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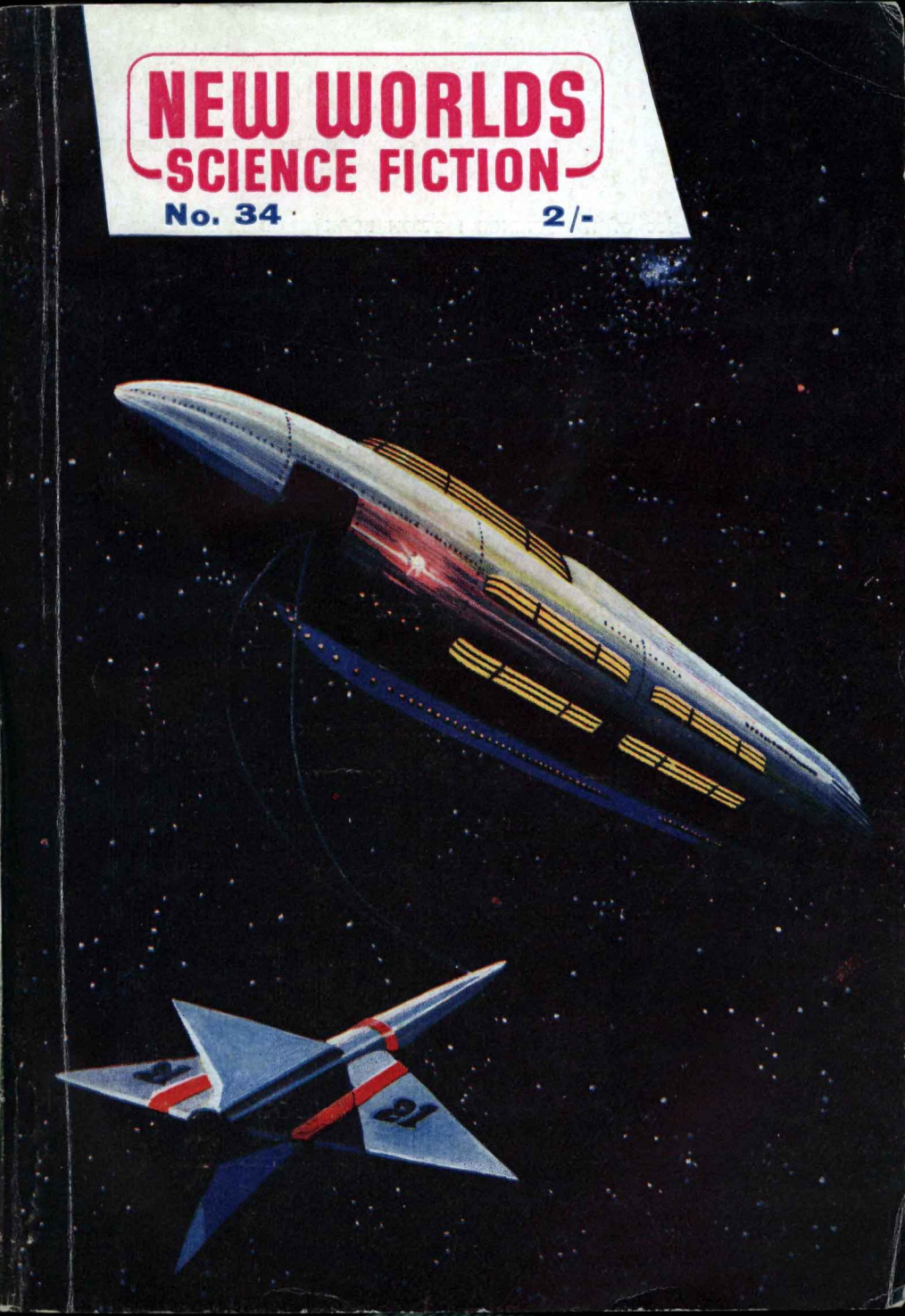

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CONTENTS

Editor : JOHN CARNELL

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Conquest of Space

A Paramount Picture in Technicolor

Eleven hundred miles above the Earth's surface the wheel-shaped space station rotates round the planet every two hours. Inside its rim technicians and crewmen work under comfortable conditions of gravity induced by the Wheel's secondary motion of spin. Nearby in a similar orbit but motionless in relation to the station hangs a partially built rocketship, its hull and fins etched sharply in the harsh sunlight against the velvet blackness of the star-studded void. Space-suited figures, gliding effortlessly in weightless conditions, attach bulbous cylindrical tanks to the tiny ship and then float back to the Wheel. Beneath them the Earth looms as a huge blue-white globe filling the heavens.

From the observation turrets on the Wheel observers plot the weather conditions on Earth, their television scanners picking up gathering storm centres from which data warnings are relayed back to the planet. Off-duty crewman can relax by watching direct TV transmissions from stations below them. Life in this all-male community above the atmosphere is necessarily rigorous, the crew working under conditions never before experienced by mankind, the medical officer constantly watching for signs of ' space fatigue,' a psychological ailment induced by mental strain resulting in partial paralysis of the nerve centres.

This is the setting for Paramount's " science fact " picture, produced by George Pal and directed by Byron Haskin, based upon the outstanding book of the same title by Willy Ley and Chesley Bonestell*. Hollywood has, of course, added a story to the technical background to cover the human interest angle and ensure " box office appeal " from every class of the general public. This review is not concerned with covering that particular aspect of the film as the ' fiction ' side is a matter of personal opinion, although fundamentally it is a good story interspersed with considerable humour and some little pathos. Unfamiliar faces play the parts throughout the story because " it was felt that new faces add realism to this type of movie fare," the actors being drawn from stage and television.

Primarily we are interested in the " science fact " side of the film and there is little room for criticism of the manner in which the extra-terrestrial scenes have been handled. The standard is as high if not higher than the previous George Pal production of *Destination Moon*,

which was a box office winner in 1952. There is no reason to assume that *Conquest of Space* will gross any less.

The completed spaceship is due to blast for the Moon on what will be Man's first trial flight across the void, when the order is countermanded by the Supreme International Space Authority on Earth. Owing to dwindling supplies of raw materials it has been decided that the party shall proceed to Mars and obtain specimens of that planet's mineral wealth in the hope that the yield will be better than that expected on the Moon. Pilotted by General Samuel Merritt (Walter Brooke), his son Captain Barney (Eric Fleming) and three crew-men (plus a stowaway !) the ship makes an impressive sight as it blasts away from the area of the Wheel.

In " free fall " while coasting at 20,000 miles an hour, they see the Earth dwindle in size and while away the tedious weeks with routine observations until one of the exterior television scanners becomes jammed. Sergeant Siegle (Phil Foster) and crew-man Fodor (Ross Martin) go outside and repair the fault but while there the ship is overtaken by a huge asteroid glowing cherry-red and Fodor is killed although the ship manages to escape damage. Fodor's funeral in space is as impressive as a burial at sea, the pilot reading the Burial Service and then gently pushing the suited body into a long glide which will eventually take it into the heart of the Sun.

Mars eventually looms large in the screens and the ship applies its forward rockets and glides down through the rarified atmosphere to land, slightly damaged, on the alien planet (the ' fiction ' side of the drama you can follow in the film itself). The Martian terrain is technically very well-done—a grim, barren world of red sand and craggy sunken rocks amongst which the expedition has to live for a year before the two planets are suitably placed to allow the return journey to be made. One of the most dramatic incidents of the film takes place when the ship is involved in a Martian 'quake but the crew manage to place it upright again in time to blast off for the Wheel—and home.

Purely from the regular science fiction reader's viewpoint the technical aspects of space flight are excellent—they could *almost* be real colour-film shots taken in space. Until real ones can be taken I don't think you will see better substitutions than those in this film, which will be showing in the West End of London at Easter and generally released throughout the country early in May.

John Carnell

• THE CONQUEST OF SPACE—
Viking Press, New York, 1949, $3.95 Sidgwick & Jackson, London, 25/-

The ship had become The Ship during its 300 year journey through the void. Nobody knew when Journey's End in the remote system of Pollux was due—or if it would ever come. Meanwhile, fifteen generations had been born an board and people had to die to make room for them. But they couldn't officially be told that—the Ship was a law unto itself.

STAR SHIP

By E. C. Tubb

Illustrated by QUINN

Part One of Three Parts

I.

Jay West, psych-policeman, arrived at headquarters just in time to see a case brought for trial at Ship's Court. As usual Gregson, his chief, was acting as judge and, aside from Kennedy and the communications man, the office was empty. Jay grinned at the operator, nudged his fellow officer to make room on the bench, and nodded towards the sheet of one-way glass separating them from the courtroom.

"What goes on?"

"Waste charge." Kennedy didn't shift his gaze from the scene. "Sector four. Know him?"

"No." Jay looked at the accused, a gardener by his green shorts, still marriageable and with the thin limbs and delicate skin of one who had spent most of his life in the low-gravity upper levels. He was nervous, his eyes wide as he stared at the starkly simple appointments of the courtroom and looking at him Jay was reminded of an animal, one of the small, brown, helpless animals of distant Earth. A deer, perhaps? Or was it a rabbit? Jay couldn't remember, then forgot the problem as Gregson shifted in his chair.

The chief of psych-police was a big, compact man with black eyes matching the gleaming slickness of his uniform shorts. At least twice as old as the accused he dominated the court by the sheer force of his personality and, as he leaned a little forward over his wide desk, Jay was reminded of yet another animal. A tiger—or was it a cat? He frowned as he tried to recall just when and on which tape he had seen the creatures and made a mental note to pay more attention to the educational spools in future. He leaned forward as Gregson's voice came over the speakers.

"Goodwin," snapped Gregson coldly. "15/3479. Charge of criminal waste. Who accuses?"

"I do, sir." An older man, also a gardener, shuffled forward, a large plastic bag in his hands. "My name is Johnson, sir. 14/4562. I'm head gardener of sector four. I caught young Goodwin here throwing the plant trimmings into the inorganic waste-disposal chute. I wouldn't have believed it of him if I hadn't seen it with my own eyes. I'd always liked him and I never guessed that he was like that." The old man sniffed. "I've always thought of him like my own son. I . . ."

"Keep to the point," snapped Gregson impatiently. "What happened?"

"I was telling you, sir. We always put all the plant trimmings into the organic waste chute for reclamation. Goodwin here threw them into the wrong chute. If I hadn't seen what he did they'd have been incinerated and we'd have lost everything but the water content." He glanced at Carter, the other occupant of the room. "I reported to the officer, sir, and made my charge."

"I arrested the accused and brought them both here," said Carter unnecessarily. Gregson nodded.

"Defence?"

"I didn't do it!" The youth licked his lips with nervous defiance as he stared from Gregson to his accuser, from Johnson to the man who had arrested him, from Carter back again to the man behind the desk. Gregson glanced towards the officer.

"Proof?"

" Here, sir." Carter took the bag from Johnson, stepped forward, and upended it over the desk. About half a kilogram of brown-edged leaves and dry stalks made a little heap of vegetation on the smooth surface. He stepped back as Gregson looked down at it.

" You found all this ?"

" I did."

" In the organic waste chute ?"

" Yes."

" I see." Gregson leaned back in his chair, the tip of one finger idly stirring the heap of leaves. He didn't speak and, aside from the faint rustle of the leaves and the soft, almost imperceptible vibration from the metal of walls and floor, so soft and familiar as to be unnoticed, silence filled the courtroom.

" Waste !" said Kennedy disgustedly. " Gregson should send him straight to the convertor."

" You think that he's guilty ?" Jay narrowed his eyes as he stared at the pale, sweating face of the accused. Kennedy shrugged.

" What . . ." He broke off as sound came over the speakers.

" I didn't do it," insisted Goodwin deperately. " I swear that I didn't do it."

" How do you account for this vital material being found in the wrong chute ?" Gregson's voice was very soft and Jay suddenly remembered what the man reminded him of. Not a tiger—a cat, and the gardener a mouse. He smiled in quiet pride at his retentive memory. Not bad considering that he had never seen either of the animals except as pictures on a screen. He wanted to tell Kennedy but Goodwin was speaking again so he listened instead.

" I can't account for it, sir. Unless . . ."

" Unless what ?"

" Johnson's getting an old man, sir," blurted Goodwin. " He's afraid that I'll take over his job and he's trying to get rid of me."

" I wouldn't throw vegetation in the inorganic chute," said Johnson hastily. " I know too well how valuable the material is to commit a crime like that. I've been a gardener all my life, sir, and I just couldn't do it." He shook his head in apparent despair. " It's these youngsters, they just don't stop to think, and if they aren't stopped they'll ruin us with their constant waste."

" This is a serious charge," said Gregson heavily. He didn't seem to have heard the counter-accusation and defence. " You know that waste, aside from mutiny, is the most heinous crime there is. Both are punishable by death." He paused. " Is there anything you wish to say before I pass sentence ?"

" I didn't do it," repeated Goodwin desperately. " I'm innocent of the charge."

" Why doesn't Gregson test him ?" said Jay disgustedly. " Two minutes on the lie detector would clear up the whole thing." He frowned at Johnson. " I wouldn't mind betting that the old man's got something to do with this. Look at him, he's as guilty as hell."

" Better not let Gregson hear you say that," warned Kennedy. " He knows what he's doing."

" Maybe, but I . . ." Jay broke off as the communications man called over to him. " Yes ?"

" Call from sector three. That's your sector, isn't it, Jay ?"

" That's right." Jay rose to his feet and crossed over to the operator. " What's wrong ?"

" An accident. Man dead on level nineteen, segment three, cubicle four-twenty-seven. Call came from a man named Edwards, he said that he'd wait for you by the booth. Clear it up, will you."

Jay nodded and, leaving Kennedy still staring at the courtroom, walked out into the Ship.

Jay had never seen an ant hill, nor had he ever seen a bee hive but, if he had, then the Ship would have reminded him of both. A huge metal egg, honeycombed with concentric levels of cubicles, workshops, recreation rooms, hydroponic farms and yeast culture vats for the production of food, kitchens and mess halls for its preparation and serving. Everything essential to life was contained within the titanic hull, from toys for the new-born to gardens to freshen the air and the whole incredible mass spun on its central axis creating an artificial gravity by centrifugal force, a gravity which increased rapidly towards the outer hull and vanished in the central areas.

Men had built it, not on Earth for that would have been impossible, but in space, fashioning it from prefabricated parts hauled by powerful rockets from the planet or brought from the new base at Tycho on the Moon. A mountain of metal had been used in its construction and, when they had finished the shell, they had fitted it with engines powerful enough to illuminate a world, stocked it with seeds and plants, food and fuel, animals and cultures so that, one day, the colonists would be able to set up a new Earth beneath an alien sun.

They had planned well, had the builders of the Ship. Fired by the discovery of planets circling Pollux, a star only thirty-two light years away, they had determined to smash the barrier between them and interstellar flight. Speed alone could not do it. There was still no way to overcome the Einsteinian equations which set the speed of light as the maximum velocity possible and, at the same time, showed that it

would take infinite power to reach that velocity. Speed could not do it, but time could, and so they had aimed the Ship towards Pollux, given it a speed one tenth that of light, and hoped that the descendants of the original colonists would be able to do what they were unable to do themselves.

But three hundred years is a long time.

First the name of the Ship had been forgotten. Then the ship had become the Ship. The sense of motion had soon died so, to the inhabitants of the Ship, the metal cubicles had become their entire universe, static, unchanging, unalterable. They lived and died within the close confines of their metal prison and, with the slow passage of time, even the aim and purpose of their journey became vague and slightly unreal .

But the builders had planned well.

Edwards was fourteenth generation, Jay could tell that without looking at the identification disc on his left wrist. There was a certain stockiness about him, a calm solidity only to be met in the older people. He stepped forward from the booth as he recognised Jay's black shorts and led the officer along a passage.

" He's in here," he paused by a door. " I haven't told anyone yet, I called in as soon as I saw what had happened."

" Were you friends ?" Jay did not enter the room immediately, the passage was deserted and it was as good a place as any for preliminary investigation. " Did you know him well ?"

" Well enough. He worked in yeast and we almost grew up together." Edwards shook his head. " I can't understand it. Hans was always a careful sort of man, not the type to mess around with something he knew nothing about. I just can't imagine what made him do it."

" Do what ?"

" You'll see." Edwards glanced down the passage, long, narrowing into distance, either end curving a little as it followed the circular pattern of the rooms. A couple came towards them, both young, arm in arm their heads together, lost in a world of their very own. " Maybe we'd better go inside," he suggested. " This passage usually carries a lot of traffic and we don't want a crowd."

Jay nodded and led the way into the room.

The only two things about the dead man that were recognisable were his yellow shorts and his identification disc. The shorts told Jay that he had worked in the yeast plant, the disc that he was fourteenth generation, his name had been Hans Jenson, and that he had absolutely no right to have done what he apparently had. All electrical gear came under Electronics and no one else had the right to remove a

masking plate and touch what was behind it. Hans for some unknown reason had done just that and been seared by high voltage current as a result.

Jay dropped to one knee, studying but not touching, his eyes thoughtful as he stared at the evidence. Edwards coughed and shifted his feet.

"What do you make of it?"

"It looks like an accident," said Jay carefully. "He tampered with the connections and got burned for his trouble." He looked around the room, a normal two-bunk, four-locker sleeping unit. "Did you share?"

"Yes."

"Where were you when it happened?"

"Down in the recreation room. Hans and I were watching some tapes when he was called away by some young fellow. I waited for him, then when he didn't turn up, I guessed that he might have gone to bed. I walked in and found him like this."

"I see. How long did you wait before following him out of the recreation room?"

"I waited until the end of the tape, about fifteen minutes." Edwards hesitated. "I don't believe that this was an accident."

"What?"

"I said that this was no accident," repeated Edwards stubbornly. "I knew Hans too well ever to believe that he would do anything like this. Why should he? He worked in yeast, he wouldn't want to tamper with the electrical gear. And if he did, he knew enough about high current never to have touched anything."

"So you think he committed suicide?"

"No. I think that he was murdered."

Jay sighed and, leaning against the wall, stared at Edwards. Against his shoulder he could feel the slight, never-ending vibration from which the Ship could never wholly be free. The impact of thousands of feet, the caught and transmitted vibrations of voices and music, the sussuration of engines and the countless sounds of every-day life, all trapped and carried by the eternal metal, all mingling and travelling until damped out by fresher, newer sounds. A philosopher had once called that vibration the life-sound of the Ship; while it could be heard all was well, without it nothing could be right. Jay didn't know about that, all he knew was that he had grown up with the sound, eaten with it, slept with it, lived with it until he was no more consciously aware of it than he was of his own skin.

"So you think that he was murdered," he said slowly. "What makes you think that?"

" Simple. Hans would never have removed that plate. Even if he had then he would never have touched a live connection. Hans wasn't a fool."

" He was an old man," reminded Jay. " Fourteenth generation. Old men sometimes do senseless things."

" Hans wasn't that old. I'll admit he was fourteenth generation, but so what ? I'm fifteenth and yet I'm only a couple of years younger than he was. Hans was one of the fittest and most sensible people I've ever known." Edwards jerked his head in irritation. " Don't talk to me about age. I know better."

And that, thought Jay grimly, was just the trouble. Generations could be separated by as much as forty years, but not more, because every twenty-year period saw an official change in generation number. Hans could have been forty years older than Edwards, but he could also have been one, and Edwards was suspicious.

" Have you anything else, aside from your own knowledge of the dead man, on which to base your statement that he was murdered." Jay straightened from the wall as he spoke and stepped towards the burned thing on the floor. Edwards hesitated.

" I'm not sure," he said slowly. " What are you getting at ?"

" Had he any enemies ?"

" Not that I know of. Hans wasn't one to go in for duelling, never had, and he was popular enough in the yeast plant. There's one thing though."

" Yes ?"

" That man I told you about, the youngster who called him away from the recreation room. I know the people in this sector pretty well, and I'd swear to it that he was a stranger and yet . . ." Edwards broke off, frowning. " I have the feeling that I know him."

" Would you be able to recognise him again ?"

" Yes, but that isn't what I was going to say. I told you that I waited for a while in the recreation room and that, after a while, I came up here to bed ?"

" You did."

" Well, as I was walking along the corridor I thought I saw a man leave this room."

" Are you positive about that ?" said Jay sharply. " You're certain that it was this room ?"

" No," admitted Edwards. " I can't be. You know how it is, they all look alike, and it could have been from the one next to this, or even from one two doors away. I can't swear to it, but I can swear to the

fact that the man I saw was the same one who called Hans away from the recreation room."

"And you think that he murdered your friend?"

"What else can I think?" Edwards made a point of not looking down at the charred heap on the floor. "He called Hans out, I saw him leave this room, or at least I thought that I did. When I arrived here Hans was dead. If that man had been here with Hans then why didn't he report the accident—if it was an accident? And why should Hans suddenly leave me, come to this room, take off the masking plate and touch a live connection?" Edwards shook his head. "None of it makes sense."

"Of course it doesn't," said Jay. "Why should anyone want to kill your friend? The thing is unreasonable. What happened was an accident. We may never know just why Hans wanted to take off the plate, but we can be certain that he never intended to touch the connection. In a way it serves him right for tampering with things outside his department."

Jay knelt beside the corpse again, then looked up at a knock on the door. "Who is it?"

"Conservation squad."

"Let them in." Jay rose as two men, both wearing the olive shorts of Conservation, entered the room. An Electronics man followed them, his bright blue making a dash of colour as he stooped over the displayed connections. He grunted as he probed at the wiring, refastened the masking plate, and nodded as he left the room. He did not look at the dead man. The two olive-dressed men unfolded a large, plastic bag and with the ease of long practice slipped it over what was left of Hans Jenson, slung it over their shoulders, and headed towards the door.

"Where are they taking him?" Edwards looked towards Jay as the door closed behind the grim two and their shapeless burden. Jay shrugged.

"To the converters, you know that."

"Why there? Aren't you going to perform an autopsy?"

"Why should we?" Jay took a deep breath as he stared at the stubborn expression on the older man's face. "Cause of death is plain; electrocution by accident, and that is my official finding."

"It was murder," insisted Edwards. "I tell you I knew Hans too well ever to believe that his death was an accident."

"What proof have you that it was anything but accident?" demanded Jay. "You say that you saw a man, you don't know who he is, and you think that he came from this room. You know as well as I do that he could have come from any one of a dozen rooms. You say that you'd recognise him again, and yet you can't be sure that you know

him or not. What sort of evidence is that, Edwards ? I hate to remind you of this, but you're no longer a young man, and it's quite possible that you could have made a mistake."

" I'm making no mistake," said Edwards. " This whole thing looks like a put-up job to me."

" Are you accusing me of collusion with a murderer ?" Jay kept his voice low but there was something in the way he looked at the yeast worker which caused Edwards to flush and bite his lips. " Well ? Are you ?"

" No, of course not."

" Then you agree with me that Jenson's death was an unfortunate accident ?" Jay stared hard at the man. " It's obvious, isn't it, when you come to think about it ?"

" No." Edwards shook his head, his eyes refusing to meet those of the officer. " I can't believe that. I knew Hans too well, he would never do a thing like that."

" You're being stubborn, Edwards," snapped Jay impatiently. " I say that it was an accident and that should be good enough. I know how an old man can forget what he's doing, make a stupid mistake, do something to cause his own death. Why don't you leave it at that?"

" I can't." Edwards looked directly into the blue eyes staring at him. " Don't ask me why, but I just can't. Hans was my friend, maybe you wouldn't understand what that means, but I'm never going to think that he was fool enough to kill himself." He clenched his hands. " I'm going to find that youngster who called him out, the man I'd swear I saw leaving this room. I'll know him again and when I find him then perhaps we'll learn the truth as to what happened here."

" I see." Jay stared at the man, almost pitying him for his obvious sincerity then, as he remembered his duty, sighed and gripped Edwards by the arm. " I'm sorry, but you'll have to come with me."

" Why ?" Edwards tried to pull away then halted, his face whitening from the pain in his arm. " I've done nothing wrong. Where are you taking me ?"

" To headquarters." Jay released the nerve pressure and led the man towards the door. " You're a little too certain that Jenson was murdered for my liking. The only way you could be so sure was to have killed him yourself."

" That's nonsense !" Edwards tried to pull away again, then winced as Jay increased the pressure against the nerve. " You can't believe that. Hans was my friend, I'd never even think of killing him."

" Maybe, but I think we'd better let Psycho decide."

Jay didn't look at his prisoner as they walked through the whispering corridors.

II.

Kennedy was in the outer office when they arrived. He looked up from the desk, grinned at Jay, then narrowed his eyes at the sight of Edwards.

"Who's this?"

"A prisoner," said Jay shortly. "Book and hold him for interrogation. Murder suspect." He didn't look at the yeast worker. "Where's Gregson?"

"Inside." Kennedy jerked his thumb towards the inner office. "Merrill's with him though and I think they want to be alone." He glared at Edwards. "Show me your iden."

Silently Edwards held out his left wrist so that Kennedy could copy his name and number. He stared directly ahead, not showing the least nervousness, and Jay wished that he hadn't had to bring him in. Impatiently he waited until Kennedy had taken the details and ordered the man taken to a cell.

"Tell Gregson that I want to see him."

"Take your time," said the officer easily. "I told you that he was busy." He lounged back in his chair. "Say, you should have waited to see the end of that waste case. The boy got sent to the converter, that was obvious, but Gregson sure pulled a fast one on the old man." He chuckled. "He had him tested by Psycho and found out that he'd been lying his head off."

"What happened?"

"Converter, of course, what else could happen?"

"And the boy?"

"I told you, the same." Kennedy chuckled again. "I told you that Gregson knew what he was doing. He's saved someone a job later on."

"I don't get it," said Jay. "If the boy was innocent then why eliminate him? I can understand the other one, Johnson? He was an old man and due, but why the boy?"

"Why ask me?" Kennedy shrugged. "Maybe he was due too and it was the easy way out." He looked up as the inner door opened and a man came into the outer office. "Here's Merrill. I guess you can go in now."

Merrill grinned at Jay as he came towards him and rested a hand familiarly on his shoulder.

"Hi, Jay, how's things?"

"Not so good." Jay didn't like the smooth, lithe, cat-like man with the pale, almost albino eyes and the too-thin mouth. There was something feral about Merrill, a secret gloating and an almost frighten-

ing ruthlessness. Jay had often thought that, of them all, Merrill was the only one who really liked his job, that he would have done it without the extra privileges and private room all officers had as a matter of right. He shrugged off the others hand.

" Going somewhere, Jay ?"

" To see Gregson. I'd like you to come with me."

" Me ?" Merrill smiled, showing his white, perfect teeth. When he smiled like that he reminded Jay more than ever of a tiger—or was it a stoat ? From what he remembered Jay thought that Merrill combined the worst qualities of both.

" Yes."

" Is it important, Jay ? I'm off duty right now and I've an important date down in sector five." He smiled again at Jay's expression. "That's right. With a friend of yours. Susan is getting to be a big girl now."

" Leave Susan alone," snapped Jay. " She's still got a year to go before reaching marriageable status." He looked pointedly at Merrill's unmarked shorts. " And you don't intend getting married."

" So what ?" Merrill shrugged. " We can have fun, can't we ? Or are you trying to keep her for yourself ?"

" Talk like that and you'll get in trouble with Genetics," warned Jay. " You've no business getting too friendly with her anyway, sector five is my unofficial sector, not yours."

" It's my official one," reminded Merrill, " and I like Susan. I like her a lot."

" I can't blame you for that," said Jay tightly, " but leave her alone. There are plenty of women out of marriageable status available if you want that sort of thing. Run around with the over twenty-fives if you have to but leave the youngsters alone." He didn't attempt to disguise his disgust. Respect for the marriage code was indoctrinated into all Ship's personnel and casual relationships with girls of marriageable status or younger, were firmly discouraged. You married to have children—or else. After the marriageable status, at twenty-five, you were free to do as you liked but before that it was strictly hands off. Even through his instinctive anger he knew that Merrill was deliberately goading him. If the man ever tried to go against the code he would be eliminated. Jay vaguely hoped that if such a thing ever happened he would be the one to get the job.

" Forget it !" Merrill smiled again, this time without humour. " I was only kidding."

" Were you ?" Jay shook his head. " Funny, I must be devoid of a sense of humour. Somehow I don't find talk of immorality the least bit amusing." He stepped towards the inner office. " Well ? Are you coming ?"

" Must I ?" Merrill hesitated, his pale eyes watchful. " What do you want me in there for ?"

" Come in and find out," snapped Jay, and opening the door stepped into the inner office.

Gregson was, as usual, alone. He sat at his desk radiating a subtle power, an impression of dominance, of restrained ruthlessness and machine-like efficiency. He had to, of course, if he had been anything other than efficient he wouldn't have been where he was. He didn't speak as Jay entered, but his black eyes were thoughtful as he saw Merrill, and he looked at Jay, waiting for him to speak.

" I've got a man outside," said Jay curtly. "Edwards, a yeast worker. I had to bring him in."

" Why ?"

" He suspects too much." Jay looked at Merrill. " You did a lousy job," he said bitterly. " Why don't you use your imagination a little more and your mouth a little less."

" What !" Merrill seemed to recoil into himself and his pale eyes glittered with anger. " I'll call you out for that. Damn you, West, you can't talk that way and get away with it. Name the time !"

" There will be no duelling between officers," said Gregson coldly. " Any further such talk and I'll have you both in front of Psycho." He looked at Jay. " Report."

" I was called to a case on level nineteen, room 427, sector three," he looked at Merrill. " Your sector."

" Keep to the point," snapped Gregson. " Well ?"

" A man, Hans Jenson, had apparently died from accidental touching of electrical circuits." Jay shrugged. " That, in itself, was bad enough. A yeast worker messing about with electronics, the thing is incredible, but Merrill's blundering made it even worse."

" Did it ?" said Merrill tightly. " How ?"

" You were seen. Edwards, the man I brought in, swears that he would know you again."

" That isn't true !" Merrill turned to Gregson. " I did a neat, quick job, and West can't say otherwise. I . . ."

" Be silent !" Gregson didn't raise his voice but the officer choked and bit off what he was going to say. The chief nodded at Jay. "Start from the beginning."

" I found Jenson crouched over a removed masking plate. He was charred almost to a crisp ; death of course, was instantaneous. He shared a four-unit room with Edwards, his friend, and they seemed to have been pretty close. Edwards refuses to believe that the death was due to accident. He stated that it was murder. I tried to talk

him out of it but he insisted that Jenson just wouldn't have done what he was supposed to have done. Frankly, I don't blame him. The thing was so amateur as to admit of little doubt. If I hadn't known better I would never have believed that it was Merrill's work."

" I see." Gregson stared at Merrill. " Well ?"

" I did the best I could," said Merrill sullenly. " Jenson was awkward. I'd tried to call him out a couple of times before but he avoided duelling. I couldn't get him alone and it was only because I told him that someone was waiting for him that he agreed to come with me at all."

" Why ?" snapped Gregson sharply. " Did he suspect you ?"

" I don't think so. He couldn't have done, or he would never have allowed himself to be alone with me." Merrill swallowed hard as he saw Gregson's expression. " It's easy enough for West to talk but he didn't have to do the job. I tell you the man was suspicious, not of me, but of things in general. A lot of these old timers are, they seem to sense that something's going to happen to them."

" Stop excusing yourself," said Gregson coldly. " What happened?"

" I managed to get him to take me to his room. I had to work fast, I guessed that his friend would be looking for him soon, so I knocked him out, tore off the masking plate, and let his hand fall on a live connection. Even at that I had little time. I saw someone coming down the corridor as I left the room."

" That was Edwards," said Jay grimly. " I told you that he had seen you."

" Well, what of it ?" said Merrill defiantly. " He can't prove anything."

" Prove anything !" Gregson half-rose from his chair, his eyes hard with cold fury. " You fool ! Haven't you eliminated enough people to learn by now that suspicion of what we are doing is the very thing we must avoid ? If this man, this Edwards, is suspicious, then he doesn't need proof. His suspicions are dangerous enough. He will talk, compare notes with others, spread rumours and, before we know it, the whole Ship will guess what is going on." He sank back into the chair. " You say that you brought him in, West ?"

" Yes. Kennedy booked him and put him into a cell. Suspicion of murder." Jay shrugged. " He's innocent, of course, but what else could I do ?"

" Nothing. At least you acted as though you had brains and intelligence. I wish that I could say the same about someone else."

" If you mean me, Gregson, then why don't you say so ?" Merrill stepped forward, his pale eyes and thin lips betraying his anger. " I killed Jenson, didn't I ? What more do you want ?"

"You eliminated Jenson," corrected Gregson coldly. "And I expect a little more than a bungled, amateur job from any of my officers, including you."

"Bungled?"

"Yes. West is right in what he says. No yeast worker would dare to tamper with electrical installations, that was your first mistake. The other was in allowing yourself to be seen in a compromising position. You have committed the most stupid fault of all, you have a witness to what you did."

"That was bad luck."

"No, there is no such thing as luck in what we have to do. Either you can do your job as it should be done, or you are unfit to hold your position." Gregson leaned a little forward, his voice falling almost to a purr. "You know what that means, I take it?"

Merrill did. Jay did. Everyone connected with Psych-police did, the officers, the Psycho operators, the rarely seen, almost unknown hierarchy of the Ship. They knew it if no one else did, and it was that knowledge which had to be kept from the people.

Unfit Personnel, Disposal Of; para 1927 of the Ship's Code. Unfit meaning any and everyone who was not wholly capable of doing their job; the ill; the diseased; the barren; the unfertile; the neurotic; those who ate too much, who had slow reflexes, who were physically below par, who were mentally unstable. The unnecessary, the unessential, the old. Especially the old.

For someone had to make room for the new generations.

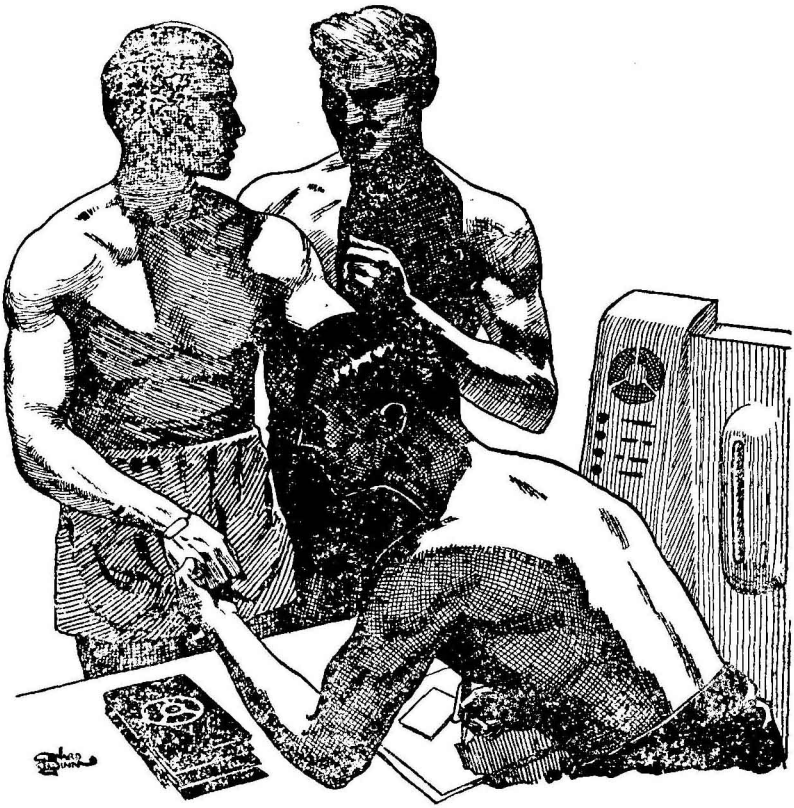
"I . . ." Merrill swallowed, sweat glistening on his naked torso. "You wouldn't eliminate me."

"Why not?" Gregson curved the corners of his mouth in a humorless smile. "Never make that mistake, Merrill. I'll admit that it isn't easy to select replacements, men who can be trusted to hold the knowledge you have, to turn themselves into merciless eliminators for the common good. But we can do it. We found you and we could find someone to replace you." Again he gave a thin mockery of a smile. "We will have to eventually, why not now?"

"You . . ." Merrill seemed to shake himself and suddenly he was calm. "All right then. So you're going to kill me." He bared his teeth and flexed his hands. "Let me see you try."

"You'd fight, of course," said Gregson calmly, "but even with your advantage you still couldn't win." He looked at Jay. "Would you care to take the assignment?"

"Now?"



"No, not now. Not while he is on his guard and expecting an attack. Later, when he has almost forgotten his danger, when he is asleep perhaps or watching an educational tape. Could you do it then?"

"Yes."

"You see?" Gregson looked at Merrill, something like contempt showing in his eyes. "You have a strong survival instinct, you need to have to be what you are, but we'd get you in the end. No man can stay alert forever and you'd never be quite sure when it was safe to relax. You have to sleep, you know, even if you hid out near the axis

in No-Weight you'd still have to sleep sometimes. And where would you eat ? You'd have to eat, you know, Merrill. And you could never be wholly certain that your food hadn't been tampered with, could you ?" He relaxed and smiled at the discomforted officer. " If Psycho decided that you were unfit and had to be eliminated, then we could do it. You wouldn't be the first officer to meet with an unfortunate ' accident ' and you wouldn't be the last. We all get our turn."

" Do we ?" Merrill shrugged and stared at Jay. " Well ? Do you want to try now, or try later ?"

Jay hesitated wondering just what was in Gregson's mind. The threat was an empty one, he knew that, no victim was ever warned that he was due for elimination, to do so would be to destroy the very secrecy they had sworn to maintain. Merrill was safe, and, knowing the man as he did, Jay knew that he knew it. There were other, deeper reasons for this by-play, and Jay had an uneasy feeling that he knew what they were.

It was never easy to eliminate an officer. For one thing each man knew his fellow operators and for another each had been trained to the ultimate in unarmed combat. Working as they did and being what they were made a sense of comradeship inevitable. Any group of men sharing a common secret, warmed with the knowledge of hidden power, had to have an affinity towards each other and, maybe, the time would come when one man on an assignment would spare his ex-fellow officer.

Unless he had a personal hate against his victim.

Merrill hated Jay, now more than ever, and Jay knew it. He also disliked Merrill and would cheerfully accept the assignment of eliminating him. Was Gregson's entire purpose to forge himself a weapon, one against the other ? Jay did not know, but looking at the hard eyes and ruthless features of the chief he felt that he had made a pretty shrewd guess. He looked at Merrill.

" I can't answer that until I receive an assignment card," he said coldly. " Don't you think this foolishness has gone far enough ?"

" Has it ?" Merrill looked at Gregson. " Well ?"

" West is right," said Gregson calmly. " I only wanted to show you how futile it is for you to get delusions of grandeur—and how easy it is to prick the bubble. You were careless, Merrill. It is the first time, I admit, but the question now is what are we going to do about it ?" He looked at Jay. " Any suggestions ?"

" We can confront Merrill with Edwards. If the man recognises him we can put Merrill to the test and prove his guilt. Edwards will be satisfied with ' justice ' and Merrill can go to the converters." Jay smiled at Merrill's instinctive gesture.

" That is one way," agreed Gregson quietly. " We should lose an officer for the sake of a principle, but it might be worth it to kill incipient rumours. Is that your only suggestion ?"

" No. The obvious way out of the difficulty is to eliminate Edwards. That was why I brought him in under arrest. No matter what happens now the man will talk, if for no other reason than to prove himself smarter than the officer who investigated the case—me." Jay shrugged at Gregson's expression. " Edwards is an old man, almost forty. He has no friends now that Jenson is dead. He will hardly be missed and soon forgotten. He would be due for elimination soon anyway, so we aren't really going against the code. I can mention to one or two people in the yeast plant where he worked that Edwards killed his friend in a fit of temporary insanity and has been taken away for treatment. They will believe me, no reason for them to do otherwise—and we will have been saved a job for later on."

" Good," said Gregson, and Jay knew that he was applauding the prospect of a ' job ' saved rather than anything else. Too many accidents would lead to awkward questions and an ingrained distrust and suspicion of the Psych-police, the very thing which they wanted to avoid. Such suspicion would make further eliminations even more difficult than they were and, in time, would lead to open revolt and the dread spectre of mutiny.

" Shall I tell Kennedy to send Edwards to the converters then ?" Jay didn't look at Merrill as he spoke and felt annoyed with himself for feeling a sense of shame. Gregson nodded.

" Do that. I'll report to Psycho that he has been eliminated and have his card expelled." He rose and jerked his head in dismissal. " You've done a good job, West. Merrill, you're off duty I believe. Get out of here and count yourself lucky, but remember this, there won't be a second time. Any more bungling and I'll be looking for a replacement officer. Now get out !"

They didn't speak as they left and Jay was glad of it. He could almost feel the radiated hatred from the pale-eyed man and found difficulty in controlling his own dislike. Silently he watched Merrill stride arrogantly from the office, his sandals slapping against the metal flooring as he thrust his way into the corridor, then, because he was still on stand-by duty, Jay sat down before one of the screens and pressed the activating button.

The educational tape was one of old-time court procedure as practised on Earth at the time the Ship had left on its long voyage to Pollux over three centuries ago.

Jay found it faintly amusing.

III.

Sam Aldway worked in hydroponics and hated every minute of it. He scowled at the ranked vats of nutrient solutions and at the glossy richness of the healthy root-crops he was tending, and savagely pruned any leaf which showed the least hint of browning or of not doing its proper job.

" Take it easy, Sam," snapped his overseer. " Cut back too far and you'll do more harm than good."

" I know what I'm doing," said Aldway sullenly. He snipped off another leaf. " Did you put in my transfer ?"

" To the Psych-police ?" The overseer laughed. " Get wise to yourself, Sam. They won't take you now, you're too old for one thing, and for another your work is here."

" I asked you if you'd put in my transfer."

" I heard you. The answer is no. I didn't put it in because I know that it's a waste of time."

" I thought so." Sam dropped his shears and stood, legs straddled, glaring at the older man. " I've a damn good mind to call you out for that. You put in that request now or you and I will have a date together down in the stadium."

" You can't make me duel," said the overseer uncomfortably. " I don't have to fight you."

" You're not married, are you ?" Sam glared at the others unmarked brown shorts. " You're of duelling age and, if I say so, then you've got to meet me."

" No I haven't," said the overseer quickly. " I can always refer it to the P.P."

" You think that the Psych-police will help you ?" Sam deliberately spat on the floor next to the overseer's sandles. " Why should they want to protect a coward ?" He prodded at the overseer's chest with his stiffened forefinger. " You put in that request for transfer now, understand ? Now !"

The older man swallowed, hesitated a moment, then nodded and walked away. He was sweating as he moved to the phone to put in the request. Aldway had the reputation of being a dangerous man, and was still smarting at the blow to his pride at losing his wife who, when he had reached twenty-five and had changed his white-banded shorts for the unmarked ones he would wear for the rest of his life, had shown him the door of their family unit. Protest had been useless, the code was rigidly enforced, and so he had gone into bachelor quarters sharing with an unsympathetic listener and trying, without much success, to enter into an agreement with one of the available women.

He had taken his revenge against the system by duelling.

The overseer lifted the receiver, dialed a number, and listened until a voice spoke from the other end.

" P.P. Headquarters."

" Overseer Brenson, 14/9741, sector five. I've got a young man here who . . ."

" Wait a minute. Are you reporting an accident ?"

" No."

" Hold on then. I'll put you through to the officer in charge of your section." There was a click, a buzz and then a fresh voice. " Merrill here. Officer in charge of sector five. What's your trouble?"

" A case of dissatisfaction in hydroponic farm eighteen, sir." Brenson looked across to where Sam lounged, apparently working but obviously listening to the conversation. " Name: Sam Aldway, cause: wants transfer to P.P. I've tried to tell him that his request won't be entertained but he won't listen and insists that I put it through."

" Which generation ?"

" Fourteenth, but he's just out of marriageable status."

" Too old," said Merrill decisively. " Tell him that he's wasting his time."

" I've done that, sir."

" Then why bother me ? You're his boss, aren't you ?"

" I'm supposed to be," said Brenson bitterly, " but he's a cocky young devil and threatens to call me out." He hesitated, looking at Sam. " Could you have a talk with him ?"

" No," snapped Merrill. " Handle it yourself."

" I can't," wailed Brenson. " He's dangerous, I tell you, he's killed at least three men already and I don't want to be the fourth."

" Afraid of a duel ?" The transmitted voice held a sneer. Brenson gulped.

" Yes," he admitted. " At least I am with him. I wouldn't stand a chance. He's vicious and fights to the death."

" Is that so ?" Merrill sounded thoughtful. " A born killer, eh ?"

" That's the way it seems," admitted Brenson. " I've never met anyone else like him."

" I see." The phone hummed silently for a moment. " Tell you what I'll do. I'll have a talk with him and see if I can't straighten this thing out. Where will he be after duty ?"

Brenson cupped his hand over the mouthpiece and yelled to Sam. " Where will you be after duty ?"

" Why ?" Sam came closer. " Who wants to know ?"

" Merrill, the P.P. officer. Well ?"

" Down in the Gyms, the same place I always go." Sam came even closer as Brenson removed his hand and spoke into the phone. "What's he want me for ?"

" He'll be down in the gymnasium," said Brenson to Merrill.

" Right. I'll probably meet him there. Tell him to expect me."

" Thank you, sir," said Brenson fervently. " Thank you." But he was speaking into a dead phone.

The gymnasiums were down on the lowest level together with the maternity wards and kindergartens, the waste reclamation units and recreation rooms. Here, though Sam didn't know it, gravity was twice Earth normal, ideal conditions both for exercise and the rearing of a strong and virile population. To survive at all the babies had to be strong and with the passing of more than three hundred years the weak and frail-boned had long ago been weeded out.

Sam spent a lot of time in the exercise rooms. He was proud of his smooth, lithe-muscled body, far more efficient than the classical type with its great masses of knotted muscle, its tendency to fat, and its high oxygen and nutriment requirements. Ship personnel were all slim, graceful, long-muscled types with perfect control and unsuspected strength, the ideal pattern of Man as arrived at by Genetics, and the necessity of achieving maximum efficiency with minimum food-requirement.

As usual he started on the punch-bag, driving slamming blows against the plastic to tune up his arm and shoulders. From there he stayed a while on the pedal-press, thrusting his legs against high-tension springs to develop his thighs, calves and loins. Weights next, and the routine drill for stomach and back. He was busy at shadow-boxing when he became aware of a pale-eyed man wearing the black shorts of the Psych-police staring at him.

" Merrill ?"

Merrill nodded, staring hard at the young man. " So you're Aldway, the terror of Hydroponics," he said and Sam flushed to the hint of a sneer in the cold voice. " What's the matter, Sam, can't you find anyone better to fight with than old men ?"

" Did Brenson tell you that ?" Sam lashed out at the punch bag, twisting his fist at the moment of impact and baring his teeth as the heavy, sand-filled container swung away from him. Merrill shook his head.

" Brenson told me nothing I didn't already know." He steadied the bag. " I've heard that you fancy yourself as a duellist. Is that right ?"

" Could be." Sam punched the bat again, seeming to take a vicarious satisfaction in punishing the unfeeling plastic. " Why ?"

" How many men have you called out ?"

" Five."

" How many wins ?"

" Five, three dead, the other two were first-time duels."

Despite his air of indifference Sam couldn't restrain his pride and unconsciously his eyes dropped to the five red spots on the inside of his left arm. Merrill didn't seem impressed.

" Bare hands or weapons ?"

" Two with knives, the other three bare-handed." Sam sounded apologetic. " Two of the bare-handed combats were first-timers and the ref stopped the bout before I could finish." He stared at Merrill. " Why all the questions ? I've not broken the code."

" Did I say you had ?" Merrill looked around the crowded exercise room. " I hear that you want to join the P.P."

" That's right." Sam looked hopefully at the officer. " Can you get me in ? I'm a good man and I'd make a good officer. I . . ."

" You're too old," said Merrill flatly, and smiled at the others expression. " Ten years ago you might have stood a chance but not now. You must be at least thirty."

" Twenty-seven."

" That's what I said, you're ten years too late. You've been married and had your kids and now you can look forward to a nice, tranquil, old age in batchelor quarters tending your plants and filling your educational quota." Merrill smiled again at Aldway's expression of disgust. " Or you can keep calling men out until you find one a little better than yourself in which case you needn't worry about old age—you won't have any."

" Is that bad ?" Sam hit the punch bag as though he were punishing the entire Ship's system. " This is a hell of a life anyway."

" Maybe we could do something about it ?" suggested Merrill softly. He took hold of Sam's arm. " First let's eat, I'm hungry."

As an officer Merrill was entitled to eat in any mess he happened to choose but Sam had to go to his own sector mess and show his identity disc. The meal, as usual, was hydroponic vegetables with yeast as the staple, well-disguised and with a choice of three main dishes. Merrill chose lemon sole, Aldway fillet of steak, neither fancying the roast chicken. The food, of course, was the same, merely differently shaped and flavoured, but the dieticians had long known that variety was essential for good health and appetite. Both men ate as fit men should eat, with hungry zest and applied concentration. Merrill finished the last of his sweet, synthetic ice cream small in bulk but rich in protein and carbohydrates, and sat back, toying with his ration of brackish water and waiting for his companion to finish his meal.

" Lousy food," commented Sam wiping his mouth on the back of his hand. " No fresh fruits—and we grow any amount of them in hydroponics. Where do they all go to, that's what I'd like to know ?"

Merrill could have told him where they went, where Sam knew they went had he but exercised his memory. To the very young, the nursing and expectant mothers, to the growing generations who needed the fresh, natural vitamins more than did the adult population. He didn't bother to explain.

" You said something," reminded Sam hopefully. He swallowed his water ration and tossed the plastic cup into the disposal basket. " Did you mean it ?"

" That depends." Merrill sipped his own water, his eyes watchful over the rim of the cup. " How badly do you want to break out of the rut ?"

" Bad enough to do anything," said Sam tensely. " Waste ! If I don't do something soon I'll go crazy and be carried off for treatment." He stared at Merrill. " Look, I don't care what I do. I'll do anything you want me to just so long as you get me away from that damn farm. I'll work in No-Weight, I'll give you half my rations, anything. You name it, I'll do it. I mean it, Merrill. Anything."

" I think you do," said Merrill quietly and his pale eyes were thoughtful as he examined the man at his side. Though Sam didn't know it he had literally signed his own death warrant. The Ship could not tolerate any unbalanced individual and, if Merrill reported the conversation as he should do, Sam would be eliminated. Even his duelling propensities, while of value in helping to keep down the older section of the population, meant little against the potential danger of his neurosis. Such a man was fully capable of hitting back against a system he imagined had hurt him in any one of a dozen different ways. He could deliberately waste essential material, ruin an entire crop by carelessness, spread alarm and despondency by whispered rumours or, as he was already doing, cause unrest and fear by his arrogance.

Sam had to die.

But how and when he died was something else.

Merrill finished his water, threw the cup into the basket, and rose to his feet. Sam rose with him, his eyes asking questions but it wasn't until they were outside the mess that Merrill spoke.

" You want to join the psych-police, right ?"

" Yes."

" Well you can't and you may as well know it." Merrill was deliberately blunt. " That is you can never become a uniformed member of the P.P. but . . ." He let his voice fade into silence, waiting for the fish to gulp the bait.

" Any job will do," pleaded Aldway. " I don't care about the uniform." He lied and Merrill knew it. " Can't I be your assistant, or something ?"

And there it was. The driving complex which demanded authority, no matter how little or how disguised. The crying need for power at any price, the desire to swagger and rule, to be dominant and boastful. Merrill had no delusions as to what would happen if he made Sam his assistant. At first the man might live up to his promise then, inevitably, he would need to show off, to display his power, to advertise his arrogance. And in that he revealed his utter inability to be trusted with authority. His kind always did. Not if he lived to Journey's End would he ever learn how to use power, but Merrill knew that Sam wouldn't live anywhere near that long.

He pretended to consider the suggestion, hooding his eyes and letting the waiting break down any barriers or moral reluctance that might be left. Finally he nodded as if coming to a decision.

" You'll take me !" Sam looked as though he could kiss the metal at their feet. " You'll give me a job away from the farm ?"

" Not so fast. I've already got an assistant and I can't have two." Merrill almost smiled at Sam's expression. " You'll have to wait until I can get rid of him."

" Oh." Sam gulped, his rosy dreams vanishing as soon as they had come. " How long will that be ?"

" Who knows ? I don't like the man but I can hardly call him out, duelling isn't allowed for officers, and no one else is likely to do it." Merrill paused waiting for Sam to make the obvious offer. " No, Sam, I don't think that you're good enough."

" You think so ?" Sam flexed his muscles. " I'm fit and I'm trained. I can snap a man's neck like a stick and I know all the holds." He held out his left arm. " You think I collected those by imagination ? Show me who it is and let me at him."

" He's not a duelling man, Sam. It'll be a first bout and the ref will stop any killing."

" If he gets the chance. I've learned a trick or two since I started and I can move faster than any damn ref." Sam gripped Merrill's arm. " Just show me who it is, Boss, that's all I ask. Just give me the chance to get him out of the way."

" You think that you could do it ?" Merrill hesitated as though in doubt. " He's pretty well trained and you might not find it easy. He could kill you, you know, it wouldn't be your first time in the stadium, and if you killed him you'd have to make it look like a real accident. You sure that you could do it ?"

" Give me the chance," repeated Sam. " That's all I ask."

" Right, but there's something I'm going to do before you call him out." Merrill smiled at the wondering face of his dupe. " I'm going to take you to the exercise rooms and we're going to have a fight."

" Fight ?" Sam stepped back, his eyes reflecting his bewilderment. " Why ?"

Merrill didn't answer, he was already leading the way towards the lowest level.

IV.

George Curtway looked up at a knock on the door, leaned forward to switch off the viewer, and straightened just in time to be kissed by a raven-haired young woman.

" Susan !" He smiled at his daughter as she settled herself on a chair. You're early."

" We got all the young devils topped and tailed and settled down and Matron said that I could end-shift early as we'd all worked so hard." Susan paused to draw a deep breath. " My ! I must be getting old. I've hardly run at all on the way up." She looked towards the viewer. " What's showing ?"

" Some old tapes from Earth. Animals and farming scenes."

" Young animals ?"

" Don't you get enough of young animals working in Maternity ?" He smiled with parental pride at her neat figure and the form-fitting pink halter and shorts. She made a face and leaned forward to switch on the screen.

" Babies aren't animals."

" What else are they ?" He didn't look at the screen as it flared to life with the transmitted images from central control. " A baby is as much an animal as . . ." He glanced at the screen, " as that young goat there, or is it a lamb ?"

" No idea." She smiled at him and snuggled closer. " Anyway, babies are far more interesting than a lot of silly old animals we'll probably never even see."

" We will one day, Susan. When the Ship reaches Journey's End we'll have to know all about animals and everything else."

" Perhaps but until then I'll worry about babies." She looked at the images for a moment then, her youthful exhuberance overcoming her patience, interrupted her father's viewing again. " Fred not here yet ?"

" Can you see him ?" George stared around the stark simplicity of the tiny room. Susan flushed.

" Sorry, that was a stupid remark." She hesitated. " Have you seen anything of Jay lately ?"

" No." Something in George's voice made her look at him. George didn't return her look. He sat, staring at the pictured scene, his mouth set with unusual firmness.

" What's the matter, dad ? Don't you like Jay ?"

" Jay's well enough, but don't get too involved with him, Susan."

" Why not ?" She leaned forward and switched off the viewer. " That's better, now you can answer me. What's wrong with Jay ?"

" Nothing." He reached again for the switch and she caught his hand. " What are you trying to do, girl ?" he said with mock severity. " If I don't fill my educational quota I'll be downgraded and lose the privilege of having a single room. Would you like to visit me in a common recreational chamber ?"

" They won't downgrade you, and you must have seen those tapes so often that you know them by heart." She moved so that she sat in front of the screen. " Now, answer me. What is wrong with Jay ?"

" Nothing."

" Yes there is or you wouldn't look like that." She became serious. " I want an answer, dad."

" Jay's fifteenth generation," he said reluctantly. " You're sixteenth and almost of marriageable status. You know that you can't marry Jay."

" Why not ?"

" Because he's too old for one thing and Genetics would never allow it for another. Now are you satisfied ?"

" No. Jay's a young man and I can't see anything to stop us getting married."

" Then you're either a fool or you're just plain stubborn—and I know that you're not a fool." George smiled at his daughter. " Just supposing that you were allowed to marry Jay. He's about twenty-one or twenty-two and you're only seventeen. By the time you're ready for marriage he'll be a year older. That means that he's only got two or three years of marriageable status while you'll have seven. That's not even long enough for you to have your two children and certainly not long enough for you to be together in family quarters." He touched her hair letting his hand caress her short curls. " After you're twenty-five you can do as you like but until then you'll have to let Genetics decide. After all, you want children, don't you ?"

She didn't blush, there was no such thing as false modesty in the Ship, but he read his answer in her eyes. Every female on board wanted children, as many as possible and as soon as they had reached optimum child-bearing age. Susan was no different from any other woman of her age group and her decision to work in maternity showed that she was normally healthy and with a strong survival instinct.

Though she didn't know it the betting was high in her favour among her overseers that she would be allowed to have more than the usual two children.

She looked up as the door opened and Fred, her brother, came towards them. Fred was twenty and still proud of his white banded shorts. He looked at Susan's vertical stripe and smiled with the superior knowledge of a two-year married man.

" Hi, youngster. Dried your ears yet ?"

He ducked as she swung at him, a little clumsy at having come down from the low-gravity levels and not having had time to become accustomed to the Earth normal on the twentieth level. George watched them for a while then, reaching out, he slapped Susan's rear and pulled her away.

" Give him a rest, Susan. He's an old married man now and not what he used to be."

They all laughed.

" Had a hard one this shift," said Fred, sitting next to his sister on the narrow bench. " Water condensed in a conduit and caused a short. Some of the fans went out and the air wasn't circulating." He chuckled. " You should have heard those gardeners ! To hear them talk you'd think that they ran the Ship." Like his father Fred was in Electronics.

" They do in a way, you know," said George quietly. " If it wasn't for the gardens we'd have no fresh air. Any idea what caused the short ?"

" I told you, water condensed in a conduit."

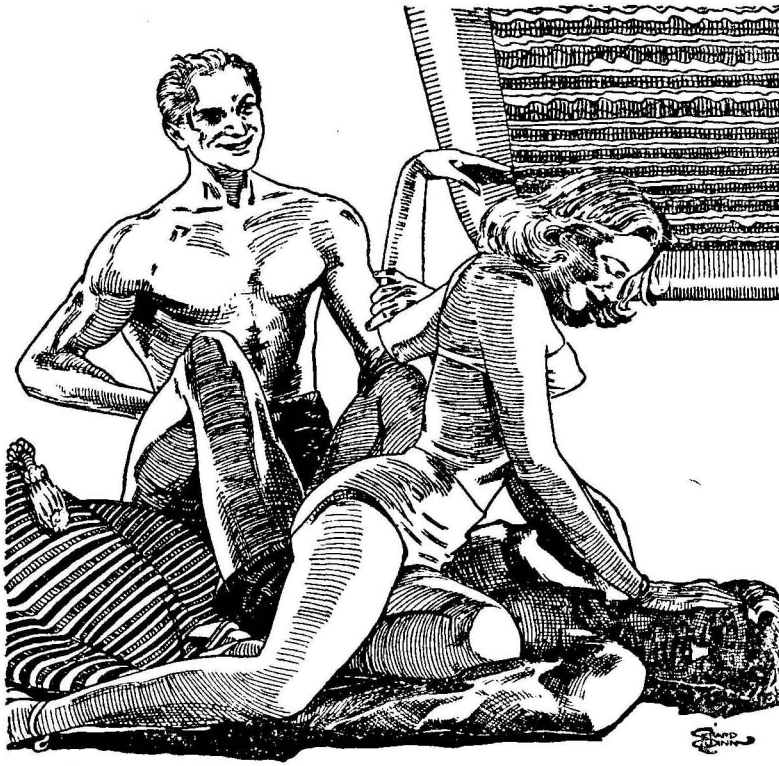
" Yes, but how ? Those conduits are supposed to be water-proof, and anyway, even if water did permeate, it shouldn't have caused a blow-out."

" That's true," said Fred thoughtfully. " It shouldn't, should it ?"

" Was the insulation bad ? Damaged in any way ? Frayed or worn ?" George frowned at his son's hesitation. " Come on, son. A good electronics man should look for these things. It isn't enough just to repair the fault, you've got to find out what caused it in the first place and make sure that it doesn't happen again."

" I know that," snapped Fred testily. " You don't have to teach me primary electronics. It's just that I've never thought of the Ship being at fault at all."

" It's at fault all right," said George grimly. " I've found out that in my own work often enough. Cracked insulation and corroded metal. Warped conduits and crystalised unions. Intermittent shorts and erratic current flow. Naturally," he said bitterly, " the atomic engineers won't admit that their piles are at fault. No, it's always our



equipment and yet I know for a fact that their generators are falling in efficiency. Why even Psy . . ." He broke off, biting his lips.

"What's that, dad?" Fred leaned forward, curiosity large on his expressive features. "You said something about Psycho?"

"No I didn't."

"You started to. What was it?"

"Nothing. Forget it."

"But I want to know, dad," insisted Fred. 'Maybe I'll be able to service the admin equipment one day and anything you can tell me now will help my promotion later on. What was it you were saying about Psycho?"

"I told you to forget it," snapped George sharply. "Remember your manners and decent behaviour. Unwanted curiosity is as bad as a violation of declared privacy." He glared at his son for a moment, then relaxed as Susan touched his hand. "What is it?"

" Why should you be having all this trouble with the electronic equipment ?" she asked with a woman's instinctive knowledge of when to change the subject. " Was it always as bad as this ?"

" I can't see how it could have been," said George. " Even the educational tapes are showing signs of wear, some of them are quite blurred, and others that I remember don't seem to be shown at all now."

" And are there more shorts and things ?"

" Yes, but we can expect that. The Ship is old, you're the sixteenth generation to be born in it, and that is a long time. Things wear, Susan, and grow old just like people do. Insulation dries out and cracks. Moisture condenses in those cracks and corrodes the metal. Deposits build and the alloys transmute a little. Capacities vary, resistances alter a trifle, cables can't carry such a big load as they used to." George shrugged. " It all adds up to a great big headache for the electricians."

" Does age do all that ?" Susan looked scared. " If that's happening now then what about later ? We're still a long way from Journey's End, aren't we ?"

" I suppose so," said George, " but it isn't only age that's the trouble." He rested his hand against the wall. " Here, put your hand close to mine. Feel it ?"

" Feel what ?" Susan frowned as she tried to concentrate. " It just feels like a normal wall to me."

" Forget the metal. Imagine that you're listening with your finger tips instead of your ears. Now do you feel it ?"

" No, I . . ." Susan laughed. " Now I see what you mean. The vibration, but it's been there all the time, it's always been there."

" Yes," said George quietly. " Every atom of the Ship is vibrating and has done for a long time now. Those vibrations are part of the trouble. Metal tends to crystalise when vibrated for too long and the harmonics can play waste with the insulation." He shrugged. " Nothing we can do about it, of course, but I thought that Fred might like to know." He stretched, his well-kept muscles rippling beneath his satin skin. " Well, children, anything else an old man could tell you ?"

" You're not old," protested Susan. " You're only fourteenth generation after all." She began to count on her fingers. " Let me see now. I'm seventeen years old and sixteenth generation so you must be . . ."

" Anything between fifty-seven and thirty-seven." George shrugged. " I'm thirty-nine if you must know, and there aren't many men my age still working." He grinned at his son. " I attribute my old age to a firm refusal ever to duel. A resolution I suggest you strictly

follow, both of you. Personally I've never seen the sense in two, apparently normal people, battering or cutting each other to death for the sake of an imagined insult."

" Suppose someone calls you a waster," suggested Fred. " Surely you wouldn't stand an insult like that without doing something about it ?"

" Look, son," said George seriously. " Never mind what they call you. If a man is low enough to accuse you of waste call in the psych-police and ask him to prove it. No one has to stand that kind of language but there are other ways of settling it without risking your neck." He looked at his daughter. " That goes for you too, Susan. You're not in any danger now, either of you, but later you may be. I've known quite innocent people fall victims to some puffed-up bully with a knack of getting under the skin, and women can be the worst offenders when they think a pretty, newly-available woman is cutting in on their boy-friends. Stay well away from it and let the fools fight, there's no conservation in getting yourself killed for a public show."

" You talk like an old man giving his children some final advice," laughed Susan. " We'll depend on you to keep us out of trouble."

" Don't do that," said George seriously. " Never rely on anyone but yourselves."

" Not even the psych-police ?" Fred looked knowingly at Susan. " The officer can be very helpful at times."

" Why ?" George stared at the flushed face of Susan. " Has Merrill been bothering you again ?"

" No, dad. Fred's only joking." She glared at her brother and signalled him to keep quiet. " He's dropped by Maternity a time or two, and we may have eaten together, but there's nothing in it. Merrill isn't marriageable, no P.P. officer is, you know that."

" Maybe not, but I don't trust that man and I'd rather you didn't see him." George shook his head as if dismissing an unpleasant subject. " Looks as if Jay won't be coming this time." He looked at Susan again. " Maybe it's just as well."

" Jay isn't bad," defended Fred. " I like him even though I wouldn't like his job. Must be rotten for him to have to keep crawling through the ventilation shafts." He smiled down at his own blue shorts. " I'm glad I'm not in Ventilation, give me Electronics every time."

" If you didn't like it you wouldn't be doing it," reminded George. He leaned forward and switched on the viewer. " Let's see what's on."

The screen blurred then steadied into a schematic of dismantled wiring and tiny transistors. Together with the diagram a smoothly modulated voice coupled with lines of running text explained what each piece was, how it operated, its purpose and the methods of construction

and repair. George leaned forward with professional interest but Fred grunted with disgust.

" Waste ! Who wants homework ? Let's find some entertainment." He reached forward for the change switch.

V.

The dream was always the same. He was dead and they had taken him to the converter. The grim men in olive had collected him in their plastic bag and delivered him at the place where the last indignities would be carried out with cold, scientific detachment. They would render him down. They would extract the last droplet of moisture from his blood and body, grind his bones to fertiliser, process his flesh and tissue, his skin, his internal organs. Medical students would cut and probe as they learned their trade and, when they had finished, his violated body would be used down to the last scraping of protoplasm. On the Ship there could be no waste and they would return him to the dust and chemicals from which he had sprung. They would reclaim everything he had used other than the energy he had needed and expended to stay alive. All of him. Every last, tiny fragment that had walked and talked, hoped and planned, loved and dreamed. All except the still unknown, wholly intangible mesh of electricity which made him peculiarly different from all others. The ego, the essential ' I,' the one thing the surgeons and the butchers could never hope to save.

And with its loss it would be as though he had never existed.

Gregson muttered as he turned and when he awoke his face and body were damp with sweat. He lay for awhile, staring into the soft darkness of his room, sensing rather than actually feeling the sussuration of trapped sound that was the life noise of the Ship. He liked the darkness. There was too little of it and, only when he had closed himself in, could he switch off the lights and sit and think and plan and dream alone as he was in the constricted universe of his own making. There were no polished bulkheads in the dark, no mirrors, no wondering expressions and doubtful eyes. No men to stare or women to question. No passing of time or hate or envy or fear.

As usual at such times he sought escape from the present into the past, letting his memory scuttle down the years back to the time when he was very young and life was something which would go on forever. His childhood in a family unit with parents who remained together because of the code and not through love. He had left them, as all children left their parents, when he was ten, but long before that his

father had gone and later his mother, impatient for her release so that she could enter into a new though essentially barren union with the man of her choice.

Youth, he smiled as he thought of it, a humorless quirking of the lips, unseen even by himself in the soft, trembling darkness that was the only night he had ever known. Schooling, always schooling, and exercise, and training. The psychological tests, the aptitude examinations and always the educational tapes at every leisure moment of every shift. The slow climb from manual worker status to administration ; from administration to the coveted psych-police; from an officer to chief of P.P.; from a nonentity, to one of the select hierarchy; from a unit to a controller; from being helpless to being in a position to . . .

He stirred, fighting the thought, and switched on the lights, blinking for a moment as his eyes adapted to the glare and waiting until the dream-endengered pounding of his heart should settle into its even throb. He rose, slipping from the pneumatic pallet with smooth litheness, and stood for a moment, stretching and flexing his muscles, watching the reflected image of his naked figure in the clean surface of the metal wall. Then he shrugged and stepped towards his private shower.

The mist-spray was hot, the lather quick to spring from his moistened body, and the following ten-second ice-cold needle shower stung his flesh to full awareness. Still naked he stepped before the warm-air blast and, as the droning current dried his body, stared hard at his reflection in the mirror. Vaguely he regretted that it was impossible to grow a beard and frowned as he examined his thick, short black hair. He turned as the attention call from the phone sounded above the soft whine of the dryer.

Still naked he walked into the other room and picked up the handset.

" Yes ?"

" Gregson ?"

" Who else would it be ? What do you want ?"

" Quentin speaking," there was cold disapproval in the Captain's voice. " I tried to get you at P.P. Headquarters."

" I was off-shift and getting some sleep." Gregson didn't alter his tone. " I trust that this violation of privacy is important ?"

" A P.P. officer is never private, you should know that." Gregson bared his teeth as the Captain's voice echoed against his ear. " Come up to the Bridge at once."

" Can't it wait ? I've a lot of routine stuff to get through and I'm supposed to be meeting Conway at Psycho."

" Conway is here with me," snapped the Captain. " I'll expect you immediately." The phone went dead with a decisive click and Gregson swore as he replaced the receiver.

The Captain was the oldest man aboard the Ship. Almost legendary, seen only by the hierarchy, a vague and, because of that, all the more impressive figure to the people, he lived in splendid isolation in his private apartment high towards No-Weight. Gregson knew him, and Conway, and Henderly the chief medical officer but, as far as Merrill knew, that was all. The chief of psych-police stepped forward as the outer door opened, crossed the spacious room with long, easy strides, and took his place at the table without doing more than nod to the others present.

" Well, gentlemen, what's so important that you couldn't tell me over the phone ?"

" I don't always trust the communication system of the Ship," snapped the Captain. " It isn't beyond the realm of possibility that some electronic engineer may have tapped the wires."

" You think that ?" Gregson shrugged and smiled towards the other two. Quentin leaned forward, his harsh, thin features beneath his mass of greying hair, stern and contemptuous.

" You think that I'm a fool, Gregson ?"

" No, but the suggestion is ridiculous."

" Is it ? Would you be surprised to learn that that very thing happened some forty years ago ?" He stared at the dark-haired man sitting opposite. " That, of course, would be before your time, but what has happened once could easily happen again."

" I'm sorry," said Gregson quietly. " I keep forgetting that you are *old* !"

There was contempt in the way he said it but, beneath that contempt, was a sick envy and the basic cause of his dislike for the Captain. Quentin was old, at least thirteenth generation but, because he was the captain and because it was essential to have one man at least who could take a long-term view of the Ship and its purpose, the Captains were always allowed to grow old.

" I'll ignore that remark," said Quentin quietly, " because I know what activated it. But at the same time I must ask you to remember who and what I am. I am the Captain, you are only the Chief of Psych-police." The inference was obvious and Gregson bit his lips as he fought down his rage. Quentin picked a thin, almost transparent sheet of paper from the table, glanced at it for a moment, then looked at the others.

" There was a Barb raid on the farming section of sector four," he said flatly. " As yet the news hasn't been allowed to disseminate and I trust that the occurrance will be kept as secret as possible." He looked at Gregson. " That is your job."

" When did this raid take place ?"

" Just before I called you—while you were asleep." The taunt was unjustified and both Gregson and the Captain knew it. " It was a small raid, three men and a woman, but it proves that the Barb menace isn't to be ignored as you gentlemen," Quentin looked at Conway, " have recommended."

" I still recommend it," said Conway. " The Barbs are few—some discontented people who managed to evade elimination, and, as we know that they are all barren, they will eventually die out from either starvation or natural death."

" Is that correct Henderly ?"

" Broadly, yes." The medical officer cleared his throat as he answered the Captain. " They are sterile, of course, everyone is over twenty-five, and they were old to begin with. Food, naturally, is their biggest problem. I have based my recommendation for the policy of ignoring them, on the twin factors of starvation and cannibalism." He shrugged. " They are hungry—so they must eat. We guard the messes—so they are forced to eat each other. That leads to mutual fear and, eventually, mutual destruction."

" The psychological factors also lead me to agree with the existing policy," said Conway importantly. " Conditioned as they are to Ship procedure, their own sense of guilt at betraying their own will lead to mental unrest and illogical behaviour patterns which will tend to disrupt their, undoubtedly, precarious social structure. If they have one, which I doubt."

" They raided sector four," reminded Quentin. " That shows that they have learned to work together."

" To a limited degree," admitted Conway, " but to me it is a sign that Henderly's summary of our policy is working." He glanced towards Gregson. " Do you agree ?"

" They should be exterminated," said Gregson flatly. He spoke again before the others could protest. " I know all the arguments for and against and I know that we can't conduct a full-scale search and massacre in No-Weight without betraying the existence of the Barbs to the people." He shrugged. " I don't determine the policy of the Ship, I only carry it out, but I say that they should be exterminated."

" Easier said than done," commented Quentin drily. " Have you any suggestions as to how they could be eliminated without betraying their existence to the people ?"

" Poisoned food ? We could allow them to steal some yeast loaded with toxins or something. Henderly would know about that."

" Impracticable," snapped the medical officer. " To begin with they would be suspicious of any food left for them to find. For another it would be waste." He snorted. " Your suggestion is ridiculous !"

" No suggestion is ridiculous," said Quentin sharply. He looked at Gregson. " Have you any others ?"

" No. As I told you, I have nothing to do with policy, I only carry out your orders."

" I see." Quentin looked again at the papers on his table. " As you feel like that, Gregson, there is no apparent reason for me to keep you longer away from your duties. I'll notify you as to my decisions later." He looked up in dismissal and Gregson felt his cheeks begin to burn with rage.

" Are you suggesting that I am not fit to sit in Council ?"

" I suggest nothing—except that you are undoubtedly a busy man." There was mockery in the way Quentin stared at the officer, mockery and a hint of something else, something cold and calculating. Gregson saw it, guessed what was happening, and restrained himself in time.

" I must remind you that I have but five officers to control a thousand times their number," he said quietly. " We have no weapons and must operate by stealth. I suggest that you gentlemen consider that in any plans you may choose to make." He stepped away from the table. " I will appreciate an early decision."

" A moment." Quentin fumbled among his papers, his thin hands in startling contrast to the youthful ones of the other men, and found a scrap of paper covered with close-set typescript. " This belongs in your department."

" What is it ?" Gregson glanced down the paper, frowning as he followed the unfamiliar words, his lips moving from the unaccustomed exercise of reading. " Is it important ?"

" No." Quentin took the sheet and scanned it with experienced eyes. " An electronic engineer requests a personal interview with reference to Psycho." The Captain shrugged. " He refuses to state the nature of his business and remains so vague as to be almost incomprehensible."

" Psycho ?" Gregson stepped forward and took the paper, thrusting it into the top of his shorts. " Something wrong ?"

" Not that I know of," said Conway sharply. He was jealous of the other's position as chief of Psycho. He looked at the Captain. " Why wasn't I informed of this ?"

" You will be," promised Gregson calmly. " Just as soon as I've interviewed the man and decided whether he's psychotic or sincere."

" That's for me to decide."

" No. The psych-police are the ones to handle it and besides," Gregson allowed himself the luxury of sarcasm, " you must be far too busy to bother with such trivial complaints." He glanced from Conway's angry face to the calm one of the Captain. " You want me to handle this ?"

" Naturally," snapped Quentin impatiently. " I've quite enough to do now that the Barbs have taken to raiding without worrying about some low-grade worker who probably thinks that he can improve on the Builders. Paper should never have been wasted on forwarding his request, there are proper channels in case of need."

" May I see the request ?" Conway half-rose, his hand extended, then sat back as the chief of psych-police stepped towards the door. " Gregson ! Didn't you hear me ? I want to see that request."

" You heard what the Captain said, Conway." Gregson paused by the door, his eyes insolent as he looked at the psychologist. " Must I remind you again that I am a busy man ?" He smiled. " I'll leave you gentlemen to discuss the Barbs while I attend to my duties."

He left them staring at the closing door.

VI.

Susan chuckled as she missed the medicine ball and watched it roll heavily into a corner. " One up for you, Jay, but it isn't fair, you've more muscle than I have."

" Have I ?" Jay smiled down at her, his admiration for her trim perfection apparent in his eyes. " Want to try something else then ?"

" Yes." She looked thoughtfully at him, trying not to admire his youthful grace. " Let me see now, you're in Ventilation and that means you spend a lot of time up in low-gravity." She smiled. " I know ! Let's play duelling !"

" No !"

" Why not ? We can wear masks and jackets and use foils, or the practice knives if you prefer them." She smiled at his hesitation. " Come on, Jay. At least I don't want to try any bare-handed stuff with you, I wouldn't stand a chance."

" I wouldn't say that," he said, meeting her mood, then sobered again as he stared at her. " Why do you want to play at duelling ?"

" Why ?" She shrugged. " Why not ? At least it may come in handy one day when I'm an old, unwanted woman. I may even have to fight a newcomer for my boy-friend." She stepped closer to him. " Will you be my boy-friend, Jay ?"

" Stop it !" he said harshly. " You don't know what you're saying."

" Oh yes I do, Jay. I'm not a child any more and I know all about the facts of life. Next year I get married to someone approved by Genetics. I'll have children and we'll live in a family unit until I'm twenty-five, or maybe longer depending on how I like my husband. Then I'm free to do as I like." She smiled at him, naked invitation in her soft brown eyes. " Will you wait for me, Jay ?"

" No."

" Why not ?" She touched his arm. " You're not married, at least you don't wear the banded shorts like Fred does, so what's to stop us making an agreement when I'm of age ? Don't you like me, Jay ?"

" You know damn well I like you."

" You don't have to swear at me then." She dropped her hand from his arm and stood, a sulky expression on her face, her foot tracing designs on the padded floor of the exercise room. " Is there someone else ?"

" No."

" Are you sure, Jay ?" She hesitated. " If there is, well, I know that I shouldn't say anything, but . . ." She bit her lip. " Waste ! Why are we talking like this ?"

" No reason at all," he said cheerfully. " Here !" He threw her the ball. She caught it, an automatic reflex action, then flung it petulantly to one side. " I don't want to play any more. Let's talk."

" All right then," he looked at the crowded room. " Here ?"

" No. Let's find an unoccupied rec-room." Before he could protest she had seized his arm and was leading him out into the corridor and up towards the next level where the common cubicles were. The fourth one she tried was empty and she switched on the light, closing the door and swinging over the ' engaged ' indicator.

" There !" She sat down and smiled at him. " Now we can really be alone."

" You're crazy," he said dispassionately. He stood by the door, staring down at her, noting her flushed features, glistening eyes and moist lips. " You're playing with fire and don't realise that you might be burned."

" You won't burn me," she said confidently. " Jay, why be so cold? You know how I feel about you."

" I know how you think you feel," he corrected. He sat down, keeping well away from her, and a little muscle high on one cheek twitched as he fought to control his emotions. " Look, Susan," he said seriously. " You don't want me to break the code, and you don't want to break it either. You're going to be married soon, why not wait until then ?"

" But I'm not going to be able to marry you," she said irritably. " Why must you be so blind, Jay. You know what I want."

" You want me to make love to you," he stated. " You're young and healthy and it's a perfectly natural reaction. But youthful immorality isn't a good thing, Susan, and you know it. Time enough for that when you've had your children and are out of marriageable status. You know what would happen if you were to have a child before your time ?"

" Genetics would be annoyed," she said defiantly. " So what ?"

" So the child would be aborted, I'd be punished for infringing the code, and you might lose the chance of having an approved child." He shook his head. " No, Susan, we daren't do it."

He was right, of course, and both of them knew it. A strong race cannot be an immoral race, not when excess would tend to weaken the very hope of the new generations, the young. Shame was unknown on the Ship, but indoctrination had set up a rigid code which no one in their right mind would think of transgressing. The trouble was that young people in love are seldom in their right mind.

" You talk just like Father," Susan said bitterly. " All about what I should and should not do but never a word about what I'd like to do." She turned to him, very young and very lovely. " Oh, Jay ! How can you ask me to wait so long ?"

" We must." He stood up out of reach of her reaching hands. " What did your father say about me ?"

" The usual." She was annoyed with him for changing the subject and, woman-like, also annoyed because he hadn't found her attractions irresistible to logic and good sense. " He says that I shouldn't see you again. He says that you're too old for me and that I should settle down to being a good wife and mother to some young dolt I haven't even seen yet."

" You'll see him soon," promised Jay. " You youngsters are thrown together when you near marriageable status, you might even go to another sector, or the boys brought here." He smiled at her expression. " Don't worry, you know that you'll be able to take your choice; you won't be limited to one."

" But suppose they send me out of the sector !" She rose and stepped towards him, her arms circling his neck, her lips hungry for his. " Jay ! What if I don't see you again !"

He didn't like to think about it. He didn't like to think about anything, not when she was so near to him and every atom of his body was crying out for her. His life was a lonely one. A marriageless, though not a celibate state was a requirement of the psych-police, and

he found little interest in the casual relationships which Merrill favoured so much.

And he was in love with Susan.

The communicator saved him. The speakers crackled into life and a voice, cold and emotionless, repeated his code number over and over again, sounding in every room of every sector, demanding and urgent.

"X112. X112. X112 . . ."

"That's my number." Jay hesitated a moment then, his indoctrination overcoming his natural desires, gently unfolded her arms from about his neck. "I must go, Susan. They want me to report in immediately."

"Must you?" She clung to him again. "Don't go yet, Jay."

"I must." He moved away from her. "That's my emergency call. Something's wrong and they want me."

"Waste!" She stepped back, her eyes hungry as they searched his face. "Can't they do without you just for this once?"

"They wouldn't be calling me if they could." He held out his hand. "Goodbye, Susan."

"Goodbye?". She frowned and, stepping close to him, gripped his arm so hard that her fingers dug into his flesh. "Do you love me, Jay?"

"I must report in." He moved towards the door, then hesitated as she dragged at his arm.

"I asked you a question, Jay. Do you love me?"

He didn't answer. He stared at her, afraid to say the word which came so naturally to his lips for fear of what it could bring, and yet more afraid to lie. He swallowed, shook off her arm and, leaving the door of the rec-room swinging wide, stepped out into the corridor.

He didn't look back.

The call was, as he expected, from headquarters and the public voice fell into silence as he contacted the desk.

"West reporting. What's the trouble?"

"No trouble," said Carter, the officer on stand-by duty. "Gregson wants you, routine job I think, but you'd better get back fast, he's flaming."

"Let him flame," snapped Jay disrespectfully. "I'll be there as soon as I can and not a second before." He heard Carter chuckle as he hung up the receiver.

The trip up to low-gravity didn't take long and his red, Ventilation engineer's shorts passed him through the guarded doors towards No-Weight. This was a part of the Ship which was little used. The circumference was too small for spacious rooms, and the gravity too

low for real comfort. Here were the stores, the huge water containers, the massive ventilation pipes and power conduits. They lay all around the odd, no-man's-land of No-Weight, the central axis which in effect was a hollow tube filled with a tangled mass of girders and stanchions, struts and braces, the pivot of the Ship around which the rest swung.

Jay passed quickly down a long corridor running parallel to No-Weight, kicking with practiced ease at the metal walls as he glided along, careful not to impart too high a velocity to his body. Men had died through failing to take that precaution. They had forgotten that, while they were apparently weightless, they still had mass. Mass has inertia and inertia had caused splintered bones and crushed skulls as bodies, moving too fast, had collided against the unyielding structure of the Ship.

Before leaving the communicating tube Jay reversed his shorts and, dressed again in his official uniform, passed the guard and moved down into sector three. Rapidly he made his way down the levels, past the gardens, the farms, the residential cubicles, along the com-tube and so into P.P. headquarters.

Gregson was waiting for him when he arrived.

The chief looked up from his desk as Jay entered and gestured to a seat as he leafed through a batch of reports. He read slowly, biting his lips with impatience as he scanned the thin, erasable plastic sheets, then snorted as he threw them back onto the desk. " Why can't they put this stuff on audible tape ?" he asked no one in particular.

Jay shrugged, not answering and guessing that Gregson didn't really want a reply. " You sent for me ?"

" Yes. What kept you so long ?"

" I was in sector five on unofficial duty."

" I know. Merrill called in and reported seeing you." Gregson stared at the young man. " He seemed worried, said something about a young girl you took to a rec-room."

" Did he ?" Jay shifted a little beneath Gregson's stare, half-annoyed at himself for feeling a sense of guilt. " Merrill wants to mind his own business."

" It is his business. As official officer of the sector it's his duty to safeguard the young. How serious is it, West ?"

" Not serious at all. Forget it."

" You certain about that ? Sometimes these things get out of hand and you know the penalties for breaking the code when it comes to a thing like that."

" You don't have to tell me the code," snapped Jay irritably. " I've said that you can forget it. It's all over. I doubt if I'll ever see her again."

" I hope that you mean that," said Gregson seriously. " I can protect my officers to some extent, but no one can protect you from Genetics if they bring an immorality charge. It means being referred to Psycho. With any one else it could mean just a downgrading, but with you . . ." Gregson made an expressive gesture with the edge of his hand and Jay knew exactly what he meant. Psych-police officers couldn't be downgraded, they knew too much, and that left only elimination as the only possible punishment. He swallowed.

" It's finished. I mean it."

" I know how you feel," said Gregson with unusual sympathy. " You're young, she's young, and that's as far as you think." He hesitated. " Do you want a transfer to another sector ? I could switch you with Norton if you like."

" No thanks, it won't be necessary and besides, I know the people in sector five and can work more efficiently there." He looked at his chief. " Is that what you called me in to tell me ?"

" No."

" Then . . . ?"

" Merrill phoned in after your call went out and I thought I'd mention it while you were here." Gregson picked up something from his desk. " I've got a job for you. The others have had their assignment cards but this is the only one in your unofficial sector." He threw a strip of plastic towards Jay. " Here, you know what to do."

Jay nodded and picked up the plastic strip. He had seen them before, lots of them, and he had long ago lost any emotion he might have once had. The strip was from Psycho and contained the full data on someone's life. It had been rejected, thrown out, and, as he looked down at it, Jay could see the broad red star smeared all over the smooth surface. The red star which meant that a person had been weighed, considered—and found wanting.

Casually he read the name and number of the person he was to kill.

" *Curtway*," he read. " *George*. 14/4762. *Electronics*."

Susan's father !

To be continued

Stories involving Time travel, either of people or inanimate objects, often require elaborate explanation by the author. Mr. Coster's debut in this magazine—he has already appeared in Science Fantasy *with "Family Secret" a delightful short story about a dream—is neither complicated nor complex.*

THE OTHER DOOR

By Arthur Coster

Illustrated by HUNTER

Feeling definitely insane, though his headache was gone, Porges did keep his two o'clock appointment with Dr. Mestik. He left his Bentley in the vast, underground garage and took the elevator to the fifteenth floor. On the way up, he wondered vaguely why the time of his appointment had been changed from one to two.

The door of Dr. Mestik's office was right where he knew it would be, and it looked just as he had foreseen it. He entered and presented himself to the nurse, who said, "Go right in, Mr. Porges. Doctor is expecting you." He thought she looked at him rather strangely. This, he had *not* predicted.

The psychiatrist sat behind a massive desk. Porges sank into a cavernous leather chair.

"What seems to be the trouble, Mr. Porges?" The doctor's tones were dry as breaking sticks.

Porges started to speak, and his voice cracked. Dr. Mestik nodded in understanding, while Porges cleared his throat. "I hardly know how to begin, Doctor," he said at last.

"That frequently happens." Dr. Mestik spread his slender hands expressively. "Just begin anywhere you like. Say it any way that is easy for you."

Porges summoned up his courage. "Well, Doctor. It's like this. I've begun to know things *ahead of time*." He paused to learn the doctor's reaction, but the latter merely nodded and waited for him to go on. "Sometimes," Porges said, "I know things an *hour or two* ahead of time." He stopped.

"I see," said Dr. Mestik after a moment. "You think you know things ahead of time. You think you have knowledge of events before they happen." His glance was piercing.

"Not *think*, Doctor, *know*. I really do *know* things ahead of time!"

Dr. Mestik cleared his throat. "Well, Mr. Porges, everybody knows things ahead of time, to some extent. Otherwise we could not plan any kind of activity. There is nothing unusual or dangerous in your knowing things ahead of time. If I had not known, ahead of time, that you were going to come to the office to see me, I might not have been here today. If the housewife did not know, ahead of time, that her husband would come home hungry in the evening, she would not buy food and cook his meal. And if the . . ."

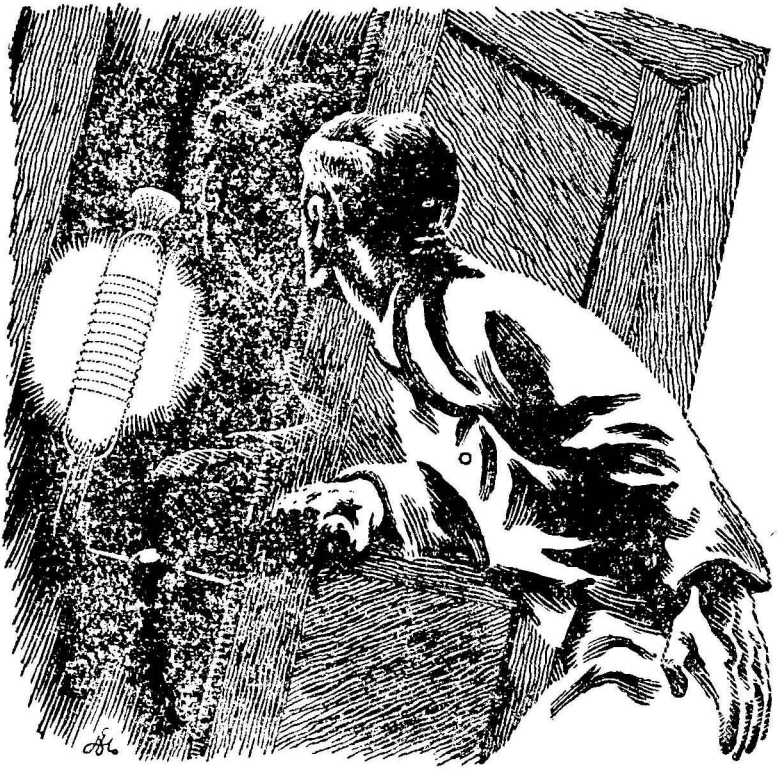
"I know all that, Doctor," said Porges impatiently. "That isn't what I mean. What I mean is, I know *all about* events of the future, just as if they had *already happened.* I know what people are going to say and do, *exactly*, just as if I were *remembering the past.*"

"This is a delusion," said Dr. Mestik. "People cannot know things ahead of time, in this way. All they can do is *estimate* the future, from *past experience.* That is what you are doing, but you do not realise it. Emotional problems are weighing on your mind, and you are trying to escape them by fantasies of knowing the future. This gives you a sense of having powers which others do not have. It is a false way of restoring your self-confidence. It is a delusion, but do not let it upset you. We have this kind of case frequently."

Porges rose and paced the room. "This is no delusion," he said, more to himself than to Dr. Mestik. "This is no delusion, because it *is happening*, just as I foresaw it."

"*What* is?" said Dr. Mestik.

"This interview. Before I even phoned for this appointment, I foresaw this very interview, word for word and gesture for gesture. I foresaw it so clearly!" Porges turned to Dr. Mestik. "Now I am *experiencing* it, and it is just as though I were *remembering* it!"



"Ah!" said Dr. Mestik.

"What do you mean, *ah*?" Porges heard the suspicion in his own voice, but he did not care.

"I sometimes say *ah*." Dr. Mestik was nonchalant. "Tell me, Mr. Porges. How *much* of this interview did you foresee? Do you have fore-knowledge of the part that is to come? Or did you know only the part that has already passed?"

"Both!" said Porges. "We are not yet half way through the interview."

Dr. Mestik nodded and said, "Mm-hmmm." He pursed his lips and carefully regarded a pencil which he turned in his hands. Then

he asked, " What is the latest point in the interview of which you think you have fore-knowledge ?"

Porges looked around the office. His attention was taken by an inner door—*not* the one by which he had entered. " I know everything, right up to the moment when you send me through that door," he said, pointing.

" Ah !" said Dr. Mestik. " But you *don't* know what happened, ah, *what is going to happen, after* you go through that door."

" No." Porges frowned. " There doesn't seem to *be* any future after that."

" No future after that ?" Dr. Mestik leaned forward. " You mean the end of the world, or something ?"

Porges gripped the back of the big chair, as though to squeeze an answer out of it. " No," he said. " It's more like no future for *me*."

" Ah !" said Dr. Mestik. " Fear of death. Fear of the Great Unknown." He scribbled on a pad of paper.

" It's not fear of death, Doctor." Porges sat on the arm of the chair, sorting out his thoughts. " It's not *fear* of anything. It's just that I don't seem to have any future after I go through that door. It's as though something takes my future away and gives me something else in its place."

Dr. Mestik rose and stepped to the window. He pondered, looking down into the street. " I think a long course of treatment is indicated, Mr. Porges. Your delusion is quite severe."

Porges' face darkened, and he shrugged. " You can call it delusion if you want to, Doctor, but I am confident that I know the future, or part of it anyway, before it happens." Dr. Mestik turned with a too-patient smile, but Porges did not let him interrupt. " For example," he continued, " I know that your nurse is going to come through that door in a little while,"—he pointed to the other door, the outer door—" and hand you a card with my name typed at the top of it."

Dr. Mestik's answer came quickly. " That happens in *every* doctor's office, with a new patient."

" And I know," continued Porges, " that you are going to discuss your fee with me and ask me for a deposit, because of my uncertain condition. And I know that I will give you fifty pounds, since that is what I have with me . . ."

" Mr. Porges." An eager note animated Dr. Mestik's voice. "Can't you see that the events which you are outlining are quite within your *normal* powers of prediction ? You know that I have a nurse. You can see two patients' cards lying on my desk at this very moment. You know that I shall charge you a fee. Your wife, or your wife's

friend, Helen Sommers, has probably told you that I usually require an advance deposit. You yourself have said that your condition is uncertain. And you, of course, know how much money you have with you. You have all the necessary facts. What is so unusual about your being able to predict what you have predicted ?" Mestik's look was triumphant.

Porges' head swam before the doctor's undeniable logic. He tried to find the proper answer, but it did not come.

" Furthermore," Dr. Mestik pressed his advantage, " your sense of normality should tell you that belief in precognition is irrational. You have always, until recently, considered yourself a normal person, haven't you ?"

It was true that Porges had never considered himself out of the ordinary. " I suppose so," he stammered.

" Exactly ! Everything about you suggests normality. Your clothes, your speech, your friends, your car. Everything, except this one idea about knowing the future. Can't you see how poorly it fits in with the rest of your adjustment to life ?"

Porges slid into the seat of the chair. Depressed, he said, " I haven't told my wife about it. She thinks it's headaches. It started out as headaches. In fact," Porges ran a despairing hand through his thinning hair, "in the interview which I foresaw with you, we discussed headaches quite a lot. My prediction seems to be falling down in some particulars." He pulled his ear, in bewilderment.

" You are beginning to achieve insight," said Dr. Mestik, and he touched a button on his desk.

Immediately, the nurse entered, handed Dr. Mestik a white card, and left the office again.

Dr. Mestik smiled at Porges. " As long as you have made such a good guess about the necessary financial arrangements, we may as well save time."

Porges pulled out his wallet and gave the psychiatrist what was left of the seventy-five pounds he had drawn from the bank that morning —it seemed so long ago ! Twenty-five pounds had gone to his wife, for betting on the races.

Dr. Mestik had the money safely in the drawer of his desk and the drawer closed, before he said, " We find that a deposit keeps the patient from forgetting appointments and from giving up treatment before he has become used to the idea that Rome was not built in a day." Dr. Mestik smiled.

" What is the rate by the hour, Doctor ?" asked Porges.

" We can go into that next time, Mr. Porges." Dr. Mestik rose from his chair. " I like to keep the preliminary interview as short as possible" He came toward Porges. " It is part of my system." Dr. Mestik put his hand on Porges' shoulder. " When you get home, Mr. Porges, I would like you to call in for an appointment." He squeezed Porges' shoulder a little too hard. " Your *first* appointment."

" I thought *this* was my first appointment," said Porges.

" Not officially." The doctor turned Porges around and led him towards the inside door.

Before the doctor could grasp the door knob, however, Porges stopped short and said, " There *is* a way I could know the future without being crazy."

" Not *crazy*," said Dr. Mestik kindly. " You are not crazy. You are *under an emotional strain.* The delusion is severe at this moment, but it can be controlled by prompt and regular treatment. That is why you must telephone to make your first appointment as soon as you reach home. The nurse will tell you when to come in." He attempted to open the door, but Porges got in the way.

" Why can't I make the appointment while I am here, Doctor ?"

Dr. Mestik looked stern. " That is part of my system, too," he said. " And now, if you don't mind, I have other appointments to keep, Mr. Porges."

Porges put his own hand on the door knob, to prevent the doctor grasping it. " Don't you want to hear how I might know the future without being crazy ?" he said.

"You can tell me next time," said the doctor, trying to manoeuvre Porges aside.

" I think," said Porges, determined to be heard, "that you have a time machine in here,"—he nodded toward the door—"and that you sent me back, after our other interview, to a time earlier in the day. And that is why I thought I had foreseen the future."

Dr. Mestik looked at Porges with combined dismay and pity. " You had better phone for your appointment the minute you get home," he said.

Desiring to shake an accusatory finger under the doctor's nose, Porges took his hand from the door knob. In the same second, the doctor turned the knob and pushed Porges through the door.

Porges all but fell into a dark chamber which seemed empty at first and then, as the door clicked behind him, was filled with cluttered objects. He stumbled into some strange hangings. A number of stiff but not brittle objects were underfoot. Something like a spiderweb touched his face, and he shuddered. Then he recognized it as a string.

He groped for the string and pulled it. Light burst upon him.

He was in a small closet. The closet was filled with clothes. The objects underfoot were shoes.

Porges opened the door of the closet and stepped into his own bedroom. There was a gasp. Clarice was staring at him from the middle of the room. She was dressed to the eyes.

" What were you *doing* in there ?" said Clarice. " You *nearly* scared me out of my *wits* !"

" I was looking for my fishing pole." Porges said the first thing that came into his head.

" Of all things !" She held out her hand. " I'm going to the races with Helen, Harvey, and I need some money."

Porges pulled out his wallet to give her the money. Then he remembered that he had been cleaned out by Dr. Mestik. " I'm afraid I don't . . ." he started to say, but when he opened the wallet to show her, he saw that it contained several five pound notes.

" That will do just fine," said his wife.

Porges' surprise turned to a sickish feeling as he counted the money. There was seventy-five pounds. He gave twenty-five to his wife and stood staring at the rest.

Snapping her pocket book upon the notes, Clarice gave him a sharp look. " What's the matter, Harvey ?"

He looked at her, wondering if she could possibly have enough sense to hear and understand what he was about to say. " Clarice . . ."

" Yes ?"

" I want you to do something for me."

Impatience flooded Clarice's face, but she said " All right, dear."

" I want you to report our Bentley stolen."

" You *what* !"

Porges frowned, shaking his head. " No, that wouldn't work. The police would more than likely pick up *ours*, since *Mestik's* would not be out on the street."

Clarice took his arm in a firm grip. " Harvey, what are you talking about ? Our car hasn't been stolen !"

His face brightened. " Never mind, Clarice. Just do *this*. Just call the police and ask them to check the serial numbers on any five pound notes that Dr. Mestik passes. They'll find duplications." He started toward the telephone. " I have to make another appointment with him right away." He stopped. " What time is it, Clarice ?"

" It's nearly twelve." There was vague fear in Clarice's face. " Harvey, you mustn't go around saying things like that about a man you've never met. People won't understand. Besides, Dr. Mestik is

a wonderful man. Helen likes him, and lots of our friends like him. I'm sure that when you see him you'll like him, too."

"He's gone too far this time!" said Porges, thumbing through a small telephone book. "Where's that damn number!"

Clarice came over to him and looked into his face. With great seriousness she said, "Your appointment is at one o'clock, Harvey. Don't you remember? I wrote it down for you."

"It's been changed twice since then," said Porges impatiently.

Clarice picked up a piece of paper. "There!" she said. "See! One o'clock." She took the book out of his hands. "Do you want someone to drive you to the doctor's office?"

"What? No." said Porges. "I'm all right."

Clarice squeezed his hands. "Harvey, you will go at one o'clock, won't you? You won't forget."

Porges stared at her, dully. His mind was elsewhere. "Don't worry," he said.

"Is your head all right now, dear?" Clarice put her hand on his brow.

"Yes, it's all right. You better go. Helen will be waiting," Porges said, not knowing whether this had any truth in it or not.

Clarice pecked at his cheek and was gone. Porges found Dr. Mestik's number at last and dialled it. When the nurse answered, he said, "This is Porges, calling for an appointment—my *first* appointment."

"Oh yes, Mr. Porges," said the nurse cheerily. "You were referred by Mrs. Sommers, were you not?"

"That's right," said Porges. "I was wondering if I could come in at one o'clock today."

"I'm afraid our one o'clock appointment is filled, Mr. Porges. What about . . ."

"What about two?" said Porges.

"That's filled, too, Mr. Porges. Would you like to come at three?"

"All right," said Porges. "Would you mind telling me who has the one o'clock and the two o'clock appointments?"

There was a brief silence, and then the nurse said in a different tone, "That is confidential information, Mr. Porges. I'm afraid I can't give that out."

There was a click, and Dr. Mestik's voice came on the line. "Yes?" he said.

"This is Mr. Porges, Doctor," said the nurse.

"Oh, yes, Mr. Porges. What seems to be the trouble."

"I was just wondering why I have to wait until three o'clock for my appointment. Why can't I come at one or two?"

Dr. Mestik cleared his throat. " Our schedule is very busy, Mr. Porges, but if there is anything *wrong*—I mean, if you don't *feel well*—we can send an ambulance right out to *get* you."

Porges felt a brief rush of panic. " No, no," he said. " That won't be necessary !"

" It's no trouble at all, if you would like it," Dr. Mestik insisted.

" No, no," said Porges. " I was just wondering about the time."

" It would be for your *own protection*," said Dr. Mestik heavily.

" Thank you, but I think I'll drive myself," said Porges, and added, " in the Bentley."

" Very well, Mr. Porges. I'll see you at three, then." There was a click, and Porges found himself alone on the line.

A sudden hardness masked his face. He crossed the room to his wall safe, which he opened. Inside, he found a small automatic pistol, which he put in his pocket. Then he walked jauntily down the stairs and got into his car.

It was shortly after twelve when Porges entered Dr. Mestik's outer office. The nurse asked him his name and whether he had an appointment. He told her he was Porges.

At that moment, Dr. Mestik was coming out, on his way to lunch. He stopped short, hearing the name.

" I have to talk to you for a minute, Doctor," said Porges evenly. In his pocket, his hand was on the gun.

Dr. Mestik shot a worried look at the nurse. " Very well," he said. " Come in."

When the door closed, Porges flashed his gun. " Show me how to work that thing," he said, nodding toward the other door.

" Now, be calm, Mr. Porges," said Dr. Mestik. " You are under an emotional strain. I am your friend."

" Show me how to work the machine," said Porges.

" You are confused," said Dr. Mestik. " You have a delusion."

Porges fired his gun. A small hole appeared in Dr. Mestik's right shoe. " I will show you how to work the machine," he said, and limped across the room, closely followed by Porges.

The nurse rushed in and stopped with a very white face, seeing the drops of blood on the carpet and the gun in Porges' hand.

" Please wait outside," said the doctor, his voice trembling. The nurse went out. Porges could hear her dialling the telephone rapidly.

The doctor slid back a false row of books and revealed a small control panel. There were dials for years, months, days, hours, and minutes. Porges saw that the years went back to 1900.

" How old are you, Dr. Mestik ?" he said.

The doctor blanched. " I am thirty-nine," he said, after a slight hesitation.

Porges fired his gun again. A duplicate hole appeared in the doctor's other shoe. The doctor winced.

" *How* old are you ?" repeated Porges.

" Forty-seven." The doctor's voice was very low.

Porges set the dial all the way over to 1900. " Step through that door, Doctor," he said.

" You are making a terrible mistake," said Dr. Mestik.

Porges smiled evilly. " You won't have any need for my three Bentleys and my hundred and fifty pounds, back in the year 1900, Doctor. They would look out of place."

Mestik shook his head sadly. " You don't understand, Porges. It doesn't work like that. There is only one Bentley and only fifty pounds. "

" A fine scheme to get rich !" said Porges. " Now get in there !" He dug the gun into the doctor's ribs.

" I was experimenting, not trying to get rich," said Dr. Mestik as he went through the door. " It was my greatest work !" he lamented, as the door closed behind him.

With the click of the latch, Porges almost lost his balance, as though the floor had shifted under him, but he caught himself in time. When he opened the door, a moment later, the small chamber was empty.

He turned, rubbing his hands in glee, but his pleasure sank immediately to the pit of his stomach, where it became horror.

The other door had just been opened by a policeman, who gave Porges a hard, unfriendly look. The policeman's uniform was orange, with black piping.

Arthur Coster.

Here is another delightful short story by Alan Barclay depicting a facet of the Jacko background he so successfully started in "Only An Echo." At last an Earthman and a Jacko meet face to face . . .

THE REAL McCOY

By Alan Barclay

Illustrated by WOODWARD

The hangar crew gathered round as usual to watch McCoy climb into his ship. Getting in through a round hole two foot three inches in diameter while encased in a stiff unbending pressure suit was a job many a good pilot could make a hash of especially when in the tensed-up state of a man going out on patrol. McCoy made it look simple. An upward jump to grasp the horizontal bar, body swung upward with knees bent, feet through the hole, then swing forward. A pull and a wriggle, and he was inside. The manhole closed with a thud. Three minutes to worm his way forward into the pilot position, then his impersonal voice over the hangar Tannoy :

" Wheel her out, boys."

The men heaved on the draw-bars, and the long shining shape of the T42 slid on its trolley towards the far end of the hangar, where the gaping hole of the blast-shaft opened to admit it. Slide the slender ship into the blast-shaft, rather like loading a cartridge into the chamber of a rifle, then close the airtight door.

Ship Control, sitting in a little dome on the surface of the asteroid that was Advanced Fighter Base, knew by the winking of a green light

that the blast-shaft had been closed. He pressed a button which opened the space-side door. Then he leaned towards his desk-phone and called McCoy :

" Hangar door sealed; surface door open—clear to blast."

The word came back immediately: " Blasting off."

The hangar crew heard a sort of muffled thud—Ship Control saw a streak of flame flare from the blast-shaft and trail away outwards among the stars, rapidly dwindling in size till it disappeared. McCoy was off on patrol again.

McCoy was a living denial of the laws of statistics, which said no scout pilot survives more than six months' service. McCoy had lasted two and a half years.

He lay comfortably relaxed on the pilot's couch. This was such familiar routine stuff that he hardly needed to think about what he was doing. His two hands grasped the controls and juggled them gently. His eyes moved round the instruments, over to his radar-sweep, forward and sideways and downward through the glassite nose, then back again over the instruments. He was past the thinking stage, past the stage of being frightened, past the stage of wishing or hoping for anything. On his first patrol a pilot is nervous and restless. After killing a couple of Jackoes he becomes over-confident and talkative. After twenty patrols and after seeing some of his companions fried by the Jacko rays, he becomes silent and jittery. After that, if he is still alive, he gets the twitch so badly that the medics send him back down home. Usually, however, he doesn't live long enough to get sent home.

McCoy had passed through all those phases. Somehow he had passed through his attack of the twitch without being spotted by the medics, and without being cooked by any of the Jacko patrols. He had emerged into a state of fatalistic calm. He had seen all his friends killed. He no longer took his entitlement of leave. He drank very little and talked hardly at all. He had thirty-seven kills to his credit, twice as many as any other pilot.

He made out towards the asteroid belt—this was usually good hunting country, for while he lay there no radar-sweep could distinguish his ship from the tumbling stream of rocks and boulders around him. The Jacko ships came sneaking inwards towards the inner planets from the direction of Aries—nobody knew exactly where they came from—and could be punched on from this ambush.

He lurked there for three days. The air purifier purred gently; the thin beam of the radar-sweep moved round and round and up and down in its transparent bowl. He lay for hours on his couch, motionless except for the small movement of his head as he watched the radar and

his instruments. At the end of every twenty-four hours he sent a brief signal back to Base. What he thought about during these long hours of waiting nobody ever knew. It is probable that he didn't think at all, any more than a leopard does as it crouches along the branch of a tree, waiting for its prey to come to the water-hole.

In the middle of the fourth day a small moving dot appeared at extreme radar range. He stirred a little when he saw it. He marked its track and noted that it would pass through the belt some distance ahead of his position. He fired jets and moved forward to be in position to intercept.

The blob was far away. For ten hours he watched it creep nearer. He did not shift his position again, for by now the Jacko would have his radar active, sweeping the Belt for signs of movement.

The ship began to show big in the radar bowl. McCoy risked another quick shift of position to bring him right on to its track.

For as long as he could watch, it coasted steadily forward without any change of speed or direction, then the blob it made on the radar-sweep passed behind a large chunk of rock about eight hundred feet

in diameter. When it reappeared it would be in plain sight—that would be the moment to attack. McCoy switched off the radar, eased himself a little on his couch and directed his eyes downward and ahead—down towards the lump of rock which was blanketing the enemy. He was tense now; if he had been the leopard in the tree his tail would have twitched stiffly . . .

The Jacko ship slid into view. It was only a few miles away. Sunlight shone on its scarlet flank.

He pushed the levers steadily forward till he had four G acceleration. It seemed as if his own ship lay still while the enemy began to come swiftly towards him. He juggled the controls, his radial jets fired briefly so that the ship seemed to wriggle itself sideways and the enemy moved across his field of view till it lay plumb in the middle of his sights.

In another ten seconds he would fire his guns—in six seconds—in four—then a long pencil of blue flame leapt from the stern of the enemy. It slid across his sights; it surged out of view.

He swept smoothly round and down—and there it was again, but turning too fast to get his sights on it. But McCoy was too old a hand at the game to panic. He continued, turning, swerving and swooping, up, round, down and sideways, although out here in deep space there was precious little meaning to any of those directions.

He kept hard on the Jacko's tail. The Jacko was no raw beginner; his ship turned and twisted and dived and rolled with skilled precision. McCoy kept after it, ready to take advantage of the first mistake the other should make—and there was the mistake ! The Jacko steadied on to a straight course. McCoy pressed the stud; a pair of seventy-five millimetre high-velocity projectiles went screaming down the muzzles.

But the very instant he fired he saw a streak of flame from one of the Jacko's radial jets, and it swung out of line.

A few minutes later the Jacko steadied again, and again McCoy fired. Once more the enemy jerked itself out of line at the last instant. McCoy tumbled to the Jacko's game; he was tempting his pursuer to waste ammunition. He gave a little grunt of respect—it was a game that called for hair-trigger timing. When the enemy tried the same manoeuvre again McCoy came on after him without firing.

These manoeuvres carried the two ships over immense distances, and although once more McCoy was on the point of getting a line on the Jacko, the two ships were hurtling in among a closely packed group of asteroids before he got into firing position. The rocks were sprinkled over a considerable volume of space and ranged in diameter from a few feet to five or six miles.

McCoy had to take his eye off the enemy ahead to estimate the positions of these hazards, and while he glanced swiftly round the Jacko disappeared.

Immediately he realised that the game had taken a new turn. It was no longer a simple case of keeping on the enemy's tail till he ran him down. Now the enemy was out of sight behind some tumbling rocks that lay all around and above, and from behind any one of these his killer-ray might lick out to fry and burn him.

He regulated speed so as to be moving with the same velocity as the rocks around his ship. Then he cut his jets and floated with the debris, watching the group of asteroids behind which the Jacko had disappeared.

But distances are great in space, relative velocities are hard to estimate, and there is no real meaning to the words up and down and sideways.

McCoy lying on his narrow padded tube spared a fleeting glance at the mirror which served as an eye in the back of his head, and saw a stubby sharp-nosed red shape glide swiftly towards him from behind and above. With the old fighter's instinct for doing the right thing McCoy fired the braking jet. A long flame shot from the nozzle just beneath him and he felt as if a large hand thrust the ship savagely backwards. The Jacko ray stabbed across his bow. He fired the lateral jets, rear-port, forward-starboard, and the ship spun round. He caught just a fleeting glimpse of the enemy and loosed off a pair of shots at him. His finger stabbed at the buttons to fire the alternate pair of jets, swinging the ship back in the opposite direction—the enemy was just gliding out of sight behind a hunk of rock. He steadied and fired, but missed again.

So this deadly game of hide and seek continued—it had to continue. Whichever ship ceased manoeuvring must expect the other to work round on to his tail, and neither dared be first to run out into clear space for the same reason.

And meantime there was the problem of fuel, becoming more and more urgent with every blast of the jets. A space-scout spends most of its time coasting at constant velocity. It uses up fuel during blast-off, a considerable quantity on return to Base, and small amounts to accomplish changes of direction, but very large quantities are expended during combat manoeuvres. McCoy watched the needle of his fuel guage drop down and down until it was near the minimum amount needed to set a course back to Base—then saw it pass below. But there was nothing he could do except continue the hunt more relentlessly than ever, hoping that he might first plug the Jacko, then send a radio signal to Base for help.

Dodging and swerving among the tumbling boulders of the asteroid stream he caught several glimpses of the enemy ship and fired shots at it. Twice he just avoided being sliced by his opponent's ray. By this time he did not really hope to survive the encounter. The Jacko was just a little too fast for him and even if he plugged him and managed to send a signal to Base, it was doubtful whether his air would last till rescuers reached him. He did not experience any feeling of fear or regret; in fact, he felt something resembling satisfaction, for this enemy was a worthy adversary—slick, daring, skilful.

But he was not finished yet. His thinking concentrated to a single sharp focus—keep after the Jacko and plug him before the fuel and ammunition ran out.

The needle of the fuel guage dropped nearer and nearer the zero mark. McCoy took more and more chances. Every glimpse he got of the red ship he fired—to be out of fuel with ammunition unexpended, or to be out of ammunition with some fuel left—either of these would be equally final and fatal.

He fired his last pair of shots. Knowing they were his last, he swerved the ship meaning to tuck himself in among a huddle of rocks where he might escape discovery, but before the turn was half completed the jets spluttered and died . . .

So he waited, powerless, helpless, unarmed, drifting. He thought it would not be more than two or three minutes before the enemy emerged from cover to make a swift slash at him. When he made no attempt to fight back, the Jacko would understand immediately and close in for a finish. McCoy closed his eyes and relaxed. He thought of all his friends fried by the Jacko rays, killed in ships that split their seams, or lost in deep space—and those who'd blown up on blast-off or crashed on return. He thought of Earth and its green fields and the people in cities going to work every morning . . .

Presently he realised that more than three minutes had passed. He looked around. There was a very large asteroid, several miles in diameter over on his left and below him, and several other smaller ones in sight, but no red ship.

He began to wonder whether after all he had plugged the Jacko just as it disappeared behind a rock. Or had it run for home in the end? But no Jacko had ever been known to run. He waited. There was nothing else to do.

He waited an hour. He decided the Jacko must also be out of action for some reason, so he sent off a signal to Base. The radio-op. acknowledged receipt and added cheerfully that a rescue craft would be sent at once. McCoy knew quite well that his chances of rescue were very

slim. He had fuel to drive his air-purifiers and heaters for about forty-eight hours. He was unable to give his position exactly and the rescuer's radar-sweep could not distinguish his ship from the jumble of floating rocks among which he waited.

After sending off the signal he lay on his couch, dozing and dreaming for the most part, but occasionally, merely as a matter of routine habit, scanning the space around and above and below him.

After a long time he came rather idly to the conclusion that the large asteroid just ahead and below him was moving nearer. At first this did not seem to matter. McCoy calculated without interest and with only one corner of his mind that his ship must have a residual forward velocity relative to the asteroid, which was carrying him towards it. He estimated that the asteroid was about eight miles in diameter.

The asteroid drifted nearer. Its gravitational field, feeble though it might be, was reaching out to draw him inwards. McCoy still did not think this mattered. There was no question of a violent crash. At worst, he would experience rather a severe bump when the ship grounded. He began to consider sending another signal to Base telling the rescue ship that he was grounding on an asteroid of considerable size. He was about to switch on his radio to do this when his attention was attracted by a flash of red just within his range of vision.

It was the Jacko ship. Despite his fatalism a spasm of purely animal fear seized him. This meant his finish. In another instant the deadly ray would lick out and consume him. Then he saw that the enemy was immobile. It also was being drawn gently downwards on to the surface of the big asteroid. Like himself, the Jacko had exhausted his fuel and also apparently the power which operated its ray. It was circling the asteroid, nose down, helpless.

McCoy was not slow to realise the enormous importance of this situation. The war in Space had been dragging on wearily for more than twenty years now. Tens of thousands of Earthmen had died and thousands of their ships had been destroyed. The number of Jacko ships and personnel lost was supposed to be very much less, but nevertheless it was considerable—and yet in all that time no Jacko ship, still less any living Jacko, had been captured. Jackos blew themselves up at the instant of defeat to avoid capture—they exploded their fuel tanks. If any Jacko was unable to do this little job for himself, or if some slight reluctance to exterminate himself made him hesitate, one of his companions would invariably swoop round and do it for him.

Despite such practices, Jacko ships had been found floating intact on a few occasions, no doubt with the pilots dead inside. But some kind of proximity fuze had always detonated them whenever an Earth ship approached within two hundred yards.

Thus in twenty years the only physical mementoes of the Jackoes to be raked out of Space were fragments of twisted and melted and half-vapourised metal, and small portions of extremely overcooked Jacko.

Now here, as McCoy quickly realised, was a complete undamaged scout, with presumably a live Jacko inside. In addition, since its fuel was exhausted, the pilot could not destroy himself and his ship in the traditional manner. In short, here was a chance to capture a complete Jacko ship, from which the secrets of their drive and their killer-ray could be learned. There perhaps might even be a live Jacko as bonus.

McCoy turned to his radio, and focussed his sending aerial as well as he could in the direction of Base. The message did not take long to send—he thought that this unique opportunity would be sufficiently attractive to bring the entire Advanced Fleet screaming over at maximum acceleration to his rescue.

After receiving acknowledgement, he took a glance downward at the asteroid. The ship was spiralling slowly inwards towards its rocky surface. The enemy ship, still nose downward, was at that instant just passing out of sight round the curve of the rock.

On a sudden impulse he switched his radio to receive, and began to spin the tuning dial. Up in the fifty-metre band he caught a swift staccato chattering noise. He had heard this sound before—it was Jacko speech, or what served them for speech. It was very loud, so loud that it could only be coming from the ship nearby. Like himself, the Jacko was sending for help.

An hour later the ship grounded gently. Ten minutes after that the Jacko ship did likewise. McCoy saw its downward-pointing nose strike an upjutting pinnacle of rock which sent it tumbling over and over. It finally came to rest about a hundred yards away. McCoy, who not so long ago had resigned himself to death by oxygen starvation, saw that there was still one more job for him to do.

No doubt units of the Advanced Space Fleet were already boring holes to get to him and the stranded Jacko, and no doubt from some other direction Jacko ships were beginning to build up speed to reach the same spot, but meantime if he could force a way into the enemy ship he might collect and send off some useful data concerning it.

He clamped down the bowl of his pressure suit, clipped on a full oxygen flask and lifted an axe from its rack. Then he insinuated himself into the tiny cramped air-lock and wriggled his way out to find himself on the hard glassy rock of the asteroid. He started to crawl cautiously towards the Jacko ship. He knew that any careless movement would send him floating off the surface of the asteroid.

But the Jacko inside had no intention of waiting to be attacked. McCoy saw a dark orifice appear in the side of the red ship. A round object popped out. McCoy stared with the most extreme interest. He was the first human to see a Jacko.

The round object scuttled over the ground towards him on four short legs. As it drew near he saw it was a spherical metal construction. So he was not actually seeing a Jacko after all, but merely the Jacko version of a space-suit, with its owner curled up inside, of course. There was a little window let into the metal sphere and two appendages —thin articulated rods—protruded from it.

The two creatures, man and Jacko, drew cautiously nearer to each other. For a brief instant McCoy wondered whether the creature inside the sphere might wish to parley with him, but he was not left long in doubt as to its intention. From a distance of twenty yards it made a swift scuttling rush towards him, with one of its rod-like appendages extended. On the end was a gleaming scissor-like gadget. The creature rushed unhesitatingly towards him, the jointed rod darted towards his arm, its scissor-end snapping wickedly.

McCoy warded off the rod and swung a heavy blow at the metal sphere itself. His arm jarred as the blow fell, but the only effect was to roll the enemy four or five yards backwards. The Jacko tumbled over and over, but got back on its four feet and rushed to attack again. The scissor-like weapon snapped at his arm again. He struck at it with his axe—he was forced to leap away—then struck again heavily at the metal sphere which was once more tumbled backwards.

McCoy saw what a deadly weapon these slashing snapping blades were and decided to fight cautiously. At the same time the Jacko must have realised that another blow from McCoy's axe might split him open.

They began cautiously to circle each other. The Jacko on its four short legs was better adapted to the feeble gravity of the asteroid but McCoy's long ones were the means to leap out of range if need be. The Jacko rushed forward once more. There never had been any doubt about Jacko courage. The scissor blades snapped. McCoy measured his distance and chopped fiercely at the metal rod, aiming at the inner joint where it emerged from the sphere. The blow jarred his arm, but the keen edge of the axe sheared right through the joint.

Instantly the second articulated metal arm flailed out; this one was furnished only with a hook, but it caught the back of the axe blade and jerked it from McCoy's grasp. The violence of the jerk sent the axe whirling upwards into the black sky, where it disappeared from sight. And so here at last were members of two species who had fought each other mercilessly for twenty years, face to face at last, on an airless chunk of rock out in deep space, within a yard of one another, unarmed.

The creature shifted position; the feeble light of the distant sun shone across the window of its metal sphere; McCoy thought he saw a single eye, large, dark, and gleaming, alert with intelligence, but he wasn't sure. It was too dark.

No one could say that the Jackoes lacked courage. It rushed him again. It had no weapon now except the long slender flexible hooked rod which had been used to snatch the axe, but with this it flailed McCoy over helmet and shoulders. Protected by the thick fabric of his pressure suit however, he scarcely felt the blows.

Then the Jacko realised it was wasting its energy and stopped. McCoy could think of nothing more to do. It was impossible to tear the metal sphere open with his bare hands. An attempt to jump on it or to kick it would merely send him floating off the surface of the asteroid. It was stalemate.

Twenty-four hours had passed. McCoy lay on his pilot-couch and watched the Radar-sweep. The bowl was sprinkled with blobs, the majority stationary, or at any rate moving very slowly relative to himself, but there were others moving purposefully across in his direction. These were the ships rushing to his rescue—he grinned a little at this thought, for although no-one would ever be unkind enough to say so, no commander would turn out a force of that size merely to rescue a single scout. Their primary object was to get possession of the Jacko ship and if possible its pilot as well, though they must feel pretty certain that the latter would manage to commit suicide before being captured.

Whatever the motives, McCoy reflected that his chance of being rescued had considerably improved, unless . . . He examined the outer fringes of the radar bowl for signs of enemy ships . . . And there they were, coming in at a great pace. They were considerably further off than his rescuers, but nevertheless likely to arrive in time to interfere rather effectively with the process of taking off the stranded Jacko ship, not to mention the re-arming and re-fuelling of his own.

He debated whether he should go back outside and play tag with his Jacko neighbour—it made him uneasy not to know what the resourceful little swine was up to. On the other hand, he thought a signal might be coming through for him soon. He waited in the ship, watching the radar-sweep.

It was not long before he saw the Squadron make a change of direction. This meant they had spotted the Jacko ships and were turning to intercept. Soon after that came the expected beep-beep of the radio call signal.

He switched on and aligned his antenna towards the ships.

" McCoy here," he reported.

A series of clicks, then a brisk voice spoke: " Commander Defala here. You've spotted us, I expect ?"

" Yes, sir. I've just observed your change of course."

" Quite correct," the voice agreed, " we're going to jump these Jackoes converging on you, and mop the lot up . . ."

" I see, sir." McCoy said. He thought it had never been easy to take Jackoes unawares, and to describe the anticipated engagement as a mopping-up process was being extraordinarily optimistic. In the last couple of days he had never rated his chances of survival very high. Now he notched them down to one in ten.

"We're not overlooking your predicament, McCoy," the brisk voice continued. " I'm detaching a scout to come directly to you. It'll carry external refuelling tanks and ammunition. Get yourself mobile when you get these supplies, and sit alongside that stranded Jacko till we arrive. Treat it as if it were a new-born child. You're not to destroy it on any account."

" Very good, sir," McCoy agreed.

" What's the situation exactly ?" the Commander asked.

" The Jacko and I are reduced to throwing rocks at each other," McCoy replied, and described his hand to hand battle.

" Well, that's closer contact than anyone else has had since this weary war began. But keep an eye on the b————."

McCoy decided he had better do just that. He clamped his helmet tight, clipped on a new flask of oxygen, and wriggled out of his air-lock. The Jacko was just as uneasy about the situation as he was himself. They met half-way between the two ships.

McCoy sat down. The spherical enemy squatted about twenty yards from him. Idly he detached a stone from a crumbling corner of rock. He tossed it to the Jacko. It clonked against the metal shell and fell to the ground. Like lightning the flexible arm with the hook scooped it up and flung it viciously back. The hook was not a good throwing device, however, and the rock missed by yards. McCoy tossed another, quite gently. This time, instead of flinging it, the Jacko tossed it. McCoy tossed it back. He went nearer and squatted down. The enemy did likewise. McCoy thought of attempting to communicate, and recalled stories about such situations—diagrams made on sand, and such-like. However, he was a fighter-pilot and anything he managed to communicate might later be described as being of military value. Besides, he had no sand, no paper, no writing material. He contented himself with making rude gestures. He supposed the actions made by the Jacko in response were the same. Once or twice the feeble sunlight shone into the window of the metal

sphere opposite but it was never strong enough for him to get a proper look at his enemy.

He kept an eye on the sky around and on the passage of time. Finally he decided it was time to get back to the ship. He made more rude signs at the Jacko who began to retreat warily as soon as he stood up.

He switched on the radar. The situation had changed radically. Defala's Squadron was in position to intercept the Jacko fleet, but there was no indication that any engagement was taking place yet. A single ship, presumably the one detached to refuel him, was approaching at high speed. In addition, however, there were three blobs coming in towards him from quite another direction. These undoubtedly represented an additional Jacko menace. He switched on his radio and sent out a call. The answer came without any time lag.

" McCoy ?" a voice growled, " where the hell have you been ?"

" I've been playing volley ball with my favourite Jacko," McCoy told him. " What seems to be the trouble ?"

" If you look in your Radar you'll see three Jacko ships have sneaked in from nowhere. They're streaking towards you from the direction opposite to me."

" I see them," McCoy agreed, " but you're a whole lot nearer."

" There's not such a hell of a lot of margin. I'll dump those tanks beside you and get off again fast—otherwise, we'll both be sitting ducks. Get yourself re-fuelled, then that will make two of us against three."

Then McCoy, before he went outside to watch for his rescuer, did something that proved in later years to be very important, though his intention at the time was nothing more than to make a gesture. He drew a number of quick sketches on a page of his report book. One showed a recognisable Jacko ship, with a series of others behind it. Opposite this he drew a large Earth-type ship, with others behind it, rank on rank, file upon file, stretching away into the distance. Above and astride these he drew the figure of a giant space-suited figure wielding an axe, in the act of splitting open Jacko ships.

McCoy was a fighting man—one of the best—a man who would have found his way into the front rank of any war in any age. He would have been an ace with any sort of weapon. He was not much of a thinker. He did not wonder very much why the present war had come about, or how it would end. He simply fought. But he was a talented draughtsman and the bold, firm, black vigorous strokes of the sketch simply shouted defiance.

He crawled over towards the Jacko ship and laid the sketch down on the top of a flat rock. Then he turned to watch for his rescuer. It was not long before he saw a red flare against the black sky as the

ship swung round the curve of the asteroid, braking hard. It circled a couple of times before it spotted the stranded ships, then began carefully to manoeuvre itself down alongside. McCoy kept well clear of the flaring jets as it settled jerkily on its tail. He saw the three extra fuel tanks and a couple of ammunition crates strapped externally amidships. He waved to the pilot, who was peering down at him from the nose. The pilot gestured to make haste.

He leapt upwards, grasped a projection, and undid the lashings. The tanks and crates floated gently downwards. He caught them before they touched ground and towed them out of range.

The moment he waved all clear, the pilot blasted off, and swooped away upwards into the darkness, trailing fire.

Though the fuel tanks were very bulky, they were not particularly difficult to carry. But when he began to pour the dangerous liquid into his ship's tanks, it flowed sluggishly in the negligible gravity of the asteroid. He left the first tank to empty itself while he transported the ammunition inside and fed it into the power-loaders. The whole process of fuelling and re-loading took him an hour. Then with a glance outside at the stranded Jacko he blasted off. As soon as he was clear of the asteroid and had space to maneouvre he switched on his radio and Radar-sweep.

"McCoy here," he called. "Refuelled and re-armed—what's cooking?"

"Just me," the voice of the pilot who had rescued him replied laconically. "I'm playing hide and seek round this surplus building material with three of the b———— on my tail. Like to join?"

"Delighted," McCoy said. He saw four ships, quite large in the Radar, gliding swiftly here and there among the moving boulders. He swept round to come up on the tail of the three Jackos. As he slid out behind a screen of rock he saw the single Earth ship fire at a Jacko. The Jacko split open and exploded a moment later. The Earth ship continued round in a violent turn to bring its guns on to the second of its pursuers. At the same instant McCoy swooped down on the third. His approach was entirely unexpected. The Jacko took no evasive action. McCoy slid right up, fired carefully, and saw him explode.

He glanced up and down and around and saw the remaining Jacko pursuing the Earth ship. McCoy streaked off in pursuit. He fired a long range shot at the flank of the enemy at the instant its ray slashed out like a sword. The sort of impossible coincidence that could occasionally happen in space warfare occurred—the Earth ship detonated in a flaring explosion at the very instant McCoy's shells tore the Jacko to pieces.

McCoy's ship floated smoothly among the debris. Almost certainly the man who had just died had volunteered to bring that fuel. Now he was dead and McCoy was still alive and did not even know his name. He switched on his radio call. Almost immediately he got Commander Defala.

" McCoy—what about the scout I sent to refuel you ?"

" He brought it," McCoy answered, " but right after that the Jackoes got him."

" What about them ?"

" Between us we got them all," McCoy assured him. " Three for the price of one."

" I see—well, they've made a shambles of us here. A crowd of these Jackoes made a suicide attack on our cruisers—rammed and blew one up, damaged another . . . My scouts are still engaged, half of them wiped out—the rest widely scattered. I can't do a thing for you. You must destroy that stranded Jacko and make your own way back—understood ?"

" Understood," McCoy agreed, and switched off. The news did not surprise him at all. The only thing that did surprise him was the fact that he himself was still alive and in condition to make Base.

He turned back to the asteroid where he had been stranded. He spiralled in and automatically lined up his sights on the stubby red Jacko ship. As he looked down the sights McCoy knew his Jacko acquaintance must at this moment be staring up at him. The Jacko, he remembered, was one of the slickest pilots he had ever tussled with —he would recognise McCoy's ship as it slanted down. He would see the guns and know what was in store for him. What passed through a Jacko mind at such a moment, he wondered ?

His fingers began to tighten on the triggers . . . Then on a sudden impulse he swerved away. He cradled his guns and began to work ou a course back to Base.

Alan Barclay.

John Christopher's entertaining story "Manna" in the last issue depicted a world with a plentiful basic food supply which 'dropped from heaven.' John Newman's article this month shows that just such an equivalent food supply is right here on Earth with us and steps are already being taken to develop it for human consumption.

FOOD OF THE FUTURE ?

By John Newman

'There isn't a great deal of difference between beef and mammoth steaks—for thousands of years Man has relied on the same types of food and food resources as did his ancestors. It is true that, by selecting and breeding, he has improved the quality and yields of plants and animals but essentially the same methods are now used as were employed by pre-historic Man. We are, with all our mechanised farming and concentrated fertilisers, still using an inefficient way of storing the sun's energy in a form that we can easily reconvert to energy in our bodies; degrading solar energy through nuclear energy, radiation, chemical energy to heat and physical energy in our muscles.

We cannot, as yet, control energy outside the Earth's atmosphere but the conversion of radiation into chemical energy at the surface is one that we can not only control but also improve. It certainly needs improving for, even under the best farming conditions, only about a half of one per cent of the sunlight is trapped and used. The problem of increasing the efficiency of food production is accentuated by the continual rise in the Earth's population; already a large proportion of the human race is living under conditions of malnutrition, most of it due to lack of protein. The search for new food resources is already underway in many countries.

A great deal of work is being carried out to increase the production from existing sources, particularly from the seas covering so much of the Earth's surface. Other work is being done to prevent losses due to insects and disease in crops and during storage. But the human race is increasing its number by one per cent every year and further improvements in medicine and living conditions will continue to raise this figure.

Scientists are now ranging far afield from conventional methods of food production and have come up with a radically new food, processed alga. This can be grown quickly, efficiently and in enormous quantities and, after cooking, it tastes somewhat like spinach but is far more nutritious. Using this method it would be possible for the south-east corner of England to supply the whole of the food for the Earth's present population.

This break with old methods has been brought about by our new knowledge of photosynthesis, the way in which plants absorb simple inorganic compounds such as carbon dioxide and water and, in sunlight, convert them into complex organic molecules. All life depends on this process, for it is the only way in which the energy of the Sun can be used to continue ' life as we know it.' If a poison that stopped all photosynthesis was to be released in the air it would not be long before there wasn't a single living creature, plant, fish, insect or animal on Earth. Photosynthesis gives us not only our food but also all our fuels, the coal and oil that have built our industrial civilisation to its present position.

The study of photosynthesis has been greatly helped since the last war by the use of radio-isotopes as tracers. Using water and carbon dioxide containing radio-active atoms made in atomic piles, research workers have traced the course of particular atoms as they are joined together into more and more complex molecules in the series of reactions that, like a chain, leads to sugar, starch and proteins. They have found that the chain is extraordinarily complicated; so much so that there is very little chance of our soon reproducing it using non-living chemicals. We can synthesise edible chemicals in the laboratory but the methods are far too expensive and uneconomical to be of any direct use in increasing the world's food resources.

But their work has shown that photosynthesis involves two processes, firstly the absorbtion of sunlight by a fast reaction followed by a slower secondary reaction, that can take place in the dark, when the absorbed sunlight is used to combine carbon dioxide and water. This latter reaction takes place ten times as slowly as the absorbtion of energy, so photosynthesis can work efficiently in a flickering light, only

a tenth of the plants needing to be illuminated at the same time. This, as will be seen later, is a useful factor in industrial photosynthesis.

As there seemed to be no likelihood of economically synthesising food by any method other than photosynthesis, scientists set about finding the most versatile and efficient plant that could be used as a living catalyst in a fully controlled industrial process. It must be fully controlled for, except by using expensive greenhouses, conventional methods of farming allow little control over the environment and conditions of the growth of plants. The composition of the air is fixed, it containing just so much carbon dioxide; air temperatures are highly variable and uncontrollable; large areas of fertile soil are required. Even in summer, only about one per cent of the light is usefully used over enormous areas of farm-land, the remainder being reflected or heating the soil so that much water has to be evaporated to cool it. Even less sunlight is used in spring and winter when seedlings have little surface area.

Scientists found that the most efficient plants are not the large complex ones but the microscopic green plants known as algae. Algae grow everywhere where there is sufficient water, minerals and light; different types in ponds, rivers and in the seas. From these many types, after testing and selecting, scientists chose the type known as Chlorella. It is a tiny water plant that is fast growing, each alga dividing into two daughter cells every ten to twelve hours. Their intense green colour is due, as is usual in plants, to the chlorophyll that they contain. Chlorophyll is a plant's equivalent of the red haemoglobin in our blood, being a complex magnesium compound instead of the complex iron one that is found in animals. Chlorella are about a hundredth of a millimetre in diameter and one pint of the ordinary nutrient solution in which they are grown contains about 6,000 million of these tiny growing plants.

They can be easily grown in chemical solutions and, because of their small size, they can be pumped through pipes, cooled, heated and filtered just like a suspension in any chemical engineering process. The Chlorella group of algae contains many sub-types and very many of these were selected and tested by growing in tanks before the ones now so widely used were picked as being the most suitable. They were selected because they grow fast, because it is easy to prevent molds and bacteria from contaminating the nutrient solutions and because they give a food with a very high protein content. Some types of Chlorella even produce antibiotics that stop the growth of other organisms that would otherwise damage or reduce the amount of product. Some of these and their antibiotics are likely to find wide usage in the near future.

Laboratory experiments on the growth of algae have to be completely controlled to prevent variable factors from affecting the results. This is done by growing algae in liquids in large glass cylinders through which a mixture of gases is bubbled, usually a mixture of air and carbon dioxide. The temperature of the liquid is thermostatically kept within narrow limits and the amount and type of light controlled by using only artificial light. Part of the liquid is periodically drawn off and filtered to remove the Chlorella and new nutrient solution pumped back into the tank to replace that used up and removed.

These are ideal conditions seldom met with in nature but they do enable research workers to vary the conditions of growth to find the relative importance of the different factors and the way that they affect the product. Raising the temperature of the mixture at first increases the rate at which Chlorella grows but, at higher temperatures, photosynthesis and reproduction are slowed down. At the moment, research workers are using a recently discovered alga that grows fastest at 39°C., a higher temperature than most others can withstand. This has the highest rate of photosynthesis of any known organism and scientists are now searching volcanic hot springs all over the world to see if they can find another one that will grown even faster at higher temperatures.

Whilst artificial light is used for laboratory experiments, the energy of the Sun must be used if the process is to be made economical. It may, with cheaper nuclear power, be possible to keep the growth going at night but sunlight is the cheapest energy that we have and, at the present rate of depletion of our stores of coal, oil and fissile materials, may soon be the only large one.

Algae are the basic food of the sea—the beginning of a food cycle—for all fish depend on them by either feeding on them or on some other organism that feeds on them. The number of fish in one area of the sea is a good indication of the number of algae growing there, this itself being dependent on the fertility of the *top* layer of sea water, light not penetrating far into sea water. In the Arctic and Antarctic the growth of algae in this top layer is limited only by the amount of light but, in the tropics, the limiting factor is the renewal of the essential minerals from either the sea bottom or from rivers. Nitrogen, phosphorus and sulphur are the main minerals that, apart from water and carbon dioxide, are necessary for the growth of all plants, whether on land or in water. The lack of them inland is usually a man-made shortage but, in the sea, it is caused by plants and fish absorbing them and, after dying, sinking to the sea bed where the minerals are lost until an up-welling of cold water brings them back into the cycle at the surface.

Fish concentrate the energy of the algae that they eat but the process is very inefficient, only a five thousandth of the energy of the algae is utilised when we eat fish. Collecting algae from the sea so that their energy can be directly used is far too difficult an undertaking to consider on a large scale ; the overall concentration is too low and vast quantities of sea water would have to be filtered. However, shipwrecked sailors can use fine nets to collect enough to keep themselves alive and, by fertilising the water with nitrogen and phosphorus salts, it is possible to grow dense cultures of algae in partially enclosed bays such as the sea lochs on the west coast of Scotland.

The basic design of an alga food factory is simple, depending on our knowledge of the factors leading to greatest efficiency and rate of production. Firstly, we must have plenty of sunshine but not of too great an intensity to raise the temperature above 40°C. This can be found over most of the world except near the Polar regions. Then we need a cheap supply of carbon dioxide so that the algae have the best concentration, about 5 per cent in air, for rapid growth. This can be obtained by purifying the gas from blast furnaces so it is necessary for the factory to be near an industrial area.

We need next a means by which the solution of nutrients, algae and carbon dioxide can be exposed to sunlight without excessive loss of water or the enriched air. This can best be done by pumping the mixture through large tubes of flexible transparent plastic such as polythene or through concrete troughs roofed with plastic. A fairly deep stream of liquid can be used if the flow is turbulent enough to mix it up thoroughly so that the Chlorella cells come near to the surface for a tenth of the time that they are in the tube. This gives the affect of the flickering light used in laboratory experiments, the period that the algae are in the deep dark layers to be ten times the length of their exposure to light. To keep the liquid circulating quickly there must be large capacity pumps and a power source.

With a cheap power source the factory can be run at night under electric lamps, otherwise the liquid will have to be pumped into storage tanks overnight. Temperatures must be controlled by cooling during the day and by heating at night and in cold weather so that the rate of growth does not slow down. This can be done economically by pumping the liquid around tanks containing a material that melts near 30°C., excess heat being absorbed during the day and given out again when the temperature of the liquid falls.

Mineral salts have to be added as fertilisers but, although they are fairly cheap, it would be possible to use sewage effluent from cities to even further lower the costs and prevent the loss of minerals to the sea. Some algae, such as the blue-green ones called Anabaena, can

'fix' nitrogen from the air and they do not need soluble nitrogen salts. It is probable that a strain of this type of algae will one day be used for food, as it contains even more protein than Chlorella.

The mixture of Chlorella and nutrient solution looks like a thick pea soup and a processing plant is needed to separate the Chlorella, filtration with centrigures to speed up the rate has been found to be the best method. The product then looks like a dark green paste, smells like newly cut grass and has a distinctive raw vegetable flavour. The paste can be fed to animals or cooked and eaten by humans but, being moist it cannot be stored without drying, freezing or canning. Drying completely changes its flavour but one can get used to its taste.

Vitamins can be directly introduced into the food by growing selected bacteria, that produce vitamins, in small units and mixing some with the algae before filtration. Various types of algae food can be produced, probably with different flavours, and its use will depend on conditions of growth and harvesting. High protein algae give the best food for humans but others will be used as raw materials for industry and drug production. Algae contain protein, carbohydrates and fats, all the essential foods already mixed. By feeding it to animals it can be converted into meat, but this involves a 90 per cent loss of energy.

The fact that algae can be grown using only water, carbon dioxide and sewage means that a cyclic process could be used in a spaceship or space-station. Whilst photosynthesis removes carbon dioxide from the air and replaces it with oxygen, the oxygen is formed by the decomposition of water and not from the carbon dioxide, which is used to build up the plant tissue. A photosynthesis method of purifying the air of a spaceship, using algae or large plants, would be quite practical but, for long journeys, either sufficient water must be carried to supply the oxygen necessary for breathing or the ship must carry an apparatus to break down plant tissue to release oxygen from its organic compounds

Enough Chlorella to feed one person can be grown in ordinary sunlight on an area of 62 feet by 100 feet, the roof area of a moderate size house. But the cost is still the main problem, being higher than for comparable foods. It will undoubtedly be used for isolated communities where cost is not the most important factor—in spaceships and extra-terrestrial colonies or, if we're not so lucky, it could be grown under artificial light in underground shelters where it could be protected from the lethal radio-activity of an atmosphere contaminated by the latest nuclear weapon.

John Newman.

It is a great pleasure to welcome Mr. Brunner to our pages with a story which bids fair to being his best to date. Although he made a name for himself a few years ago in numerous American magazines, his literary career was halted while he served a two-year term as an officer in the R.A.F. This is his first new story since becoming a civilian again.

VISITORS' BOOK

By K. Houston Brunner

Illustrated by LEWIS

Arnold stood on the balcony of the operations room, not really taking in the master plot his eyes were fixed on. Below him, the watch personnel, earphones clasped on their heads, moved with long rods like a croupier's stick the little symbols that showed the monstrous network of watchers girdling the sun. Every now and again there would be a minuscule error, and Arnold would pick up his mike and code out orders to the swinging ships to correct their course. But nothing really happened.

He sighed, and went back to the desk he had first taken over three short weeks ago. Already, he felt tired of it and the monotony of the task, and he wished achingly that the clock on the wall would hurry towards the end of his watch.

As he settled behind the desk, a light glinted on the report panel, and he tripped the teleprinter switch beside it. Instantly, the busy keys rapped out a message.

XQKD — GBDV. 1167.

That was all. It was all there ever was from one of the robot orbital stations out beyond Pluto. Probably it was no more than a routine statement of mechanical efficiency. He yawned and reached for the black-bound Cypher Manual at his side.

A moment later he stood up and knocked the manual skittering across the floor. One or two of the men on duty below glanced up incuriously as he strode over to the edge of the balcony again and looked for the position of Robot Monitoring Station 1167. As soon as that was fixed in his mind he went out of the operations room at a run.

He was still running when he came to the door bearing the legend A. G. NWAKA, COLONEL COMMANDING, and went in without knocking.

Nwaka raised his eyes from the file on his desk and was on the point of making a comment when he saw that Arnold was agitated. He demanded crisply, " Well ?"

" 1167 picked up an alien ship, sir," said Arnold breathlessly.

Instantly, Nwaka came from behind his desk. " Right. I want to take a look at this."

He studied the layout of the operations table for a long time before he made his decision. Pointing with a long brown finger, he said, " Who's that ?"

Arnold followed his eye and saw the symbol of a manned patrol ship lying on the board within a few hours' flight of 1167. Hesitating only a moment, he said, " Galimov, sir."

" Good. Tell him to make course for the alien ship and report verbally on what he sees. Then notify Earth—use cryptest means. And then go down to the vault and open cabinet five. Inside you'll find a sealed book. Bring it to me in my office. Here's the key."

" Right, sir," said Arnold unhappily, and took the key.

Inside the alien ship a conference was in progress. " Now the question is," said Harachmar, " what have we got ?"

Chweit reached across him and opened contacts which notified all stations in the big ship that they were on duty and alert. He said, " That was just about right, where you put us, Harachmar."

" I still don't see why you wanted to break from hyperdrive twelve light hours from the star. I flatter myself we could have put you within ten minutes without any trouble."

" This system happens to be inhabited," said Chweit. " It's a strange custom of livable planets—they produce life. And this lot have space flight."

Harachmar considered the fact, nodding slowly. " What standard ? Have they the faster-than-light drive ?"

" We haven't found any sign of it yet. But we were picked up by a robot monitor as soon as we broke, and to judge from the number of detectable ships and stations in transit or orbit, this is a passably crowded traffic area."

" Trouble ?"

" Well, one ship can attract plenty. If we'd materialised as close to the inhabited worlds as you wanted, we'd have had hydrogen mines knocking at our screens and asking to be let in as soon as the local soldiery got over their surprise."

" Hydrogen mines we can handle, surely," said Harachmar.

" Yes, but not too many of them, or too large. And besides, they may have something else as well. We've got a good ship here—but it's on its own."

Harachmar reflected on the populated part of the ship—the quarter that wasn't drive machinery—and the thought of all that armament was comforting. He said, " Well, if they haven't got interstellar flight, they won't bother us."

" You sound as if you want us to go in and take the planet over," Chweit commented. " That's all very well if the race on it is savage, or doesn't exist. But our task in a case like this is to find out what it will take to conquer the locals—not to do it. I agree that if they're only at the sub-light stage of space travel, they shouldn't worry us, but we don't want to be left with an unusable radio-desert for our pains"

He pressed the *report* button. Observation was the first to come in.

" This is Brach, sir," said a soft voice. " Considerable activity on the electronic level. No gravitic communication has been found. We haven't broken the language yet, since from the shortness of the messages all we are getting is pre-arranged code signals. I'd say they have trouble with their information transfer. But there's a pile reaction headed our way. The inhabitants are coming out to take a look at us.

" Let me know when you get a decent image to show me," said Chweit. " Armaments, what about you ?"

" Ready and waiting sir," said a different voice. " State of equipment—serviceable. State of personnel—on watch and ready."

" Fine," said Chweit. " Cloust ? What's the situation at Engines?"

" Drive cooling," was the answer. " Serviceability of engines—estimated ninety per cent. We're changing a thrust pole on number six, but it shouldn't take more than an hour."

" Get it fixed fast," said Chweit sharply. " Who ordered you to immobilise the ship like that ?"

" I did," said Harachmar.

" Well, anyway," Chweit backed down. " Get it fixed." He avoided Harachmar's annoyed gaze and began to check the inship stations—personnel, administrative, medical, catering, discipline. All reports being favourable, he shut off the communicator and sat back with a sigh.

* * *

Arnold found himself nervously shredding a sheet of paper into fragments, and threw it aside in annoyance. Beside him, Colonel Nwaka looked up from the thick red-bound volume bearing the title *Most Secret—Directive* 957/09, which Arnold had earlier brought from the secret documents vault. His chocolate-coloured face broke into a grin.

" You look as if you were due to die at dawn," he said.

" It might be that way, sir," answered Arnold miserably.

At that moment a voice from the open communicator rang out, and they were all attention. The words had been scrambled in transit and there was a faint distortion, but they were comprehensible.

" Galimov here. Do you read me, Titan ?"

Arnold passed the mike to Nwaka, who answered urgently, " Titan reading you. Nwaka here—what have you got ?"

" It's alien all right. And it's enormous. I estimate it at a mass of not less than five hundred thousand tons, and it's at least a mile long. It must have faster-than-light drive, or it would have shown on my detectors before 1167 caught it. It's covered in what look like long-range rocket launchers, and it's coming in fast. I can't extra-polate its course back—"

There was the beginning of a rending crash, and then complete silence.

" What—?" began Arnold. Nwaka put the mike down.

" They blasted him," he said. " You'll see it on the table in a moment. You'd better get that through to Earth as fast as you can, but I think I know what their answer will be."

" But what the hell can we do against a race with faster-than-light drive ?"

" Do as I say," said Mwaka. " You might be surprised."

" Brach, sir," said Chweit's speaker. " We're tracking this ship that's coming out to us. I'll put it on your screen."

While they waited for the image to stabilise, Chweit mused, " I wonder if we'd be silly enough to walk into the lion's jaws to count his teeth ?"

" Maybe they never met a lion before," said Harachmar.

" To judge from the thoroughness with which they monitor their perimeter, either they've met people from outside before, or they have over-developed and jumpy imaginations. In either case, our course is definitely one of care—for now, at any rate."

" Here it is, sir," said the speaker again. " It's tiny—a mere six or eight hundred tons. It must have been in orbit when we got here—it couldn't have reached us from a planetary body in this space of time."

"That's certainly not a menace," observed Harachmar as he contemplated the miniature image of a rocket under full power that filled the screen before them.

"You're jumping to conclusions," said Chweit thoughtfully. "There's no reason why that shouldn't be able to come up to this ship, drift through our screens as if they didn't exist, and spread us across a rapidly expanding volume of space."

Harachmar looked at him sharply. "You're joking," he said, but he sounded uncomfortable.

"Of course," agreed Chweit. "I doubt if that ship could go through a planetary atmosphere, let alone our screens. It's a primitive canoe. But you felt bad at the idea, didn't you?"

"Naturally."

"I think in some ways it's a judgment on us that we should be perpetually afraid," Chweit went on. "How many planets have we dispossessed?"

"Over a hundred."

"I thought it was less. Still, that brings out my point. We've done it to so many people that we're forever afraid of it happening to us."

Harachmar turned in his seat and gazed at the other with blank amazement. He said fiercely, "Chweit, do you realise what you're saying?"

"I have nightmares," said Chweit calmly. "Nightmares in which this ship is followed home from one or other of the systems that we visit by a fleet of faster-than-light ships carrying weapons against which we have no defence and armour which we cannot pierce."

"It'll never happen," asserted Harachmar, but there was little conviction in his voice.

"It has never happened," Chweit corrected him. "It may—the odds are all in favour."

"Rubbish," Harachmar all but shouted. "If that's the way you feel, we might as well give up and go straight home."

"Oh, no. Not while there's an inhabited planet here. I want to see that world taken and made one of ours. Not so much because we need it, but because that would be one less place for the threat to come from. We're walking a tight-rope over a sea of flame, and we shall never feel secure until we've conquered every system in the galaxy. Then, maybe, we'll be able to relax."

"But inter-galactic travel—" said Harachmar, in spite of himself.

Chweit laughed, a little sadly. "You see?" he said. "We've chosen our way, and now we are embarked upon it there is no turning back."

He looked again at the tiny image on the viewscreen. " What's it got, Brind ?" he went on, keying open the line to Armaments.

" Radioactive weapons, sir," was the reply. " That's all. No energy source big enough to load a beam. It's not a match for us—we could go through its meteor screens as if they were paper."

" Blast it," ordered Chweit.

There was a hiss of indrawn breath from the speaker. " Would you repeat that, sir ?" Brind asked hesitantly.

" I said blast it. Knock it out of space. Use the smallest and least efficient weapon we have capable of doing the job. If I want to study the behaviour of ants, I stir the heap with a stick. This will tell us what they have to fight with and if it offers any obstacles to us."

"Right, sir," said Brind, but it was plain that he was unhappy about it.

" You see ?" Chweit commented a little grimly. " Brind is as afraid of some impersonal vengeance as you or I."

Harachmar said nothing, but kept his eyes on the screen.

It was minutes only before the ship in it abruptly turned into a cloud of boiling gases and dissipated its mass among the interstellar dust.

" Brach here, sir," the speaker muttered after a while. " The ship Armaments just blasted—it was broadcasting, presumably to a home base somewhere not far from here. Also there is considerable noise from the robot station that reported our arrival. It seems to be some kind of alarm."

" Brind ! Blast the robot station as well. Make them really unhappy while we're about it. There's a chance that if they don't like the way we get rid of their best stuff, they may be too frightened to offer resistance."

A pause. Then, " Robot destroyed, sir," Brind said. He sounded very nearly frightened.

" Assessment from Armaments, " a new voice cut in, much more assured than Brind's. " No resistance was offered to the light weapon employed. No screens were detected except a minimum of meteor protection. Analysis of the resultant explosion shows no energy source except a space drive pile operating on a simple reaction principle and the suspected detonation of an atomic missile. Enemy weapons assessed as primitive."

Chweit noted the defence mechanism implicit in the use of the word *enemy*, and smiled faintly.

" Right," he said. " Now we await results."

For perhaps the twentieth time Arnold stood up and went across the balcony to look down at the operations table. In his hand was

the last thing to come from the 'printer on the desk behind him. It was the final message from 1167, the monitor which had first found the alien, and consisted of two simple code groups as always. These, though, meant :

" Alien known to be hostile. Station under attack."

But now there was a piece missing from the jigsaw on the table below, and an uncomfortable gap in the ring of watchers. There was a new symbol in the gap, too—one he had never expected to see. There was a brilliant red question mark which signified *ALIEN.*

He could almost smell the sense of uneasiness which arose from the busy men below him. There were no words, but the glances they kept passing meaningfully every time their eyes fell on that red query made their anxiety plain enough.

The door opened, and he turned to see that this had infected even the normally imperturbable Nwaka. His dark, strong face was lined and haggard.

" Anything from Earth ?" he demanded abruptly.

" Nothing yet, sir," said Arnold worriedly. " Unless—" He stepped back to the desk, and as if the transmitter far away had anticipated his arrival, the light on the panel began to blink. He tripped the switch, and read the message eagerly as it emerged from the 'printer.

From : Minister for War.
To : All units holding Directive 957/08, as amended.
Most secret—encode by cryptest means.
Priority—instantaneous immediate.
1. Proceed in accordance with directive above-named.
FOR THE PRESIDENT OF EARTH,
Li Liang-Huen.

Nwaka had come up behind him and was reading it over his shoulder. He said without glancing up, " High time." He seemed satisfied.

" What does that mean ?" Arnold demanded. " I never heard of—oh ! That book I fetched out of the vault for you, sir ?"

Nwaka nodded. " Watch the operations table," he said. " I think I could do with some sleep. Isn't it about time Rattray came on ?"

Startled, Arnold looked at the wall-clock. It was more than an hour past the termination of his watch. He said, " Of course, sir. I'll go and wake him—I promised to call him two hours ago. What shall I tell him ?"

" Tell him not to be surprised at the number of symbols he has to use this watch," answered Nwaka cryptically, and went out.

* * *

The results were a long time coming. And when they did arrive, they were not what had been expected.

Chweit was almost out of patience, and ready to order another show of force, when Brach's voice from Observation heralded the long-awaited answer. He said, " Sir, there's a ship coming. A big one."

" Put it on the screen," said Chweit.

Shortly, the image of a ship so big that at the standard magnification for its distance it filled the screen from edge to edge, appeared before them.

Harachmar sat forward on his chair as if jolted by an electric shock.

" What is it ?" he demanded.

" That," said Chweit, choosing his words with care, " is the biggest ship either of us has ever seen in space."

" Sir—" there was a note of alarm in Brach's voice, "—our radar doesn't register this thing properly. It won't hold the image. We can't get a distance-fix on it, and the mass-register won't stop still !"

Slowly whitening, Harachmar sat back again. Chweit rapped out, " Find out why ! Armaments, get every gun and beam we have focused on that ship. Stand by to blast !"

" What if we can't hurt it ?" said Harachmar. His forehead was beaded with sweat.

" That's exactly the point," said Chweit. " We aren't up against a primitive rocket this time. We daren't fire, for fear of not achieving anything."

They sat in silence for a while, as the ship loomed larger and larger. They had to step down the magnification twice to keep it in sight.

" This is it," Harachmar kept whispering. " This is it." He wished he was a peasant with a god to whom to pray.

But nothing happened. No bolts of intolerable lightning flashed out to exact a revenge for the loss of the other ship and the orbital station, and at length Brach voiced what they were slowly coming to suspect.

" Sir, that's a dead ship ! She isn't under drive—she's drifting !"

And indeed it was true. The mighty stern tubes, that looked capable of lowering the ship's vast bulk to the surface of a sun with less force than would crack an eggshell, were cold and quiet. The ship was on a derelict's course.

" Where's she from ?" Chweit demanded.

" She must have been lying inert in orbit somewhere. We didn't notice her before a few minutes ago. It looks as if she blasted off and something went wrong." A note of cautious jubilation crept into his voice. " Maybe their big bang was a misfire."

" No !" said Chweit decisively. " There must be a reason for this. A people who could build a ship like that wouldn't design it so that it went wrong the very first time it was used."

" The first time ?" said Harachmar involuntarily.

" You don't fight interplanetary wars with battlewagons like that," said Chweit. " You'd lose half your planets. No, that must be their major defensive weapon. A ship packed as full as possible with everything their technology can devise for the inevitable attack from outside their system."

" Why do you say it is their major defensive weapon ?" Harachmar wondered. " Would they send out their only one—like this ? Dead ? I don't think so. It would come out fighting. They must have more than one."

" Sir," said Cloust from engines, " do you want the drive warmed?"

" Warm it," said Harachmar. " We'll probably need to get out of here in a hurry."

" No !" said Chweit decisively. " We won't be going. We stay here—until something happens."

" Are you out of your mind ?" said Harachmar incredulously. "You mean we're going to stay here right under the nose of that thing ? Don't be more stupid than you can help."

" Remember what I said about an alien following us home ?" Chweit answered quietly. " The drive stays cold."

Harachmar remained silent, but his face went grey.

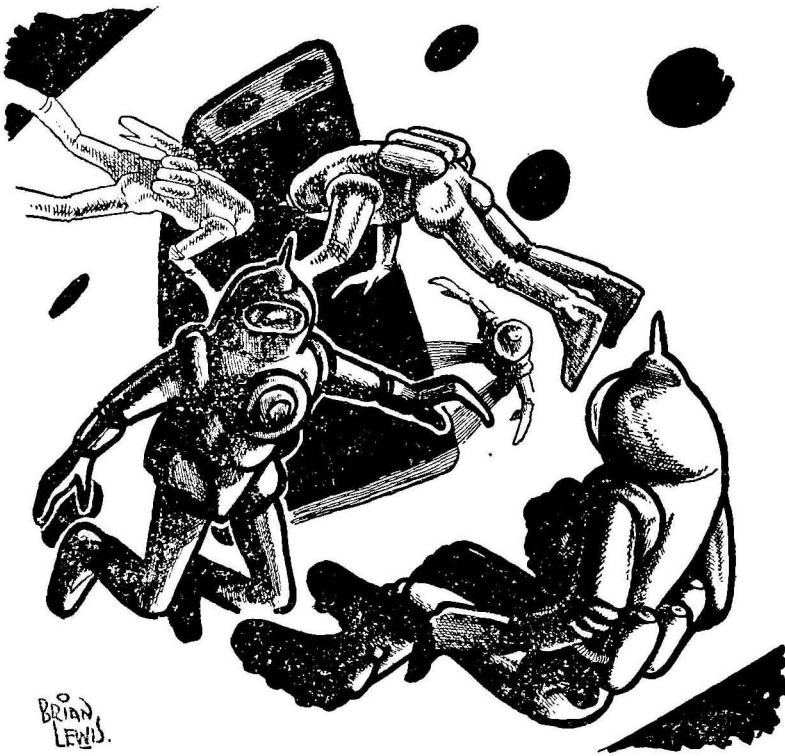
•

It was like a game of chess, thought Arnold. Unfortunately, there was no time limit on the moves. It was more than three days since the new piece—this time, the symbol was a black cross—had moved out of nowhere and begun its leisurely drift towards the red query. In that time, he had found himself almost incapable of sleep, and had taken to spending his time in the operations room " in case he was needed."

Nwaka too was spending much of his spare hours here, and the contrast between them grew minutely more pronounced. With the enigmatic message from Earth, his worry seemed to have sloughed at least partly off him. It isn't fair, Arnold thought dispiritedly. He knows what's going on.

Below, the man in charge of that sector moved the black cross one step further on its journey.

For the ten-thousandth time Chweit raised red-rimmed eyes from the viewscreen, which still held that same awe-inspiring image, and repeated, " There's got to be a reason for this !"



Harachmar leapt out of his seat and began to pace the length of the cabin. After a couple of circuits, he wheeled suddenly and asked, "Must there be a reason? Why can't you accept that it's within the bounds of possibility the enemy ship should have gone wrong—is simply lying there, drifting? Why not let's settle that once and for all? If it's booby-trapped, there's no need to go close to it to find out. Just send a life-boat, manned by a crew of volunteers, to draw its teeth. Or at least to find out if it has any."

Chweit nodded reluctantly. "That's right," he admitted. "We don't have to endanger the ship—we might even get something out of it we can use ourselves. Attention!"

He snapped open the general address circuits.

" Attention ! Since the enemy ship has lain dormant for so long, it has been decided that it cannot intend to attack. There is a high probability that it has failed and is incapable of so doing. Volunteers are called for, one from each of the following sections : Armaments, Observation, Navigation, Engines. These men will have the task of investigating the alien ship.

" The alien ship is to be considered a derelict."

It took some time, but after a while the names of volunteers began to trickle in, and Chweit picked those whom he knew to be most stable and competent. Nonetheless, it was with misgivings so great as to approach terror that he watched the image of the little life-boat leave their ship and cautiously move on to a collison course with the alien. They all waited, in the ship, for the life-boat to vanish—or flare into nothing—or turn into a manned bomb and attack its own ship.

Nothing of the sort happened.

Instead, the small and the big spacecraft converged, and the first hesitant report to come in was full of jubilation. The voice was that of Brind, from Armaments, the senior member of the four-man crew.

" The locks are open to space," he reported baldly.

Harachmar turned to Chweit, starting to say, " What did I tell you?" but Chweit motioned him to silence. His teeth had closed so firmly on his lower lip that the blood had begun to flow.

The boat touched. One man in a spacesuit entered the vast lock of the alien, and disappeared. Brind's voice announced that radio contact had been lost, owing to the intervention of the hull and a peculiar sourceless static which the listeners could hear crackling in their own speakers. An hour elapsed. Another, and a second man followed the first. It must have been Brind, for a different voice made the third report—a non-commital statement of absence of progress.

In all, more than six hours had elapsed before the two men returned from searching that colossal hulk. Even before the official announcement, there was something in their very movements which indicated success, and indeed the word came shortly after.

" Captain Chweit ! The ship is empty !"

Slowly, Chweit and Harachmar relaxed. Chweit felt for a handkerchief, becoming conscious of his bitten lip for the first time, and said thickly, " Congratulations : Right, leave it. I want all the members of the search party to report to me right away. In person."

Harachmar, this time, could not be stopped from saying, " I told you so."

Even so, it was a worried captain who acknowledged the salutes of the reconnoitring party when they entered the cabin on their return. He said immediately, " Well ? What's it got ?"

The four men looked hesitantly at one another. It was Brind who finally had the courage to break the silence. He said, " Everything, sir."

" What do you mean ? Explain."

" Just that, sir. There's hardly anything there which we could understand. I managed to get a look at the armament while I was on board, and though that's my job I never saw anything like it. As far as I can see, they pipe some kind of energy—fusion, at a guess—into a beam. At least, there are some blackened cradles which lead off to output antennae. That's the only thing I could even remotely guess at. The controls are fantastic. It looks as if five or six hundred men would be needed to run the ship—and there's absolutely nobody on board."

" As far as the engines go, sir," one of the other three chipped in, " they work on no principle I ever heard of. It looks as if they use raw energy. And I mean raw. It could even be neutrino stuff. They draw it off into some kind of metal frame running around the hull. It's probably faster-than-light drive of a kind we don't know about."

" I see," said Chweit. " And you're sure there's nobody on board?"

" Certain, sir. There just isn't anywhere for them to *be*."

" Then we are going to find out what makes that ship tick. And when we've done that, we'll know exactly what we're up against. Harachmar, would you organise the necessary teams ? This is the best break we've ever had."

The red question mark and the black cross had finally come so close that the scale on the board was too small to show the gap between them. Arnold gazed at them with tired eyes, wondering what was supposed to happen now.

A manned patrol ship, watching from the absolute limit of detector range with positively the best radar ever taken into space from Earth, reported that something had left the alien and touched with the mystery ship represented by the black cross. Arnold notified Nwaka when the latter came in.

For some reason, it seemed to make him overjoyed. He took from his pocket a signal form on which a message was already written, and said, " Send that to Earth. Right away."

In astonishment, Arnold took it and read it. He was no better off when he had done so, for it ran, simply :

Dog has seen rabbit.

It wasn't quite the break he had thought it was.

They put in a complete team of technicians, all very highly skilled

tradesmen, for their fighting service had access to all the latest technical and scientific knowledge. And conversations ensued . . .

" What are you so worried about, Grad ?"

" It's this thing here."

" What about it ? It's a guided missile, isn't it ? In fact, it's about the only recognisable thing we've dug out of this department."

" Yes, it's a guided missile, all right, with an ordinary fusion warhead. But it's got nothing to guide it ! This circuit is set up as if the information loss was nil. Chief, that's impossible !"

And again.:

" Well, it's plain that you pipe the heavy hydrogen in here and initiate a fusion reaction in it with the pocket-size atom bombs they store in these lockers over here. The power is somehow drained off into this tube here and fed into a square frame aerial about six feet long somewhere the other side of that hull. That much is clear. But how the hell can you have a dozen hydrogen bombs going off in little metal cups right in the middle of your ship ?"

" It must have something to do with this doolally here."

" Yes, that's what I think. It's focussed right slap in the middle of the cup. But we've tried putting power into it, and all it does is create a magnetic field. And nobody is going to tell me we dare try this thing out before we find how a magnetic field can control a fusion reaction."

And again :

" I don't know where the power comes from, but this widget here is a neutrino counter, so that might be it. Somehow the power is fed into a framework of copper and silver that girdles the hull. It must be a drive—it can't be anything else. But before we try it, we'll have to figure it or we may blow ourselves to hell and gone."

" What about the tubes ?"

" Ordinary tubes—athodyd, so help me ! They don't store any reaction mass aboard, so I don't see what the hell there is to come out of them."

" You know, even interstellar dust piles up ahead if you go fast enough."

" You may have something there. But how do they get it to move fast enough in the first place ?"

And again :

" Well, we know exactly what this is. It's the Nurald effect. We discovered it fifty or sixty years ago, and we never found a practical use for it. But these people seem to be able to make it do tricks—though what kind of tricks is strictly beyond me."

And again :

" Konslave, have you tried looking at this control panel ?"

" Till I'm giddy. I've fed power to every one of those cables one after the other, and the dials go round and the lamps light up and the tubes shift up the spectrum, but I can't read what it says on the dials and I can't distinguish changes of wavelength that small, and the whole thing means rather less to me than Horakian Polmeth."

And again :

" Where do the *crew* sleep ? There are no quarters and no hospital. There isn't even any food storage space ? And there isn't anywhere for them to hide, either."

" Maybe they don't eat and they don't sleep."

" I'm not wearing that one. But you could say they didn't mean to undertake voyages of more than a few hours in this ship—which means its speed is something out of this galaxy. And you could explain the absence of hospital and repair facilities by saying they were quite sure they wouldn't get hurt."

" It doesn't make sense."

That was exactly it. It didn't make sense.

They solved the problem of why they had so much trouble with the radar. In addition to—warping space, they decided to call it—the silver and copper frame around the hull shifted all radiation falling on it half an octave down the spectrum. That was aside from the fact that the whole skin was space-black and absorbed light in the visible range as if it hadn't been there. Chweit sat and marvelled for an hour at that, asking why his own people had never thought of it.

They solved the problem of the mass-register. It had something to do with a meaningless alloy of rare minerals in a steel ball machined to an incredible tolerance which hung judiciously balanced between giant alnico magnets at the exact centre of gravity of the ship. But they couldn't see the point of it.

It was on the twentieth day that Observation reported, " Sir, we're being watched."

" Who by ?"

" There are about four hundred enemy ships of all sizes ringed in a semi-circle at the limit of detector range. Two or three of them are ships as big as the one they sent before."

" Are they doing anything ?"

" No, sir. They're just—waiting for us to go away."

Chweit sat bolt upright. For a moment he was speechless. Harachmar demanded, " Are you all right ?"

" Yes," said Chweit with difficulty. " Yes, I'm all right. And so, by the grace of a very kind and wise people, are all of us."

Harachmar looked as if he suspected insanity, but Chweit went on, the words tumbling from his mouth. " Don't you see ? Here, we've run up against what we've always feared—a science which we can't understand, which is so superior to ours that we couldn't last against it for a moment. We came here, and the first thing we did was to destroy one of their ships—probably a sort of one-man go-cart. But instead of retaliating, as we expected them to do, they must have looked us over and discovered how primitive we are. So, rather than attack us and wipe us out, they simply sent us a sample of what was waiting for us. We've looked at it and we know we're beaten. Now they're waiting for us to admit it."

" But surely they wouldn't have sent us their best weapons ? Supposing we'd turned them back on them ?"

" They won't have sent us anything they haven't got a defence for. But the fact remains, we can't understand them. Why, those crazy atomic fusion beams of theirs could go through our screens and we'd never know any more. No, Harachmar, let's go. Let's get out before they run out of patience, and we suffer that long-ago vengeance we're all so afraid of." He opened the general address system.

" Recall all personnel on board the alien ship ! Warm the drive ! We're getting out of here, and we're not coming back !"

It was just a short time later, but it seemed like an age, when they were on the point of dropping into hyper-space for the long trip home, that Chweit finally voiced a thought which had been worrying him since he first realised what they had found.

" I wonder what will happen when they get tired of staying in one solar system," he murmured.

Harachmar barely heard him, but the thought chilled him through and through.

There was a sudden ripple of excitement in the operations room, and, unbelievingly, the man in charge of the sector where the visitor was located reached out his croupier's stick and moved the red question mark—away from the sun.

Arnold caught the motion and whirled on Nwaka. " Look at that !" he exploded. " What in God's name did we *do*, sir ?"

Nwaka's brown face suddenly relaxed, and Arnold saw that his composure of the past weeks had been only a mask, maintained by sheer nervous effort. He said, " We didn't really do anything at all. They did it to themselves."

He picked up the thick volume labelled *Directive* 957/08 and weighed it meditatively in his hand. He said, " Well, I can tell you now, I suppose. It'll be released to the public soon enough.

" We just pulled the biggest bluff in the history of man. This book started out as a minute from the Minister for War back in '08. Came up at a cabinet meeting. They'd decided that we couldn't expect to dodge interstellar contact much longer, once we were in space ourselves, so the psychologists set up a kind of defence. They postulated that any race which went out conquering among the stars must suffer from a deep feeling of insecurity, and the fear of retaliation. Guilt, if you like.

" So they built about a dozen ships—bigger than anything else we'd ever dreamed of. Ten, even fifteen miles long. Then they turned loose the backroom boys to dream up the wildest inventions they could, things that looked as if they did the impossible. Those ships *look* as if they go faster than light, and they're stuffed chock-full of every inexplicable scientific effect that has ever been discovered. Every time something new comes up, it's first priority to those ships. And that's why this publication here is a bit longer than the original minute."

He put it down on the desk and gazed at it. " You'll get to read this some time," he said. " Now that it's been proved to work, they may even declassify it. It's fascinating, really."

He glanced up at Arnold with a faint smile, the first in many days. " We call it the Visitors' Book," he said.

K. Houston Brunner.

Asteroid mining will be a hazardous as well as a monotonous job when ships eventually reach out to the Belt to extract the mineral wealth lying there. The hazards will not all come from rocks in their orbits either.

FORGETFULNESS

By Phillip Martyn

Redfern was the one who found it. Big, slow, good-natured Redfern with his easy smile and vivid imagination. He stared at the spectroscope and his yell jerked Murry from where he lay in uneasy slumber.

" Hey ! Murry ! Look what I've found !"

Murry grunted and, swinging his legs over the edge of his bunk, drifted from the tiny sleeping cabin into the passage leading to the control room. " Found what ?"

" It ! The thing we've been looking for !" The big man stabbed his thumb towards the tell-tale lines on the plate. " See ?"

" Wait a minute." Murry rubbed at his eyes and stooped a little closer to the spectroscope. The pattern of bright and dark lines faded even as he watched and he swore with the easy fluency of a man to whom cursing was second nature. " It's dead."

" I'll liven it up again." Redfern swung the butt of the thermite gun into the hollow of his shoulder, peered through the sights at something far out in space, and squeezed the trigger. The cough of the weapon was almost immediately followed by the reappearance of the spectroscopic pattern as the burning thermite vapourised the surface on which it rested. " Now do you see it ?"

" I see something," grunted Murry, his little eyes narrowing as he read the lines. " Iron, carbon, some copper . . ."

" Platinum and," Redfern's finger touched the screen, " osmium. Osmium, Murry ! The heaviest substance known !"

" Yeah." Murry straightened, one leg automatically hooking itself around a stanchion to prevent him drifting away. " How big is it ?"

" It's big, Murry. Almost too damn big to be true !" Redfern stared at the fading lines on the spectroscope. " Think we can handle it ?"

Murry shrugged. He was smaller than Redfern, much smaller, with a kind of uneasy restlessness which revealed itself in a constant flickering of the eyes and a subconscious jerking of the head. Compared to the big man he was a midget but what he lacked in animal strength he made up in animal cunning. Now he stood, his slight body swaying a little from the reaction of his movements, his little eyes heavy with thought.

" We could mark it and take the co-ordinates," he said, more to himself than to the big man. " Then we could register the claim and sell out to a combine. We could do that and maybe get a twentieth of its value—if we didn't get swindled out of our claim and if claim jumpers hadn't found it after we'd left."

" That don't sound so good," protested Redfern. " Why can't we get it all ?"

" Or we could mine it here and now, take as much as we can and trust to luck that no one finds it again after we leave."

" Why can't we mark it and register the claim ?" Redfern stared through a port towards the dim shape of the rich asteroid. " Then we can come back either alone or with a combine to take out the osmium."

" If we mark it the radio-beacon will let every claim-jumper in the Belt know that we've made a strike and they'll be swarming here to shift markers and fill their holds before we could touch down on Mars." Murry shook his head. " That ain't the wise thing to do, Red. Not unless we can stay here to protect our find and we can't do that."

" They'd respect the markers, wouldn't they ?" Redfern stared at Murry. " I thought that the Belt had been cleaned up years ago ?"

" If you thought that then you've got a lot to learn." Murry grinned as if at a pleasant memory. " Who's to worry about a couple of bum prospectors and a junky old ship ? The Patrol ? Hell ! They'd never be able to prove a thing even if they could police the Belt, which they can't. The buyers ? All they care about is getting valuable ore cheap. Our so-called friends ? They'd be the first to pick up our signal and blast in for the kill. No, Red, you've got to be smart to get rich in the Belt, and you've got to be smarter if you hope to live to spend it."

He sucked at his teeth and something like a smile twisted his lips at the other's expression of incredulity.

" You think I'm joking ? Listen, Red, I've prospected the Belt for twenty years now and I know what I'm talking about. That thing," he jerked his thumb towards the port, " can either set us up or put us down. It all depends on how we handle it."

" We could radio the co-ordinates to Mars," suggested Redfern. " Wouldn't that authenticate our claim ?"

" Sure, unless some tout intercepted the message, or a dishonest clerk saw the chance to make an easy piece of change." Murry shrugged. " On a small strike it wouldn't matter, the combines can afford to let the small fry alone, but you said that this one was big."

" It is big."

" How big ? Murry gestured towards the instrument panel. " Give me facts, figures, some dope I can chew over. Hurry !"

Redfern flushed a little at the other's tone then, his easy nature asserting itself, he turned towards the panel.

He was younger than Murry, younger in years and a baby in experience. Fresh out from Earth with a few degrees after his name and some cash in his pocket he had been lured by the glittering prospect of an easy strike. The Asteroid Belt was littered with the corpses of those who had imagined the broken shards of some planetary explosion to be plums ripe for the picking. The wealth was there, yes, but death was there too. Death from the unpredictable orbits of the tiny worlds, from the massive giants of several tons to the tiny ones of a few ounces. Both could kill. The big ones by sheer weight and momentum, the small ones by their bullet-like penetration.

It took guts and skill and luck to survive. It took more than luck to live long enough to find a hunk of rock containing enough wealth to make it worth mining.

" Mass about fifty tons Earth weight. Size is small but that's because of the heavy metals. Osmium content . . ." Redfern frowned as his fingers pressed the keys of the calculator. " I'd guess about twenty per cent." He looked at his partner. " She's loaded, Murry. I told you that this was a big one !"

" Calm down." Murry drifted forward and stared with pale eyes at the looming shape limned now by the stars which it occluded. " High density means tough mining. We need explosives, extra oxygen, gear we haven't got." He swore with cold precision. " It looks as though we've found ourselves a headache."

" But . . ."

" Shut up ! I . . ."

Both men winced as something slammed against the hull. The impact was followed by the shrill whine of escaping air, a screaming hiss as the precious gas streamed out into the void and Murry swore as he dived for a patch.

" That's the third time in ten days ! Damn it, this section must be lousy with shrapnel." He tore the soft, sucker-like rubber cup from

a row on a bulkhead and slammed it over the hole. Internal pressure pressed it tight against the inner hull, sealing the punctured hull against such time as they could weld it whole again.

" Did it penetrate or explode on impact ?" Murry stared around the control room. " I've known one of those things to enter and blast the instruments to a heap of junk." He sighed as he saw no damage. " We were lucky, it must have been a small one travelling at high speed and it vapourised when it hit."

Redfern stared at the older man, amazed at his calm acceptance of near-death, himself still trembling with thoughts of what might have happened. Speed had saved them. Air at thirteen pounds pressure was only too eager to stream into the void and any hole over a few millimetres in diameter would evacuate the ship almost at once. Not all the ship, of course, the bulkheads would see to that, the doors sealing off the rest of the vessel from the empty compartment, but that was no help when the break occurred in a section of the ship where there were men. Those men either sealed the hole or they died. Experience had taught them to seal the hole.

" Got it !" Murry snapped his fingers.

" Got what ?"

" I know how we can have our cake and eat it." Murry pointed towards the asteroid. " Listen, can this tub haul that hunk of rock out of orbit ?"

" Out of orbit ?" Redfern looked blank. " Why ?"

" Don't ask stupid questions. Can it ?"

" Yes. We could hook onto it and drag it after us if that's what you mean. Do you ?"

" What else ?" Murry scowled at the rubber patch against the hull. " This section's too dangerous for mining anyway, we'd be riddled before a month was out, and we're low on oxygen as it is. We'll weld cables from the ship to the asteroid, blast off, and swing its orbit towards that of Mars."

He mentioned it as if he were talking of taking a stroll and Redfern frowned as he mentally struggled with facts and figures.

" Wait a minute ! That thing out there has high mass and even at full blast we couldn't move it very fast. Once we start it moving it's going to be the Devil's own job to stop. I . . ."

" Who said anything about stopping it ?" Murry sneered his contempt. " All we want to do is to get it out of orbit, swing it away from this sector and out into free space. What's so hard about that ?"

" If you move it you'll disturb the orbits of other asteroids," warned Redfern. " They'll be so disrupted that they'll be unrecognisable."

" So what ?"

"But don't you see what it may mean? If we upset the balance between this and the others the disturbance will spread half-way around the Belt. Collisions will occur, main asteroids thrown off orbit, smaller ones sent running wild. What of the prospectors who may be caught? They won't know what's happening. All they'll know is that once-safe areas have suddenly become dangerous." He shook his head. "No, Murry, I can't do it."

"You'll do it," said Murry coldly. "You'll do it because, if you don't, I'll kick you off-ship the very next time we land. This is my ship, remember? I've no time or room for a milksop. This is my chance to get rich and I'm taking it. Well?"

Redfern swallowed, knowing that he shouldn't agree, but nodding just the same.

Murry grinned.

Welding the cables was easy. Against the night of space the welding torches gleamed like trapped stars as the searing arcs caused metal to fuse to metal. Deftly they kicked themselves from asteroid to ship, from ship back to the asteroid, from asteroid to ship again, drifting like bloated fairies in the weightlessness of free fall.

Then came the hard part.

The ship groaned in every plate as the thrusting power of its tubes struggled to shift the immense mass of the captured piece of mountain. Twice the cables snapped and had to be repaired and augmented with other strands. Three times the engines had to be cut as the thin hand of the guage crawled up and past the red danger area of fusing tubes. More than once Redfern shook his head at the rapid drop of the fuel gauge only to ignore it at Murry's insistence.

"We don't need fuel," Murry snapped. "Once we get well away from here we can always radio for a tug to bring us some. Keep trying."

Finally they managed to swing the mass of the asteroid from its orbit and dragging it after them like a jagged ball on the end of a string, headed slowly towards the distant image of Mars.

And then they had time to think.

Redfern thought of Murry and Murry thought of Redfern, and both of them thought of the asteroid which, like some ungainly monster speared in some alien sea, glided after the tiny bulk of the ship.

Redfern thought of his home and his friends and wondered what they would think of the company he kept. Murry was all right in his way, but his way was the prison way, the criminal way, the way of cold blood and hot temper, of calculated cruelty and murderous indifference. He was uncouth, low, foul-mouthed, content with a cheap woman

and cheap wine, flashy clothes and the tawdry appurtenances of wealth. To such a man riches would do only harm—and anyway, he had found the asteroid.

Murry thought of the wasted years since he had been a boy, the years of struggle Redfern would never know. He thought of men he had shipped with, strong men some of them, dying as they clasped at dreams, ripped apart as they combed the Belt for the wealth it contained, finding it only to be robbed and cheated, swindled and hoodwinked, shot and beaten up. He thought of himself twenty years ago. A young man then with an ideal and an aim. No education other than that given by the school of experience, no friends other than the assorted scum of a dozen ports, no hope except that offered by the eternal El Dorado of a lucky strike. What would Redfern, young fool that he was, do with so much money?

Money! Both thought about money. Osmium, ten tons of it maybe, and even at a credit the ounce that would mean over three hundred thousand credits. Platinum too, that was worth something, but the real money was in the osmium. A credit the ounce? That was the price of rough ore delivered to the combine. It was worth more, much more, but even at a credit an ounce it would mean a fortune.

Two fortunes, two small fortunes that is, one big one. Murry thought of money and hated the thought of sharing it with anyone. Redfern thought of money and begrudged his partner his share.

Both thought of murder.

Redfern thought of it and dismissed it immediately. Not murder. Murry was bad, rotten, greedy and criminal, but not murder. He couldn't do that.

Murry thought of it—and acted.

To kill was easy, to escape discovery was essential, and he knew just how to do both.

First he took the sealing patches from the sleeping cabin, all of them, lining them up with the others on the control room bulkhead. They were well away from the Belt by now and the danger of being penetrated by meteors was so slight as to be negligible. Then he had to wait until the big man fell asleep. Not so easy this, a man didn't tire much in free fall, but sleep provided a welcome break in the monotony of shipboard routine. Then to test the door, centre swivelled and with extended overlap on either side so that, no matter which compartment was airless, the pressure on the other side would hold it immovable with all the force of thirteen pounds per square inch pressure. Then, with the seals removed, Redfern asleep, the door fastened against his waking, Murry donned his suit and, passing through the double doors of the air lock, emerged into space.

His plan was ridiculously simple.

It was so simple that it would work. Accidents happened, didn't they ? They had been prospecting the Belt, hadn't they ? Well then ? With three normal punctures within ten days who could say why there couldn't have been four ? It was bad luck, of course, that the sleeping compartment had been holed. Worse luck that Redfern had been asleep at the time. A tragedy that the door had sealed and that Redfern had obviously died before being able to stop the hole. A dead man, a scarred hull, a foolproof alibi—and ten tons of osmium all his.

Murry grinned inside his helmet as he stepped cautiously over the outer hull.

He knew the vessel as well as he knew the palm of his hand, better, for he rarely examined the palm of his hand. He crouched over the section of the hull behind which lay the sleeping man, and the arc-torch in his gloved hand flared to instant life. A hole, not too big, with the seared edges and surround of meteor damage. The air would gush into space and, even if Redfern should awake, there was nothing he could do to seal the hole. Metal glowed as Murry lowered the torch.

After the air had escaped and Redfern was dead he would reseal the hole, normal procedure against which no one would complain. He would bleed air into the empty compartment, replace the patches, seal the room, evacuate it, and wait for the patrol and their investigation. With all decomposition arrested by the vacuum it would be impossible to find the true time of death. A perfect murder !

He chuckled again as the softening metal bulged a little from the internal pressure. He grinned as the searing arc of the welding torch vapourised the thin, outer skin. He laughed as he completed the hole.

And then he stopped laughing.

Air, confined at thirteen pounds pressure, blasted through the opening, slammed against his chest and sent him spinning and whirling away from the vessel. Driving him like a pea shot from some immense pea shooter, his long, too long life line trailing behind him.

He had time for one scream as he saw the mass of rock and metal of the captured asteroid waiting to smash his face plate into utter ruin.

Phillip Martyn.

It was a touchingly beautiful gesture, the yearly service to those men who had never returned from space, yet psychologically timed to appeal to the very young in whom the future rested.

NO PLACE FOR TEARS

By R. H. Godfrey

To Peter it was just like a holiday.

It had started early in the morning, so early that the lights had been on when he awoke and the pale grey of approaching dawn had pressed against the windows with silent mystery. He had eaten, forcing himself to swallow the cereal and fruit juice, the egg and the thin slices of crunchy brown toast, wriggling on his chair as he ate, full of the excitement of anticipation.

"Mummy. Will we see the rockets?"

"Yes, dear." Mummy poured out a tall glass of creamy milk.

"Can we stay all day?"

"Perhaps. Drink your milk now."

"Will Ginger be there?"

"I don't know. Did you ask him?"

"No." Peter drank and, when he looked at his mother, a broad white streak made a milky moustache across his upper lip. "I hope that he isn't there," he said candidly. "Then I'll be the only one in the class to have seen them."

Mummy didn't answer that. She busied herself clearing away the breakfast things, putting the milk in the refrigerator, throwing the used dishes into the disposal chute, doing all the dozen things that she always did before they ever went out.

Peter tried to be patient, but it is hard for a ten-year old to sit quietly and, before long, he had taken his toys from the cupboard and was engrossed in his play.

"Woosh," he said. "Zzzzeeemmm, hisssssss, wheeeee . . ."

"Peter!" Mummy stood above him. "*Must* you make that noise?"

"I'm playing rocket ships," he explained. "Do they really sound like that?"

"Like what, dear?"

"Woosh. Zzzzeeemmm, hi . . ."

"Something like that," she said hastily. She looked at the watch strapped on her left wrist. "Hurry now, Peter. Put those things away and wipe your face and hands."

"Are we going now?" Eagerly he jumped to his feet, thrusting the models into the cupboard, and, for once, did not protest against having a wash. "Is it a long way, Mummy?"

"Yes, dear."

"Ten miles?"

"Longer than that."

"Twenty miles? A *hundred*?"

"About that." Mummy looked at her wrist again. "Ready?"

"Yes." He scrubbed at his face with the towel. "Are we going by train?"

"You know that we are, Peter." Mummy sounded tired and a little impatient. "How many times must I tell you? We'll catch the bus to the monorail station and, when we arrive, catch another bus to the spaceport. Are you ready now?"

"I'm ready." Hastily he wriggled into his coat as Mummy moved towards the door. "How big are they? Really, I mean."

"How big are what, dear?"

"The rocket ships, the real ones. Are they as big as a house?"

"Sometimes. It depends on the size of the house."

"I'll bet they're as big as this house." Peter waited while his mother switched off the lights and slammed the door. "I'll bet that they're as big as this street. Bigger!"

His mother didn't answer but that didn't stop him and he was still chattering as, hand in hand, they walked down the corridor towards the new-lit streets.

The spaceport was larger than anything he had ever seen before. It stretched before him, a tremendous area of steel-ringed concrete, spotted with gantries and cranes, sheds and tractors, office buildings and what he took to be repair hangars. It was the first time he had seen the spaceport, always before he had been left at home in the care of a neigh-

bour, and by the time they reached the gate he was almost hopping with excitement.

" Where are the rockets, Mummy ? Why can't we see the rockets?"

The gate-man smiled down at him as he took the slip of paper from Mummy's hand. " They'll be here later, sonny." He looked at the pass. " Mrs. Morgan ?"

" That's right. This is my son, Peter."

" Mrs. *John* Morgan ?"

" Yes."

" Pleased to meet you, Madam." He rested his hand on the top of Peter's head. " His son, you say ? Yes, I can see that. Another one, Madam ?"

" I don't know." There was a strange thickness in her voice as she looked down at her son. " I just don't know."

The gatekeeper nodded as he swung wide the high, wire-mesh portal. " The service will be held at shed five, Madam."

Together they passed through while behind them, other women and children with a scattering of men lined up outside the gate, their passes in their hands. They were a quiet, solemn crowd, much different to the usual sightseers who crowded the spaceport when the ships were due to take-off or land. Some carried flowers, little wreaths and clusters of lilies and roses. Many of the women were red-eyed, smiling at their children and, in some cases, gripping the arms of their men. Only the children seemed normal and, even they, especially the older ones, seemed to have quelled their natural high spirits.

But Peter wasn't looking at the people.

His eyes were twin searchlights darting from crane to gantry, from shed to office, from office to the far, slightly misty horizon where the thin silhouette of the perimeter fence showed with vague unreality.

" Mummy ! Where are the rockets ?"

" You'll see one soon, dear."

" Yes, but where are they ?" Disappointment tinged his young voice as he stared over the barren concerte. "I want to see a rocket ship."

" Be quiet, Peter. You'll see one soon."

" Where is it then ?"

" In space. Be quiet now."

" Space ?" He tilted his head to stare at the cloudless blue of the sky. " Up there ?"

" Yes."

" I can't see it, Mummy. Are you sure that it's up there ?"

" It's a long way away. You'll see it soon."

" But . . ."

" Peter ! Be quiet now !"

They had arrived at shed five, a bleak, empty hangar now showing signs of wear and obviously long since abandoned except for special purposes. Chairs filled but a fraction of the stained floor and an altar, framed with flowers and bearing the tiny flames of snowy candles, stood against one wall.

A guide ushered them to their seats, moving silently as he escorted the men and women to their places, treading soft-footed on the echoing floor. Peter sat down, his eyes wide as he stared at the white-robed priest and the cassocked altar boys. The scent of flowers seemed to clog his nostrils, the seat was hard, and he wriggled a little before obeying the touch of his mother's hand.

The service began.

To Peter it was meaningless. He stared at the genuflecting priest, the smooth administration of the altar boys, the rising voices and whispered responses. The words seemed somehow unreal, the sonorous voice of the priest echoing with subtle undertones from the walls of the hangar like a dimly remembered dream of long ago. He glanced up at his mother and saw that her eyes were bright with unshed tears. He looked at the others and saw their stark, intent faces. He sighed and began to think of rocket ships and the toys he had left at home.

To Peter's mother the service was all she had.

It had been all she'd had for ten years now, ever since she had joined the crowds at the gate and watched her husband walk proudly towards the waiting rocket ship. She too had been proud for then space travel had been in its early days and the men who rode the ships between the planets were envied and loved by all.

Ten years ! She bowed her head to hide her tears while over her, the soothing words of the priest rolled like honeyed syrup.

". . . *for they are not dead, those who have left us . . .*"

Not dead ? Perhaps not if you believed in an after-life but they were gone and that was all that really mattered. John had gone like that, vanishing somewhere into the great unknown, never knowing that his wife had given him a son, never knowing the heart-break and the empty longing he had left behind him. He was dead, a frozen corpse drifting for an eternity like an uneasy ghost, never to be returned to the soil from which he sprang. He was dead and, for him, the universe had ceased to be, but for others . . .

Death would have been a welcome relief.

She bit her lips against the tears, feeling again the sick, hopeless sensation that had torn her apart ten years ago. No news. That had been the worse part. No definite news at all. The ship could have reached Mars and been delayed there. John could have fallen ill,

anything, but she didn't know and there was no way of finding out. All she could do was to wait. All anyone could do was to wait, to stare at the sky until their eyes burned, waiting for the tell-tale finger of flame which would proclaim a space ship homing in from the void.

The ship which had never come.

Peter had been born before she knew the truth. He had been crawling before belated officialdom had finally decided that the ship and her husband must both be counted as lost. And in that moment she had wished that she could die.

Peter had saved her. He had needed her too much, relied on her too greatly for her to leave him. So she had swallowed her grief and, facing reality, had forced herself to live for her son if for no other reason.

"*. . . we must not mourn those we have lost. They are waiting for us, happy in . . .*"

Words ! Futile, empty words ! Words designed to bring comfort and yet only succeeding in re-opening old wounds. What could the priest, that celibate man, know of love ? What could he possibly know of a woman's heart ? She felt a rising anger, an instinctive revulsion against the calculated comfort of what he said. John was dead ! Let it stay at that. Why try to bring him back to torment the living ? How could he be waiting when he was lost somewhere far from home and familiar things ? If he was waiting, if he could wait, then how would she ever find him ? Space was too big, too empty, it was almost as if he had never been.

And yet not quite that. There was Peter, and she had her memories, and, as she closed her eyes against a flood of tears, old faces and old times rose up before her as though time had spun backwards and rolled in the threads which had passed.

"*Don't worry, darling. This is my last trip, I promise you.*"

John had said that. John, to whom duty was a sacred thing and to whom space was his whole existence. But he had meant what he said. Fate had meant it too, laughing perhaps as at a colossal jest. It had been his last trip all right—though not in the way he intended.

And now he was gone.

Now, not a single atom of him whom she had once loved, still loved, remained to give her comfort. Nothing. No ash, no dust, no grave or sacred plot of land. Not even the sea, that great resting place of so many, in who's waters drifted the dissolved atoms of all who had died in her or been buried in her. Not even that remained to give her comfort. All she could do was to stare at the sky and pay her silent homage to an entire universe.

And that hurt most of all.

For there is a familiarity about a grave. There is a tender comfort in tending a tiny plot of land, to plant flowers, to see them grow, to know that, beneath the brilliant verdure lies that which we once walked with, talked with, ate with and still love. Even a pot of ashes contains the essence of the departed, a warm reminder of what has been. But she had none of that. All she had was the ritual, a once-yearly service to the souls of those who had died in space. That and her son.

Not even a grave to weep over.

". . . . *the Father, the Son and the Holy Ghost . . . Amen.*"

The service was over. The token remembrance paid and the flowers and wreaths laid before the stone plaque with its long, too-long, list of names. Now there was nothing. Nothing at all except . . .

It came as the swelling roar of a mighty organ. It shook the hangar with its primeval thunder, a bellowing concussion of sound, rising as it grew, pulsing and shouting as if all the voices of those who had ever protested against the barriers of nature had joined together in a triumphal paean.

The sound of a landing rocket ship.

Timed, of course, it always was. The landing was a symbol of those who had lost their lives in space and the service was arranged so as to end when the ship became apparent. Imperceptibly the congregation stirred and, as the roaring thunder of the blasting jets echoed down from the cloudless sky above, rose and made their way outside.

It was a sight of which no one could ever tire. The vessel itself, a gleaming splinter of metal riding the summit of a column of flame. The flame, blue-white and searingly incandescent as it supported the massed tons of dead weight above. Together with the ship and the flame the throbbing pulse of man-made thunder stirred the heart and fired the blood with a noise which seemed to echo around the world.

" Mummy !"

There was awe and a terrible fascination in the boy's voice as he stared at the approaching vessel, and his hand, where it gripped hers, tightened with surprising strength in one so young.

" Yes, dear ?"

" It's . . . it's beautiful !"

It wasn't so much what he said as they way he said it. The words weren't just sounds made with the mouth, they stemmed from the very soul and, recognising them for what they were, she felt fear and a sick panic.

" No ! No, Peter, it's not beautiful. It's horrible ! Horrible ! It takes men away and kills them and leaves their wives and children

alone and broken-hearted. It takes those we love and carries them far away to a place where we can never see them again. It's fascinating with the awful fascination of poison and bright with the lying tarnish of barren adventure. It . . ."

She broke off, remembering to whom she spoke and the ears of those around her, but she needn't have worried.

Peter wasn't listening.

He stared, his soul naked in his eyes, as the ship settled to the flame-scorched concrete of the landing field, staring as the brilliant fire from the jets died into glorious memory and heavy silence reclaimed its own. He didn't move as his mother pulled at his hand. He stood, watching, lost in his own realm of thought and, looking at him, she knew that her son was destined to travel in the footsteps of his father.

The spaceport officials were kind with them. They recognised the expression on the young boy's face, recognised too the stricken look on the mother's. They had seen it before, saw it every year when the space-dead were remembered and the space-destined came into their own. And so they let the couple wander over the field, examine the vast sheds and even touch the cooled fin of the rocket just landed. But in the end, politely but firmly, they ushered them off the field.

Peter was very silent on the way home.

His mother was silent too, and though each had the same thoughts, yet neither had the same objectives.

"Did you enjoy it, dear?"

"It was wonderful." Peter spoke reluctantly, not wanting to shatter his mental dream images. "But they aren't very big after all, are they?"

"Aren't what, dear?"

"The rocket ships. I'll bet that one we saw wasn't even as big as the house."

"No, dear."

"Wait until I tell Ginger! He says that they're the biggest things ever built."

"Peter." She turned him to face her. "We didn't go to the field just to see a rocket ship, dear. Didn't you like the service?"

He stared at her, his face quite blank and, as he spoke she knew that she had already lost.

"What service, Mummy?"

R. H. Godfrey.

Several of our authors have evolved futuristic hypothetical backgrounds against which their stories are often set, making the identification of places and names easily recognisable by regular readers. Authors Chandler, Barclay and Bulmer are three such writers and herewith we offer the latter's latest Palladian adventure.

ASYLUM

By Kenneth Bulmer

Illustrated by WOODWARD

He realised with a shocked clarity that even suicide would not solve his problem. He sat slumped in his office chair, his hands clasped loosely on the stained laboratory smock and stared with resignation at the machine that had just been wheeled in.

All around him the sprawling aseptic laboratories were quiet, except for the harshly illuminated section where he sat dazed, wishing that he could kill himself and knowing with a sick sense of futility numbing his mind that death would not make the slightest difference. Amy had told him many times that he was ineffectual, useless, hadn't the guts of a worm. His lips drooped sourly. When he had the chance to prove her wrong by taking his own life that act had been made superfluous before it had been committed.

Amy ! He'd come home to their tiny project prefab tucked away here on Plantin III, morosely conscious of the evening with her friends that awaited him.

" Hurry up, Robert," she said before he had taken off his hat. " They'll be here any minute."

The door chimes went ' ding-dong ' just as he was shrugging his too-tightly fitting black jacket over a stiff white shirt. Going quickly into the hall he was just in time to echo Amy's welcome. The two women vanished into the bedroom, their conversation snapped like breaking elastic as the door closed and he turned with an artificial smile and cigarette case extended.

" Cigarette, John ?"

" Thanks, Andrews, old man. Oh—uh huh—not that brand, if you don't mind. I have mine sent from Earth. Smoother, you know." His guest produced his own case.

" Oh, sure, sure," Andrews mumbled, feeling his blood pressure mounting. A fine evening this was going to be. He flicked his lighter and was cynically surprised when it lit the first time. He'd almost

extended it, then jerked it back quickly and lit his own cigarette and caught a lungful of smoke which sent him coughing. John drew on his self-lighting cigarette and said with concern spreading over his fat face: " Sounds a bad cough there, Andrews, old man. Been smoking too much ?"

" I'm all right, thank you." Andrew's thin face flushed.

" It's this damned climate," John nodded sagely. " Plays old Harry with the metabolism. Be glad when my hitch is up and I can head back home."

" Earth ?"

" No." John shifted uncomfortably. " Not exactly. That is, Proxima IV. Can't afford the prices on dear old Earth. Nancy keeps nagging me to go Earthside: but what's a fellow to do ?"

" I know."

" How's the work at the labs ? Hear tell you've really got a dragon by the tail there. Old Harbuck was telling me—uh, that is—oh, here come the girls."

". . . so of *course*, I said we'd be going back to Earth as soon as Robert has finished the special work here. So important. And what do you think she had the nerve to say ? She said . . ."

From years of practice Andrews blanked out his wife's voice, kept a polite smile plastered across his face, a thin nervous face with that damned tic jumping across his cheek again. He sat there with the others and felt a million miles away. This young jackanapes here shooting off his mouth about what Harbuck had been saying about the project. Hell—Harbuck should have been pensioned years ago. Anyway, the old chap's equations were easy to consolidate and finalise now. The important thing was that the project was of greater moment than any one man, any single individual's feelings. They drank cocktails. They sat at the small fussy table, crowded with glass and chrome and artificial flowers. When the meal was over Andrews thankfully switched on the radio. That, he wanted. Television he could do without. Just a background noise to wash away the nagging overtones of his wife and her friends.

The radio came on with a band fading to silence.

" Turn the radio off, Robert. It's only the news."

" All right, dear," Andrews said without moving.

" Here is the news." The announcer's voice was calm. " Reports have been received of a battle between Terran Ninth Fleet and strong forces of Palladians in the Lornni sector. Four enemy heavy units were destroyed and damage inflicted on two others. The Ninth Fleet is regrouping in the Katlin sector. No further information is at present available."

Amid a babble of voices Andrews switched the set off.

" That'll show 'em. Filthy painted Palladians."

" Terrible war. I wish it was over."

" Katlin sector," Andrews said stupidly. " Why that's between us and the Lornni sector."

" Have a drink, John ? Nancy ?" Amy smiled brightly at her guests and gave her husband a vicious side glance.

Andrews wandered over to the bookcase and found a star map, checked quickly. Katlin was— he measured with his thumbnail— almost exactly halfway between the Lornni sector and their present home here on Plantin III. The conclusion was obvious. The Terran Ninth Fleet had taken a beating. Had been forced to retreat—and this planet Plantin III was right in the path of the withdrawal. Another big Palladian push and this could be right in the middle of the shooting.

The other three in the softly lit warm room were chattering like grasshoppers unaware of winter stalking relentlessly through the vast empty spaces between the stars, growing nearer and nearer, millions of miles every second.

Andrews found a drink and sat nursing it. Damn the war ! Damn the stupid egocentric maniacs who wanted to fight amongst themselves when it took all a man's brains and guts just to stay alive in the open hostility of space. He finished the drink and had another.

Throughout the rest of the evening he spoke a dozen words, and the strain they imposed left his vocal chords dry.

He went to the laboratory early in the morning, glad to be away from his home and yet ashamed of his feelings. Gladding, the Director General, was waiting for him.

" Bob. Glad you've come early. There's been a big shift round in projects. Orders from Earth now are to concentrate on P.3. Let the others go hang."

Andrews took his time putting his laboratory smock on, transferring his cigarettes and lighter. P.3. That was just a dream, at first, until Gladding and his team had forced the very soil of this planet to co-operate in its production. Gladding was a tough, rubbery old bird, who always walked as though on springs. Andrews got on all right with him.

" P.3 ? I'd say that that was just about the hardest nut of all the work, deegee—"

" I know, Bob. But it's the one most useful to the military."

" Oh, I see." Sure he saw. The picture fitted now. " I suppose evacuation is being ordered ?"

Gladding frowned. " You think too damn fast, Bob." he growled. "General Chalmers got me out of bed. Transports will be arriving day after tomorrow to take off all non-essential civilians and most of the garrison."

" You mean total evacuation ? They're not even going to put up a fight for Plantin III ?"

" 'Fraid not."

" Well, from what I know about project P.3. we might as well pack up along with others, deegee."

" That's just the point." Gladding walked towards the wall chart showing daily production. " We require about two and a half days to fill the rods. Then we can shoot the pile and, I hope, produce enough P.3. to tell us whether we have succeeded or failed."

" And after that, deegee ?"

" After that, Bob, if the reports show negative we pack up and leave. If it's positive, we must carry on with the initial tests for as long as we can." He spread his arms. " You know the importance of this planet—revolving in a stable orbit around a binary—my God, man, we won't have another chance under the same conditions for years, possibly never."

" What we are really trying to produce is neutronium. Its value—even as an agent to warfare—I don't have to try to imagine. I've too good an idea. And the theory is that this planet was once part of the white dwarf component of the binary. That's all right as far as it goes. What about Sirius ? Can't they help ?"

" They are even worse off than we are. The Palladian sphere of influence bulges there, the Sirians have the painted devils breathing down their necks. We must synthesize P.3. here. I don't know whether to hope that report shows negative or positive. The work will have to be rushed through if its positive—as much as we can manage —until General Chalmers tells us we have to leave."

" You know damn well you want a positive, deegee. Let's hope we have the time, that's all."

Masters, the project psychiatrist, came in, his cheery face lined and showing strain.

" Mornin' Bob. Oh, deegee—some of the pile personnel are concerned about their status. They want to know how they stand in the evacuation."

" Chalmers must be moving around," Gladding commented sourly. " Still, everybody will have to know soon. I'll be back to check with you later, Bob."

" Be seeing you, deegee. Morning, Masters." Andrews watched

the two men leave, then he lit a cigarette and pulled out the computor and went to work.

The morning slid along, and as he did most mornings, Andrews began to work himself into a good mood. Old Harbuck's figures were neat and precise; on his final check Andrews was confident that the reports would show a positive. He was just finishing his second cup of tea when Harbuck came in. both hands crumpled into tight fists and balled into the pockets of his lab smock.

" You hear the news, young Bob ?"

" About the evacuation, you mean ? Yes, I heard."

Harbuck walked a little uncertainly, like a man with just enough in him that the next drink would topple over. His watery eyes appeared unfocussed.

" Not the evacuation. I mean—the Palladians have actually broken through into the Katlin sector. That means the fleet will have to fight." The old man swung abruptly on Andrews. " They'll be here any time, young Bob. Any time at all."

" It's not as bad as all that—"

" Isn't it ? Oh, yes it is. I'm due for retirement this year. Only stayed on because Gladding asked me. Flattered me. Now look where it's led. We'll all be killed, you mark my words, young Bob. Killed. All of us."

Andrews knew what old Harbuck wanted him to say. He understood that the oldster wanted the suggestion to come from an outside source because he couldn't quite summon enough courage to say it himself and because it would help to salve his pride. Andrews felt very sorry for Harbuck.

" Look," he said carefully, his voice flat. " You're due for retirement and your work's just about finished here. Why don't you leave with the evacuees—I can handle your final calculations."

" Oh no ! Couldn't do that. Wouldn't be ethical."

" Of course it would. Speak to deegee about it right away." Andrews stood up, riffled through the papers on his desk and selected a thin folder. He put his hand on Harbuck's shoulder. Under his fingers he could feel the hard sharp ridge of the old man's collarbone. He said :

" Come on. I've your calculations here. Let's find deegee."

Harbuck looked as though he would burst into tears. Andrews hoped he was not in for a scene and found a deep gratitude when Harbuck nodded wordlessly. They both left the laboratory. They found the Director General coming back from his talk with the men at the pile. Gladding's large rubbery face was sweating.

"Got a handkerchief, Bob?" he began without preamble. "My God, those people sure object to being sorted. Talk about sheep and goats. Half those I can do without seem to be the most belligerent types you could hope to meet." He stopped, the handkerchief at his chin, and his shrewd eyes went from Andrews to Harbuck and back in an odd, bird-like dipping. "What's with you two?"

"Oh, deegee." Andrews began at once, anxious to speak before Harbuck but not quite knowing what to say. "I think I can finish Professor Harbuck's work. I have a fresh idea I feel will save time."

"That's good, Good. What d'you say, Harbuck?"

"I think . . . That is . . . Yes. A good idea." Harbuck was now quite openly trembling and the stitches were beginning to part along his pockets where his fists thrust down.

"Here's your handkerchief, Bob," Gladding said. "Oh, Harbuck, this development is quite useful. Quite. I've a job for you. Want you to take charge of the laboratory and pile personnel being evacuated. See they get everything aboard with them and shepherd them to earth. Contact General Chalmers about it, will you?"

Harbuck nodded, his adam's apple bobbing. He walked away stiffly, not looking back. Gladding and Andrews exchanged looks, then watched the retreating back of the old scientist in silence. When he had gone, Gladding said:

"That was embarrassing."

"A bit. Hell, deegee, what are the military up to? Are they incapable of holding Plantin? Or what?"

Gladding smiled tightly. "Or what, I'm afraid, Bob."

The atmosphere of waiting and suspicion, a tenseness that was almost tangible, that hung over the laboratory buildings decided Andrews. He rang his home and found Amy all atwitter at the prospect of being evacuated to Earth.

"Look, Amy, I shall be pretty busy up here from now on. I'll get down to the field to see you off if I can be spared—I just didn't want you to go without . . . that is, I want you to know that, whatever happens, I'll do my best to join you on Earth."

"You mean you're not coming with me? But Robert, you know how super-light drive frightens me—"

"I know, Amy. But this is war. You have to do all kinds of things in war that frighten you. Just take care of yourself." He smiled wanly. "We'll make a better go of it on Earth than we ever would here."

"Well—" she was doubtful. "Just you hurry up and come to earth. Now, I must rush and pack. John and Nancy are waiting. 'Bye."

" 'Bye, Amy," he said absently. There was love between them, he was confident of that; but love stretched thin and taut by the conflicting stresses of his job and her desires and social ambitions and the war. Always, the bitter war.

He needn't have worried about getting away to see her off. Gladding checked that nothing needing immediate attention was on the boil and almost all the laboratory staff went down to the field. The place was crowded. It looked like the last days of Pompeii with spaceships taking the place of marble columns. People were milling everywhere. Children were being lost and found. Loudspeakers were blaring. Baggage was being loaded. Overhead Plantin was obscured by a slow bellying surge of purple cloud and a rustling wind raised a film of dust everywhere. It was hot and sticky and noisy.

Andrews held Amy tightly, only half aware of her ridiculous straw hat with the feather and her best travelling suit of spun-glass in irridescent colour. She had not cried at all during breakfast; now, she was pale and strained, but her eyes were dry still and hot with some indefinable emotion. The annunciators blared above the noise for all persons to embark.

He saw her pause on the long gangplank and look down and wave. He knew that she could not see him; but he waved back and did not feel at all foolish. The backs of his eyes stung suddenly and he went along with Gladding and they had a couple of drinks together and acted as though nothing extra special had been happening. The ships took off, screaming their way through the displaced air. With the silence came a sense of loss, of emptiness.

" Now we can get down to the real business," Gladding said. " Tomorrow we shoot the pile and see whether we produce P.3. or not. General Chalmers has arranged a ship to stand by here ready to ferry us out."

" There can't be more than a hundred people left," Andrews said ruminatively. " And about twenty-five soldiers. We must be a pretty important section of the Terran war effort to expend this much attention upon us."

" P.3." said Gladding over his drink, " is worth far more than one super-light cruiser. P.3. can make a whole lot of difference to who wins the war and how long it takes. I know you think that scientific research has been prostituted too long in the service of the military; but this time, Bob, it's something that can shorten the war by a very significant amount."

" What happens if we produce P.3. and find that it does all we expect and the Palladians walk in and take over ?"

" All information is being relayed direct to Earth via contact ship

without going through channels. As soon as we know, then Earth will know."

"How about us?" There was a hollow of icy coldness in Andrews' stomach.

"They'll want us out. We'll know too much, all of us, for Earth to allow us to fall into the hands of the Palladians alive. If P.3. is a success, everybody on Plantin III will be of vital importance to both sides."

"And if it's a success, and we can't get away—?"

Gladding shrugged and finished his drink.

The false easing of tension that Andrews had felt after the departure of the ships built up again into a sombre menace enshrouding them all. Gladding's flat voice echoed in his head. He felt hot and uncomfortable. The purple clouds grew and hovered overhead, little whorls of dust rose aimlessly, to be blown into confusion as he and Gladding walked back towards the pile. That damned tic was pulsing in his cheek again.

He hoped the ferry ship waiting to take them off was on the ball.

Masters came from the white laboratory buildings to meet them and Andrews thought he detected an undercurrent of excitement in the jovial face. The psychiatrist fell into step with them.

"How come you're left behind, Masters?" Andrews enquired casually. "You vital to the project or something?"

"Me and us all, both," the psychiatrist grinned. "Say, deegee, I'd like a word with you. About the Palladians."

"Yes?" Gladding was looking tired, Andrews noticed, and felt a stab of pity for the man's responsibilities.

"Can you arrange a rota for me to have a private interview with every member of the project remaining here?"

"Why, yes. I can do that. But why?"

"I'd rather not answer that, if you don't mind, deegee. It's a case of loading the dice, you might say."

"Very well then," Gladding said stiffly. "Bob—will you draw up a rota for Masters?"

"Certainly," Andrews agreed, puzzled.

"If you could manage it," Masters said with a smile, "I'd like to see them all tomorrow. Oh, yes, there's something else. General Chalmers asked me to tell you that he's heard that a raiding party of Palladians broke through the Ninth Fleet outriders."

"They've done what?" Gladdings face went red.

All Andrews could think was that whatever Masters wanted to see the laboratory personnel for must be of tremendous importance if he

only thought to tell them about the Palladian raiding party after he had asked for the rota to be made up.

The three men walked into the coolness of the laboratory, with Andrews feeling a growing itch of uncertainty in his mind.

He spent the rest of the day supervising the filling of the rods, and their insertion into the cores lying on smoothly oiled rams facing the uncompromising sides of the pile. It was hot work—hot, that is, for a man with worry on his mind that he can't pin down. He slapped a core hard, the sting of pain in his palms an antidote to his mental fog. If all went as planned, if old Harbuck's equations, with the added factors of his own ideas, worked, then tomorrow should see the first mass production of P.3.

His office was a few degrees cooler than outside. He sat heavily at his desk and switched on the reading lamp. Plantin III had a twenty hour day and night cycle; after a time you got used to it but even now it gave the frightening impression that life was rushing past at the speed of a racing rocket. He yawned and knuckled his eyes. Rota. Of course, that was what he intended to do. He spent an hour composing a list of names that would leave somebody with the necessary know-how working at all times around the pile whilst the others were having their little tete-a-tete with Masters. He yawned again. Switching off the lamp he went down to the stores and drew a mattress and a sheet and curled himself up in the corner of his office. The next thing he knew Gladding was shaking him to get up.

The morning went quickly enough and then, just as they were about to pull the rods, Gladding walked over to Andrews.

"I can handle this from now on, Bob. You've done all the hard work and we need only check the rods to see whether we've succeeded. Get along to see Masters. I notice you didn't put yourself on the list."

"I didn't? Must have been dopey with fatigue, although I can't see why."

He went along to Master's cubbyhole, without bothering to argue with the Director General about leaving the project just when it was becoming interesting. If deegee said a thing, he meant it. Masters looked up with a smile.

"Come on in, Bob. Sit yourself down."

"What's this all about?" Andrews demanded, sitting in a large and comfortable chair. He'd avoided the couch—but the chair was almost as good.

"Just an idea of mine. At least, I'm adapting Earth procedures for the situation that confronts us. I suppose you know, Bob, that the Palladians have developed a device which is capable of scanning the

brain cells and interpreting a coherent pattern from the electric potentials there? It's rather a clever thing, really." His voice grew more serious. "However, it means that if we are captured—and the possibility exists, Bob—the enemy will be able to sit us under their infernal machine and read off all our knowledge."

"Hell," Andrews hadn't known this. "What about our work? P.3. is pretty important. If we discover its uses just so the Palladians can dig it out of our brains we shan't be too clever."

"Precisely." Masters moved towards the chair and Andrews turned his head lazily to watch the psychiatrist. "See that picture on the wall, Bob? Well I want to tell you a story, a story that embraces a whole lot of important things."

Master's voice was low and smooth. Andrews was beginning to tense himself automatically, conscious of the fact that if this was the psychiatrist's idea of hypnotism it was not too good. Despite himself, he glanced towards the picture. At the same time he was aware of a small sharp burning sensation in his arm. He looked away from the picture, annoyed, and brought his arm up sharply.

"What's the idea, Masters?"

"Nothing at all. I just wanted to tell you that Gladding is asking for you. Better get along."

"Do what? What is all this? You get me down here and pump me full of mumbo-jumbo and then turf me out. What are you playing at?"

"Sorry, Bob. Some other time." He pointed to the wall screen where the Director General's face stared impatiently from a background of the laboratory.

"Bob!" Gladding's tones were thrusting, exultant. "We've done it! P.3. reacts exactly as predicted!"

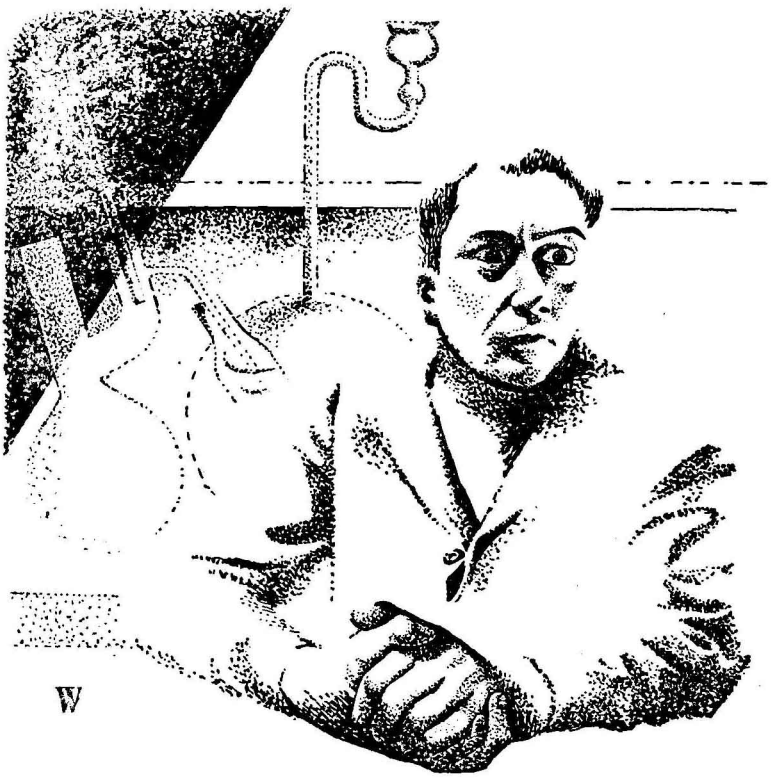
"Congratulations, sir," Andrews said formally. He knew what this meant for the Director General. For himself, for that matter. But unless they could get back to Earth, or to a friendly planet before the Palladians struck, all the kudos in the galaxy would be useless.

"I'll be right down, deegee," he said and stood up. His knees sagged a little. He must be getting old. He said cheerio to Masters and went to the laboratory where he found Gladding and a crowd of technicians and scientists clustered round the television screen.

Gladding looked up and the sparkle seemed gone from his eyes.

"All the information on P.3. has been sent to Earth," he said quietly. "The specimen has been destroyed in the only way possible, returned to the pile and utter destruction. But, look at what's happened now."

The television screen showed a man's frightened face, then a long sweep of star-studded space. Against the crystal backdrop a moving



group of lights slanted diagonally downwards. Before even Andrews could comprehend that, before he could bring all the things that had happened so suddenly in the past few hours into focus, they heard the thunderous reverberations come rolling in from outside. The building shook and a glass retort toppled over and splintered on the tiled floor. No-one moved. They were standing like that, a group of white-smocked statuary, when General Chalmers came through the door.

" I'm sorry, gentlemen," he began, then stopped and groped blindly at his waist. He swallowed. " I have to inform you that the Palladians have landed on Plantin III."

There was a chorus of dismay. Gladding stilled it with an uplifted hand.

" You are aware of what this means, gentlemen ?"

Only too damn well aware. Andrews slumped back against the bench, too blasted well aware. He felt cold. Shrunken, as though all the blood had been pumped out of his body. Chalmers was speaking again, conscious, Andrews saw, of the history-book significance of this moment.

" I can tell you that an Earth fleet was in transit here, and that they will probably arrive and drive off the Palladian force. However, I do not suggest that you pin any hopes on that."

" What about P.3.?" Gladding said, his voice a hoarse rasp. " We all know that the Palladians have a device which enables them to read our minds. At least, to take what information they need. What can we do ?"

" How many men here have vital knowledge ?"

Gladding waved a hand helplessly. " I would say that of those who have enough information for the Palladians to duplicate our work all are here."

Chalmers' face was hard and grey and beads of sweat glittered across his forehead. He wiped his hand on his jacket. He said: " In view of the circumstances, I must carry out the course of action that appears to me to be right." He lifted his hand in a signal and then pulled out his gun.

Gladding's face went as white as the handkerchief he now thrust before him, hands shaking, eyes wild. Andrews stared in horrified disbelief.

" You can't," Gladding croaked. " You can't kill us all."

" The information is safe on Earth," Chalmers said, speaking with the wooden stiffness instilled into the military soul. " The enemy must be denied this information. I am truly sorry; however, my men are waiting, they should be here—" he paused. " They should be here," he repeated in a puzzled voice.

In answer to the unspoken query a succession of explosions thundered through the long laboratory building. Chalmers tightened his lips.

" Very well, then, alone." He raised the gun and simultaneously the doors folded inwards and men ran into the room, crouched over and with weapons extended. Chalmers shouted savagely and swung his gun towards Gladding. From nowhere, it seemed to Andrews, Masters, the psychiatrist, flung himself forward and knocked the gun from the general's hand. Then they were all squashed and shocked and rounded up by the mass of Palladians.

When some semblance of sanity had returned, Andrews saw that Chalmers was standing like a man before his own execution. The general turned burning eyes on Masters.

" Why did you do it ?" he demanded dazedly. " Why ?"

A Palladian thrust the Terrans apart before Masters could answer.

A painted face, daubed with mascared eyelashes and carmined lips glared into Andrews' parchment face. A close fitting metal helmet came round the Palladian's head, emphasising its shape, throwing into relief the stark battle fever that devoured the alien. Andrews pulled back.

" Listen, Earth men," the Palladian leader, his cheeks rouged and powdered, stepped before the captives, " I observed your little pantomime." He laughed sourly. " I can assure you that it would have been useless, but I must thank this craven here for at least saving me a little trouble and some extra ampere hours. You see, Earthmen, our machines can take information from your minds even after you are dead."

" But that's impossible !" Andrews burst out.

" You contradict me ? I tell you, you Earth scientists are not so clever. There is residual electric activity in a dead body. Does not a frog's leg remind you of anything ? Pah ! You do not even know your own history." He swung his arm and the Terrans were herded

into a corner. "You!" He pointed at Andrews. "You. Earthman. Since you know so much, you will be the first one to be examined."

Andrews was propelled forward and dumped into the office chair. He sat hunched up, his hands clasped loosely on his stained laboratory smock, and stared with resignation at the machine that had just been wheeled in.

He sat, wishing that he could kill himself, and knowing with a sick sense of futility numbing his mind that his death would not make the slightest difference. Amy—he had the feeling that they could have made a go of it if he had got out of this situation. But now, of course, he wouldn't. The Palladians would read his mind, and the minds of the others, and the secret of P.3. would be lost.

Amy. Good God, he thought hopelessly. Don't let her grieve too much.

The machine was wheeled closer, bringing him back to the impossible fact of what was to happen. He laughed. He laughed suddenly and shockingly. This was an impossible situation truly. If the mind is faced with such a situation, it has two outlets, two methods of resolving the problem.

Masters would know that. Masters, with his picture and the story that he had never told. Andrews realised that he liked stories. He smiled at the Palladian.

"Tell me a story, first," he said politely. "Please. I'd like to hear a story. Only a little one. Before I go to sleep. But, of course, I'm not going to sleep. I'm going away and away, on a long, long journey. Where? Do you know?" He broke off, staring around, chuckling. "I like your pretty faces. Not like Amy's though. Oh, no." He was very grave about it, comparing their painted faces with Amy's delicate prettiness. "You don't put your paint on the same way, do you? Ha! Paint. That's funny. Men, painting their faces. That's silly. Silly men. Dilly men. No, dilly Amy."

The Palladian leant forward, struck Andrews across his face.

"Earthman. It is not good to laugh at fighting men of Pallas. We knew well enough that you were up to something here on this binary system. And we'll find out." He gestured to the soldiers and the machine was rapidly wheeled towards Andrews, the metal cup with the electrodes lowered onto his head.

"Up to something," Andrews chuckled, his face drooping suddenly and his fingers making steeples, pulling at the lab. smock. "Oh, yes, we're looking at pictures. That's a good one. Ha. I am tired. I'd like a glass of water. No, I mean, oh, my head hurts. Amy. Where are you, Amy?" He began to cry. His head lolled and the cup held

it back with cruel mesh of metal. Somewhere, in some small part of his mind, Andrews heard a horrified whisper from Gladding.

" Good God. He's gone mad !"

That was the funniest thing of all. He couldn't go mad. Or could he ? No. He was going to Earth and Amy was there and it was all bright and sunshiny and . . .

A dim confusion of shadow shapes beyond immediate vision. He lay for a moment wondering, trying to remember who he was. Amy. Yes, he had been going to see Amy. No, that was before—he remembered.

He had gone mad.

Andrews sat up under the shock of that.

He blinked his eyes, squinting them against the glare. White hospital walls, flowers, gay chintz curtains, sunshine. Was this heaven ?

Then a familiar face bent over him.

" Masters," he said weakly.

" You're all right now, Andrews. Just relax."

" What happened ?"

" I'll tell you, if you keep quiet. You remember that you saw me before the bust up ? Well, I induced a little post-hypnotic command into you. Narco-hypnosis. Method quite simple, really. That's why I had that chat with all the staff who knew more than was good for their own safety."

" I gather that as I feel all right now, the Earth fleet must have come in and saved us ?"

" Of course. They came in quite soon after all you brainy boys had gone collectively mad."

Andrews was profoundly disturbed. " You mean we *all* went mad?"

" When a mind is faced with no possible solution to a problem, it will either die or go mad. That is its solution. In this case, to die would not have been a solution. So—"

" But all of us !"

" I admit that I helped a little. But psychology is based on fundamentals, whichever way you choose to interpret those basics. The Earth fleet boys came into there to find a roomful of completely insane Terran scientists. It was quite a sight, I can tell you."

" It must have been."

Andrews flopped back on the pillows. He said: " Is this Earth ?"

" Yes. You're safe on good old Terra. And I hear that your work will be carried on here now."

" Why aren't I mad now ?" Andrews forced himself to make the query, yet dreading the reply.

Masters chuckled. " The real post-hypnotic command I gave you was that, after you'd gone mad—if you did so, that is—you'd regain your sanity on arrival on Earth. It was a chance I had to take; but all the scientists recovered. The Palladians were completely unable to read your minds when they were as electrically scrambled as only insanity could make them."

Andrews laughed then, deeply and richly. He was still laughing when the door opened and a woman came in. She had a pale, serene, unpainted face. Andrews saw her, and saw her again for the first time.

" Amy," he said. He held out his arms. " Post-hypnotic commands can't get this out of my system. Amy, I'm mad about you."

Kenneth Bulmer.

THE LITERARY LINE-UP

The second part of E. C. Tubb's serial " Star Ship " gathers momentum next month as the lives and destinies of the inhabitants are affected by the many layers of intrigue and policy which apparently commences with the Captain and works downward through the various levels of authority. For those who prefer to read serials when completely published there is an excellent background of shorter material. James White has a short novelette entitled " Outrider " which is full of tense drama and for which Gerard Quinn has produced another outstanding cover painting.

John Wyndham returns with one of his usual top-quality shorts, this time about a robot, and new author Richard Rowland who recently appeared in *Science Fantasy* presents his first story in this magazine with " Ferrymam." Other short stories and features round out the issue, including a very topical and interesting article upon ' invisible astronomy.'

Story ratings for No. 31 were :

1.	Prisoner In The Skull (Part II) - -	Charles Dye.
2.	Outside - - - - - - - -	Brian W. Aldiss.
3.	Kill Me This Man - - - -	Francis G. Rayer.
4.	Fair Exchange- - - - - -	Lan Wright.
	Short Circuit - - - - - -	Gavin Neal.

The preponderance of anthologies on this month's review shelf serves once more to underline an important weakness in the field of science fiction. This is the inability of most writers in this *genre* to pursue successfully their efforts beyond the development of a single idea sufficient for a short story. Admittedly science fiction lends itself admirably to the short story medium and its commercial exploitation in the last few decades has been mainly confined to magazines catering for this story length. And at the same time serials written specially for magazine publication form an unhealthy basis for hard cover publication, as both readers and publishers must have discovered.

Inevitably there have been exceptions, and to these due credit has been in this column and elsewhere, but the inescapable fact is that the science-fiction book publishing field both here and in America is maintained by an inordinately large output of short story collections. By comparison, in any given year the number of first-class original science fiction novels published barely reaches double figures, and I contend that science fiction can never establish itself as a recognized and respected branch of literature whilst this uneasy proportion obtains. Apparently these anthologies are a commercial, if not aesthetic, success, but unless offered in conjunction with a reasonable selection of high-grade full-length novels, the trend can become dangerous. A danger not to be lessened by the frequent duplication of stories in different collections.

When estimating the value of anthologies, I overlook deliberately the attitude of the seasoned enthusiast (or ' addict ' as superior literary opinion now terms him in a somewhat condescending manner). The fan will probably have met most of the stories before in their original magazine form, and if he buys the book at all it is to preserve an occasional well-liked story. Most of the sold copies must go to the libraries and to newcomers attracted for one reason or another. In both cases, the story contents will act as science-fiction's ambassadors, and I feel that the strain of maintaining past excellence must surely be telling on bemused anthologists and bewildered publishers' readers.

Therefore, much as I abhor the practice of duplicating stories currently available in other and recent collections, I must concede the superior qualities as an ambassador of Edmund Crispin's **Best SF** (Faber and Faber, 15/-) and contrary to my editorial colleague's opinion, I cannot condemn this advent into respectability. My reason for this favourable outlook is that if we *must* have anthologies then this volume, excellent in both production and story content, and, I think, carefully priced for a hitherto unexplored strata of readers, will go far to strengthen the cause. Only the uninitiated will not be misled by the familiarity of titles, or by the beguiling use of an editorial name much respected for brilliance in other literary fields. I share many of the erudite Mr. Crispin's sentiments but his introduction does reveal certain flaws in his assumed cloak of connoisseurship, for instance in such assertions that science fiction is practically unisexual and is generally deficient in humour and characterisation. Nevertheless he has had the perception to select such stories as C. L. Moore's " No Woman Born," John Wyndham's " Dumb Martian," James Blish's " A Case of Conscience " and J. T. McIntosh's " Fist Lady " (rather proving my point ?). Authors of the other ten fine stories include A. E. van Vogt, Bradbury, Kuttner, Russell, Latham and Christopher. It is comforting to hope that this book may help to convert a few thousand aloof literati.

Better still they should read Raymond J. Healy's new collection **Nine Tales of Space and Time** (Weidenfeld & Nicolson 10 6d). As in his previous " New Tales of Space and Time " Mr. Healy offers never-before-published stories by leading authors, and it is a publishing event I have looked forward to with great interest with the promise of the first new story by John W. Campbell, Jr. since 1939. Here is a book which Mr. Crispin would do well to analyse for his own education (and realisation that " a humourous science fiction story " is *not* in itself a sort of definition of misplaced jocularity). It is a book which is recommended to all connoisseurs of science-fantasy who can not only appreciate ideas several levels above space adventure and technological extrapolations, but also own a sense of humour. It illustrates the recently reached stage of development in science fiction writing in which the short story aspect of it has reached a peak, and is on a level with the best that main-stream literature can offer. Grading the nine stories here is a matter of personal taste. Best of all I choose equally Anthony Boucher's " Balaam," Kris Neville's " Overture " (a sequel to the memorable " Bettyann ") and the editor's own " Great Devon Mystery " (in spite of the unfortunate use of inconsistent Cockney dialect which never does succeed in print). Barely a nose

behind I place Frank Fenton's sly "The Chicken or the Egghead" and David Harold Fink's delightful "Compound B." In contrast Horace Gold's "Man of Parts" seemed a little too facetious, and R. Bretnor's "Genius of the Species" distastefully farcical (and not because I have a cat allergy). Lamentably last, if only for a solemnity unduly wasted on the small points made, came "Shock Treatment" by J. Francis McComas, and Campbell's "The Idealists." Perhaps unfairly the latter was an anticlimatical disappointment, but tedium loses me to good humour every time, despite a worthy attempt to depict possible interstellar cultural differences.

Ubiquitous editors Bleiler and Dikty present in **Category Phoenix** (The Bodley Head, 9 6d) three long novelettes taken from the American *Year's Best Science Fiction Novels*: 1953. The title story, by Boyd Ellanby, is a mediocre account of a dictatorial future state in which all people belong to neatly divided classes ranging from Menial to Ruler (just under the Leader). A Dr. Wong in Research Category discovers the secret of immortality, and conspires to overthrow the dictator and set up his own Utopia of selected immortals. Aside from my own personal dislike for this idiotic conception of stratified future society, I could find little merit in the tedious yarn. James Blish's "Surface Tension" is better. Here we have a galactic colonisation ship crashed on a water-logged planet of a far star. The mechanics of colonisation are ingenious; human germ-cells are intricately sown so as to develop compatibility with the new conditions. In this case the last despairing gesture is to ensure that man's inborn drive to the stars will survive his transition to minute sea-creatures who bravely travel from one pond-world to another in a two-inch space ship. Quite delightful. William Tenn's lead story "Fire Water" strongly depicts the dilemma of mankind confronted by an invasion of inexplicable aliens—I can do no better than to quote—"fearfully intelligent dots in multi-coloured bottles," whose sole contact is through the Primeys, the cream of man subverted into peculiar behaviourists by the alien entities. It is the unscrupulous American business tycoon who successfuly fends off both anti-Primey/Alien and the balancing World-Police factions to reach a basic understanding, and incidental personal gain. A completely amoral theme, guised in an eminently slick and interesting story.

The equally ubiquitous Groff Conklin has ranged far and wide for his new anthology **Science Fiction Adventures in Dimension** (Grayson & Grayson, 10 6d) and is unfairly penalised by a dismaying title and insipid dust jacket. For here are fourteen varied short stories

from at least nine different magazines, all of which it is nice to meet again, though by no means is any one item exceptionally good. Time-travel and parallel worlds is the theme for most of the book, and many fascinating concepts are entertainingly presented in such stories as John D. Macdonald's " Ring Around the Redhead," Alan E. Nourse's " Tiger by the Tail " and Raymond F. Jones' " Pete Can Fix It." Miles J. Breuer's " The Gostak and the Doshes " is an interesting period piece, and other major contributors include Asimov, Padgett and William Temple. A very sound, if unpretentious, collection, well up to the usual high Conklin standard.

Of the two novels this month one shines out as a good example of realistic science fiction which can only enhance the reputation of the genre. Robert Crane's **Hero's Walk** (Cresset Press, 10/6d) was expected here after its publication last year in America, and it has taken advantage of the publicity of its adaptation for the recent television play, " The Voices." Unfortunately the play suffered from inferior acting (on the whole) unsure plot setting, and undue emphasis on the political bickering in the story. Moreover several of the main characters were mysteriously changed, and somehow the impact of the original novel was lost. Here is a recognisable world of the near future, where the nations of the world are united, but delegates to InterCos, seat of the world government, bicker and conspire as of yore in the United Nations Assembly. Man has pushed his space frontiers to Mars via Platform Alpha, the first space satellite, and Dr. Werner, Chairman of InterCos, is pushing through his pet project, Operation Beta, to extend man's space empire. Then mankind is faced with catastrophe, beginning with near-unintelligible warnings picked up by radio-telescope, and culminating with the bombardment of Earth by the all-powerful but unseen owners of the voices, the Ampiti, who see danger in Earth's aggrandizement. Humanity's reactions to this dire situation are strongly portrayed and the author handles masterfully the underlying themes of the wrangling at InterCos.

The other novel is John Taine's **Seeds Of Life** (Rich & Cowan 9/6d) which, if I remember correctly, was first published during 1931 in the old *Amazing Stories Quarterly* magazine. It has apparently been resurrected because of topical public interest in the deleterious effects of atomic-bomb radiation. Now Taine's book, which has aged remarkably well, never mentioned the atom-bomb, but nevertheless remains one of the finest stories written about mutation-through-radiation, and offers a powerful study of a laboratory-spawned superman, Miguel De Soto, whose impact on the world makes for solid, entertaining science fiction.

Leslie Flood

Aberdeen.

Everyone who reads science fiction must have noticed a mutation in science fiction novels in the last few years. Not everyone will agree on any definition of the change. But that's no reason for not making some attempt to define it.

The successful novel of the nineteen-thirties was a tale of wonder. We read avidly, open-mouthed, credulously. We didn't much care about character in our light reading. We didn't get it, anyway.

In the nineteen-forties the pattern was complication, tension, thrills and mental gymnastics. We weren't so easily surprised now. We knew it all. Science fiction writers had to keep us jumping through hoops, never allowing us an instant to settle, or they'd lost us. Characterization was better than before, but stories by this time were moving too fast to be able to take time out for character drawing.

In the nineteen-fifties the pendulum swung back, and among successful novels we began to find many that were relatively simple, slow-moving, reflective, and often so prosaic that an earlier generation might have said they weren't science fiction at all.

Let us consider the other two types, Class I being the novel of the forties and Class II the newer type which is threatening to replace Class I.

Forget the time division and regard Class I as clever, imaginative, busy, often frenetic novels like those of A. E. van Vogt, like Williamson's *The Humanoids*, Eric Frank Russell's *Dreadful Sanctuary* (and *Sinister Barrier*, which was well ahead of its time), Judd's *Gunner Cade*, Orwell's 1984, Bester's *The Demolished Man* (perhaps the last of the great Class I novels).

Class II might be described as stories in which the people are more important than the science *or the ideas*. Sometimes in Class I science plays only a small part, but the ideological conflict, the theme if you like, towers over everything else, overshadowing anything so infinitesimal as an ordinary human being (this phrase does not include such remarkable individuals as Clay Forester and Gilbert Gossyn). In Class II, no matter how important the external conflict, the author

directs our attention not to that conflict, but to the people struggling with it. Such books are Wyndham's *The Day of the Triffids*, Stewart's *Earth Abides*, Pangborn's *West of the Sun*, Tucker's *The Long, Loud Silence*, Clarke's *Prelude to Space*, and, in fact, most of the successful science fiction novels of the present time. These, of course, are the good examples of both types. By looking for dreadful examples and showing how dreadful they were, one might make out a case for one class being better than the other.

Such is not my intention. Many of the authors, myself included, who now prefer to write Class II novels are still writing Class I novelettes. Perhaps they've little choice in the matter.

How many of the above Class II novels were serialized in science fiction magazines? How many of the Class I books weren't? At the moment, in fact, we've reached a position where practically all the science fiction magazines cling to Class I (serials are exclusively Class I), while all, or almost all, the successful new science fiction novels belong to Class II. It's not a position which can last for long.

Serials in the U.S. fantasy magazines will (*a*) stop altogether, since most authors are now writing Class II books, or (*b*) mutate as hardcover science fiction is doing, or (*c*) boom suddenly as writers find Class II is only a passing phase, and rush back to Class I or come up with a so far purely hypothetical Class III.

I'm claiming to discuss this matter impartially, but it's only fair to show my own bias, if any. So I must point out that my own first novel, *World Out of Mind*, was decidedly Class I, but each subsequently has tended more and more toward Class II—the fourth, *The Fittest*, even more than *One in Three Hundred*. Nevertheless, like most authors, I'm still producing Class I novelettes.

I'm biased, then, in this respect—when I set out to write a novel which is to be as good as I can make it, I can't see it being anything but Class II. Incidentally, this Class I into Class II mutation has an important bearing on the censorship question recently discussed, (*New Worlds* Nos. 31 and 33), and I mention it here because it is only in Class I stories that it is possible as a rule to bypass such questions. In stories about people rather than environments, there are times when awkward questions have to be faced.

Science fiction grew out of imaginative people's capacity for wonder. Their other virtues apart, most Class II books fail to exercise this capacity to the full. Can anyone write adult science fiction which will be fast, clever, exciting, yet warm and human as well? Can we have our cake and eat it too?

We must see the answer soon. The present position is essentially unstable.

J. T. McIntosh.