguys call it? "Forbidding Planet!"

HE LOOKED out the car window at this strange familiar city now opening up to him. Up ahead was an oak-lined street he could remember all the way back to his childhood. That was the route of his morning trek to high school.

"Em," he said, "take a right turn up there on George Washington Street. I haven't been on that street for five years."

"Oh, I wish you had written me that you wanted to go home by way of that street. I would have made arrangements for it."

"Arrangements?"

"Yes," said Emilie. She sounded hurt. "I plotted out a route I was sure you'd enjoy." They were past the street.

Skip turned in his seat and looked back at the oak trees fading into the distance. "Why didn't you turn anyhow? I never knew you to be a slave to detailed plans, Em."

"Our route is registered with the traffic division. I can't vary from it. It's a three hundred fifty dollar fine."

"Fine," said Skip.

Emilie took her right hand off the wheel and patted his hand. "There there, dear. I'll make it up to you. Next Monday evening is city tour day. We get one every month. I'll put in a route application and I'll plot over every street and alley in town. How's that?"

"Are you sure they'll okay it?"

"Oh, yes, reasonably sure. Darling, they almost never turn down an application." She seemed to be trying to sound cheerful.

A CAR IS no place for serious talk, Skip had always felt, and he now found he had nothing in his head but deep probing questions. Better to wait, he thought, until we get home. Even better to wait until tomorrow or next week. Try to get the feel of this new life.

His attention wandered out the car window again, and he started reading signs as they whizzed by.

Parking Permitted Here; Quiet Talking Permissible; Go Ahead and Sing if You Want to; Dignified Flirting Permitted in This Section of the Park; Animals May be Fed Authorized Peanuts Purchased in the Park; Tricycle Riding Area; Hand-Holding Permit-

ted for Teenagers; Wait for Bus Here; Soap Box Available for Political Speeches Between 4 and 6 p. m. Daily.

And other odd postings.

"What happened to all the 'No' signs?" Skip asked, looking into the back seat where he half-expected to see a family car conductor.

Emilie burst out laughing. "They're all gone, darling. Didn't you know?"

Skip didn't know. Emilie made no further comment. The next mile was speeded in silence.

Except for the signs. They made a peculiar sort of high-pitched sound in Skip's mind as he watched them go by the car window.

CARS MAY Speed up to 75 Miles Per Hour for the Next Quarter Mile; Motorists May Leave the Road Here for Five Minutes to Watch Sunset; Drivers with O Stickers on Windshields Need not Show Pass Cards to District Guard.

"Pass cards?" Skip asked, as his wife slowed down. Apparently she was going to stop at that check hut beside the road barricade. That, thought Skip, must be a District Guard. He glanced at the car windshield. Sure enough, there was no O sticker.

"All in order," said the district guard, waving Emilie on and pushing the "up" button for the barricade.

"This city is divided into five residential districts, dear," Emilie explained. "They don't let you out of one and into another without the proper pass card." She paused. "I mean, if you have the proper pass card, you may leave one district and go into another."

Skip said nothing. He didn't even bother to think anything.

"You see," Emilie continued, "everybody in a district is issued a pass card. Temporary pass cards are issued along with approval slips for routes. See?"

"You mean," Skip said, "that I can't go wherever I da...wherever I please, whenever I please, however I please, whomever I please, and whyever I please?"

Emilie lifted a hand to silence her ignorant husband. "Oh, no, dearest. You have it all wrong. You can go anywhere for almost any reason.

All you have to do is file an application. It's just, well, routine."

They were home.

IF NOTHING else in this city looked the same, absolutely the same, at least his own house had not changed in his absence. Same red roof, same white picket fence with the fourth picket to the left of the gate missing, still missing, same brick steps, same yellow door, same cement walk, same low-clipped green lawn.

Except that he didn't remember that small hole right in the middle of the left side of the lawn. Gophers? He'd get them.

"Hey!" he exclaimed, halting. Emilie halted too. "Where's the 'Keep off the Grass' sign?" It had been planted right there in that hole.

"Some city employees came around the neighborhood last week and removed all those signs" Emilie said. "We don't need it. Nobody walks on our lawn anyhow."

Skip, remembering why he had planted that sign, scowled. It had been his only way of protesting the negative, prohibitive way of life the American way of life had come to be. It was his own negation, his own p r o h i b i t i o n, directed against the whole negative country, including its negative government officials. Now it was gone.

But he could play this new game, by—ah—golly! Skip began to compose a new sign in his mind as he and his wife continued their way to the front door. His new sign—he'd plant it tomorrow—would say:

Lovers and Pedigreed Toy Poodles May Walk on This Lawn Between the Hours of 10 p. m. and Midnight on Fridays, Saturdays and Sundays.

EMILIE closed the door behind him and he reached out for her, confident that there was no federal, state or city law against kissing one's wife in one's own home (with the door shut). His hands clutched empty air. Emilie was over by the television set, snapping on various knobs and dials.

"It's six o'clock, dear," she said. "Time for the president's weekly program. I'll kiss you

later. This show only lasts half an hour." A monstrous beaming face appeared and came into focus on the fifteen-foot screen.

"Who's he?"

"Thatcher Gunsmith, President of the United States," Emilie whispered. "He landslided our party into office."

"Our party?"

"The Positive Party," Emilie said with a trace of pride. "I'm block chairman."

Volume came on at this point and Skip could hear the President's heavy breathing.

"Citizens of the New America," boomed a television voice. "We are witnessing together the beginning of a new era of freedom in our land."

Skip glared at the presidential image. "What is he talking about?" he asked sarcastically, hoping that two-way television hadn't been introduced into New America's homes.

"Already you and I are seeing the results of the new program of the Positive Party," the President said, ignoring Skip's interruption.

SKIP GLANCED at his wife to share the irony of it all, Emilie's face was a picture of concentration, pleasure and pride. Block chairman, huh?

"Too long has this nation suffered the slings and arrows of outrageous prohibitions of free activity and limitations of privilege. Now is the time for all good Americans to rise up, take the bull by the horn of plenty and demand the milk of human kindness in our legislation.

"Let it be said when that grand day of reckoning dawns upon this green earth that our leaders heard the call and answered by putting their shoulders to the wheel of fortune and by opposing the very spirit of negativism ended it."

The absurdity of it left Skip weak with silent laughter, but neither the President nor Emilie caught the joke. Thatcher Gunsmith continued:

"The Positive Party was formed by men who know that law, in order to be positive and progressive, must say 'yes' instead of 'no.' It must say 'go ahead' instead of 'stop.' We have now seen those men—great leaders all—come to the forefront of the American scene. We have seen them

change that scene and now we herald in clarion tones the rebirth of a nation, the birth of a new nation, set forth by men who one day will be known as our forefathers of four score and seven years ago, which hangs together so that it will not hang us separately. Which is one nation indivisible because it cannot be divided by an interminable series of restrictions on life, liberty and the pursuit of happiness. And now, a word from our sponsor."

Emilie danced up to the television knobs and switched them off. The smile on Thatcher Gunsmith's face faded and so did Thatcher Gunsmith.

"What was all that nonsense?" Skip demanded.

EMILIE'S eyes brightened feverishly. "You'll understand after you become rehabilitated," she said. "Darling, the whole structure of our society has changed."

"It's gone psycho," said Skip.

"Why, to think that up to just a very few weeks ago, this country was in the grip of thousands of laws which stripped us of almost all our fundamental rights!"

Skip got up from his chair to mix himself a drink. "Now what kind of grip are we in?"

Emilie watched his swizzle stick as it muddled his drink. "Well, laws used to tell you what you couldn't do. Now they tell you what you can do," she said merrily.

Laughing almost hard enough to spill his drink, Skip remembered the new crop of signs he had seen on the way to his house. Then banishing mirth from his tone, he took a solemn look on his face. Maybe he could get through her enthusiasm to her powers of reasoning in spite of the silliness that seemed to have infected the whole planet.

"Look here Emilie," he said, "don't fool yourself into thinking that we Americans are better off when we trade our rights for privileges. Why, we have no more freedom than a yo-yo, and you pointed that out to me on our way home when you said we could go anywhere we wanted if we got permission."

Emilie smiled patiently,

"You're just using words," she said.

"No, no, no!" Skip said. "When I came down to Earth last time, a man was free to go wherever he wanted unless he was prohibited. There is a difference, you know."

"I don't know," Emilie said. "It sounds like six of one and half a dozen of the other to me."

SKIP SANK down to his chair again. "In a nutshell, Em, it works like this: when laws say you can't do something in a certain place at a certain time, they imply that you have the freedom to do the same thing in that certain place at a different time. Right? They also imply that you can do that same thing anywhere else anytime. Now do you understand?"

Emilie didn't, admitting that she never knew laws implied anything.

"Well," said Skip persevering, "that is the historical American assumption: complete freedom to do anything anytime anyplace. In American history—early history anyhow—laws were passed restricting this complete freedom in order to protect the people against malicious use of freedom by unscrupulous persons to the detriment of everybody's freedom."

The glint of the crusader shone from Emilie's eyes. "But, darling, don't you see? There were so many laws passed over the years that freedom got so badly restricted that there wasn't any real freedom left. Now, under the banner of the Positive Party, we are marching back toward freedom."

Skip sighed. Maybe it was true. Maybe so. Maybe he had allowed himself to become alarmed too easily.

Emilie took off her "PP" armband, which Skip hadn't noticed until then, and slipped it into her purse. Snap.

"Is your party repealing a lot of those old laws by the barrelful?" he asked.

Emilie, on her way to the kitchen, answered over her shoulder. "Not exactly repealing. The legislatures are busy amending them, though. They've made considerable progress already, and the states and counties and cities are following suit."

SKIP GOT up and followed into the kitchen. "What about that ordinance against profane language. Is that a new one or an old one?"

Pausing with frying pan in mid-air, Emilie replied, "That's been amended. The ordinance used to prohibit loud swearing on public streets and in public places. Now it permits quiet swearing in the privacy of a person's own home. They've made a positive law out of it."

"Emilie, tell me: under this new positive ordinance, is it legal to swear in as many places as it was under the old negative ordinance?"

She admitted that it was not and quickly added that she didn't think swearing was a very worthwhile freedom anyhow.

"Well," said Skip as they sat down to supper, "I've got lots of time on my hands until I find a job. I'm going to study the American legal scene very closely and find out whether my impression is correct."

Passing the butter, Emilie asked without more than a trace of interest, "What is your impression?"

"My impression is that everything is illegal except when a law says specifically that it is legal."

A five-day study proved to his satisfaction that his impression was correct. After his first day of studying American laws, he found out that it was illegal to make such a study without a permit. Or rather, that it was permissible to make such a study if he applied for and received authorization.

ON THE FOLLOWING Tuesday Skip launched his campaign against the positive trend in laws.

"Fifteen gallons of black paint," he said.

"Do you have a purchase authorization slip?" the clerk asked suspiciously.

"Yes!" said Skip, dropping a Q-23-78-W form on the counter. He already had the lumber and a good brush.

He painted for twelve hours everyday (including illegal Sundays and Wednesdays) for two weeks in his basement.

"Back the truck up to the door, here, Joe," he said.

Joe did, grumbling about how it took him four hours to

get the necessary eighteen permits to hire the truck, buy the fuel and plot the trip. Loading the truck and planting the signs took the two men all night.

Sign-reading citizens the next day were duped into believing that city councilmen, all members of the Positive Party of course, had authorized at various times of day and in various places:

Tipping of theater managers; donations to the city coffers; arm-swinging while walking; singing off-key; floor-scrubbing; baby-tending; use of the middle name in conversations with family members; splitting infinitives; cutting of cats' whiskers to uniform lengths; leaving the refrigerator door open all night; standing on your head, and other things.

SKIP AND JOE stood outside the post-office, admiring a small sign which said, "Up to Three Licks per Stamp Permitted for Local Delivery Mail."

A puzzled look passed over Joe's face. "Would you mind explaining to me just one more time why we pulled this prank?"

"The whole idea, Joe, is this: we are using the best weapon in American history—ridicule. If we can get enough people laughing at our signs, they'll start laughing at all the government's signs too, and then we've got this Positive Party licked."

And Skip spent an hour or so Wednesday morning, stationing himself by a sign that said simply, "Anything Goes," watching pedestrians and motorists and waiting for the response to his campaign.

He didn't hear a laugh, didn't see a smile. The newspaper that night had no mention of the new crop of signs.

"You know, Joe," Skip said thoughtfully. "People must think these are bona fide government postings!"

Government officials must have thought so too. Several days passed and not one of Skip's signs was taken down.

"The Positive Party still seems to be in power and going strong," Joe taunted on Saturday.

"Aw, go soak your head," Skip answered.

Another Q-23-78-W form dropped on the counter of the paint store. "Fifteen gallons of black paint," Skip said and two weeks later told Joe to back up the truck to the door again.

Weary with a full night's work, Skip and Joe got back into the truck and drove homeward. "I don't see," said Joe, "how you expect to succeed this time when you failed last time."

"I don't expect success this time," Skip said, "but it's my patriotic duty to give it a good try."

SIGN-reading citizens, whose ranks had thinned (out of boredom) considerably in the last few weeks, the next morning saw the new signs, which permitted:

Glopping on Tuesdays; disengaging phatchets (with Caution) after Sunset; jigwaving blue spikefilters; screeding fillets of whopovers; panparades on darkened quirebenders; ecstatic prorating of diathenageous four-edgd paraficious hung-shots; totalitrigarianpomiffianism; as well as anti-totalitrigarianpomiffianism.

"What is a 'spikefilter?'" Joe asked on the telephone next day.

"A spikefilter is a sort of prongfunnel," Skip replied. He rushed out to the northeast corner of Main Street and First Avenue and stationed himself by the up-side-down sign that read, "G-g-g-g-g-g-g-ging Allowed Between 9:00 A. M. and 9:01 A. M."

He was rewarded by assorted looks of puzzlement, bewilderment, amazement, worry, amusement and exasperation on the faces of numerous passers-by who saw the up-side-down sign and cocked their heads to read it.

At the corner of Washington Street and Ninth Avenue an hour later he was further cheered by the few smiles he noticed inspired by authorization to "unglob yourself whenever necessary."

Before going home to lunch, Skip stopped at Lincoln Street and Sixth Avenue, where the courthouse stood, and listened with crusading delight to the snicker of a lawyer reading a large sign which said, "Semi-Torting During Court Recesses is Semi-Legal."

THE NEWSPAPER that night carried this banner headline: LIGGY-FLORPING SWEEPS CITY.

The banner story revealed Skip's plot and quoted the legends on most of his signs. The paper also carried a full page of pictures of signs and of stupefied people reading them.

Skip lived the next day in dread that he would be traced and arrested. "So do I," Joe said on the telephone. "If they check the route licenses, they've got us."

The jailer brought Skip that night's paper with the banner headline saying GROPE-PUDGING ANGERS OFFICIALS.

A columnist told his readers: "Government officials have reason to be angry with Skip Smith for his sign campaign. They are certain to be laughed right out of office by a voting public which sees an amazing similarity between Skip Smith's signs and the official government issue. Skip, who is in the city jail right now while city fathers are trying to figure out which one of this town's eight thousand laws was violated in his campaign, will probably be released for lack of a charge.

"He should get out of jail on a writ of ha-ha-habeas corpus."

Skip was in front of his own television set the following night when Thatcher Gunsmith, President of the United States, made a hastily-arranged appearance.

"The government of any nation, any state, any city has but one right," he said solemnly, as the TV camera picked up the blush on his face. "That right," said Gunsmith, "is to govern. No one can deprive the government of that right, that fundamental right on which is built the structure of our nation. I ask you to remember that when you go to the polls next week, for our very heritage is at stake. Our very way of life is threatened by a certain private citizen who dared to attempt a one-man revolution, who tried to wrest the government from the hands of the duly elected."

Gunsmith was duly un-elected the following week. So was the Positive Party.

obey that impulse!

by Larry M. Harris

Being smothered to death by butterflies isn't pleasant, and Carla would never have thought it possible — but suddenly the swarm was around her . . .

THE PLANET had checked out safe, nine-nines safe. It was as near a duplicate of Earth as Carla could have hoped for, and even old Gerritson looked pleased. Which was something of a tribute, Carla thought; Gerritson hadn't looked happy about anything in the eight years she'd known him.

But even he had to admit that the planet was something special. Coming down in an approach curve, they discussed names for it and, with his usual feeling for exactly the wrong, too-purple word, Dobit had suggested: "Paradise. It's the perfect planet—let's call it Paradise."

Carla looked at the Maintenance technician with something like awe. From that pale blond head, from that fragile, graceful wisp of a body, it was impossible to conceive of the shattering bass voice. But there

it was, a voice so masculine as to defy the ear, uttering purple inanities.

"How about just giving it a number," Carla said, "and letting the settlers name it. They probably will, anyhow; whatever name we pick is liable to rot in the files and never be heard of again."

"It's the principle of the thing," Dobit said. "Our name has an effect on volunteers. It's all psychological; you ought to understand that, Carla."

"All right," Carla said. "Paradise has an effect on me, all right—an emetic effect, if you have to know."

Gerritson came between them then, his hands pushing empty air. "Now, now. Can't you two learn to get along? Fights, all the time fights. We've got work to do, and we. "

"Him and his Paradise," Carla said. "I can't help it, Will. He gets on my nerves."

"If you don't like the name," Dobit said, that bass voice somehow managing to sound petty, "just say so. That's all you have to do—say so. You don't have to get nasty about it."

"After all, Carla," Gerritson said, "we're a crew, the three of us. We're supposed to work together — engineering, maintenance—bio and psych. Now, how can we work together if we're going to fight all the time?"

IT WAS A stupid situation, without any real base; but maybe she had been a little over-sensitive. And Gerritson—damn his wrinkled old hide!—was right, anyhow; there wasn't any room for dissension on a three-person ship. Carla said: "I'm sorry," and let the matter drop.

"Now," Gerritson said, "I've got a suggestion for a name." He beamed impartially at Carla, at Dobit, and at the bulkheads of the Lounge. "Want to hear it?"

Carla sighed. "Go ahead," she said. She wanted to be friendly and easy to get along with: in the past, she remembered, she had been. But nine months was a long time to be out. Thank God there was only this last planet—and then home again. Home, and peace, and relaxation... "Go ahead," she said. "What's your suggestion?"

Gerritson's face positively shone with pride. "New Earth."

Carla restrained herself with an effort. Of all the unimaginative, soppy names for a planet...

"Maybe we'll come up with something better after we land and look around," she said at last. "Why not let's put the matter in abeyance?"

"All right with me," Gerritson said.

Dobit looked around at the others. Carla felt a brief flash of pity for the youngster; this was, after all, his first trip, and Maintenance was proverbially a sensitive, easily-offended outfit. "My goodness," he said. "If that's the way you all feel, it's all right with me."

Pity disappeared with the sound of that roaring bass. Carla opened her mouth and shut it and finally said: "I'm going to grab a nap. There's nothing for me to do until we land, right?"

"Nothing at all," Dobit said, "unless you want to help me. And you really don't *have* to, you know." He looked at her appealingly; she ignored him and got up, heading for her room down the corridor.

"Ground in three hours," Gerritson said, and she heard him talking to Dobit as the Lounge door shut behind her: "Better see to your flyers. There'll be a touch of 3-G."

SHE HEARD Dobit stand up hurriedly, awkwardly, and the door shut and she went down the hall. A nap was about the last thing in the world she felt like. But she'd kill the time somehow, reading or just thinking.

Paradise!

New Earth!

Sentiment, Carla told herself, was all very well in its place; but its place was most emphatically not in a Space Exploration Team ship. The SETs had to be hard, cold and efficient, unshocked by anything, ready for every eventuality, two-fisted and unemotional...

Like Dobit. Or Gerritson.

Carla went into her room, shut the metal door and lay down on the bed, waiting for the braking weight and the little bump that meant landing.

THE SPOT selected for landing seemed to be mainly rocks. This, as Dobit went around telling Gerritson and Carla, meant nothing. There were places like that on Earth, too. A few miles away the terrain might be entirely different. Probably was, in fact. "This is such a lovely planet," Dobit said.

"Sure it is," Carla agreed. As soon as he'd said it, she became convinced that it was a terrible planet, practically the sinkhole of the Universe. But she kept herself tightly under control; it wouldn't do for a fight to start now. After all, they only had to set up the Transmat and ride it on home.

One of these days, she thought, *they'll invent a Transmat that'll set you down anywhere, without any need for a circuit connection at both ends. And then the entire SET operation will be out of business.*

But as long as Earth needed space, and as long as the Transmat linkage had to be made at both ends, there was still need for the exploration teams and ships, ducking through hyperspace to set up Transmats on new, unoccupied planets. One fearless, resilient and resourceful pilot-engineer—like Gerritson. One psych technician, both to treat with any alien life found (not that anyone had ever found any, but you never knew) and also to smooth out troubles among the crew members with unfailing wisdom and calmness and patience—like Carla herself.

And one Maintenance man, to take care of the semi-robots that served them for crew. Carla had heard of the heavy-planet scouts, with their huskies and even (according to rumor) elephants. But it had been just her luck to get assigned to a light-planet expedition. Their current stop, with its 0.9999999998 Earth-normal gravity, was the heaviest they'd hit, and about the heaviest their "crew" was equipped for.

And here they come now Carla thought edgily. It wasn't that she was sensitive, but there was something eerie and unnatural about the sight of Dobit heading from the ship half a mile away, followed by the clouds and swarms of his crew.

Dobit didn't seem to mind, though. He seemed quite at

home among his butterflies. "And why not?" Carla asked herself bitterly. "He's more butterfly than human being anyway—except for that voice."

THE DISCOVERY that animals beside the dog and (hopefully) the cat could be trained by applications of the Shimbashi Syndrome Analogue treatment had been a revolutionary fact comparable to the discovery of steam-driven ships. Setting up a Transmat had once required the services of a crew of twelve technicians. Now it took over a hundred—but only one of the technicians had to be human. Animals didn't suffer deep-space neuroses and —on the light-planet ships, anyhow—didn't take up so much space, weigh so much, or require so much food.

So: butterflies, and a Maintenance man to take care of them. And who'd volunteer to nursemaid a horde of butterflies except a man who thought they were really very beautiful and romantic, and so gentle and lovable...except, in short, a man like Dobit?

Carla sighed. She hailed the Maintenance man with a hand and a cry: "Dobit!"

He turned and waved to her, the butterflies wheeling with him like a well-trained platoon —which, of course, they were. She signalled him closer.

"I've found a pool," she said. "Water, or what looks like water."

He approached, the butterflies a lazy cloud over his head and stretching back toward the ship. "It ought to be water," he said. "The tests we made from atmosphere show this planet as just about like Earth. Why, you could bathe in it, I'll bet. And it would be so nice to have a real bath for a change, in good natural water instead of that awful recirculated stuff."

THERE WASN'T any difference between natural water and recirculated, but Dobit knew that better than Carla did. If she objected, he'd only tell her that it was a matter of how one felt about it. And there wasn't any answer to that, she thought.

Except a rabid scream.

"We could set up the Transmat right here, near the pool,"

she said finally. "It would give the colonists some idea of scenery. Make them like the place, at least enough to try settling."

"That's a fine idea," Dobit said eagerly. "My goodness, that's a good idea. It's certainly a fine psychological point."

Also, Carla reminded herself sourly, it was obvious to the average ten-year-old child, and most emphatically did not call for any enthusiasm. But—temper! Temper!

"We're not in any hurry, though, are we?" Dobit asked.

"Hurry?"

"Well. He paused, and Carla would have sworn he'd blushed. "I would like to take a—little bath. It would be so much *fun*. Like a *pic*nic."

Oh, God!

"We're not in that much of a hurry," she found herself saying.

Dobit smiled at her, butterflies churning the air over his head. Some of them, as a matter of fact, were almost as big as his head. Selective breeding had done wonders with animals. Selective breeding, and intricate biological manipulation and engineering. These creatures still looked like butterflies, but Carla knew that they were not the ordinary butterfly magnified. Just how they'd overcome the square-cube law and mass-weight ratio limitations to the size of insects, in order to produce "butterflies" this size which could fly, walk, and not suffocate forthwith, was too intricate for her to follow.

Carla began to wonder why the techniques hadn't been used on people.

She turned away from Dobit and headed back to the ship. Detectors had shown very clearly that the planet held no life at all. There was no need for her, until the Transmat had been set up and they were on their way home.

She had nothing to do but wait. And the planet certainly wouldn't give them any trouble.

TWO HOURS later, they had trouble.

Carla thought ruefully that it was her own bath that had caused things. That was nonsense, of course; it simply enabled them to discover the thing. And who could have re-

sisted—after Dobit had come up splashing and singing, and Gerritson, the old fool, had decided to take a dip himself? The infection had caught hold, and Carla had found herself thinking that it might, after all, be nice to bathe in a natural pool, just splashing around in a carefree way...

That, she told herself later, will teach you to look for pleasures on this trip!

But she hadn't even thought of trouble then. And there was nothing for her to do—back at the ship, Dobit and Gerritson were unpacking crates, and she was damned if she'd "lend them a hand."

No. She took a bath.

And when she was finished, she realized she'd left her suit halfway up the slope to the ship. It was a pardonable oversight; nobody was watching; but she was damned if she was going to walk over bare rock shoeless. And there *was* a simple answer.

"Dobit!" she called.

Sound carried well on a lifeless world. From the ship he called back: "Yes? What is it?"

"Dobit, have your flyers bring me my suit, will you? They can put it right next to the pool."

"Can do," he shouted. "I'll do it right away."

Well, that was one good thing. Butterflies were servants (like robots) that didn't cause any embarrassment if you happened to be bathing in a pool without any clothes.

She waited a second and then saw them, swarming out of the ship's lock, ducking to pick up her suit piece by piece, flying toward the pool—and dropping her suit, every last piece of it, dead center in the pool itself.

She shrieked and Dobit called: "What's wrong? Water too cold?" and she couldn't even think of an answer.

Slowly, she dredged her clothing from the pool, and even more slowly she put it on. Then, clad in several pounds of wet and dripping space gear, she made her way back to the ship.

The butterflies, c h e e r f u l spots of color in the world, followed her gaily. She nearly turned to swat at them several times.

Damn it, she *squished*!

"THEY SHOULDN'T have done that," Dobit said. His face bore a worried expression, like a sulking little girl. "Their orders were very specific."

"You're not fooling me one bit," Carla said tightly. "You planned this. You ordered them to.. "

"I did not!"

"Now, now," old Gerritson said patiently. "Fights aren't good for this ship. We can't have any fights."

"The hell we can't," Carla snarled at him.

"But I tell you.. Dobit began.

"My suit is wet and I've probably caught some kind of cold, and I'm wet and miserable and your damned butterflies are the cause of it all, and I.. "

"Look," Dobit said. "I wouldn't do anything like that, would I? Really, now. "

"Dobit's a good boy," Gerritson said.

"Well," Carla said. "Either I'm crazy—which I wouldn't doubt, after nine months of being cooped up with you two—or else something is radically wrong with those flyers."

"My goodness," Dobit said. "But. "

"Perhaps she is right," Gerritson said. "Perhaps something is wrong."

"Nothing *could* be wrong," Dobit protested. "I've been careful. Diet, light, everything is just what they want. I know. Really I do. And we never had any trouble before."

"All right," Carla said. She leaned against a bulkhead in the Lounge. "Then you did this deliberately. Just to annoy me. And, brother, you succeeded. And how you succeeded. Wet and miserable and cold. "

"Please, Carla," Gerritson said.

"I didn't do a thing," Dobit said. "Honestly. Really."

CARLA GAVE him a glance that should have shriveled him where he stood. Unfortunately, he remained alive and well. "You make me sick," she said.

"My goodness," he said. "I only "

Gerritson raised his hands in a peacemaking gesture. "Let us start setting up the Transmat," he said. "It will give us all something to do, and take

our minds off these quarrels. All right?"

"My God," Carla said.

Dobit whistled up his butterflies.

"Don't you let those things come near me," Carla said. "The traitors."

"But Carla," Dobit said. "They're beautiful. Lovely. Just *look* at them."

"I don't want to look at them," she said. "I don't even want to think about them."

"But Carla..."

THE BUTTERFLIES were, it developed very quickly, perfectly useless for the business of setting up a Transmat. "What's wrong with them?" Dobit asked, his face one mask of worry and concern.

"They've gone nuts like the rest of us," Carla said.

"But they *couldn't*," Dobit said. "They just *couldn't*. After the good food and exercise and everything they need, that I..."

"They did," Carla said.

The Transmat was hopeless. Three people could not even attempt to set it up, without help. Carla stood near the fateful pool and looked at the rocks that stretched in all directions to the horizon. "What do we do now?" she asked. Crates and parts for the Transmat were scattered around the landscape, and bore a useless air.

"We go home," Gerritson said, sitting down on a crate.

Dobit whistled his butterflies close to him. "Without doing anything about the Transmat?" he said.

"We take the coordinates of this place," Gerritson said. "And we pass them on to another research team, one with sane butterflies."

"Okay by me," Carla said.

Dobit said: "But..." and realized he was outnumbered. There wasn't a chance that he could still pretend his beloved butterflies were normal. "All right," he said pettishly at last. He hoisted a crate onto his sloping shoulders and led the sad way back to the ship, followed (in order) by a cloud of butterflies, Carla (with crate) and Gerritson, who carried two crates and didn't seem burdened by them.

"Radiation's the answer," Gerritson said when they were inside the ship at last.

"Radiation?" Carla said.

"Something too fine for our detectors—too fine to affect human beings. But it got to our flyers."

"Then the next trip..."

"The next trip will take precautions," Gerritson said. "Shields or something. Or blanking beams of some kind. That's not our worry."

"I suppose not," Carla said.

"Listen," Gerritson said. "We were lucky. We could have had the butterflies in some kind of independent action. As it was, they misapplied orders, but they didn't act on their own. And that was. "

He stopped as Carla screamed.

BEING SMOTHERED by butterflies is a death not usually envisioned by any normal person. It can, however, happen. Carla beat frantically at the air, perfectly sure it was happening to her. The flyers came at her in swarms, clouding the air with the dust of their wings, making her choke and sneeze. She struggled frantically and found the breath for one more scream:

"Help!"

It brought Dobit out of a corridor with his eyes popping. He whistled for the flyers; some answered and some didn't. Carla beat at them for a few minutes and then the attack was over. Several flyers lay dead on the ground. Dobit looked at the dead mournfully.

"My goodness, Carla," he said. "Did you *have* to?"

"Did I..." Carla stared at Dobit, at Gerritson, at the dead butterflies and the living swarm over Dobit's head. Then she shut her mouth with a snap. There was absolutely nothing to say.

"I think we'd better get going home before something else happens," Gerritson said. "Now that these butterflies. "

"They're not acting right," Dobit complained. "They're just not acting right."

Carla shook her head in disgust. "Home by hyperspace?" she asked.

"It's not instantaneous—but it's pretty quick," Gerritson said. "I'll go and set it up."

Carla turned to Dobit. "I want those flyers locked up."

"But..."

"Never mind the objections," Carla said. "Those things could

get into the drive some way—or anything. Anything at all."

"Now, Carla. "

"Locked up," she said. "And I insist on it."

Gerritson came back to the door. "You know, maybe Carla's right."

The butterflies swarmed angrily around Dobit's head. Suddenly they began to move. Carla screamed and ducked but the flyers circled her and went on, out of sight.

Dobit cried: "Look!" He was standing at an open port, staring out at the planet.

Carla went to the port, Gerritson behind her.

There were the butterflies. They seemed to fill the sky with their wings, set free on the land. Dobit whistled to them but they paid no attention. He ran for the open landing port, and the others followed.

"WE WERE wrong," Gerritson said. "It wasn't insanity. It was some kind of—what? Mental field? The butterflies were reading your mind."

Carla snapped: "Butterflies don't have minds to work with."

"Well," Gerritson said, "impulses, then. When Dobit here wanted his flyers to have their freedom—they took him at his word. They left the ship."

"It's a good thing I planted food for them, the poor things," Dobit said reflectively. "Algae, in the pool. They'll live happily there, at peace."

"Sure they will," Carla said. "You mean the flyers just took impulses from your mind—whatever you wanted them to do—and did it?"

Dobit said: "Apparently."

"Some kind of resonance field, too small to be measurable," Gerritson said. "The next expedition ought to have fun with it."

"I'll bet," Carla said. She walked over and slapped Dobit's face.

"That suit," Carla said. "You *wanted* them to drop it in the water. You wanted to humiliate me." She turned on her heel and stamped out of the Lounge.

"Well," Gerritson said in a tone of wonder.

Dobit stared in silence for a second. Then he said in a plaintive bass: "My goodness. My everloving everlasting goodness."

———— ★ ————

Flame of Life

by Frank Belknap Long

Strange was the aftermath of the first man's exposure to cosmic rays outside the Earth's atmosphere ...

TWENTY-THREE miles above the surface of Earth, Thomas Marshall had felt almost god-like, but now he was a shy young man, taking a shower in an airport locker room. He stood in the buff, while the torrent descended on him, seeing again the sun glowing in the black heavens—a dull red disk with a visible corona, and all about it, white stars glowing.

He had come back alive, the first human being to be exposed to cosmic rays at that height, and he was a popular hero; even Radio Moscow expressed congratulations. But Marshall didn't feel heroic.

He was just the kind of man who could do this sort of thing, the solitary sort, the shy type, the lonely kind. They'd given him leave for a few days; they'd arranged for him to get to New York quietly, a police escort whisking him away from the crowd that surrounded the plane, and sneaking him into the airport lockers. He'd have to make some public appearances, he knew; but to-

night, at least, he'd be by himself.

Which was worse, he wondered—the crowds, or the loneliness?

He stepped from the shower and toweled himself dry. He dressed quickly; pulled the hat down over his eyes, loosened the knot of his tie and lit a cigaret. He paced impatiently about the locker room, cursing softly under his breath.

A minute ticked away into a steam-vaporish e t e r n i t y. Then the door opened and an airport official peered into the room.

"Your car is waiting, Mr. Marshall," he said. "It's a limousine with drawn blinds. A state trooper will accompany you."

Thomas Marshall groaned. "The blinds are okay," he said. "But I don't want a police escort."

He had his way. Five minutes later, he left the airport in a long, black car that purred, but with no motorcycles trailing him. Being a somebody had its advantages. His slightest whim was satisfied. The car picked up speed as it left the airport. It was soon an ebon cylinder flashing through the night.

A wide, macadamized state highway stretched between the airport and the city. It bisected a long stretch of level marshland, ascended in a gradient over meadows that shone with a blue luster in the light of a spectral moon, tunneled under viaducts that quivered with the passing of ponderous trucks, and entered the city through a region of docks and abysmal slums.

The change occurred gradually. It began when he left the airport, making him shift about restlessly in the depths of the car. He was shivering violently when the damp marsh air assailed his nostrils. When he passed between the blue-lit meadows, he stared excitedly out of the window. When the dismal dwellings of the waterfront region loomed up on all sides of him, he seized the communication tube and shouted to the driver: "Stop here. Stop at once."

THE DRIVER swerved to the curb and stepped on the brakes. There was a squealing of tires as the car came to an

abrupt halt beneath the red-brick facade of an enormous, deserted warehouse.

With incredible agility, Marshall leapt from the limousine. He stood for a moment teetering on the curb, his eyes shining, his breath coming fast. The edifice that towered up behind him contrasted strangely with the streamlined magnificence of the limousine.

Broken and blankly-staring windows gave the warehouse an air of desolation and squalor which was accentuated by the weather-eroded bricks of its precipitous facade. Utterly cliff-like it seemed, a cyclopean stone barrier blotting out the stars.

Beneath it swarmed the furtive, ugly night-life of the slums. The driver leaned out of the car and stared at Marshall on the curb. His eyes widened; his mouth fell open. Utter terror shone for an instant in his gaze.

Marshall said: "I'll walk the rest of the way, Collier. You can drive the car back to the airport, if you wish."

The driver cried: "Good God, sir, the light. "

"The light? What light? Are you crazy, Collier?"

The driver nodded. "I must be. You seem to be all. "

"Never mind, Collier. Just leave me."

The driver said: "You bet I will." The car swerved out into the center of the street and shot away into the night.

Marshall threw his arms up over his head. He waltzed about on his toes. He shouted; he laughed. A savage exaltation had him in thrall.

A reeling drunk emerged from a dark alley near at hand. He swayed toward Marshall, cursing. Then suddenly he stopped, stared. His eyes got too big for his face.

THOMAS MARSHALL began to run. He ran swiftly along the narrow pavement, keeping close to the warehouse. He ran exultantly through the sordid slum. He encircled a lamppost and brushed swiftly past an old woman who stared. He tripped over an alley cat and went sprawling. The cat screeched, erected its tail and backed away, saliva drooling from its bared teeth.

Laughing, Marshall picked

himself up. He brushed himself off and started talking to himself. "It's just nerves, I guess. The long strain, ten hours of strain. But it's incredible how light-headed I feel. I could hug and kiss that old woman and she's as ugly as sin."

The old woman was backed against the warehouse, her scrawny hands clutching at her throat. She was staring at him and shaking. All the blood had drained from her face. A shabby shawl dangled from her bony, emaciated shoulders. Her skirt was torn and mud-bedraggled. She was so old she seemed ageless—ageless and incredibly ugly—a fragile, desiccated shell.

Marshall murmured: "It's incredible. She didn't seem as old as that a moment ago. She didn't seem. "

Suddenly he felt the muscles tightening along his jaw.

The old woman was shrinking before his eyes. The flesh of her face was shriveling, darkening. Her clutching, bony hands became destitute of flesh. Her eyes burned like tapers of flame in the depths of her skull-like face.

And then, suddenly, her face was a skull—a fleshless skull surmounting a skeleton body against the bloodhued bricks of the warehouse.

A COLD chill itched across Marshall's scalp. He wiped a hand across his brow and staggered back into the gutter. The skeleton image did not pursue him. It began to dwindle and dissolve. It became a nebulous white blur in the wan light of the street lamps, a vaguely articulated shadow-shape that hovered for an instant upright in the gloom.

The next instant, it was gone. Between Marshall and the warehouse stretched merely the narrow pavement and the small, elusive shadows of the night.

He stood for a moment giddily swaying in the gutter, feeling a constriction about his throat, his tongue parching as he strove desperately to summon reason to his aid.

It was an illusion, of course, an illusion of sense. From vague shadows, he had conjured up a fantastic shape that resembled a shriveled old woman. Seemingly, it had the same reality as the bricks of the

warehouse and the cat which had tripped him. But a strong illusion...

Perhaps it was more than an illusion!—an actual hallucination, perhaps. He had read somewhere that hallucinations could occur in all the senses simultaneously. Such images were more real than reality. They had a terrible clarity; they burned themselves into the senses in filaments of flame.

What was he muttering to himself? He was behaving like an idiot!

He drew himself up. He stepped back onto the pavement, squared his shoulders. He was beginning to feel lightheaded again. His terror was dwindling. He felt a giddiness sweeping over him, a reckless defiance which banished fear.

He began to walk. Presently, he was running again. He was nearly at the end of the block when a flash of sudden light leapt out at him, half-blinding him. He whirled about in sudden dismay. Confronting him was a shimmering oblong of glass that blazed with little, weaving coruscations of light.

The window was unbroken. It was low down, on a level with his chest and not more than eight feet from the northern extremity of the warehouse. It was one of the few unbroken windows in the great, cliff-like building.

FOR AN instant, he stood rigid and appalled, staring—staring! Mirrored in the tall window was the image of a man, the image of himself. Spirals of white and saffron flame streamed from his head and shoulders, aureoling him in a blinding incandescence!

He was literally blanketed in flames that danced and swirled continuously about the upper portion of his body! He could not see his limbs in the glass. Tremulously, he raised his hands and looked at them. They were faintly luminous, but not ablaze.

Utter consternation engulfed him. In blind terror, he turned from the window and tottered along the street. Twice he stumbled and nearly fell.

He was afire!—yet he felt no pain, no searing torment as he reeled drunkenly through the night.

How he reached the wharf,

he never knew. There were intervals of terror and confusion when he was obscurely aware of his surroundings alternated with a blackness that blotted out the world. He seemed at times to be running, at times to be staggering in circles through the shadow-thronged murk. He had a vague recollection of cries of fright, of scurrying human shapes.

His faculties were confused for a long while. It was not until he found himself on the wharf that his mind became lucid again and reality assumed sharp and agonizing contours.

He found himself standing on the wharf gazing down at a gleaming, black expanse that mirrored all the stars of heaven. He could hear the murmur of the tides as they swirled and eddied about rotting pier-heads and sucked at barnacle-encrusted piles. An odor of brine assailed his nostrils. Far out over the water, a tug-boat shrilled.

SLOWLY, he raised his hands and stared at them. They were still faintly luminous, nebulously aglow. He leaned out over the wharf and gazed down into the dark water. In the depths of the water, he saw human shoulders that blazed, a human head aureoled in flame! Despair enveloped him like a shroud.

The girl was standing a few feet away on the opposite side of the wharf. Her head was lowered in somber contemplation of the dark water. Her back was turned to him; she seemed unaware of his presence.

Her face was deathly pale in the moonlight. It was a very lovely face. The girl was of medium height, with fair, exquisite features. The moonlight haloed her red-gold hair, dappled her white throat, descended in silver curlicues over her slender body.

She was staring intently at the black water, her body swaying a little. Suddenly she moved to the edge of the wharf, cried out in despair and raised her arms. The next instant she was gone.

Marshall stared thunderstruck. The water below whirled dizzily to his gaze. The star reflections were shattered as though some cosmic ham-

mer had shattered the mirror of the sea.

Sweat started out over Marshall's face. His horror forgotten, he bent swiftly. With feverish fingers, he unlaced and removed his shoes, ripped off his coat. As he dived from the wharf, the girl's thrashing body seemed to spin through an ebon vortex immediately beneath him.

Straight into the vortex he plunged, his body bent like a bow. He went down into cold blackness. His body sliced through the water in a perfect arc and emerged twenty feet from the wharf. Frantically, he trod water, turning swiftly about and searching the gleaming expanse for the girl's struggling form.

Presently he saw her. She was bobbing about under the wharf, her face obscurely visible in a swirl of foam. Swiftly, he swam toward her. Their bodies collided in a churning maelstrom. He turned on his back, grasped her about the waist, and drew her relentlessly to his side.

SHE STRUGGLED a little as he swam backwards with powerful leg strokes. In a moment, he had reached the sloping stone underpinnings of the wharf. He pulled himself to safety with his free arm, dragging the girl up beside him.

He stared at her apprehensively as she sagged on a horizontal ledge of stone, her back resting against a huge, circular pier-head. Her hair was a sodden mass, her face utterly bloodless. She was choking and gasping for breath.

Presently, her breathing shortened into sighs. She shifted about on the slippery stone ledge, raised her eyes and stared at him. Her white face seemed to go a shade whiter. She raised her hands to her throat in terror.

Marshall said: "Do not be afraid. The radiance is just—just fluorescence. I am a chemical worker in a laboratory. Radiant particles lodged in my skin. It will wear off in a little while."

He lied feverishly, hoping, praying that she would believe him. He needed someone to cling to in his despair—someone warm and human and alive.

THE TERROR went out of her eyes. She slumped on the ledge, her shoulders drooping, her lips twisting.

"Forgive me," she said. "The radiance frightened me. For a moment I thought.. "

Marshall laughed hoarsely. "You thought me Lucifer in shining raiment, perhaps?"

A wan smiled crossed the girl's face. "Why not an angel of light? You risked your life to save me. Only I—I wanted to die."

He was studying the girl closely now. Her clothes were pathetically shabby. She was wearing cotton socks and shoes with plugged soles.

Compassion shone in his gaze. "Poverty?"

The girl nodded. "It nearly always is, isn't it?"

"Yes," he said. "Nearly always. You look half starved. How long since you've had a decent meal?"

The girl said: "Three days."

"And how long since you've had a job?"

She smiled again. "Four months. I guess I'm not very brave."

"Nonsense," he said. "I can tell by your eyes that you're brave—and much too young to die."

She said again: "I wanted to die."

"I know, but you'll feel better when you've had something to eat."

She was looking at him queerly now. Suddenly she said: "You're Thomas Marshall, aren't you?"

MOMENTARILY, he had forgotten that he was Thomas Marshall. The girl's loveliness had absorbed him to the exclusion of all else.

Her recognition dismayed him. He said, falteringly. "Yes, I'm Marshall—but I know what it means to be wretched and lonely and—lost."

The girl stared at him incredulously. "Why should you be lonely? You have everything. Wealth, fame. "

He smiled bitterly. "I'll tell you about that when you're warm again. We'll find a restaurant and talk. You're shivering."

They found an all-night cafeteria located on a dingy, winding waterfront street. It was a welcome haven after their strenuous ascent in the

cold darkness to the wharf. Compared to the wind that pursued them as they fled to cover, it seemed very warm and friendly.

The proprietor was a little gnome-like man with an atrophied sense of curiosity. He raised his eyes and nodded when they entered, passing them a menu over a long counter. He scarcely seemed to notice their drenched and dripping clothes.

The girl sat on a revolving stool facing her companion, her face still deathly pale, her eyes shining.

"The fluorescence doesn't show in the light," she said.

His hand went out and gripped her wrist. "I'll get you a job," he said. "Tomorrow. A real job. You won't—ever go out on that wharf again. Promise me you won't."

"I promise," she said.

"You might tell me your name."

"Barbara Ellison," she said. "I am twenty-three. I spent four years in a business college before I came East. I was born in the middle West, but I came east to look for a job in an office. I didn't get one."

"You'll have one tomorrow," he said. "Now let's eat."

STANDING on the counter before them were two cups of coffee and a platter of doughnuts. The girl took one of the doughnuts and broke it apart with fingers that trembled a little. She said: "I'm grateful, believe me."

"Nonsense," he said, feeling a little of the horror stealing over him again, feeling that she must never leave him. "I'm grateful to you. You'll never know how grateful."

"But why? What did I do?"

"You risked your life—your life that belongs to so many people, and all for a girl with no courage at all."

He said: "It takes courage to have too much to live for."

Her face was very close now and her breath fanned his cheek.

In confusion, he picked up a doughnut and raised a steaming cup of coffee to his lips. "I'll take mine black," he said, and smiled at her when she pushed a pitcher of cream toward him.

Then, suddenly, the smile vanished from his lips. The

girl beside him was changing before his eyes! She was changing, receding into a nebulous haze. She seemed to be shrinking, too—growing smaller, her limbs shortening, her face becoming plump and rosy!

Horror blazed over him again. He turned as white as a sheet and began to tremble. The girl seemed to be still sipping her coffee, but her body was enveloped in a nebulous mist that swirled up about her in rippling waves. Her clothes were concealed by the white opacity. Obscurely through the mist he saw short, plump legs that dangled and above them the rosy, innocent face of a little child!

She was a child of four, a cherubic infant sipping a cup of coffee almost as large as its face!

Then, slowly, the mist evaporated and the girl was beside him again. She was staring at him with troubled eyes. She said: "Why did you start so? You frightened me."

SWEAT beaded Marshall's forehead. He passed a hand across his damp brow, stared at the huge silver coffee percolator which stood at the end of the counter and the proprietor dozing in shadows a few feet away. The proprietor was leaning over an oyster bar at the rear of the restaurant, his eyes three-fourths shut, his elbows supporting him as he drowsed.

He had not changed at all—neither had the coffee percolator, the long counter, the dingy plate glass windows and all the rest of the shabby little restaurant. Only the girl had changed—for a brief, appalling instant.

White-lipped and trembling, Marshall picked up the checks.

"Shall we go now, Barb—Barbara?" he said.

The girl glanced swiftly up at him. A strange tenderness came into her face. She said, simply: "Yes, if you wish."

He was trembling uncontrollably when they left the restaurant. As soon as they emerged into the street, she linked her arm in his and stared up into his white, tormented face, her eyes luminous with concern.

"Are you ill, Thomas?" she asked.

He shook his head, and walked with her in silence through the chill grayness that precedes dawn. Their linked shadows danced grotesquely on dim-lit pavements and flickered over deserted, tenement-house doorways.

Suddenly he said: "Where do you live, Barbara?"

She mentioned a mean street on the north side of the city. Marshall was familiar with the north side. Relief surged up in him as he visualized long rows of shabby-genteel rooming houses. The neighborhood was desolate and down at heel—a dismal region of decaying brown-stones dating back to the Mauve Decade. But it was not a slum.

IT WAS about a fifteen minutes' walk to the girl's home. Marshall seized her hand and held it tightly while they threaded their way out of the waterfront maze into a region where the squalor was less oppressive.

He did not speak again until they arrived at the high stoop of the rooming house. The flames which poured from him enveloped the girl without harming her, swirling up about her slender body in a golden blaze. She was clinging to him and shivering, her face illumined by the lambent glare.

His fingers tightened on her hand. He said: "I'll phone you in the morning, Barbara. Promise me you'll go straight to bed."

She said: "I promise, Thomas." But she did not move away from him. Instead, she moved closer to him.

She moved tremulously closer until she was in his arms. He cried out in sudden wonder and strained her to him, all else forgotten. The horror of the enveloping glow, the strange confusion which had descended upon his faculties—all was forgotten, swallowed up in a blinding ecstasy such as he had never known.

She was in his arms and he was kissing her hair and lips and eyes. The bleak rooming house towered up behind them—unseen. He was only aware of her warm and clinging arms and the wild beatings of his heart.

When he released her, her eyes were glowing. She turned and ran swiftly up the stoop

into a dim-lit vestibule. Stunned, tremulous, he watched her fumbling in her bag for a key. Suddenly she turned and blew him a kiss.

"Tomorrow," she called, and was gone.

HE STOOD for an instant staring up at the shabby facade above him, scarcely seeing it, thinking only of the girl who had vanished.

Suddenly he felt a chill creeping over him. The dismal brownstone was becoming nebulous, was receding into mist.

It was unmistakably dwindling, receding! All about it whirled a tenuous haze. Gradually, a new mass seemed to collect behind it—a smaller, more graceful mass that emerged obscurely from whiteness.

Marshall was held transfixed. The impossible was happening before his eyes! A huge, substantial house was dissolving and another taking its place. As he watched, the new dwelling assumed sharp and distinctive contours.

Before him on the deserted street stood a three-story house of Georgian brick with antique chimney pots and glowing, square-paned windows. Silhouetted in its fan-lighted doorway was the figure of a young man with pale, aristocratic features.

The young man was startlingly attired in sky-blue small-clothes and snow-white periwig. Silver buckles gleamed on his satin pumps and he wore silken breeches. As Marshall stared, there appeared beside him in the doorway a slender, white-haired girl dressed in the costume of the eighteenth century.

Marshall cried out in stunned wonder! The mist was returning again, was obscuring the outlines of the second dwelling. Gradually it receded until it was a vague, amorphous blur.

IN THE depths of the blur, an enormous shape was stirring. As the second dwelling dwindled, a Gargantuan animal form loomed obscurely out of the mist. Gigantically, it towered in the still night, while on both sides of it the air seemed to quiver and recede with a curious glimmering over silent,

houses of decaying brownstone.

In the mist-filled void between the houses loomed the terrifying apparition of an enormous cat. It was like no cat Marshall had ever seen before. It was fifteen feet in height and it sat immobile on its haunches menacingly regarding him!

It was snarling, hissing at him, its eyes glowing balefully in the darkness—but it was not so much the appalling size of the animal or its menacing ferocity that filled Marshall with blind, unreasoning terror.

What sent him reeling back across the gutter, his mind a jumbled ferment of incredulity and horror, was the cat's long and curving tusks! Curving out from the creature's feral jaws were two enormous slivers of ivory that glowed dully in the darkness.

Mercifully, the mist returned, obscuring the monstrous feline—but Marshall did not wait for the shape to vanish. He turned and reeled blindly along the street.

HE WAS still reeling when he woke David Rand at three in the morning. He appeared at Rand's door dishevelled, wild-eyed, his face the color of tallow.

David Rand was Marshall's only friend in the city.

Calm and scientific was David Rand, eyes palely discerning behind steel-rimmed spectacles, hair close-cropped, long, sallow face impeccable in its poise and restraint.

He was Marshall's counselor in boyhood, the confidant of his years of struggle—ten years older than Marshall, but still on the pleasant side of forty—biochemist, physicist, astronomer—dabbler in a dozen sciences, but a competent and gifted dabbler.

He met Marshall in pajamas, his face showing surprise and concern, guided him into a spacious, booklined study and mixed him a whiskey and soda.

Five minutes later, Marshall was talking. He sat in an old-fashioned easy chair, leaning forward a little, his eyes glowing feverishly. He stopped occasionally to puff on a cigaret. Occasionally, he sipped at the glass in his hand.

Rand listened in silence to Marshall's incredible recital,

nodding his head thoughtfully from time to time. Finally, Marshall ceased to talk. He sank back exhausted and stared at his listener in mute despair.

Rand sat regarding him for an instant in silence, his fingers plucking at the gray frogs on his black silk pajamas. When he spoke, his pale eyes were glowing.

"There is much, of course, that we still do not understand about the strange new reality which we are accustomed to refer to as space-time.

"But this thought has occurred to me, Thomas. You ascended twenty-three miles; cosmic rays and the rays of infra-light—are potent in the upper stratosphere.

HE STROKED his chin thoughtfully. "You are of course familiar with the speculations of that gifted biochemist, Dr. Crille. Crille believes that all our body cells are endowed with microscopic suns, radiogens, continually radiating microspecks of searing light.

"He believes that life itself is a by-product of billions of tiny suns which suck energy from light—of tiny suns that glow in us, microscopic batteries of life."

He paused an instant, then resumed: "Now consider the mysterious new space-time of the physicists—of Einstein, Eddington, De Sitter and the rest. Our awareness of space-time is limited because human perception is three-dimensional. We do not perceive time as an aspect of space. But we know that time is an aspect of space! If human perception were four-dimensional, we would not be aware of time as a flowing of events.

"We would not be aware of time at all. The past, the present, and perhaps the future would exist as static realities. We could examine one segment of space-time and see the past, another segment and see the present. I am not so sure about the future.

"But space-time would exist as a definite entity—timeless, static. All the past would exist in that entity—all the past, the present, and perhaps all the future.

"To express it differently, we would perceive space as it

really is—and that includes time. Space-time is simply true or four-dimensional space. Time is simply an aspect of true space.

"We cannot perceive true space because our faculties are biologically limited. But suppose we intensified our life forces. Suppose we transcended our protoplasmic limitations!

"Assume that life is a by-product of the tiny suns in us, the radiogens. Suppose those radiogens sucked new energy from the cosmic rays, expanded, became Novas in our body cells. You understand—new suns, brighter suns."

MARSHALL was leaning forward in his chair now, his face strangely taut. "You mean," he said, "that up in the stratosphere. "

Rand nodded. "The cosmic rays charged your radiogens, which are microscopic batteries of life, with undreamed-of new energies! They flared more brightly in you, Thomas. That would explain the glow, the fierce exaltation that swept over you, the desire to run and shout.

"Life burned more fiercely in you, Thomas. Your faculties expanded. You transcended your biological limitations. You perceived the fourth-dimension, or true space—only momentarily, of course—in flickers, but you perceived the past, which still exists in true space. You had momentary, evanescent glimpses of the past.

"You saw the girl you spoke of as a little child. And you—wait a minute, Thomas. You did see the future! The future must exist. You saw the old woman shrivel and become a fleshless skeleton!"

Rand sprang up and strode about the room. "You saw the future! Do you realize what that means, Thomas, the implications?"

Marshall did not reply. When Rand saw how pale Marshall had become he sat down abruptly.

"It was chiefly the past you saw," he said, "sporadically, in flashes. You saw an eighteenth century house. Then you went back across wide wastes of years. You saw—a sabertooth tiger, a Machaerodus!—the largest, most sinister cat that ever walked the earth. You

went back to the dim Eocene, to the age of the asphalt pits!"

MARSHALL felt very weak, tired, soul-sick and appalled.

He said: "But when Barbara became a little child, the restaurant did not recede or change. And when the house vanished, the street and the adjoining houses remained unchanged. And when Barbara was really a child, she was somewhere else in the world—not sitting beside me on a stool. Yet I saw her sitting there."

Rand said: "You're assuming that relationships in space-time or true space are similar to relationships in our three dimensional space—but it is an unlikely assumption. With the expansion of your faculties of perception, all relationships would change.

"We can only speculate as to just how they would change. It is probable that human beings preserve a definite continuity in true space which transcends their orientation in our space. You saw the girl sitting beside you because her past in true space was not chained down to her actual position when she was really a child in our space.

"Remember that plants, animals, and human beings are complex examples of entropic inversion. Entropy, as you know, means dissolution, disintegration. The universe as a whole is running down—but organic life is not. Organic life is building up, swimming against the swift entropic currents. It is possible that living organisms maintain a certain integrity in true space that makes them independent of our space when you perceive them as space-time units."

SUDDENLY Rand stood up again. His eyes were glowing. "Thomas," he said. "You have no idea how I envy you. Never before, in the whole history of our race, has a man been so gloriously privileged. You are no longer a wretched Earth-bound biped akin to the apes! You have become god-like in your perceptions!"

MARSHALL groaned. "I do not want to be god-like, Rand. I want to be a normal human being again, not enveloped in flames, with all the world unstable about me.

Rand, what am I to do?..

Rand's impassivity was completely gone now. He strode up and down the room, no longer able to control himself. Suddenly he whirled on Marshall.

"It is regrettable that the flames you spoke of are invisible in this light. I must see them. Thomas, I am going to turn out the light."

Marshall leapt up in protest, but before he could reach Rand's side, the other had stepped to the wall and switched off all the illumination in the room.

Utter darkness engulfed the two men. Rand could hear Marshall's agitated breathing and Marshall was aware of Rand moving about close to the wall. But utter darkness engulfed them. There was no light at all in the room!

Suddenly the light was on again. Rand was staring at Marshall with set lips. He seemed shaken, disappointed. He said: "You are no longer enveloped in flames, Thomas."

Marshall swayed a little. "You mean, you think..."

Rand nodded. "You are obviously normal again. You have had your wish. You have ceased to be god-like. Evidently, the radiogens flared with fierce new energies and then burned themselves out—or rather, dwindled to normal tiny suns again."

He was scowling disappointedly, as one who regretted to admit an unwelcome and unpleasant truth.

"It is significant that you were not immediately luminous. Evidently, you were flooded with rays, drenched by your ten hours high above Earth. It is probable that the radiogens absorbed the energy slowly, flared into brief novae, and then dwindled again to the smaller suns of normal protoplasm."

The color crept back into Marshall's cheeks. He straightened, seemed to increase in height. He said: "Nothing has changed in this room, nothing. The other changes occurred swiftly—at fifteen-minute intervals. For over an hour, there has been no change at all."

Rand nodded. "I am quite sure you are normal again," he said. "You are restored. It is a pity—a great and tragic pity! For a brief hour, you were

god-like. You could even see into the future and predict human events. You might have altered the destiny of our race."

Marshall said: "I am god-like now! A man in love is very close to the eternal."

"In love," said Rand. "I had forgotten. In love, Thomas?"

But Marshall did not hear him. He saw again moonlight haloing red-gold hair, dappling a white throat. He saw her face again, luminous with tenderness. He saw her standing in a dim-lit vestibule, waving at him. He heard her whisper: "Tomorrow, Thomas. Tomorrow!"

Happiness enveloped him like a flame, swirling up about him in a golden blaze.

Numerous readers have written to us, asking for a look at some of the stories we ran long before they started reading science fiction. Here is a tale which we feel has stood the test of years, needing only a little revision to give a contemporary ring to it. Would you like to see some more oldtime material? Are there specific tales you'd like to nominate for a "second look" — a "first look" for most readers, remember? Let us hear from you; we'll go with the desires of the majority — so be sure you get YOUR vote in!

— The Editor

Novelet

survival in parallel

by T. H. Mathieu

Al Atherton's child was a monster, in a subtle way, and there was no place for it in society — or was there? And once there had been another child ...

GRANTED, the child had been born a monster back in 1980 and had lived nine years as though he were a monster. But he would not die as one, not if doctor James Reilly could help it.

A few moments ago, when he entered the office of the District Security Officer—the DSO —Reilly thought every battle had been lost, every attempt fruitless. And then came this offer, this incredible hope for survival.

Just a hope, however: his speed of action in the next hour —less than that, now—would determine life or death for himself, the boy, and Marjorie.

Had Marjorie been tilting at windmills? Judgment couldn't be made yet; but Reilly did know Marge would be willing, as Mark Anthony, to take on the Roman army by ones, twos, or threes. The Roman army was as dead as the dinosaurs—it was force and brutality that Marjorie would fight on behalf of her son.

It wasn't always so. Once, she was content following the ordeal: living flesh expelled and pulled from living flesh, new personality impelled and pushed

from old personality. And with the hope that this generation, stirring beside her, would be better than hers.

Marjorie, quiescent, stuperous at 0600, didn't know that from the start the little one, Gumdrop, was different, had already made a mark. It was small: he won the New Year Derby, arriving as if by design at 0000:43, 1 January 1981. The number two entry arrived 126 seconds later.

Al Atherton couldn't hand out cigars until the following day; by then, everyone had teeveed it and the fun was gone. Still, Al didn't mind the income-tax jokes because, aside from the Governnment prize, there were other Free Enterprise bounties that more than offset the loss of the 5000-dollar deduction on the 1980 return.

For Marjorie at that time: happiness. Then distress came. Later, with some knowledge, fear. Much later, with truth, the abject misery and terror she now knew.

* * *

THE SUN, which would look no different 150 million years hence, had struggled past zenith and wearily began setting above the broad floodplain. On the plain, streams meandered lazily, their muddy waters creeping seaward, ever seaward. Here and there, oxbow lakes lay stagnant: breeding grounds for plants, animals, trouble. The putrifying, unnoticed odor of decayed organic matter was always present. Tropical country in every aspect, reflected in the climate —warm and moist. Reflected in the vegetation—large, thick-leaved, growing in idiotic profusion. Reflected in the animal life—diverse, abundant.

Abundant...except w h e r e trod the hunter, the Allosaur. Life spread desperately away from him, ripples from a stone tossed in a pool, galaxies moving outward in the universe. The huge beast moved in a never-ending search for food.

In the brush surrounding a clearing was a small, crude nest. Two newborn lay nursing quietly, unaware of the evil portent on the land. Two of a litter of four, two who survived. One was gray, the other white and brown. Two newborn: miracle of miracles: innovation of the

century, progenitors of the era. The cubs had been nurtured within the mother's body.

The hunter's defiance echoed across the plain once more. His 2-foot head swiveled, following a scent of food in his nostrils. In reflex action, the jaws opened and closed convulsively, dripped saliva in viscous spheroids. With each action of his jaws, the hunter's head bones rode up and down, moving like ferry-slip pilings when a ship docks.

None were immune when the hunter called; the mother knew fear, but fear different from the other animals around. Hers, not wholly instinct, was tempered by the faintest glimmering of reason.

WITH NO defense and no offense, except rudimentary intelligence, the mother's small size—about that of a rabbit—was all she had of value in this world of constant violence. Despite her desire to run blindly, she knew the cubs would be safest hidden where they were.

Some distance away in the opposite direction, approaching rapidly, came one who did not fear, but was itself used to inspiring that emotion.

Another Allosaur.

This second hunter heard the challenging hiss and replied with one of its own. Literally, it could not fear. The psychic mechanism was missing from this particular species; outdated, the make, model, and line were shortly to be discontinued.

The first hunter paused momentarily, listening. His blue-green skin caught, reflected iridescently, the rays of the afternoon sun. A thing of beauty and horror, he was indecisive whether to seek out the challenger or follow the fresh trail of living food. The urging of his stomach was the will to survive. He continued after the game.

In the nest, the mother grew anxious, unconsciously plotting the noises of the hunters. They approached from north and south. She shook with anticipation, her elongated head and pouchy cheeks resembling a woodchuck's. The brown hair stood up all over, from neck ruff to tail. She moved jerkily, dislodging the gray cub. Annoyed, it cried shrilly, and the

mother quieted. The cub lustily reattacked the milk gland.

* * *

JIM REILLY patted his stomach and puffed his cheeks, the exaggeration answering Marjorie's question of dessert.

"Later, honey," said Al Atherton, "Jim pigged himself again on your cookery, and so've I...lemme help!"

Marge refused; the upshot of the ensuing argument was that each of the three carried his own dishes to the washer. Marge insisted on stacking, however. At the flip of a switch, each dish in sequence dropped to the ultrasonic chamber, was subjected to the Food Frequency, rolled past the blowers into the collator and there was size-sorted.

Marge smiled. "There, done—thanks so much for helping with the dishes, fellows."

In the living room, Al and Jim sprawled out on the sofa, gasping usual snorts of overstuffed adults.

"Huh," Al rumbled, "rest of the world don't have no food like this." He reached over, grabbed the arm control, and dialed a tv program.

"Please, not tonight," Marge said.

He frowned. "Why not?"

"I'd like to talk. We don't see Jim often these days."

"Talk? *T a l k*—what you wanna do that for? We..." Al was interrupted by a flashing red signal on the wall.

"Gumdrop must be awfully upset. Will you see what he wants?" Marge asked.

Al left, mumbling crankily, "That kid..."

Jim pointed to the light. "Something new?"

MARGE NODDED. "Latest thing—you keep yourself buried in books too much, Jim. It's an Infanteer. Don't know how it works, but the louider the baby cries in his room, the more intense the light. It starts with orange..."

"And how much," Jim interrupted dryly, "did you go into hock for *this* one?"

She looked dubious. "Well, we'll be paying for quite awhile, but all the big companies say you should have one—Jim, why do you always knock

scientific advance? Haven't we enough trouble from the rest of the world?"

He grinned humorlessly. "I've nothing against scientific advance; but don't confuse it with ethical or moral advance."

"Sometimes I don't know, even faintly, what you talk about."

Al reentered the room. "Still talkin' about talkin', huh? Lemme tell you: it ain't good, not at home anyway. Makes you think, and we should stay happy. That's what the plant Security Officer told me, just today." He looked at his guest with a warm smile. "Understand, Jim, we ain't like others. We don't hold it against you 'cause you're goin' to college to be a si. .si. "

"Psychiatrist."

"Yeah, well a few of our best friends has gone to college. Everybody knows that some have to do unnatural things to help the rest of us. Margie and I sure don't hate you, just because you want to be a egg-headshrinker—oops, sorry..."

"Forget it," Jim said, waving off the apology, "What about Gumdrop?"

AL'S FACE clouded over. "I *told* you I didn't wanna talk!" he roared, then regained control. "Since you and Margie are old friends, I'll tell you what I think. We should get rid of it, only I don't know how. The kid is one of them radiation defectives, I think. I love Margie, and she wants to hang onto the kid, so we'll let things go for awhile. That's all I'm gonna say."

Jim asked, "Mind if I see him?"

"Suit yourself," Al shrugged, "Me—I'm gonna watch the Playhouse like a good citizen."

Marge led Jim into the chiid's room. "I am getting worried. For a 1-year-old, Gummy is awfully retarded."

"Why?"

"It was on the Government tv show for mothers. Gummy should have raised his head sooner; as for rolling over, he's six months behind."

"Let me see." Jim leaned over the crib and cooed, "Hiya, there, Gummy? Hello, little John Atherton." He shook his keys, was rewarded with a smile. "Now, what did the book say?..."

Finally finished, he straightened. "Peculiar!"

Marge touched her cheek in concern. "What is it? *What?*"

Jim smiled gently. "You're right; however, 'slow' is a better word, I think. At a year, he has the typical neurophysical reactions of a 5-month-old—yet, from the studying I've done and the children I've worked with, I'd swear the lad isn't a mental defective. Look how bright and alert he is." He added, as a sop, "Remember, the longer the young need care, generally the higher they are on the scale of evolution."

"How nice of you to say that; I feel so much better."

His expression grew serious. "You love him deeply, don't you? How hard are you willing to fight for him?"

"That's a silly question, Jim."

"No it isn't: Al is typical of society, yet this baby must have his chance. And believe me, Marge, society—when it comes to children like Gumdrop—everyday grows more and more into a witless, giant beast. A dark storm is coming..."

II

THE STORM would soon strike. Drifting clouds meandered across the sun, then moved abruptly to darken the area. An evening thunderstorm was due, prepainting a depressing, somber unreality. The foliage, no longer riotous in color, aged prematurely, became a dull, flat, gray-green.

The second Allosaur's motivation was different from the first's. Belly reasonably full, the second wandered into this land, now was ready to settle down. His plans were interrupted. Listening to the involuntary hisses and screeches of the opponent, the second wanted to force a showdown. He moved toward the noise, trying to determine the path, trying to intersect it. He moved clumsily, a ridiculous, senseless bulk.

The first hunter's skin lost its sheen in the gathering storm, but intangible aesthetics were not to be considered. Food was the prime mover; neither clouds nor rain could slow the appointed task. The trail he followed became warm, hot. Then, ahead....

The large quadruped ambled slowly, browsing. Tiny plates in the center of its back gave way to spines over its haunches; the spines continued down the full length of the tail. The animal's black bulk rolled along. Realizing too late the danger behind, it froze momentarily, then attempted to run, impossibly inefficient.

THE FIRST hunter shrieked in triumph. It was only a matter of time before the feeding began—the quadruped was not fast enough, could not escape. The carnivore plunged after his terrified victim, snorting demoniacally. Despite being swifter, the first hunter was also inefficient of gait. It was a slow-motion, comico-tragedy.

The plant eater broke into a small clearing, got about halfway across, stopped in frenzied terror. The hunter followed, neither caring nor wondering why it had stopped, knowing only that more of an advantage had been gained. And then he, too, stopped, for from the other side of the clearing came the challenge and the bulk of the second hunter.

To underscore the elements of the scene, the clouds broke; for a few brief seconds, a circlet of sunlight poured down. The quadruped crouched in the sudden spotlight, feebly turning head from one danger to another. The first hunter's eyes glittered at its prey, then—recognizing a threat—flicked to the challenger. The second, yellowish-brown body poised for action, balanced on his tail and carefully watched the smaller opponent. Again the sun ducked behind the clouds, and motion returned to the tableau. Forgotten now was the quadruped; the two mighty antagonists watched each other, estimated chances. The intended meal waddled from the clearing as fast as its rolling walk would allow, breathing and snorting audible sighs of relief.

THE SECOND Allosaur made his decision; this impending fight was what he'd wanted, and with his striking advantage—the first was smaller—he could end it soon. Jerkily, slowly, second advanced across the clearing toward his immobile, seemingly hypnotized, foe. No longer were there hisses; now the sounds were

throaty, gutteral roars.

In the nest, the mother became a thing of total instinct, covered the two cubs with her own body. She quivered uncontrollably. The cubs, though just barely entities and unaware of the Roman Circus into which they'd been born, nevertheless sensed the mother's fear. Under her, they huddled together.

The two, great dinosaurian bulks were now close. There began a dance—erratic, stumbling, circling that would end only one way—a dance of death with fatal choreography. Each looked for an opening; as yet, none appeared...

* * *

THE YEAR 1985 opened with changes, as every year does.

It was the year when money became obsolete, when cash, coins, and checks were no longer used. An electronic pocketbook—a laminated metal card containing a highly complex printed-circuitry network—was issued to all citizens. Wages were electronically posted on the 3x2 card. It was then metered, and the value—the information signal—was transmitted to a "central bank" in Denver. In essence, the bank was a series of huge data-processing systems. Almost instantaneously, the systems added value when the employee was "paid" or subtracted it when a "purchase" was made in a store.

Paying bills by mail was a thing of the past. The citizen now placed his value card in a specially adapted videophone pickup, dialed his creditor's number and the amount to be paid, and the transaction was over. The card additionally was used as driver's license, social security, and voter's registration. Truly, 1985 ushered in Progress.

It was a year in which the Soviet Union demonstrated the reflected beam. Before she had a chance to suggest the world live in harmony under her aegis, the U.S. demonstrated the *de*flected beam. The Curtain was again drawn; the world waited; and rising tension brought more reaction to the only country capable of stopping the threat.

As far as the few remaining thinkers could see, capability

didn't mean a damn. Because of the trees, the forest was lost. Progress.

A crackpot in New York was shot to death. In public meetings, he'd been demanding the return of the Fifth Amendment. Actually, the crowd found the sight of him afterward far more interesting than what he said before; his murderers simply strolled away.

AN IOWA woman exceeded slightly the highway speed limit: she claimed her new Buick-Ferrari was doing 110 when she hit the student. Defense counsel established she was watching the important Government Network show, "Why Many Children Will Save Us From European Enemies." Because of mitigating circumstances — pregnancy — she was given six months (suspended) instead of the usual year...and a governor for the B-F. The student died.

Eighty million of 240-million population now had solar-battery power—and phoned monthly biils to the banks instead of the electric utility companies.

Truly an era of Progress.

Progress for Doctor James Reilly. In mid-January, he was appointed head of one of the many hospitals for the mentally ill.

Progress for Al Atherton who, in late January, became a Security Unit Leader, took his oath to uphold the Government of the United States, and was given a plain black uniform with an insignia of Atlas supporting the world.

Progress for John Atherton. On the last day of January 1985, he took his first halting steps.

Al grumbled when Marjorie first broached the idea; but after all, Jim *had* watched the baby every so often, it had been too long since they'd invited him to dinner, and wouldn't it be nice for Jim to see the new uniform...

"Sure's a fine party," Al said expansively, "what with you bein' made head of a skrewloose hospital, and me being a Security Unit Leader, over three plants, too."

"How's the dinner, Jim?" Marjorie asked hastily.

Reilly had been toying with his algae steak. He looked at her, replying with no convic-

tion, "Very good." She flushed at the way he said it.

AL, OBLIVIOUS to the interchange, said proudly, "Cooked on our new Dyl-A-Din. You could afford one, too, if you'd get an important job. I could help, Jim. I got influence now."

The doctor colored. "Thanks, Al, thanks a lot. "

Marjorie headed it off: "There's another reason for celebrating. Johnny started walking this week."

For the first time that evening, Jim was of old. "Really? Wonderful! I'll have to see him. . ."

"Fergettit!" Al interrupted. "Lissen, Marge, that kid's gonna hold me back. Four years old and just startin' to walk. My boss told me so, right out, that the kid ain't helpin'. You gotta realize sometime. " His voice trailed off at her look. Then, trying to regain dominance, he said, leering, "Shouldn't of mentioned it, Jim —now she won't put out any for a week."

Marjorie said coldly, "'Among the attributes which distinguish the human animal, care of its helpless is prominant.'"

Al's jaw dropped. "You been readin'!" he accused, *"Readin'!"*

"I lent her a few books," Jim said mildly. "They go into child-rearing in somewhat greater detail than the tv's."

"Readin'!" Al's face was the color of his uniform. "You know the Government don't like people to read. They ain't happy and adjusted. Gawd, what would I tell 'em at the office if they found it out?"

"Say nothing, Al," Reilly answered. "Reading isn't against the law."

AL ROSE, knocked over his chair. "I'm gonna go down there right now to check the files on you. Marge, you hear me? Stop with the books. Our office don't like people to read." Leaving, he stopped, said furiously to the guest: "Reilly, you crum, I'll bust your back if you give her any books again."

When he'd left, she asked, "What was wrong with the meal?"

Jim smiled. "Not a very good liár, am I? It wasn't *your* cook-

ing, Marge. It was like a hundred other dinners in a hundred other places. It was cooked perfectly, too perfectly, too uniformly perfectly. "

She nodded. "Lost my individuality; lost my"—lightly—"renown. But the Dyl-A-Din is so easy!"

"It is," he said grimly but sincerely, "a wonderful machine. It is also a symptom. Instead of allowing it to serve, you've allowed it to master. Any machine—electromechanical or governmental—that tells instead of asks destroys the individual. It's like watching tv instead of reading: you have far less chance of knowing whether you're getting the honest word— Sorry, didn't mean to spout off; I'll go."

She put her hand on his arm to detain him. "Jim, if reading will help my child.. "

"As well as yourself," he added, churning within from feelings about her he thought he'd long ago buried.

"...then no one will stop me. Not all the bullies, not Al, not his boss Chaffin...not even you!"

He faced her squarely, proud of the way she would fight, yet wanting her to give it up and avoid what was coming. How does a man suggest to the woman he loves that what he wants her to do may end her life? And then Dr. James Reilly made the decision: "It'll be dangerous; you might be killed."

"You, too," she said softly, instinct confirming what Jim had never told her.

"I can take care of myself, Marge. I want you to know the consequences, to face a dirty reality. Even now, Society is battling for possession of little John; shortly, the State will go to work in the same direction. Two monsters fighting right overhead, and you are in the middle."

Firmly, with dignity, she said, "I am John's mother."

Progress for Marjorie, too.

* * *

THE MOTHER, covering the cubs with her body, watched and listened. Still the circling of the two beasts continued. The first hunter's tail lashed from time to time; the second convulsively moved his ill-proportioned forelimbs up and

down alternately. These actions were mere chest pounding.

Suddenly, the first's head descended in a sweeping arc toward his opponent's stomach. It was a brilliant maneuver, had won many previous battles before they began; however, the second, experienced in survival, rocked back on its tail, and the smaller beast missed. Before he could straighten for defense, the second hunter—mouth wide apart with 3-inch teeth curving inward—struck across the neck and shoulder of the off-balance enemy.

There came a shriek of pain. Despite incredibly thick, tough skin, he suffered severe damage. Blood welled out, dripped from him. In places where it mixed with the salivary froth, the blue-green skin of the first Allosaur was changed to purple.

THE NEST, so close to the battleground, bounced with each shock from the tons of struggling monsters. Panic—unreasoning, emotional, blind—struck deep at the mother.

The first hunter, still unafraid, still incapable of being so, tried again. With a leap, he threw his entire hulk at the foe. Nothing before had ever been able to withstand the tremendous charge he generated. But never before had he taken on a bigger opponent.

The force, as the two met, was staggering. However, the second, prepared, used its tail as a brace, a third stout leg. The first Allosaur reeled back, nearly falling, in so doing, nearly dying. He gained his balance, only to find the yellow-brown body of the antagonist boring in.

Another strike—and the forelimb was clenched between the second's mighty jaws. The claw-tipped 3-digit palm moved weakly as pressure was exerted. Then, above the noise of combat, came a sharp crack of breaking bone.

To inflict the wound, the second hunter had bent over; in maddened pain, the first sank his teeth into the back of the exposed head. The second jerked away, tearing off half the first's broken forelimb. The bigger beast straightened and slowly, almost contemptuously, opened its jaws. The limb rolled down its chest and stomach, bounced against a knee, and

skittered across the clearing.

The noise—and a certain innate sense of death—attracted carrion-eaters. They came overland, slinking through the brush. More quickly and more thickly, they came by air. Runners turned gliders, recently turned flyers, they settled like a flock of crows in the surrounding trees. Restlessly moving to and fro, their chatter while awaiting the inevitable was obscene.

The two antagonists were no longer wary. The fight became toe-to-toe with the bigger, the second Allosaur, pushing it and the smaller defending viciously. Both were hurt, but the first hunter was giving ground continuously. Soon the climax must be reached.

III

DOCTOR JAMES REILLY slumped at his desk, stared at the blank screen he'd savagely switched off. Was it real? Could this monstrous business of changing the name be possible.

It's real: 1987 is for the history books. I'm 32, what used to be the prime, and already feeling old from psychic tension. I can remember Dad talking of World War II, saying how much easier it was for him at St. Lo, thinking he had something to fight for: young lives in a free world to come. How bitter he was when he spoke.

What happened? Where did we take the wrong turn to arrive at this? By act of Congress, from today on this country shall be The United State of America. No wonder there's a crying, screaming need for care of the mentally ill, especially among the late middle-aged. Our new name will send the rate way up. .maybe I can call it the Reilly Syndrome: fear, rooted not in loss of virility but in loss of freedom...

Reilly raised his head from the desk at the urgent buzz of the viewcom. His visitor was announced; maintaining composure, he permitted entry.

WHEN MARJORIE walked in, he rose, asked, "How are you, Mrs. Atherton?" while holding up a scribbled note: *Told you not to come here—dangerous.*

"Doctor, perhaps you remem-

ber my son?" she asked calmly, "I've come for help. He is .slow."

"I remember the little fellow —but it's some time since I've seen him."

"Let me bring you up to date. Because of his condition, there is talk in our neighborhood. Recently, things have started to come to a head."— Reilly gestured for her to continue, began writing another note—"The neighbors feel it isn't right for productive energy to be wasted on such a child; from their patriotic point of view, he can't possibly grow to a useful citizen to protect us from the Threat. They wish to dispose of him. "

Follow my lead. Don't panic.

" .so I wondered if you could take him, to head off any possible trouble."

"I *am* sorry, Mrs. Atherton." Reilly was proud of the unctuous tones he achieved. "This hospital simply can't handle children. But don't worry—I'm sure the United State, as represented by its citizens, will choose the right course."

"I guess—I'm certain you're right, Doctor."

Safely in her car, Marge read the slip of paper he'd handed over: "Been expecting it for some time; have a little plot of my own cooked up to play one against the other. If I fail, you know the location of the cabin. They don't, I hope."

REILLY, AN hour later, was ushered into the District Security Officer's presence. Reaching the DSO was a surprise. First, there'd been the usual statements and explanations; then, the bored waiting to see the usual petty official—who was usually busy. The DSO was right at the top.

Chaffin had gray-flecked hair and benevolent eyes that smiled at his visitor. He said, "Come right in, Doctor. Sorry if you've had to wait."

Reilly was nervous and hoped it showed—properly. "I know you're busy, but I've an idea I thought good enough to bring to Security. .though I hadn't expected to see *you*."

"I was curious: our intelligent citizens don't often come to this office."

Reilly, expecting another Al, was more surprised by Chaffin's cultured voice than by what he said. Caution was implicit. "A

woman came to my hospital today. She and her husband are old friends of mine, though we've lost contact recently. Their name is Atherton. He works in Security.. "

"Al Atherton? He used to be one of my unit leaders," the other interrupted.

THERE WAS a peculiar expression on the DSO's face which made Reilly pause. Had Security become efficient enough to see through the plot? No, don't assume things out of fear. Besides, the look was more one of dislike. And Al, with growing authority, had become harder to like. Perhaps this could be used as a wedge.

Reilly continued: "I assume you're aware of their child and the neighbors' threats. Mrs. Atherton asked my aid in taking the boy into the hospital. Naturally, I couldn't, but the incident started me thinking.. " He broke off, flustered at the slip.

Chaffin waved, obnoxiously magnanimous. "When you're in Security offices, relax and feel free to speak"—*what a laugh*, Reilly thought—"We recognize that intelligence and thinking are inseparable; since some, for the good of the United State, *must* be intelligent, some must think."

The doctor was galled by the patronizing manner but continued grimly, "Thanks. Now, we put stress on healthy bodies and minds. Our citizens have little patience with those who aren't; that's why the Atherton child is endangered. I assure you, Officer Chaffin, that a great many mental defectives *can* be used. For the Total Effort, we should employ them. I think," he finished defiantly, "the Government should protect them."

Chaffin drummed fingers on his desk, considered. With narrowed eyes, he said, "Good idea, doctor, a very good idea. Good enough to have been dreamt up by me."—Reilly exulted inwardly but said nothing—"What would you say if *I* sent it to Washington?"

In his best sour-grapes tone, Jim Reilly huffily replied, "My main purpose is to protect the United State; I don't care who gets the credit!" And when Chaffin eased him out, he repeated his unconcern about credit but permitted a slight

tightening of his lips and furrowing of brow.

Reilly walked to the park and, safely alone, laughed long and hard.

At the same instant, Chaffin, alone in his office, laughed long and hard.

* * *

ONE OF THE chatterers in a tree saw the discarded forelimb of the first Allosaur. Launching itself, the bird planed down—overly-long tail steering stiffly—in a pass at the object. With sharp, well-developed teeth, it caught the flesh in its jaws, lifted the heavy weight momentarily, then dropped it. The greedy bird, too stupid to forsake its appetizer, went back and placed itself at the feet of the fighters. In the briefest flash, it became a crumpled, sodden smear of feathers.

The fight closed on the nest, the mother, and the precious young. Primitive reasoning in the mother was, at best, veneer and could not long survive under the stress exerted. Forgetting her previous decision, she broke and ran, clearing the nest in one leap. Instinct had seized her; now instinct drew her up short. Blind instinct caused a fateful choice. She returned, picked up a cub by the scruff of the neck, and left. Safety, deeper in the brush, was her concern.

By now, the second hunter was completely on the offensive. Again and again it struck, hitting ever nearer the vital neck region. Once the shoulder, once the underside of the lower jaw. The first hunter grew weaker, no longer attacked, conserved himself for defense.

THEY DREW apart, a breathing space before the larger beast administered the final coup. The first Allosaur rocked back: mud, mixed with his blood and that of his enemy's, clung to his legs and tail. He rolled drunkenly, one forelimb hanging wearily, and the other a torn, jagged stump that bled heavily. Even the birds quieted suddenly in hushed tribute.

The larger Allosaur moved then—slowly, at first, but gaining speed; jaws agape, blood-reddened teeth murderously exposed, froth issuing from nos-

trils and mouth, engine of destruction headed for the throat of the foe. Each step threw tons of weight on the ground. But on one of those steps, the four-toed, birdlike foot descended on a loose log. The log rolled; the second hunter lost balance. Half running, half falling, the beast staggered across the intervening space.

For the last time, those two monstrous bulks met in a body-to-body crash. The first reeled back; the second bounced off and fell sprawling, stomach down. The force of it shook the clearing, caused trees to vibrate, annoyed the grisly rooting section.

It was the fatal slip. Agile while upright, the second hunter was helpless flat on the ground. The first, instantly alert to this fantastic shift from defeat to victory, bent forward at the hips. His head swung down on a highly articulated backbone; his jaws clamped around the neck of the supine enemy.

LIKE A PUPPY with a slipper, he tightened his grip, tossed his head madly back and forth. Within moments, the larger animal's neck was broken. There was no release; with deep feral growls, the first continued the shaking. At last, the passion was spent. The beast straightened over the crumpled form and looked about the clearing for any other challengers. Finding none, he bent to finish the action.

Nervous reaction continued in the fallen victim; its legs and forelimbs twitched spasmodically but more and more feebly. The life light was dim in its eyes, but unquestionably it still lived and was still conscious.

The victor slashed and hacked pieces of flesh from the second's throat and stomach. This was the penalty it paid for erring—this was the penalty it would in turn have exacted for winning. The chunks tore from the body as the ripping of cloth. Slobbering, the first threw back his head and swallowed, the sound that of a foot quickly withdrawn from mud.

Sated, having stripped the carcass as much as he could, the first Allosaur haltingly withdrew his bleeding, muddy, once-beautiful blue-green body from the clearing. Pyrrhic vic-

tory—within hours, he too would be dead from the damage inflicted by the vanquished.

The carrion-eaters flocked to what was left on the ground.

The mother, having safely hidden the gray cub, returned for its brother. She crept cautiously through the brush until she could go no farther. The second hunter had toppled onto the nest, crushing the brown and white cub.

IV

REILLY shook off the rough hands of the guards and snarled at the urbane Chaffin, "You haven't any right to drag me to this office!"

"Certainly I do, doctor, because *you* haven't any rights. Remember? Congress temporarily abrogated the Bill of Rights last..."

"I was speaking of dignity and innate rights," Reilly interrupted, now in control of himself.

Chaffin simply smiled, dismissed the guards, offered Reilly a chair. "No," he mused, "you gave up those rights and now have to depend on others to give them back." He switched abruptly, threw a change-of-pace: "This situation is almost like Jung's paired opposites, isn't it?"

Reilly started in surprise. "What do you know of. "

"I read, but that's not the point. Look what we did: became so frightened of the Enemy, we ignored our basic strength and emulated all we opposed in him. Sure, there's been no war. Why should there be when all nations think and act alike?"

Reilly warily asked, "Am I here to discuss political philosophy?"

Chaffin shook his head. "I brought you here for many reasons. I want to know what kind of a man you are. Are you aware how much I know about you? When you first came here two years ago, I'd already had quite a file. You interested me —now the file is complete."

His manner disturbed Reilly most. It was confidence, assurance, a royal flush. Still, the effort had to be made: "I would imagine you do know everything..."

"I'm not cat-and-mousing, you idiot!" the DSO snapped angrily. "There's no time for

that. Be convinced by these: clandestine meetings with Mrs. Atherton...books you've given her...the cabin you're sure no one knows about—had enough? You struck a blow for freedom, didn't you? I laughed after you left—so damned obvious. You tried to put two giants—society and the state—into battle to protect a helpless, worthless child. You forgot that all battles must end."

REILLY, completely deflated, shrugged bitterly. "All right, I'm a traitor; so what? I struck a blow for freedom? No, it was the twitching of a corpse."

"That statement is pretty stupid, as you'll see when you stop feeling sorry for yourself. Reilly, men have pushed other men around since the beginning—yet always the concept of freedom returns. It's like water spurting from a rusted pipe; fix it in one spot and pretty soon it breaks out in another. That's because confinement of thought, like the pipe, is rusted, rotten clear through. Freedom will return this time, too, so long as the idea lives anywhere."

Reilly stared at him. "Do you know what you're saying?"

"Certainly: b o r i n g from within. I saw this coming, prepared for it years ago. If you can't fight them..." Chaffin pointed to a folder on his desk. "That's the only complete record of you." He held up some cards. "Here are identification and money cards for all three of you."—grim smile—"One advantage of a central electronic bank; it doesn't know that the circuitry has been altered to give that card enough credit to last forever. I'll tear up your file and give these things to you in exchange for a promise—that you won't flee the country but continue to live at that cabin until the time you're needed."

"And when...?"

"Can't say—you'll have to play it by ear."

REILLY looked quizzically at the DSO. "I can't help remembering a book I read; the protagonist was encouraged to revolt simply to please the whims of..."

"It's standard reading for high-level S e c u r i t y officers.

This is 1989; the author only missed by five years. However, I didn't bring you here to discuss literature any more than politics. Give me your word, or I'll have all of you shot immediately. Don't look so startled: this is too important to waste time worrying about three people—I've several others to process."

"What three people?"

"Yes or no, doctor?"

Reilly paused a moment longer. Then: "I don't really have a choice. You have my word."

"Good!" Chaffin set fire to the folder, dropped it in the Dispose-All, pushed the cards to the other. "We're really not in this, but standing on the sidelines watching the battle. We're parasites on each of the antagonists. Listen well, Reilly: in spite of the Government's lip-service to your idea, Security has consistently looked the other way at defective-baiting. The populace grows restive for sport...the Atherton child is next on the list. Al, at this moment, is out inciting the neighbors..."

"Al? His own kid?"

CHAFFIN nodded grimly. "An ambitious man who knows he'll never rise in the service as long as the boy continues to live."

"This is insane!" Reilly said frantically. "At eight, the boy is no longer a defective. In the last year, he's more than closed the gap; now he's advanced, has the intelligence of a ten-year-old. At this rate, in a few years, he'll be a superior individual."

"That's why I want the three of you to go: you, Mrs. Atherton, and the boy."

Jim Reilly looked at him as though this was the greatest surprise of all. "Marjorie would never agree; what chance I had was gone when Atherton came along."

Chaffin displayed impatience. "She's grown in the years, matured. Stop arguing; you haven't the time: Atherton reported that the mob will be ready in the next hour or two. Leave your coat and all your identification. Use that door there." He pointed to his private entrance, caught the coat thrown to him.

Reilly whirled to the door, stopped. Slowly, deliberately,

he returned to Chaffin. "In case we never meet again. .thank you!"

The DSO smiled. "If we ever do, it'll be because I'm in trouble. You might have to put on a new ranch-hand."

Chaffin waited 20 minutes after the doctor left, then opened the washroom-closet and said to the corpse within: "Sorry, but I have to use you as a substitute for Reilly. Don't mind—it's a good cause." He fired his sidearm several times into the face of the sightless clay.

MARJORIE had felt nervous all day. It began when she put Johnny in the back to play, and had gone to the front yard to pick up some of yesterday's carelessly left toys. A man across the street watched her, completely indifferent to her return glance.

By the boy's nap time, a small but alarming group had gathered to watch the house. Marjorie's nervousness changed to fear. Desperately, she called Al: he was out of the office. The fear increased. She called Reilly: he was being...interviewed by Security.

Panic—unreasoning, emotional, blind—gripped her. Marjorie broke and ran, out the front door. Instinct had seized her; now instinct drew her up short. For a second or two, she stared at the faces of her neighbors, of strangers, of a few strategically placed Security men. She returned to the house, fateful decision made.

Her appearance seemed to set the mob off, echoing loud shouts. By the time she'd dressed Johnny, more than shouts were being hurled—stones were pounding against the outer walls. A few windows splashed inward under the barrage.

Marjorie thought briefly of calling the police, went to the viewer.

A man raced from the body of the crowd to the front gate. In hysterical tones, he screamed for the child, then ran back.

MARJORIE realized the deadly game was now in earnest, that the conclusion was inevitable. Soon the bloodletting must begin. She decided against wasting time on the call; the police undoubtedly knew what was happening.

Grasping the frightened child, the mother ran to the back of the dwelling.

Outside, another man sped across the street, lept the fence, tossed something through one of the broken windows, came running back—the whole a smooth, continuous, trained action. In seconds, there came a blast and sheet of flame, followed by bowing, collapsing walls. Fire instantly spread through the house. Two young Security agents, stationed in the rear, quickly ran to the front.

Al Atherton arrived with a pitifully inadequate force of men. Smirking, he shouted in stentorian tones, "Stop! The State wants to save defectives!" As expected, he was ignored. "Clear the area for fire patrols!" Again he was paid no heed; happily, he unholstered his pistol and did his duty, firing into the air.

Suddenly, to his surprise, other Security units arrived. More shooting began, this time just over the heads of the struggling crowd. Al Atherton had time to wonder what the DSO was doing there and why Chaffin was pointing a gun at him; then time ran out. A deliberately stray bullet, unnoticed in the confusion, slammed him to the sidewalk. In a flash, he'd become a crumpled, sodden mess.

Reilly, a block away, tried frantically to break through the official cordon, but it was impossible.

AND THEN, ahead—impossible illusion—he saw Marjorie walking numbly. But she wasn't illusion, she was real, she was Marge. Casually, he fell into step beside her. With carbon-smudged face and torn clothes, she carried the boy, an unmoving bundle.

"You were right, Jim," she said, showing no surprise that he was there. "Brutality is often stupid—they left the back of the house unguarded." In a monotone, she added: "But they've killed this little boy."

Gently, Jim took the child from her. Silently guiding her toward his car, he examined the youth. Finally, exultantly, he said, "They haven't, Marge! Johnny's in shock, but we'll soon have him out of it."

Hope, alertness returned to her. "Where can we possibly go?"

They reached Jim's car. "To

the cabin, until freedom returns."

Inside, Marjorie was silent as they drove toward the outskirts of the city. Finally, she shook her head, said sadly, "Freedom will never return."

"I'd have said that myself a few hours ago. Believe me, it's due back—what we need is a catylist of some sort, and we'll find it, we'll find it."

* * *

The mother—she of small size, hairy, and pouched cheek—was a stem mammal. In returning to the nest to save the gray cub, she also saved a biological sport, a mutation.

The gray cub, survivor of the battle that acted as a catylist, carried the seeds which eventually gave rise to Homo sapiens: man.

* * *

Marjorie—she of small size, high forehead, and intelligence—was one of Homo sapiens. In returning to the house to save her son, she also saved a biological sport, a mutation.

The young boy, survivor of the battle, carried the seeds and was the catylist: the new man.

★

and then he went away

by DONALD E. WESTLAKE

There was one trouble with artist Emory Ward's depiction of futuristic machines and gimmicks . . .

EMORY WARD sat hunched over his drawing board, manipulating compass and ruler and pencil. If he could get the illo roughed out by lunchtime, he could begin working with color in the afternoon. He sat hunched, weighed down by a deadline, and bit his lower lip as he drew.

The doorbell rang.

"Damn," said Ward. He reached for the gum eraser, corrected, drew another line.

The doorbell rang.

"Fry in hell." Ward shifted on the chair, irritable, annoyed at the outside sound. He drew lines, measured angles.

The doorbell rang.

"Disconnect it," muttered Ward. As he drew, he grumbled about the sound and its maker. Salesman, paper boy, somebody meaningless and unimportant, a cipher, non-entity, nobody, mass man...

The doorbell rang.

"Nobody home, nobody home," Ward whispered desperately. "Go away." He'd have to put down his tools, straighten, stand, walk to the door, open it, walk down the hall, down the stairs, across the

front hall, open the door, listen to words, say, "No, thank you," close the door, climb the stairs, walk down the hall, open the door, come into the room, close the door, cross to the drawing board, sit down, pick up his pencil and protractor and compass, put them down, light a cigaret, be angry, go back to work—total loss, ten minutes.

The doorbell rang.

"No," grated Ward. "I will *not*." He shut his ears, turned off all the circuits of his mind except those connected with his work, drew lines, measured, drew.

Someone knocked on the door.

EMORY WARD stiffened. He stared at the wall. He thought indignantly, someone is outside the door. The *upstairs* door, *this* door, in *my* house, knocking on the door while I am trying to meet a deadline.

The door opened.

Ward's back was to the door. He turned slowly, ready to tongue-lash an insurance salesman, browbeat a paper boy, utterly demolish a collector from the United Fund.

The visitor was tall and slender, with white hair, impeccably dressed in gray flannel surmounted by a thin face with thin smiling lips, and he said, "Mister Emory Ward?"

"Listen," said Ward.

"I am Gamble Two," said the visitor. "I am from the twenty fifth century."

Ward got to his feet. "I am going to kick you downstairs."

"I will erect a force field around myself," the visitor told him. "Then I will put you in a temporary state of paralysis. Very flamboyant. I would rather we sat and chatted like gentlemen."

Ward advanced.

"I will kill you."

The visitor smiled and disappeared. A voice said, "Please be sensible, Emory Ward."

Ward stared at the doorway. "Listen," he said. "Listen, cut it out. I got a deadline."

The visitor reappeared. "Five minutes. Five minutes. No more, I promise."

EMORY WARD took a deep breath. "You are not from the future."

"Of course I am," said Gam-

ble Two. "Tell me, do I speak without an accent?"

"You are a wise guy," Ward told him. "You are a practical joker."

Gamble Two looked faintly pained. "May we sit and chat? I would like to explain."

Ward looked with regret at his drawing board. "I got a deadline."

"I promise not to take long." Gamble Two gestured at the two chairs over by the writing desk. "May we sit?"

"You from some fan club?" demanded Ward.

"May we sit?"

Ward shrugged. "Have I got a choice?" Disgruntled, he sat.

"Fine," said Gamble Two, beaming. He also sat; he even leaned back and made himself comfortable. "First, as to myself. I am Gamble Two. I am an android. I am from the twenty fifth century. I am a policeman, until recently assigned to customs duty. I have just been promoted, and my job assignment changed to the Time Police. You are, frankly, my first important case."

Ward looked sour. "I am?"

"Yes." Gamble Two nodded. "You are Emory Ward. You are a commercial artist. An illustrator. You work primarily for science fiction magazines and paperback book companies."

"So what?"

Gamble Two waved a hand at the illustrations covering the walls. "This," he said, "is what you are best known for. Machines. Machines of the future. Space ships, cybernetics machines, robots, weapons, all the manufactured and constructed paraphernalia of future civilizations."

Ward repeated, "So what?"

"Some illustrators, work mainly with the depiction of strange and fantastic life forms, creatures from other planets. Some work mainly with the human form, usually the female human form. Some are best known for their illustrations of uniforms. The Space Corps, the Intergalactic Patrol, strange uniforms with strange insignia. Some have made their names drawing other worlds, strange, seething jungles, rocky landscapes, tundras. But you draw machines."

Emory Ward said, "I'd like to be drawing a machine right now. I got a deadline."

GAMBLE TWO raised a restraining hand. "Please. I hastened to the point. All of these illustrators, teeming and pouring through the newsstands, spreading their imaginations across the covers and interiors of magazines, all are wild and far-fetched and illusory. All except you."

"Me?"

"You." Gamble Two stood and viewed at close hand some of the illustrations on the wall. He tapped one. "Here," he said. "This instrument panel. The J-27 model intra-system four-seater. I have operated the J-27. This instrument panel is correct. To the smallest detail, correct. Even to the alphabet used, the words on the various dials and levers. All correct." He proceeded to another illustration. "Here," he said. "This robot. I own one exactly like this. He is my janitor. Everything is perfectly in order. It is almost a photograph." He proceeded around the room, tapping various illustrations, nodding and saying, "Yes," and, "Here," and, "Exactly."

Ward snorted. "Ridiculous."

Gamble Two returned to his seat. "You say ridiculous. Next, you will say coincidence. I deny both." He mused, as Emory Ward squirmed. "Time travel," said Gamble Two, still musing. "So fascinating, yet so impractical. So unproductive. Man is born, grows to maturity, lives and dies. All within one environment. It is as necessary to him as atmosphere. We know this. A man from the Greece of Pericles, how long could he last in this century? He would not speak the language; he would be terrified by the machines. He could not last."

"Naturally," said Ward.

GAMBLE TWO reflected. "A man from this century, in the Greece of Pericles. He might stand a somewhat better chance. He could at least get an academic knowledge of the language. But could he survive?"

"Probably not," said Ward.

"Definitely not," agreed Gamble Two. "The change in environment. He would have no resistance to germs. Disease bacteria evolve. He would miss all the conveniences of civilization he had come to accept as

a part of the environment. His ideas would be completely out of tune with the time. He would be shunned. He might even be stoned. He would last perhaps a week."

"One out of every five science fiction stories I illustrate," said Ward, "is based on just this conclusion. Finish, please, and let me get back to work."

But Gamble Two could not be hurried. "Could *any* man survive in an era other than his own?" he wondered. "Could *any* man usefully employ his knowledge of his original environment?"

"Probably not."

Gamble Two held up a finger. "One kind of man can survive in environments other than his own," he suggested. "Think of ship-wrecked sailors on South Sea islands."

"They usually went mad."

"Precisely the point," said Gamble Two. "Before one can integrate himself into a new environment, he must divorce himself from the old. There is only one way to divorce oneself from one's environment. Insanity. Psychosis."

"A psychotic divorces himself from all environments," Ward suggested.

"Exactly. He doesn't even hear doorbells."

EMORY WARD flushed. "Now, wait a minute; I heard that doorbell. I got a deadline. I never answer the doorbell when I got a deadline."

"I am almost finished," Gamble Two assured him. "We have already answered one point. Only a psychotic could make the necessary adjustment to a totally new environment. Now. Is there any man who could survive at the economic level in an environment other than his own? A physicist from this century, for instance, would be an unskilled laborer in Julius Caesar's Rome. As environment changes, vocations change."

"What about a doctor?" asked Ward. "A twentieth century doctor in second century Rome."

Gamble Two shook his head. "Useless. Doctors do not cure, they only *prescribe* cures. And what good would it do a doctor to prescribe penicillin, aureomycin, or even aspirin, in an

environment where such products do not exist?"

"Then," said Ward, "The answer is no one."

"There is a possibility, however," Gamble Two corrected him gently. "What about an artist, an illustrator? All he requires are the drawing tools of the period. Pencil on paper, berry juices on stone, what does it matter to him? He can draw with anything."

EMORY WARD was stunned. "You're not suggesting. "

"It is a severe crime," Gamble Two told him, "to attempt to escape one's obligations by running away through time. You are well aware of that."

Ward shook his head. "You're out of your mind."

Gamble Two ignored him. "Return with me to the South Seas," he said. "The shipwrecked sailor again. He always retains his European clothing, although the native dress, or undress, is much more suitable for the environment. Why is that?"

"You're making a terrible mistake," Ward said urgently.

"It is not possible," Gamble Two said sadly, "for man to divorce himself entirely from his native environment. The sailor keeps his European clothes. You wistfully draw pictures of the machines you once knew and loved, the machines that once seemed so necessary to civilized life, and which you now must try to get along without. Gamble Two pointed an accusing finger. "You are from the twenty fifth century."

Defiantly Emory Ward stated, "I am not."

Gamble Two sighed. "I wish you would just admit it and be done with this foolishness. They should have sent an esper. I wish I could read your mind. The only thing for me to do now is return you for identification. You are from the twenty fifth century, aren't you?"

"I am not." Emory Ward erected a force field around himself, then he put Gamble Two in a temporary state of paralysis. Very flamboyant. Finally, he withdrew from a desk drawer a hand weapon precisely like one in an illustration on the wall. Very functional. "I am from the thirtieth century," he said.

DOWN TO EARTH

LETTERS to science fiction editors are not tossed into the wastebasket or dropped into a drawer for some vague future reference; no, they're all read if the editor can possibly puzzle them out. Comments on stories, artwork, etc., get careful attention; and when the reader has listed the stories in his order of preference or given any clue as to which stories he prefers, these votes are tabulated on our master chart of reader-reaction to the issue. Whether your epistle bristles with wrath, or praises us so heartily that we suspect a forthcoming touch for a loan or some special favor, we meditate upon it. And when we find something which seems like a concensus, we try to act upon it.

ROUND THREE

Dear Mr. Lowndes:

I don't agree that "should it turn out that most people find them (my definitions of science fiction and fantasy) useful, then it's quite irrelevant

whether, among the dissatisfied minority is Yours Truly, RAWL."

I think that it's quite relevant. After all, if you don't agree with me, I'm either communicating badly—or I'm dead wrong.

Your reply to my letter in the December issue of *Future* would seem to indicate the former.

"An 'Omnicompetent Creator,'" you write, "is One Who has so devised that His purposes never require His infringing on the laws of His creation, however much He may actually put his hand in. Thus, under such a God, 'all things are subject to law' but at the same time, there is 'an agency from which all law and power devolves.'"

It does not follow, however, that if God does not infringe upon the laws of His creation, He is subject to the natural law of that creation. In your reply to my first letter you agreed that the creation was inferior to the Creator. Therefore, God must have capacities that are greater than those which can be derived from the natural laws of the universe; and so He must utilize laws that—although they may not conflict with the universal laws—are of a different nature. Certainly, He could not be restricted to the laws this lesser universe is bound by.

With this false qualification removed, then, we see that there is nothing to prevent God's changing of His purpose at some time in the future: as the only restrictions upon God are those He places upon Himself, we cannot know what His course may ultimately be. The "Ominicompetent Creator" is, in short, one more version of the omnipotent god, and as such cannot have any place in a philosophical system that adheres to the belief—as the scientific philosophy does—that *all* things are subject to natural law.

There is, though, a way in which an agency can be subject to the universe's laws, devolve laws and powers, never infringe on natural law, and put his hand in in any way that he chooses. It was first outlined in the "Metaphysics" of Benedict Spinoza, the 17th cen-

tury philosopher. It was Spinoza's belief, as I understand it, that the Universe is God, and the natural laws of the universe are the thoughts, or will, of God. It is this metaphysics that is generally considered to have initiated modern scientific philosophy.

However, there is no way of proving or disproving the concept, since God and the universe are *absolute* identities. And, given a problem with two equally satisfactory solutions, one complex and the other simple, it is better to select the simpler solution. In the case of Spinoza's God, the concept of a supreme agency is an unnecessary complication; it is easier—and equally useful—to assume that the universe and its laws have always existed, or came into being spontaneously.

Spinoza's idea, regardless of the unneeded complexity of some aspects of it, did open the way to a new insight into the nature of man and the world. For, on the face of it, it postulated a closed universe—a system that cannot be interfered with, or affected, from without. It is theoretically possible to discover and map all of such a system, and since the capacity for any action must be inherent in the system itself, this information can be used to predict every change, every reaction that can take place within the universe.

It is this concept that has taken men from their great dependence upon God to a greater reliance upon themselves. It is the foundation of science.

Supernatural: 1. Of, or proceeding from, an order of existence beyond nature, or the visible and observable univers. 2. Ascribed to agencies above or beyond nature; miraculous. "Merriam-Webster's Collegiate Dictionary."

Since we have discovered that the "Omnicompetent Creator" is a member of Genus Omnipotent God, I believe that your thoughts in this area need additional examination.

You write "...thus what was 'supernatural' in times past *might* not be so today or tomorrow—although the 'supernatural' still exists; there still remains an area beyond our comprehension, etc., at the given time."

If we define the "supernatural" as, "of, or proceeding from, an order of existence beyond nature," that is, God, then your reasoning must be in error—for God and His acts must always be beyond the universe's capacity to know and understand completely.

If we define the "supernatural" as, "of, or proceeding from, an order of existence beyond the visible and observable universe," then you would be correct—but then, gravity, or *any* force we can not now measure or understand in its entirety, could be considered "supernatural." As correct as this definition may be, it leaves me with a most unsatisfied feeling.

As unsatisfied, perhaps, as my definition of science fiction and fantasy leaves you.

Frankly, I'm a little embarrassed by the confusion my two previous letters seem to have created—particularly the first one. I'd thought that even if the ideas were carelessly expressed, they were too much a part of our time and our civilization for an important misunderstanding to occur.

After all, the philosophies I discussed are not new; the only newness lies in showing the relationship of these philosophies to science fiction and fantasy —if, indeed, that is new: surely there must be many others in the science fiction world, and the world of general literature who have made the same observation.

Perhaps the brevity of the first letter made understanding difficult—a certain amount of redundancy is necessary to proper communication. And perhaps I help create confusion by the use of the terms "Finite System" and "Infinite System" to label the two conceptions of the nature of the universe, the concept of the universe as the creation and eternal subject of an omnipotent god, and the concept of the universe as a closed system in which all things are equally subject to law—but what labels could I have chosen in their stead? The labels "Faith" and "Reason" are used at times, but they are not adequate for this discussion; the labels "Religious Universe" and "Scientific Universe" are inadequate, too, for

they tend to ignite irrelevant pre-conceptions.

Maybe the haste with which I wrote those letters obscured what I was trying to say—although, in honesty, I think that the two letters taken together provide a coherent outline of my ideas.

The ideas that I tried to put across are essentially simple. They are not complicated or obscure.

I said that there were two basic ways of conceiving of the existence of the universe: 1. That the universe was created by an omipotent god who ultimately commands every aspect of the universe's behavior; 2. That the universe and its laws have always existed, or came into being spontaneously, and all things are subject to its laws.

I said that there might be other ways of conceiving of the universe's origin and continued existence, but that no logical formulation has been made of such concepts.

I said that fiction in general fell into two groups: stories about things that are, and stories about things that aren't —that is, stories in which the events that occur are known, or presumed, to be demonstrably possible, and stories in which the events that occur are *not* known, or presumed, to be demonstrably possible.

This latter group I labeled "imaginative fiction," and I said that it could be broken down into only two groups: science fiction, and fantasy.

I said that science fiction stories derived their logical framework from the philosophy that the universe and its laws have always existed, or came into being spontaneously, and all things are subject to its laws.

I said that fantasy stories derived their logical framework from the philosophy that the universe was created by an omnipotent god who ultimately commands every aspect of the universe's behavior.

Now, I don't think that these idéas are difficult ones. True, I have made no great effort to prove my points, other than through the use of logic. To do a proper job, I'd have to analyse every philosophy ever thrust on paper, I'd have to

summarize every science fiction and fantasy story that was ever printed. I don't have the time or the interest. But, as a long-term science fiction and fantasy reader—a very long-term one—I'm satisfied that there are no exceptions to the rules I've laid down. There is no story that everyone agrees is a science fiction story that my definition excludes; there is no story that it is generally agreed is *not* science fiction that my definition includes. What more can be asked of a definition of science fiction, except lucidity? I think the definitions below take care of that.

Imaginative fiction: The branch of literature in which the events that occur are not known to the author to be demonstrably possible.

Science fiction: The branch of imaginative fiction in which all things are subject to the natural laws of the universe.

Fantasy fiction: The branch of imaginative fiction in which there is an omnipotent agency from which all natural law and all power devolves.

If I'm wrong, I want to know it. I'm not adverse to the finding of stories that do not fit my definition. I invite them. I only ask that the story provide sufficient information for a logical conclusion to be reached, and not, as in Vidal's "Messiah," or Wylie's "The Disappearance," too little information to reach a rational conclusion.

Frankly, though, I hope nobody finds an exception—or what seems to be an exception. This is not the *liveliest* subject; I don't want to write about it forever.

I thought that *The New Science of Astronomy*, by Donald Franson, was a marvelous story. It was a wonderful mixture of whimsy, corn, and speculation that had me completely charmed. I don't know how it will affect the rest of your readers—but as far as I'm concerned, it's one of the best stories of the year.

By all means continue *Yesterday's World of Tomorrow*. Although I know that these letters have not sounded like it, I have been enjoying—and generally agreeing with—your analyses of science fiction.

The new Ward Moore and Robert Bradford serial looks very promising. I'm a great admirer of Moore's "Bring the Jubilee." If this is only a fraction as good...

RICHARD KYLE,
Box 139,
Joshua Tree, California

This gets rougher because I'd forgotten Cardinal Newman's wise admonition to the effect that it is very foolish to dispute about points b, c, d, etc., when there is no agreement on point a.

And that is the crux of the matter. I can't accept your formulations, Sir Richard, not because your logic appears faulty to me—on the contrary, granting your assumptions, your argument seems to follow very well—but because *I cannot accept your basic assumptions!* Not because you have failed to define your terms—on the contrary, you have given a most lucid resume of what you mean by them—but because *I cannot accept your definitions.* Not because, even further, that there is no authority for these definitions (in the sense that you didn't make them up out of your head, but have the backing of what many have regarded as sound system behind them) but rather that *I cannot accept these authorities.*

But, let me repeat: I see no reason why anyone who goes along with the basic assumptions, who accepts the definitions you employ, and who agrees with the authorities you cite, should not arrive at the same conclusions you have reached. Nor should I be astonished if a majority of the readers agree with you—which is why I ended my last reply as I did.

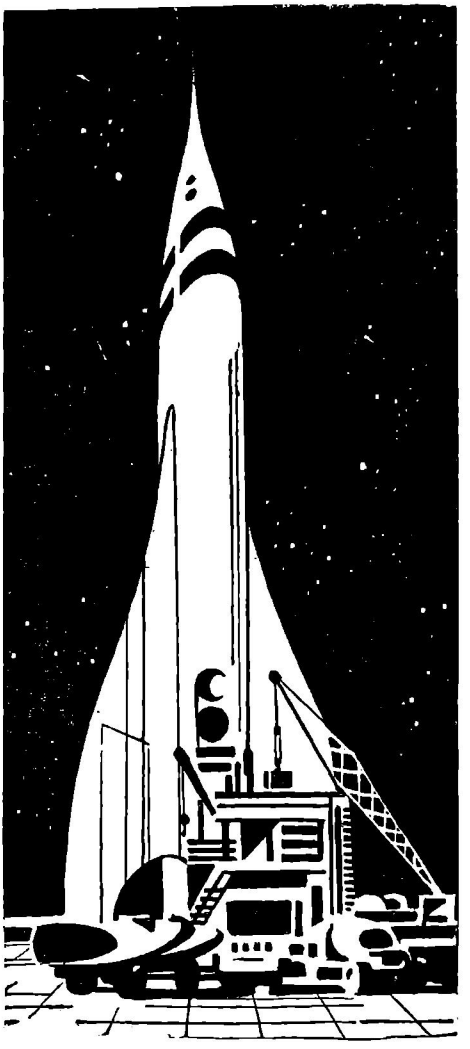
I would indeed enjoy carrying the debate farther, for I realize that I am actually saying that I believe you're wrong; but I do not feel that this department is the proper place for it. I doubt that the other readers would find the subject as interesting as we do, and am almost sure that I'd have to equal—more likely exceed—the lengths to which you've already written.

Just one aside, though: Pantheism (God is the universe and vice versa) is much older than the 17th Century. St. Augustine points out a few of its most flagrant absurdities in *"The City of God"*, and pantheism was by no means a new philosophy then. Moreover, I doubt that St. Augustine was the first to puncture it. RAWL

★

Last In A Series Of Definitive Articles

by Thomas N. Scortia



Mr. Scortia is Assistant Manager for the Chemical Research and Development, Propellant Chemical Corporation.

The Race Into Space

III: Ions, Photons, and Clipper Ships

Some of the wildest fancies of science fiction now seem to be the most solid possibilities.

FROM THE looks of things, 1959 will be the biggest year in the history of human conquest of space since Kimball Kinneson discovered the Arisians.

In the latter part of 1958, Republic Aviation tested the first rocket motor, using liquid fluorine, the ultimate in chemical oxidizers. You can expect to see a great deal of work on this material in the coming months, as liquid fluorine becomes increasingly available in tank-car quantities. If the program remains on schedule, the X-15 space vehicle will have flown its qualifying tests by the time you read this. Unless the program is postponed because of lunar probe failures, NASA will launch at least one Mars probe in the middle of 1959.

The team members for the Dynasoar Rocket Bomber project were announced in November, 1958 and shortly after that, ARPA (Advanced Research Projects Agency of the Department of Defense)

The first article in this series, "Operation Bootstrap", appeared in the December 1958 issue of this magazine; the second, "The Chemical Rocket and Beyond", appeared in our February issue. Copies may be obtained from the publisher @ 35¢ each.

called for bids on a manned orbital capsule to ride atop the Atlas. The chances are that we may expect some startling developments in the field of atomic propulsion. 1959 will probably be the year in which the first atomically-propelled aircraft is flown. (Right now, the odds seem to be in favor of the Russians doing it first ...another instance of a U. S. program being too little and too late.)

Don't look for any very startling developments in the area of fusion power. (An announcement on a new H-Bomb technique can probably be expected, however, in view of the AEC's announced reduction of lithium requirements.) It now appears that the magneto-hydrodynamic approach to fusion power described later may not pay off as quickly as other approaches.

And...hold your breath... it now appears that anti-gravity—or, at least, a pseudo-anti-gravity—is possible! More about that one later.

AS FOR the Russians... what are they up to? As of this writing (January 5, 1959), it's well known that they have tried at least five lunar probes without success, but a spectacular near-success —the *Lunik*. Some Western sources theorize that in developing their monster rocket (while we scaled ours down to produce the quarter-size *Atlas*), they may have run into guidance problems which we haven't encountered. (In this area, some think we are more sophisticated than the U.S.S.R.) One thing we may be sure of; at any moment, they're likely to come up with another technical bombshell...

Like a manned orbital vehicle, perhaps.

So, we're on the road to space, and it looks as if nothing short of a technology-smashing war will stop us. In a fantastically short time we have reached the limits of the chemical rocket (or will have in another year or so) and are looking for new and better means of propulsion. We've spent something like ten thousand words in the first two parts of this series in discussing chemical rockets and motors working with exotic physico-chemical species. This is, of

course, as it should be. Chemical rockets occupy most of our time at the moment. However, from this point on, we're going to turn our attention to reaction motors that do not depend on the energy of the chemical bond.

I SHOULD point out to you that all of the systems we're going to discuss are, with the exception of the photon drive, well explored in theory and appear to be workable. I doubt that all of them will be built, or will come into common usage; but they are all theoretically possible. Most of these drives are "low 'g'" drives—that is, their maximum acceleration is lower than the acceleration of gravity at the surface of the Earth. This means, of course, that these devices can never operate from the surface of a planet. They must be assembled in orbit and operate between an Earth orbital position and an orbit about another planetary body.

A great many authors have pointed to the sun as a continuous source of propulsion power within the solar system. It's well known that our *Vanguard* satellite, and at least one of the Russian satellites, carried solar batteries to power certain telemetering and radio equipment. A number of schemes for the use of such solar batteries to drive a ship have been developed, as well as schemes for the more direct use of the suns heat to develop electric current by thermobatteries.

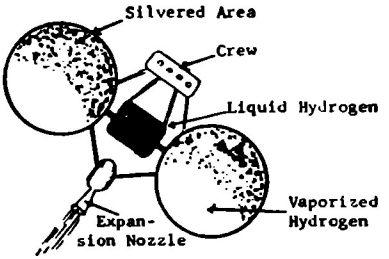
HOWEVER, one of the most direct of the solar power schemes is that advanced by Krafft-Ericke of *Atlas* fame. Krafft-Ericke has drawn upon the well-known effect that we see daily on earth in our greenhouses. The sun's rays, as they penetrate the atmosphere, are of a fairly high wave length, the so-called radient energy. These rays pass through air, glass, and transparent plastic quite easily. However, if the radiation then strikes an opaque surface it is adsorbed and re-emitted as longer-wave heat radiation, which cannot pass even the transparent glass or plastic barriers. If you've ever been in a greenhouse during a cold but sunny winter day, you can appreciate just

how effective this entrapment of solar energy is. Indeed, this same effect is being used in experimental stills to recover sea water.

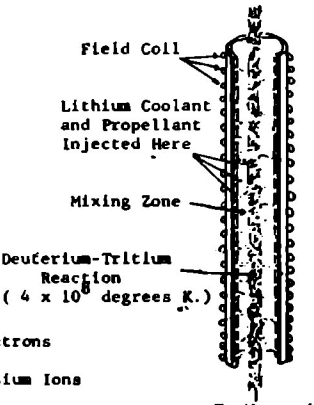
Figure 1. shows the basic design of Krafft-Ericke's solar ship. The principal feature of the device is a pair of very large transparent plastic spheres, each of which is silvered on half of its interior surface. These spheres are positioned on either side of a tank of liquid hydrogen. (You may recall that we talked about specific impulse, the measure of the efficiency of a propellant, and we pointed out that this quantity varied inversely to the square root of the molecular weight of the substance ejected through the nozzle. Hydrogen, the lightest of the elements, is chosen in this system for just that reason.) The liquid hydrogen is injected into the two half-transparent spheres. To the rear of the hydrogen tank is located an expansion nozzle.

NOW, IT should be pointed out that there is no oxidizer in this set-up and that the hydrogen *does not burn*. It acts merely as a low molecular weight reaction gas to be ejected from the ship—much as compressed air is ejected from a toy balloon, so that it propels itself through the air. The liquid hydrogen is injected into the plastic spheres where it receives solar energy. The radient energy of the sun enters through the transparent half of the sphere and is reflected by the mirrored half. However, the wave length of the energy is increased by this reflection and the energy is now entrapped.

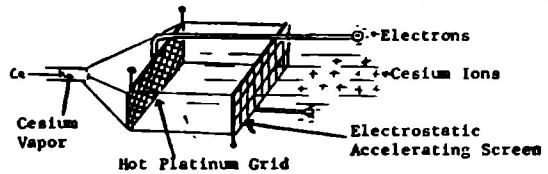
The interior of the plastic sphere rises in temperature and the hydrogen inside quickly vaporizes and rises to a temperature of 850° Centigrade (1562° F.). The vaporized hydrogen is now under quite a bit of pressure and is passed through the expansion nozzle, where a major portion of its thermal energy is converted to energy of motion; and the hydrogen leaves the nozzle at a velocity of about 4500 meters per second. Krafft-Ericke's design indicates that the resulting thrust of the system will be only 160 pounds and that the whole ship will ac-



Krafft-Ehricke's Solar Ship

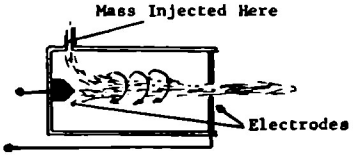


Deuterium-Tritium Fusion Drive

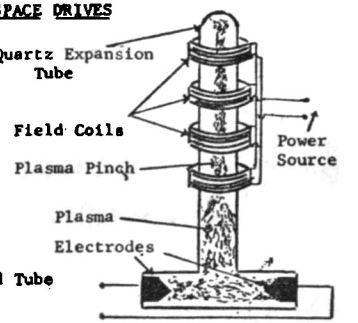


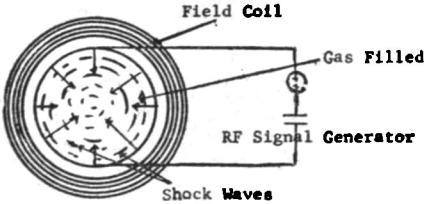
Stuhlinger's Ion Drive (Schematic)

FIGURE 1: NON-CHEMICAL SPACE DRIVES



Basic Plasma Jet





AVCO MHD Device (End View)

NRL MHD Device

FIGURE 2: MAGNETOHYDRODYNAMIC DEVICES

celerate at the rate of only 0.01 g—that is, its speed will increase 0.01 times 32 feet per second for every second the motor operates.

NOW, THERE are two obvious questions to be answered about this system. The first is: How is it possible to develop such high temperatures within the plastic spheres when no such temperatures are encountered in earthside greenhouses? The answer to that lies, of course, in the fact that there is no filtering atmosphere between the ship and the sun. While the air of the Earth is fairly transparent to radient energy, it is not perfectly so; losses occur. Moreover, further losses occur from clouds and dust in the air.

The second question is a more general one and applies both to the present system and to those we will discuss later: Of what possible use is such a tiny acceleration, a mere third of a foot per second per second? The answer to this lies in the time over which this acceleration is applied. A chemical rocket develops enormous thrust compared to this system and equally enormous acceleration, but it does so for a very short time measured in minutes. This solar propulsion system and subsequent low "g" systems are able to apply their lower acceleration for much longer periods. Suppose our solar ship should apply this acceleration for 1000 hours. Its final velocity can be calculated. It is equal to the acceleration, 0.32 feet per second per second, times the time in seconds. For 1000 hours, this is 0.32 times 36,000,000 seconds, or 2,100 miles per hour.

THERE ARE some objections to this system, however. Some critics have pointed out that the present temperatures and acceleration are characteristic of the ship at the distance of the Earth from the sun. While the operating characteristics of the ship would go up as it approached closer to the sun, its ability to gather useful energy would go down quite rapidly past the orbit of Mars. Other writers have pointed out that the plastic spheres themselves offer a major problem, since most of

the materials we know today would quickly become opaque under bombardment by the hard radiation found in space.

There's another very clever device for using the sun's energy—one which has quite a romantic appeal to me—and that's the use of solar sailing. The earliest treatment of this concept was in an article in the May 1951 issue of *Astounding Science Fiction:* "Clipper Ships of Space" by Russell Saunders. It has recently been revived by Richard L. Garwin of the IBM Watson Scientific Laboratories at Columbia in a technical note published in the March, 1958 *Jet Propulsion,* the American Rocket Society's technical publication.

Garwin notes that at the Earth's distance from the sun, solar radiation exerts a small but definite pressure upon a surface, and that this pressure may be used as thrust to accelerate a body. He points out that if the twenty-inch *Vanguard* satellite were black over half its surface, light pressure in its orbit would be sufficient to rotate it about one sixth a circumference (one radian) about its axis in thirty minutes.

AT THIS distance, the energy falling on a surface is 1.3×10^{6} ergs per second per square centimeter and the *pressure* (or thrust) exerted is 0.8×10^{-4} dynes per square centimeter. Garwin proposes the use of a large aluminized plastic sail to propel a vehicle. His design calls for a sail of sufficiently large area so that the resulting thrust will give his ship an acceleration of 1.6×10^{-4} g or about 0.06 *inches* per second per second. Now, this is smaller than the acceleration of Krafft-Ericke's ship by a factor of nearly one hundred, but the acceleration of this ship is continuous so long as the sail is exposed to the pressure of the sun, (assuming that the sun's radiation remains constant.) Assuming that the sun's radiation pressure remains constant, the escape velocity of the *solar system* which is 26.4 miles per second or about 950,000 miles per hour might be reached in approximately a year.

Garwin points out that this same effect may be used to accelerate a satellite once it is in orbit. He proposes launching a satellite containing a col-

lapsible sail 70 meters in diameter. The sail would be unfurled when the satellite is going away from the sun, and furled as the satellite moves toward the sun in its orbit. The net effect would be to increase the velocity of the satellite and hence cause it to seek a higher orbit.

Of course, the same objections to the Krafft-Ericke scheme apply here. The most important limitation, ignoring the structural problems of making such a sail and supporting it, is that the solar clipper ship is dependent on the sun and solar radiation, and hence solar pressure goes down as the square of the distance from the sun. Within the orbit of Mars, the solar clipper ship would probably be quite efficient. It could tack across the solar system, moving from planetary orbit to planetary orbit, increasing or decreasing its straight line distance from the sun. It could move massive cargoes cheaply across the system and sail indefinitely without refueling problems. Who knows but what there may someday be such ships with all the appropriate legends of a sailing tradition—Flying Dutchmen—another *Mary Celeste*—the Jolly Roger and shades of Henry Morgan and...

Oh, yes— Now, where were we?

SO FAR, we've discussed two reaction systems depending upon the sun for their energy. (The solar sailing system is still a reaction device, the reaction mass being the reflected photons of solar radiation.) It would certainly be preferable to have a propulsion system with its own self-contained energy source. What shall we use for reaction mass? Well, why not the elementary particles of matter—electrons and protons? Why not the charged atoms we call ions? All of these can be accelerated by an electric field and thus we can apply an electrical source directly to propulsion.

Professor Hermann Oberth, the grand old man of rocketry, discussed this problem in the early Twenties, and proposed the use of electrons, accelerated by an electrostatic generator. Recently, in his *Menschen In Weltraum* (published in this

country by Harper and Brothers as *Man Into Space)* he has amplified on this concept. Oberth proposes the use of solar boilers to provide the electric current to run his ship. Assuming an adsorption of 1.5 kilowatts per square meter per hour, he assumes a thirty per cent conversion to electricity by the use of heat exchangers and turbines followed by a 95% conversion by an electrostatic generator to yield an ionization power requirement of 0.44 kilowatts per hour. He proposes the use of an electrostatic generator to ionize a working fluid held in two cylinders whose ends are porous plates. The emission of ions from this device produces a thrust of from ten to twenty kilograms (22 to 44 pounds.)

A MUCH MORE well-worked-out proposal for ion propulsion is the scheme advanced by Dr. Ernst Stuhlinger, formerly of Peenemunde and now with the Army Ballistic Missle Agency at Redstone, Alabama. Stuhlinger's ion drive depends upon the use of alkali metals which have a low ionization potentials. Of these, cesium and rubidium are the most easily ionized. If cesium metal is vaporized (Cesium also has a low heat of fusion and vaporization.), and the vapor passed across an incandescent platinum or tungsten surface, it will in a matter of microseconds become completely ionized. The red-hot platinum or tungsten surface will strip an electron from each passing cesium atom, converting it into a cesium ion with one positive charge.

Now, an ion, because of its electric charge, may be attracted by a charge of opposite sign. Thus if positively charged ions are introduced into an electrode system above a positive pole, the positive pole will repel them and they will move toward the negative electrode, accelerating all the while in direct proportion to the square root of the size of the charge on the negative electrode. Thus, ions, once formed, can be accelerated to workable velocities by accelerating them across an electrostatic field.

SUCH IS the design of Stuhlinger's ion drive, represented schematically in Figure 1.

Cesium vapor at 200° C. is forced over a red hot platinum grid where the electrons are stripped from the neutral atoms, converting them to positively charged ions. The positive particles are attracted toward a negatively charged accelerating screen and move across a potential gradient of about 200 volts, reaching a terminal velocity of fifty miles per second as they leave the motor. Now, this situation could not long continue if the electrons stripped from the cesium were allowed to build up on the platinum grid. The negative charge of the platinum grid would soon be so high that its attraction would cancel out the attraction of the accelerating screen. To solve this problem, and to prevent a large negative charge from building up on the ship as a whole, the electrons are led away from the grid by conductors which extend out past the orifice of the ion motor. There, the electrons leave the conductor and recombine with the positively charged cesium ions which then revert to cesium atoms. Because this reaction occurs after the cesium ions have left the motor, no thrust is lost.

STUHLINGER has discussed the design and flight characteristics of such an ion ship in "The Flight of an Electrically Propelled Space Ship" (*Jet Propulsion*, April, 1957; *27*, 4, pages 410-14). His design calls for a ship with a total initial mass of 730 tons, of which 365 tons is propellant mass, *i. e.* cesium. The actual motor is composed of a great many cells of the type shown in Figure 1. To operate the motor, a current of 4220 amperes is required and a potential of 4880 volts. This is supplied by a conventional atomic reactor, such as now powers our atomic submarines. It should be noted that throughout his design, Stuhlinger has drawn upon *existing* technology and has assumed no technical developments over the present state of knowledge. In other words, Stuhlinger's ion ship could be built right now with presently existing knowledge, if we could get the materials and men into orbit to assemble the ship.

Taking the exhaust velocity

of 84 kilometers per second and a total thrust of 50 kilograms (110 pounds), we find that the ship has an acceleration of only 0.67 x 10^{-4} g. This is, however, on the same order of magnitude as the acceleration of the solar clipper ship we have discussed earlier. Using these quantities, Stuhlinger has calculated the requirements for a round trip flight to Mars.

HIS DESIGN is based on a payload of 150 tons. The trip to Mars from an Earth orbit will take slightly over one year, while the return trip will be less than one year. The propulsion system acts throughout the trip, except for short intervals of maneuvering. (An interesting part of the design of the ship is that the turbine for the ship is so positioned that the reaction from its revolving rotor will cause the whole ship to spin, thus providing a light centrifugal pseudogravity.)

Over one third of the time for the Mars trip is devoted to gathering enough velocity to break free of the Earth. The ship begins its trip by applying thrust along a tangent to its Earth orbit. The result is a widening orbit that takes the form of a spiral. At the end of two hours of continuous thrust, only twenty miles have been added to the radius of the ship's orbit. At 100 days—or 376 revolutions around the Earth—later, the ship is still in orbit at 100,000 miles from the Earth. After 124.5 days of acceleration, the ship reaches escape velocity for its distance from the Earth, and begins move outward. The motors are rotated at this point and decelerating thrust is applied.

The deceleration is applied between the 194.5 day position and the position at 275.5. At this point, the ship is approaching the orbit of Mars in a long spiral, and acceleration is again applied until the 347th day arrives. A series of coasting, accelerating, and decelerating maneuvers finally places the ship in orbit around Mars at the end of 401.3 days from the beginning of thrust in the ship's orbit around the Earth.

THIS SAME type of ion drive has been used in the proposal by Martin W. Willin-

ski and Mrs. Elsie C. Orr of the Rocketdyne Division of North American Aviation for their Project Snooper,* an unmanned interplanetary probe. Project Snooper is a robot spaceship, guided by an automatic solar-planetary navigation system. The ship is propelled by two ion motors, similar in characteristics to the Stuhlinger motor, and using cesium ionized by a hot platinum grid. The ship itself is comparatively small, its gross weight being only 3300 pounds, with 220 pounds of that being propellant. The payload of Snooper includes television, radar, communication equipment, and auxiliary power systems; it weighs a total of 1500 pounds including the navigation system.

The interesting thing about the ship in Project Snooper is that it need not be assembled in orbit, as must the much larger Stuhlinger ship. The 3300 pounds gross weight is well within the orbital capabilities of newer chemical rockets which will be in operation within the next few years. The rocket which the Russians used for Sputnik III is capable of launching a similar ship. Given enough time, Snooper can explore the limits of the solar system.

Ion propulsion is definitely no distant dream. The Air Force is actively studying the problem as of this moment. Giannini Research Corp., AVCO Manufacturing Co., and North American Aviation, to name a few, all have USAF contracts bearing upon this method of propulsion.

BOTH THE Stuhlinger manned ship and Project Snooper depend on present-day fission power plants for their electrical power. Unfortunately, present day fission systems are anything but efficient. Were it possible to reduce the size of the system, or increase the power yield per unit weight, ion drives would become even more attractive—since accelerations of as much as one thousandth of a gravity might be achieved easily.

One method of deriving electrical power directly from a fusion reaction has been pro-

*"Project Snooper, A Program for Unmanned Interplanetary Reconnaisance" *Jet Propulsion*, Nov., 1958, 28, 11, pages 723-9.

posed by S. A. Colgate of Project Sherwood, and R. L. Aamodt of the Los Alamos Scientific Laboratories. These authors propose a device which consists essentially of a cylinder 150 feet long by 25 feet in diameter. Around the center of this cylinder is placed a field coil in which the current will be generated. A gaseous plasma of Uranium 235 is injected into one end of the cylinder at 6000° Centigrade. (A plasma is a mass of hot ions and electrons. At this temperature U_{235} is gaseous and completely ionized.) The mass of plasma reaches critical conditions in the tube, and a chain reaction starts. The sudden rise of temperature propels the plasma down the tube before an explosion can occur. As the plasma collects at the other end of the tube, a new chain reaction starts and the process is repeated.

Now, each partical within the plasma has an electrostatic field associated with it, and as this field cuts the coil during the plasma's passage up and down the tube, a current is generated in the coil. Colgate and Aamodt estimate that their proposed device can generate 500,000 kilowatts with an efficiency of 20%, quite an increase in efficiency over present fission power systems.

THERE ARE other approaches to the direct development of electric power from atomic reactions, including the so-called atomic batteries which generate current by collecting decay particals from radioactive materials between their electrodes. Of course, what everyone is waiting for is fusion power and its application to space travel.

A great deal of work is being done on the production of fusion power, and on its application to space drives. In a sense, it is quite impossible to separate present power work from propulsion work since they are so closely related, the power effect being probably the effect to be used directly for propulsion.

The important thing to remember about fusion is that it involves some spectacular temperatures—temperatures measured in the tens of millions of degrees F. The Bethe cycle,

for instance, is one of the cycles of the sun and requires 35,000,000 degrees F. to maintain it. The reason for such high temperatures is that for two atomic nuclei to fuse, they must have sufficient energy of motion so that they can over come their mutual electrostatic repulsion (Both nuclei are positively charged, and like charges repel each other.) and approach each other closely.

However, the temperatures required to penetrate this coulombic barrier are very much above the temperatures at which ordinary matter vaporizes. The present approach to this problem has been to confine the high temperature matter in so-called "magnetic bottles." It should be remembered that any matter at the temperatures we're discussing is not only vaporized, but also ionized into a plasma. Plasmas, being composed of electrically-charged materials, can be acted upon by a magnetic field. In most of the fusion devices, the applied magnetic field serves to hold the plasma away from the walls of the container.

PROBABLY the simplest way of approaching some of the ideas in the field of magnetohydrodynamics—that is of the interaction of magnetic fields and charged plasmas—is to consider one of the more basic devices, the plasma jet in Figure 2. A sufficiently high voltage is impressed across the two electrodes, so that an arc may be struck between them. Normally, an electric arc has a temperature of a few thousand degrees. The main reason for failing to achieve higher temperatures is that the matter within the arc is fairly rarefied and collisions between charged bodies—which would increase the temperature—are not too frequent because of the comparatively low number of particals.

If one could increase the number of particals in the arc, one would increase the number of collisions per second, and consequently increase the temperature. The same effect could be achieved by reducing the cross-sectional area, and consequently the volume of the arc, since the existing particals would be more confined.

A logical approach would seem to be the injection of other matter into the arc, and this

is what is done. Water, or a noble gas, is injected into the cylinder holding the arc. This injected material also serves a second purpose in that it adsorbs heat in reaching the temperature of the arc and thus cools the walls of the cavity.

NOW, TWO other very interesting effects come into play. Around the arc whose temperature has increased, magnetic fields from the plasma tend to organize the plasma itself, squeezing it together. In addition, an other effect—a magnetoconstriction effect—comes into play. It is well known that two wires lying close together and carrying current in the same direction are drawn together. (There's a pretty relativistic explanation for this that says that the electrons in each wire see the adjacent wire as being more electropositive, but we'd better not get into that one.) In the same way, two adjacent streams of charged particals attract each other, and the result is a further constriction of the plasma in the arc and more collisions and higher temperatures. Temperatures of from 15,000 to 30,000° C. have been achieved with such plasma jets, and the flow of hot plasma through the orifice of the arc container exerts a definite measureable thrust. Exhaust velocities above 6000 meters per second have been achieved by this technique.

THE ATTEMPTS to achieve high temperatures in the laboratory began with the use of high pressure gases in shock tubes. Kolb of the Naval Research Laboratory, using such tubes, achieved a gas velocity of Mach 200 in 1955. This corresponded to a kinetic temperature of one million degrees Kelvin. It should be pointed out at this point that the mean free path of a partical—that is, the average distance a partical may travel before collision with another partical—is a measure of its kinetic energy and its temperature. There is a definite velocity, therefore, associated with a definite temperature for each partical. The plasmas being studied in the laboratory are rarefied plasmas, and when we speak of their temperature, we mean their kinetic tem-

perature—i. e. that temperature to be associated with the velocity of the particals in the plasma, and hence their kinetic energy.

For the high temperatures needed for fusion, Kolb's shock tubes were not enough; research turned to magnetohydrodynamics, and the pinch effect we have described in the plasma jet. Field coils external to the plasma were used to squeeze the plasma together, raising its temperature and holding it away from the walls of the evacuated container.

FIGURE 2 shows two devices currently being used to investigate the application of magnetohydrodynamics (MHD) to fusion temperatures. In the Naval Research Laboratory device, a plasma is generated between two electrodes in the legs of an evacuated quartz tube. A pulse generator throws a pulse through the lower field coil, hurling the plasma upwards. The magnetoconstriction effects described in the plasma jet serve to start the stricture of the plasma column as it enters the influence of the first of the field coils around the upper tube. This coil further constricts the plasma, cutting down the mean free path of the particals in the plasma. The result is more and more collisions and an increase in the kinetic energy of each partical—a rise in temperature. The coils further up the length of the tube continue the effect on the rapidly moving plasma. In future experiments, NRL is planning a device that utilizes two such expansion tubes, placed end to end, so that two masses of hot plasma may be fired at each other to collide in the center of the device. It is hoped that the resulting temperatures will be considerably higher than achieved in this apparatus.

THE AVCO device in Figure 2 depends upon a radio frequency signal from a signal generator to set up shock waves traveling inward and colliding in the center of the tube. A great many other devices are being explored, tubes in the shape of a torus, or figure eight, but a major increase in temperature is still required

to initiate fusion by this method.

If it were possible to set up a continuous fusion of deuterium gas to yield energetic particals, this reaction could be used to heat a reaction mass directly. Figure 1 shows a prototype of a fusion drive in which a center plasma of fusing deuterium and tritium is constricted by field coils and held at the fusion temperature of 400,000,000 degrees K., while new deuterium and tritium, together with lithium—which acts as a coolant of the fusion chamber before being injected—and reaction mass, are injected through holes in a manifold that runs the length of the fusion chamber. The plasma, moving at high velocity, is conducted toward a

[*Turn Page*]

magnetic nozzle which expands it, converting the heat of the reaction to still more velocity.

NEEDLESS to say, while all of these schemes look fairly simple on paper, a great deal must be done yet before high temperature fusion can be applied to a rocket motor. However, there is hope of solution in another direction. In the latter part of 1957, L. W. Alvarez and his coworkers at the University of California reported what appears to be fusion *at room temperatures!* Working with negative mu mesons in a bubble chamber, Alvarez and his coworkers observed fifteen instances in which a negative mu meson united with a hydrogen atom to

[*Turn To page* 122]

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yield a negative partical, which decayed to an unknown species plus an electron. Their observations indicated that a negative mu meson was capable of catalyzing fusion between a deuteron and a proton to yield 5.4 Mev and *another negative mu meson.* This suggests that fusion may well finally be tamed by the development of a source of negative mu mesons.

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THE WHOLE idea of a photon ship

[*Turn To Page* 124]

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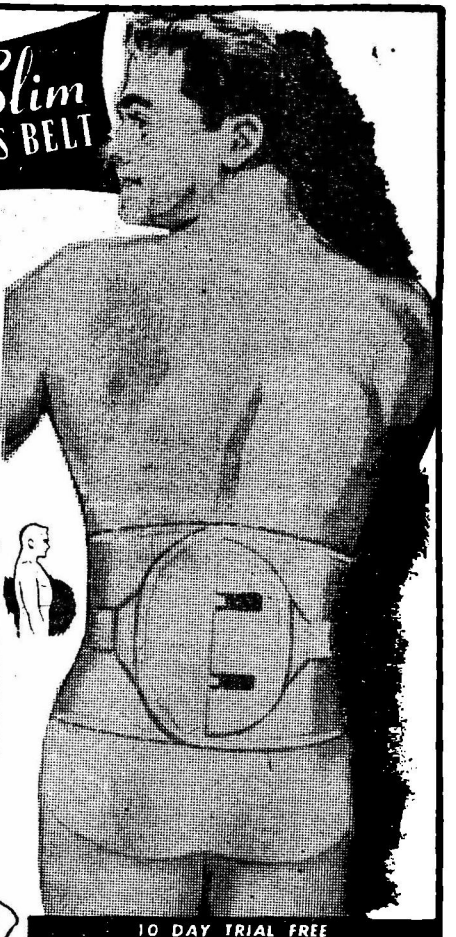

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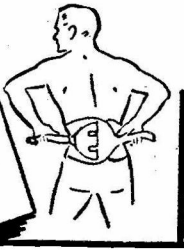

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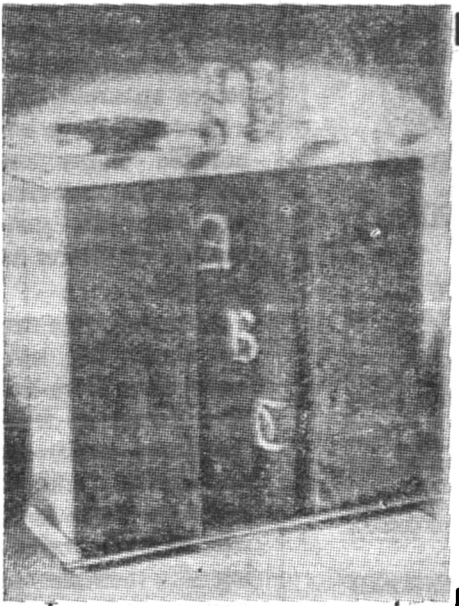
depends on the treatment of a quantized unit of light as a partical, a photon. Well, this is done every day in physics, and we've already shown that light exerts a pressure. Unfortunately, the mass of the photon is much smaller even than the ion. (Perhaps, I should have said "pseudo-mass.") To give you an idea, the mass can be calculated by inverting the Einstein mass-energy equation so that M equals E divided by C squared. When you consider that C is 30,000,000,000 centimeters per second and that C squared is 900,000,000,000,000,000,000 centimeters squared per second squared, you can see that it takes quite a bit of energy to account for a workable reaction mass. When you con-

[*Turn To Page* 126]



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sider that fission or fusion convert only a small fraction of the available mass to energy, it quickly becomes apparent that a photon drive is impossible unless one can initiate and control complete conversion of matter to energy.

In theory, this can be done. We now know that there are such things as anti-particals—positrons, antiprotons, etc.—and that these anti-particals colliding with their normal counterparts, cause both to be annihilated. Thus, an antiproton and a proton destroy each other, both reverting to energy. If it were possible to generate anti-particals, complete conversion of mass might be accomplished but it seems doubtful that this will ever be done.

[*Turn To Page* 128]

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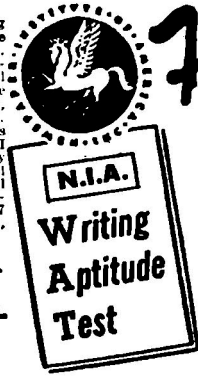

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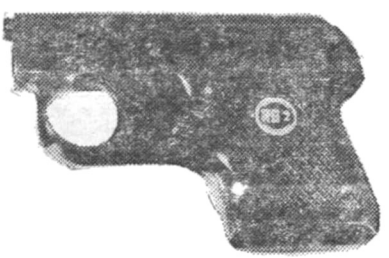

Even were it possible to generate such an amount of light so that a ship might be propelled, a photon drive would require a reflection and optical system so nearly perfect as to be impossible within the foreseeable future.

IT MAY WELL be, however, that the old dream of science fiction—antigravity—may be possible. There have been persistent rumors among rocket men for some time about antigravity, of course. It is well known that there are at least two feasibility studies going on under government auspices. However, Dr. William J. Hooper of Principia College has recently demonstrated what appears to be an antigravity effect or a pseudoantigravity,

[*Turn To Page* 130]

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if you prefer. Dr. Hooper in pursuing a new approach to electromagnetic theory, particularly as applied to the field of a conductor moving across a magnetic field, has developed a series of devices composed of strong rotating magnetic fields which, even when well shielded, show a lessening of attraction upon a fused quartz gravitometer equal to 0.01 milligals, well outside the error of the instrument by several orders of magnitude. The experiments have been critically checked for interference, and for diamagnetism of the quartz, but the effect remains.

So far, Hooper has presented one paper before the Institute for Gravity Research and is continuing his work with strong private backing. Whether the effect is actually what it seems remains for further work, but no ready explanation remains for the effect—or for the fact that the effect was predicted, the theory developed by Hooper. As for its possible applications to space travel, Hooper prefers to wait until he's had a chance to work with newer devices now being built.

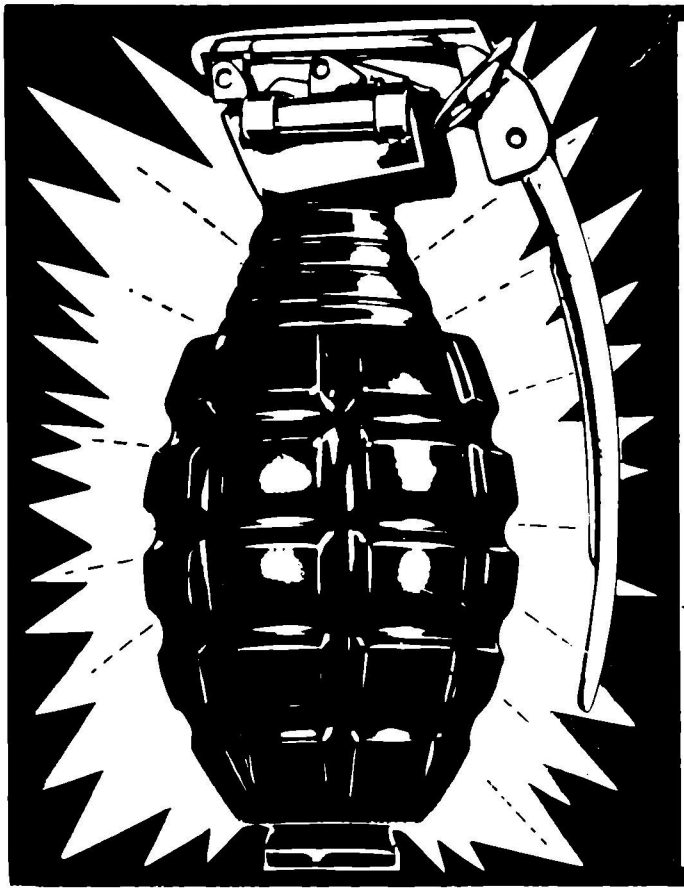
THE END result of this survey of present day rocketry, and rocketry still to come, should be a profound conviction that, now that we are leaving this small world upon which the human race has lived for so many millenia, we have the knowledge and the desire to go on to the complete fulfillment of man's destiny in space. Perhaps, this statement seems mystical. Certainly, there is something mystical about this move into space, apart from certain demands of our times.

If there is a goal higher than the making of flying bombs, then Hermann Oberth in *Man Into Space* has stated it:

For those who have never known the relentless urge to explore and discover, there is no answer. For those who have felt this urge, the answer is self-evident. For the latter, there is no solution but to investigate every possible means of gaining knowledge of the universe. This is the goal:

To make available for life every place where life is possible.

To make inhabitable all worlds yet uninhabited, and all life purposeful.



EXPLODING
ARMY HAND GRENADE

EXACT REPLICA **only $1.00**

Here's real battle authenticity. This menacing hand grenade looks and works just like a real one. All you do is pull the pin, wait 4 seconds, throw the grenade, and watch the fun as it explodes automatically. It's completely harmless, but the explosion it makes can be heard for a block. Really scatters the gang when you throw this baby in their midst. It sure looks and sounds real. Can't break. Can be exploded over and over again. Heavy gauge steel firing mechanism. Only $1 plus 25¢ shipping charges.

10 DAY FREE TRIAL

Don't delay! Order now! If not 100% delighted simply return for prompt refund of full purchase price.

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LYNBROOK, NEW YORK

Rush me my exploding Hand Grenade at once. If I am not 100% delighted, I may return after 10 Day Free Trial for prompt refund of purchase price.

☐ I enclosed $1 plus 25¢ shipping charges.
☐ Send C.O.D. I will pay postman on delivery & C.O.D. & shipping.

Name _____

Address _____

BOYS! GIRLS! SPECIAL OFFER TO ZOOM YOUR POPULARITY

More fun than a barrel of monkeys when I print in your nickname or tag line . . or I'll print plain

Kick up your heels — get on the ball — let your friends see that you've got a real personality all your own. You can do it with an order of my new and different Personalized Stationery! It'll get you more favorable comments — more good natured laughs — it'll win you more friends and greater popularity than if you came into Aunt Minnie's fortune!

All you have to do is let me print up your stationery with your nickname and "tag" line. That'll do it! Just you wait and see! Sounds like a simple little thing, but brother how it works! And what perfectly beautiful stationery — the kind you'll be proud of: genuine Vellum envelopes and famous Merion writing sheets. Amazing value — all for $1.00 postpaid. Now — if you don't want a nickname printed, or you don't want a "tag" line — leave them off and just give me your name and address and I'll print your stationery plain. ACT AT ONCE. Use coupon below.

WHAT'S YOUR NICKNAME?

If you don't have one . . . dream one up

FELLOWS	GALS
Slats	Dream Girl
Chunky	Honey Bunny
Smokey	Kitten
Lightnin'	Bubbles
Pitcher Ears	Dumpling
Spook	Hep Cat
Satch	Slick Chick
Goldbrick Harry	Baby Face
Glamour Boy	Glamour Puss

WHAT'S YOUR TAG LINE?

A twist on one of your traits

Last of the big time spenders • Life begins at 40 • The Personality Kid • Fastest man in town • Mankind's gift to women • Toast of all the bums • Put it off till tomorrow • Tightest man in town.

Or I'll print your stationery with plain name and address

If you want to keep your stationery formal — you can eliminate nickname and tag line, and I'll print just your name and address.

SEND ORDER NOW!

WILSON — The Stationery Man
DEPT. 50-F, TYRONE, PENNA.

RUSH THIS ORDER COUPON!

WILSON — the Stationery Man
Dept. 50-F, Tyrone, Penna.

Enclosed please find $1.00 for which please send my PERSONALIZED STATIONERY printed as shown below.

NAME .....
(Please print and include nickname if you wish)

TAG LINE .....
(This is optional — limit 6 words)

.....

ADDRESS .....

CITY ..... ZONE ..... STATE .....