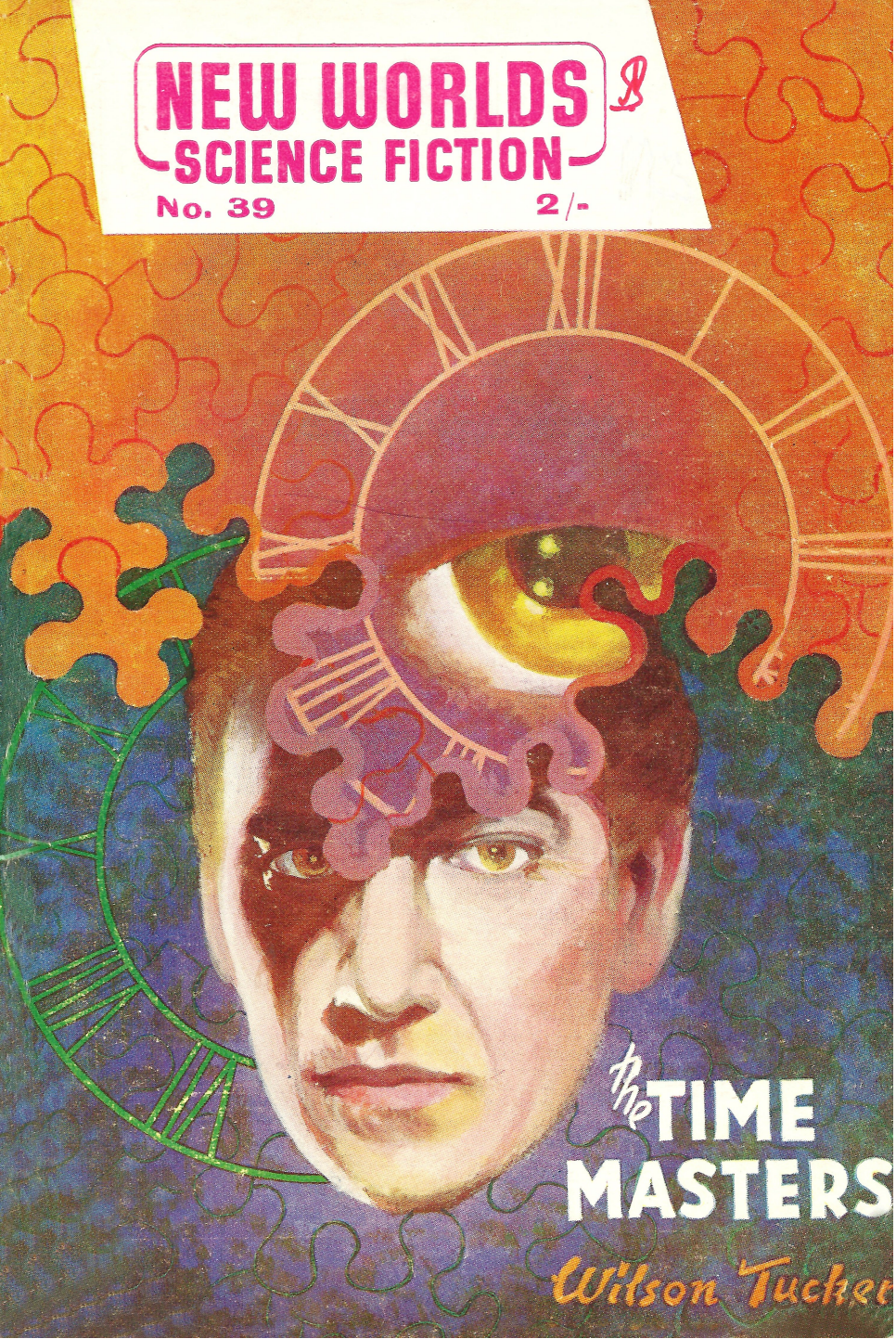
NEW WORLDS & SCIENCE FICTION

No. 39 2/-

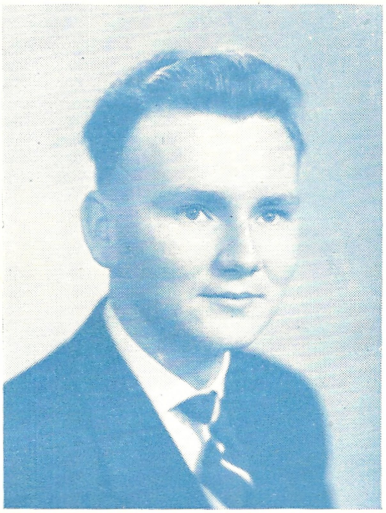


The TIME MASTERS

Wilson Tucker

NEW WORLDS

PROFILES



Dan Morgan

Spalding

Lincolnshire

A 29-year old ex-professional guitarist, who now prefers the more settled environment of a small Lincolnshire market town. He has been reading science fiction for as long as he can remember; but not exclusively; modern mainstream writers such as Hemingway, Saroyan and Nigel Balchin are another essential part of his literary diet.

The desire to write has been with him a long time too, but it was not until about five years ago that he managed to conquer his natural inertia and do something about it. The result of this burst of energy was his first published short story "Alien Analysis" which appeared in the January 1952 issue of *New Worlds*.

His ambition is to write the kind of science fiction story he likes to read—this is the road to permanent frustration; short of amnesia there is no way of approaching one's own work and judging it impersonally for its values as fresh and interesting fiction—ask any writer.

He believes that the writer's job is not to impress the reader with verble pyrotechnics, but to provide him with vivid impressions and ideas—creating a two-way relationship in which the intelligence of the reader and writer are co-operating. This trend is becoming increasingly apparent in modern science ficition and may be the key to any future serious assessment of the *genre*.

NEW WORLDS SCIENCE FICTION

VOLUME 13

No. 39

MONTHLY

SEPTEMBER 1955

CONTENTS

Editor : JOHN CARNELL

Cover : QUINN Interiors : QUINN and HUTCHINGS

Cover painting symbolising "The Time Masters"

TWO SHILLINGS

Subscription rates :

Great Britain and the Commonwealth, 12 issues 26/- post free

United States of America, 12 issues $4.00 post free

Published on the last Friday of each month by

NOVA PUBLICATIONS LTD., 2 Arundel Street, Strand, London, W.C.2.

Printed in England by The Rugby Advertiser, Albert Street, Rugby

Visiting Season

One great advantage of having an office centrally situated in London is that seldom a day passes without a visit from an author, artist, or just an average reader calling to discuss our mutually favourite medium —science fiction. During the summer months when London is the happy hunting ground of tourists from abroad the trickle becomes a stream which often disrupts normal working schedules and entails additional editorial work late at night. Nevertheless, that still remains a pleasure as most visitors produce many interesting ideas for discussion and many must derive a certain amount of pleasure in telling an editor just how *they* would run the magazine—even though I do not always agree with them, for visitors are extremely diverse in their personal viewpoint. About as diverse as the localities of their home towns.

This week (end of July) has been up to mid-summer standards for callers—John Wyndham stopped by and my enthusiasm for his new novel *The Chrysalids*, coming from Michael Joseph Ltd., in the Autumn rather over-powered him. It is, without doubt, his most outstanding novel and far superior to either *The Day Of The Triffids* or *The Kraken Wakes* and is as powerful as Ted Sturgeon's I.F.A. winning novel for 1954. My enthusiasm is also shared by Anthony Boucher, editor of *The Magazine of Fantasy and Science Fiction* in U.S.A., who has just reviewed the American edition published by Ballantine Books under the title of *Re-Birth*.

Wyndham was followed by Alfred Bester, back in London after six months in Rome, who called to renew a strengthening friendship and we discussed the manuscript of his newly completed novel which will be published in U.S.A. next year. While he was enthusing over E. C. Tubb's recent serial " Star Ship " in *New Worlds*, that erstwhile author also arrived and that was the end of a working afternoon. Subsequently Mr. Bester was prevailed upon to be Guest Speaker at the July meeting of the Science Fiction Luncheon Club and gave a most interesting and, at times, highly amusing talk on the background of American magazine science fiction.

John Kippax brought in a new " Dimple " story for our companion magazine *Science Fantasy* and revealed that he is now hard at work on a number of scripts for the new Independent Television circuit, but only one of these had a slight fantasy angle. Author Ken Bulmer called on the eve of sailing to U.S.A. to attend the September Cleveland Convention and discussed the ramifications of Britain's bid for the 1956 World Science Fiction Convention. Artist Bradshaw brought in an idea for another cover (not the one you will see in September),

and was followed by two American airmen stationed in this country. And while this editorial was being written it was interrupted by a Swedish visitor to London, Pierre Lundberg, who belongs to one of the Stockholm science fiction groups and relies to a large extent on his countries' only magazine *Hapna* for his reading material.

One prominent topic of discussion with most visitors is—Has the present magazine science fiction story gone too far into the realms of the abstract to be good entertainment ? Many feel that it has and that the new trend tends to put potential new readers off—others disagree and welcome the expanding horizons depicting the psi powers and general metaphysical ideas, saying that science fiction had long been in a rut bounded on two sides by Action and Adventure. Still others ask whether science fiction would be more popular (and magazine sales higher) if there was a return to the "good old action" adventure story—and to blazes with the psychological and sociological themes ?

It is a particularly interesting and knotty problem and one which every editor must decide for himself, depending upon the type of readership to which he is expecting his magazine to appeal. If science fiction is to be made presentable entertainment to the mass market it cannot presume too far into the abstract and an author cannot presume that his readers know more than what he tells them in the story. On the other hand, sales of some of the American magazines showed in the past that their circulations were almost twice as high when they were concentrating on action-adventure as they are now when the emphasis is on characterisation. It is more than possible that the decrease in the general interest of the American reading market was caused by follow-my-leader tactics of both editors and authors, resulting in an overall sameness of style. There is little doubt that when there were only three magazines being published in U.S.A., each with a totally different style, their circulations were healthy and between them their stories catered for readers virtually from the cradle to the grave !

It does not follow that a return to action-adventure will necessarily mean an increase in the number of people reading science fiction—but it could mean an increase in circulation for any magazine catering to a youthful teenage readership. And as those readers grow older and more mature they would naturally graduate to the more adult magazines—if their interest in the medium had been maintained. And throughout twenty years of being actively connected with science fiction I have found that there are innumerable middle-aged and elderly men whose interest *has* been sustained, built upon a foundation formed long before there was such a term as " science fiction " or specialised magazines to publish such stories.

John Carnell

Wilson Tucker is one of those rare authors who has made a name for himself in two fields—the mystery novel and the science fiction story. Although The Time Masters *is his most recent published book and is undoubtedly in the latter category, he has managed to combine the two talents with sustaining efficiency.*

THE TIME MASTERS

By Wilson Tucker

Illustrated by QUINN

Part One of Three Parts

Prologue

He fell slowly through a black and colourless vacuum which still lacked sufficient substance to be called a sky, his encased body a diminutive mote pinwheeling in ridiculous fashion toward the planet somewhere below. A strange sun and stranger stars whirled around him in kaleidoscope effect.

Not far away another body tumbled with him, a lifeless exploded body hanging part way through the slashed hole in the air-suit. That other body had not been so quick or so fortunate, had not escaped the demolished ship with its suit and its life intact; his slow revolving

glimpses and the intermittent flashes of sunlight striking the corpse revealed that the body had exploded instantly upon contact with the vacuum. He did not recognize his dead companion—could not, really, but he supposed it had been some crew member. The two of them drifted leisurely downward. Were there others ?

The ship was long gone, after plummeting past like a spent but monstrous bullet, to burst into searing flame as it struck the atmosphere and cindered. There had been scant time to escape the doomed vessel. The rocketing thunder of the meteorite ripping into the hull and invading the power room had made the warning bells a mockery, faint by comparison and quite useless as a signal of alarm. He had automatically zipped his air-suit at the first invading crash—a reflex motion instilled in him by long conditioning—not feeling personal danger or consternation until a full second later when he spun toward his wife on the bunk. Between his first and second steps toward her the signal bells had cut loose, and he experienced a momentary anguish that she would not be able to close her suit in time. In the timeless interval between the second and third steps the big ship had exploded at the seams, torn apart from the sudden backlash of power unleashed in the stern. He was catapulted into space.

He still did not know if his wife had saved herself. She had undressed and showered, preparing herself for bed, when the crisis came. His final glimpse of her had been of her body stretched out on the bunk, struggling to close the air-suit.

The invading meteorite had continued its unseen way, but the shattered, hurtling ship had fallen like a black hulk until it struck the planet's atmosphere far below. And since then he had lazily followed it down, he and that other lifeless body near by. He closed his eyes to shut out the sight of it.

Were there other survivors ?

He sensed a thin layer of air about him and opened his eyes to discover a faint, faltering daylight. His suit was beginning to react to the tenuous atmosphere. In the next glance he saw his lifeless companion again and turned his head away to look below, instinctively bringing his feet together so that the conjoint energy of the two metal shoes would right him, would cause him to fall feet first toward the planet. He did not know the sun nor the planetary system, so the world below was an unknown mystery. There were both light and dark areas scattered over the world, indicating land and seas; and though he strained his eyes toward the night side, he could find no illumination that might betray a city or a sign of civilization. Perhaps he was still too distant from the surface—perhaps illumination was dim.

Following the next thought, he clutched the belt about his waist that contained emergency rations and once more turned to look at his dead follower. Food on the strange world might or might not be a problem, but the question of suitable water was of paramount importance. The seas were useless without refining equipment, sufficient rain water could be hard to come by and even then might not be too palatable—he would be wise to take the rations belonging to the dead man.

A shipwrecked man either lived by his wits, or he did not live at all.

The atmosphere was gaining substance and depth but still he continued to fall keeping his feet together that the energized shoes might increase his speed of descent. He wanted to be on the ground when the corpse landed, wanted to be in position to salvage the rations. Below him the land areas were taking on sharp definitions and he calculated where he might touch ground off to one side the setting sun-kissed the waters of a nameless sea.

He thought again of his wife, wondering if she had succeeded in closing her suit, wondering if she had been blown clear of the doomed ship. Would he be able to find her again on the wide world below his feet—if she were alive? Would he be able to locate any other survivors—if they existed? It would be like hunting a lost traveller in a vast jungle, or seeking a castaway on an uncharted island.

He never thought of himself as lost, as a castaway. He had lived through a stunning calamity, and when he touched ground again he would continue to live if he was able.

He forced his feet apart finally to slow his fall. He was descending on a sandy, desolate shore.

I.

Cummings, just in from Washington, folded his hands over the thick sheaf of typed papers lying on the desk and let his attention stray to the patch of sunlight spilling in the window. It was a warm summer sun and the window was open, letting in the mild traffic noises of the Knoxville streets. Cummings seemed to be absorbed in the patch of sun on the floor, studying the brightness of it, measuring its incredibly slow movement. The hasty flight from Washington had upset him, disturbed his heart and his stomach as flights always did, and he sought comfort in the warm splotch of light. The sunlight alone seemed peaceful, undisturbed and familiar.

The second man in the small office held his silence, waiting for his superior to speak.

Still carefully watching the sunlight and waiting for his body to attain a quietness, Cummings said, " It wasn't at all necessary to include that vacation request, Dikty. You know me better than that."

Dikty nodded, sombrely agreeing with the supervisor.

" I know you. But I left you that loophole open, just in case you wanted to put another man on. I hate to admit it but this is one time I've fallen down on the job." He waved a tired hand at the stack of papers on the desk. " I know all of *that* about the subject, and yet I know nothing."

" A tough one," Cummings said almost to himself.

" A tough one," Dikty agreed again. " I'm stopped. Everybody has to be born sometime, somewhere ! But not this man—apparently."

The supervisor's responding smile was small and fleeting, entirely lacking in humour. It had been a quickening of the lips and nothing more. " I appreciate that last."

" Another loophole," Dikty explained uselessly. " I'm assuming he *was* born." A trace of bitterness crept into the investigator's voice. " I've seen the man with my own eyes and therefore I *know* he exists. And I don't subscribe to any of those theories and stories regarding storks, cabbage leaves or bullrushes. The man *must* have a set of parents, *must* have a flesh-and-blood point of beginning in space and time." He opened the palms of his hands in despair. " But where ? The subject simply appeared—*pop* !—on a day and year, and has existed since."

Cummings continued to examine the pool of sunlight, moving his folded hands idly over the typed reports.

" What was the day and year ?" he asked.

" March 8th, 1940."

The supervisor closed his eyes. Dikty, watching him, fancied a shadow of an expression had swiftly crossed his face, and he wondered if the pain were a physical or mental one. After a moment Cummings spoke.

" Does that date mean anything to you ?"

" Beyond being the birthday of my second child, no."

Cummings hesitated a moment before replying, wrestling with either his thoughts or his stomach. " March 8th, or thereabouts, was one of the birthdays of hell on earth. You could also consider it *our* birthday in a manner of speaking; at least, the tentative plans for a secret security police went on paper at that time. On or about March 8th, 1940, the President set up the National Defence Research Committee; both the Manhattan District and our organization grew out of that."

" I had always thought Manhattan was the beginning," Dikty said absently.

" No." Cummings opened his eyes again to see if the pool of light had moved. " Another one of those eternal committees came first, in 1939. I forget the name. It didn't amount to much because it was hampered by lack of funds and lack of support in the right places, but *it* was the beginning of hell. Our Research Committee grew out of that in 1940, and the Office of Scientific Research and Development grew out of *that* in 1941. Finally the Manhattan District sprang from them all, in 1942." He sighed. " And there we are with more birthdays than you can count; I sometimes don't blame the public for being confused with Washington's confusion."

" Which would you say was *the* birthday ?"

" Which indeed ?" Cummings shrugged his shoulders and almost lifted his eyes from the floor. " It all depends on which date you prefer to observe—if any. The first atomic bomb explosion occurred out there on the desert in July, 1945. But the men responsible for that one regard the real birthday as three years earlier.

" Three ?"

Cummings nodded. " Those men obtained their first real chain reaction in December, 1942. They want that recognized as hell's birthday. Personally, I don't know if the date should be carved in stone and worshipped, or thrown away and forgotten. I think it is the worst step in progress since gunpowder. Oh, well." He at last moved his eyes from the floor to stare at his assistant. " What most concerns us now is March 8th, 1940. The subject under surveillance first appeared on that date."

Dikty added, " Apparently."

" Yes, apparently."

" He came here to Knoxville about two years later," Dikty continued after a moment. " And I do know what that date means. When the first engineers walked out into the hills west of here to survey the site for Oak Ridge, our subject had already appeared on the scene and opened an office." Then he added bitterly, " He calls it an office. Just a couple of blocks from this spot, if you please."

Cummings smiled again, a faint trace of genuine humour turning the corners of his lips. " I appreciate that, too. I wonder if you do ?"

" That he located so close to us ?"

" That somehow he anticipated us again. *We* didn't get here until several months later, until ground had already been broken on the Ridge. But study the over-all picture, the places and dates as a whole. On or about March 8th, 1940, three things happened—besides the birth of your second child. One, the powers-that-be in Washington decided in earnest to build an atomic bomb and began pouring important money into research. Two, those same powers realized the need

of a highly secret security force to guard the bomb, and to guard the guards of the bomb—a hidden wheel within the wheel. And finally three, our subject makes his first recognizable appearance in public. Day and year, all three items. It occurs to me therefore that he might have known of the events of March 8th in advance, and timed his appearance accordingly."

"But I located him in Miami on that date," Dikty protested.

"To that you should have added, *apparently*. To be precise, you have succeeded admirably in tracing him back to Miami on March 8th of that year. He purchased a used car there and thus established himself for our scrutiny. You were unable to trace him back before the purchase."

"That's correct, and that's where I fell down. There isn't any kind of a trail or hint of a trail prior to that date—in Miami or any other city I've searched." The strong bitterness had returned to his voice.

"So we know," Cummings continued, "that he was in Florida on the same day that historic events transpired in Washington. Very well. Eventually our subject wanders into Tennessee and opens an office here in Knoxville, shortly before the government begins building Oak Ridge twenty-some miles away. We see that it has taken him two years to drift the distance from Florida; he certainly has little regard for time, has he? There is nothing really alarming about those facts when considered out of context, is there? Which is why I say he somehow anticipated us again—he arrived before we did, to allay suspicion."

Dikty slouched in his chair, staring through the open window. "The entire line of reasoning is rather fantastic."

"Agreed." The supervisor nodded slowly, his gaze lingering for a space on the sunlight brightening the floor. "And so you can tear up that formal request for a vacation. I realize what you've run up against and I appreciate what you've been able to do. Tell me about the man."

Dikty hauled an old pipe out of his coat pocket and pointed the stem at the desk. "It's all there in—"

"I don't want to read about him. I want to hear your version of him, impressions and opinions and all." He thumped the papers with locked hands. "This is the dry way of telling it, this is the formal way you dictated it to Hoffman. I'd rather listen to your emotions paint in the colours. Tell me about the man."

The assistant said hesitantly, "He saved my life."

"Yes. And so you will colour him. I want to hear that."

Dikty packed and lit the pipe, sending great clouds of smoke churning toward the ceiling.

" It was about a year and a half ago—we had just cleaned up that McKeown business, remember? My wife and the children were coming in on the train and I was late to meet them; I suppose I'd tarried too long over lunch and didn't realize how late it was getting until I heard a train whistle." Dikty paused, the memory strong in his mind. " As I ran out of the restaurant I saw a taxi parked about half a block away, and I made for that. I remember thinking that if the cabby took the short cuts and cheated on the red lights, we could get to the station in time.

" I was—oh, fifty or sixty feet from the cab when I first noticed the woman, an ordinary sort of woman with bundles in her arms. She was running for the same taxi and with a determination to beat me to it. I didn't have a gallant spark in me—I wanted that cab and I wanted to reach the railway station in a hurry, so I continued running. I'd have made it, too—the cab that is—if *he* hadn't stepped in front of me. I blinked, I suppose, and there he was, right in my path. I threw out my hands to keep from colliding with him and he had done the same—for a second or so we stood there, our hands and arms locked in balance with each other. I attempted to disentangle myself as quickly as I could, but he was rather clumsy about it; when I finally got free and stepped around him, the woman was entering the taxi. It sped away from the curb."

" And ?" the supervisor suggested.

" That cab rocketed away from the curb and smashed into a gasoline truck at the next intersection. Both vehicles went up in flames."

There was a small silence in the office. The pool of sunlight had shifted its position on the floor as the sun continued its westward journey, and the early afternoon traffic of the streets was lighter. Outside the closed door of the room a stenographer's typewriter was busy. That was the only sound for long moments.

" And our subject ?"

" I have no idea," Dikty supplied. " As soon as I could move after the crash, I ran back to the restaurant to call the fire department. When I returned to the scene I thought to look for the man but he wasn't there. I must have stayed there fifteen or twenty minutes before I again remembered my wife. I took another cab—with instructions to drive slowly—and met her at the station. She was crying."

" Crying ?"

" Yes. There was something odd in her behaviour when she saw me and our reunion was rather—affectionate. Quite some time afterward I found out why. The night before coming home she had dreamed of my death, it seems that I was killed in an automobile accident. And you see, when I was so late meeting the train, she thought . . ."

Cummings nodded. "Yes."

"Well—that was my introduction to the subject. I never saw him again until a few months ago, when I received your instructions to investigate him. The name meant nothing to me so I started in the routine manner. He maintains a small office in that building down there"—Dikty pointed through the open window—"and seems to have a small amount of business. He doesn't advertise himself as a private detective or anything so melodramatic—his office door merely contains his name and the word, *Investigations*. He has the proper credentials from the police, he did not apply for a permit to carry a gun, and he has never been involved in any unsavoury situation since he arrived here in 1942. The police haven't a bad word to say about him—although no one seems to be really friendly with him. The sort of man who keeps to himself and obeys all the rules."

Dikty found that his pipe had gone out, and relighted it.

"When I first saw him, I remembered him as the man who had prevented me from reaching the cab. Up until that moment I considered the whole affair as a lucky break—for me, you understand. I had always assumed it was a fortunate coincidence that he did what he did—until I saw him, in line of investigation. My convictions changed on the spot. I can't tell you why they changed, or what caused it, but as I studied his face I realized that he deliberately stopped me that day to save me." Dikty put his hand to his forehead. "But I can't explain why I think that. I just *do*."

"I'll believe it," Cummings said.

"If I had met him in any other way, had happened across him on the street or in a bar, I suppose I would have reacted normally. I'd have gone on thinking our earlier meeting was a lucky break for me. I'd have bought the man a drink, pumped his hand and probably made a complete ass of myself. But because you had started me working on him my reactions were unexpected, and somewhat startling. Because he was a subject under investigation I leaped to the conclusion that our first meeting was *not* a coincidence. And that, in turn, made me realize what kind of a meeting it had been. He deliberately saved my life with—well, hardly malice aforethought.

"He is a tall man, three or four inches taller than myself. Well over six foot, I'd say. Wears his hair in a crew cut, light brown, almost sandy." Dikty glanced at his superior. "He looks like an Egyptian."

"What?"

"An Egyptian. Tanned skin as though most of his life had been spent out of doors; a strangely hardened or *old* skin as though he had been living on a desert or the windy plains. I found his eyes quite

odd. The corneas are yellow. That is a peculiarity common to people in the Far East and sometimes the Middle East. It strengthened my impression of an Egyptian. Physically, he's a fine specimen. Lithe—I'd judge his weight at about 175 pounds, evenly distributed. For some queer reason he gives the impression of speed in his build, as though he were constantly poised for flight, or had been a track star in college and continued to keep in practice. Trim and fast, always alert for something.

" He seems to be a quiet, unassuming man, not married. Drives a two-year-old car and lives alone just outside of town on a rented place, a mile or so beyond the trailer camp. Has a small house and a couple of acres out there—nice rural picture except that he doesn't follow the pattern set by the neighbours. No garden, no poultry, no livestock —just himself and an apple orchard. He doesn't visit or encourage visitors. If he has any women friends, I haven't discovered them. I've checked his mail through the post office and he receives little or nothing beyond a mass of technical journals and books. His evenings are as quiet as his days—sometimes at the library, once in a while a movie, occasionally just walking about town, but mostly at home alone. Bookworm type. He is less a part of this town than the people living in the trailers."

" You haven't mentioned his age," Cummings said.

" No—I haven't." Dikty stared at his supervisor, a wrinkled frown creasing his forehead. " When he first made application to the police for his license in 1942, he stated he was thirty-one."

Cummings nodded. " And today ?"

" He seems to be thirty-one."

Cummings added in an ironic undertone, " Apparently."

" Tell me . . . Why our investigation ? What started it ?"

Cummings had returned to his study of the pool of sunlight. There seemed to be a fascination in it.

" That, too, was a routine thing," he answered finally. "Someone discovered that he subscribed to every bulletin and journal of science currently published in the free world." Cummings waved a broad, sweeping hand. " Archeology, geology, astronomy, meteorology, chemistry, medicine, nuclear physics, everything. It was that last which initially attracted our attention. Someone was checking the subscription lists and stumbled across his name on them all, down to and including a social journal for the atomic scientists. When someone noticed that his address was Knoxville, the routine began." His hard knuckles rapped the papers on the desk. " And you know the rest."

Dikty was still frowning. " Subject apparently has an overly healthy interest in science. All science."

" Subject's interest might even be an unhealthy one," Cummings retorted drily. " And so we are continuing the investigation. I want to know the source of his income, so we are checking his tax returns. I want to know how he appeared in Miami without previous trace, so we are checking all ships that put into that port on and before the day of appearance. And checking other Florida ports as well. I want to know what is behind the mysterious coincidences of those dates, so we will continue to investigate him. You stay on the job—stay on him." He sat up and abruptly turned away from the sunlight to lock eyes with the other man. " I have already assigned another investigator to the case. Here."

Dikty said nothing, awaiting clarification.

" That is no reflection on your ability or your work," Cummings said decisively. " I'm satisfied you have done all that could be done. But I'm also satisfied that the subject is aware of you and aware of the supposedly secret organization you represent. I can see no other way of explaining that taxicab incident. We will bear in mind that his intentions toward you—and us—are friendly, otherwise he would have let you go to your death. Take note that he made no attempt to prevent the deaths of the woman and the cab driver—only you. But still, the primary purpose of our organization is to protect our atomic structure against all comers, so he must remain under suspicion and investigation. Continue on that basis; meanwhile a new investigator he does *not* know has been moved in. To approach him in a new way. I prefer that you and the new agent do not know each other—I don't want to run the risk of having the subject link the two of you together. If an occasion should arise when you must reveal identities, you will be cousins."

" My cousin ?"

" Yes, that is safe enough. You have no real cousins."

" Very well."

" Our procedure from this point forward will be to determine how the subject knew those various important dates in advance. I'll start Washington digging into the scientific and political circles of 1939 and 1940. Something may come up to connect it all. I hope so."

" I'm sorry, but you are way ahead of me."

" In 1939 and 1940," Cummings sketched the outline for him, "only the President and a *very* tight little knot of scientific and political advisors knew the United States was speculating in nuclear physics; you know the degree of secrecy maintained on that score. But still, our subject appears in public view for the first known time. In 1942,

only the President and a slightly larger group of advisors and planners knew that these Tennessee hills would be the future site of an atomic plant. So, our subject appears here and opens an office—an investigator's office, of all things. Talk about your protective colouration ! And finally, about a year and a half ago, an agent of a supersecret security organization barely misses an appointment with death. Again our subject is in the right place at the right time. We find now that he is overly curious of the sciences, follows their discoveries."

" He doesn't seem to age," Dikty said absently.

" How did he know of that historic birth in Washington, in 1940 ?" Cummings demanded. " How did he know Oak Ridge would be built out here, in 1942 ? How did he know of your existence—and perhaps mine ? Believe me, Dikty, when I say this outfit is tight, I mean *tight*. We don't so much as have an official name—we just exist. And not all of the President's Cabinet members know of our existence —only a few of them. We don't appear on *any* pay roll; money is secretly siphoned off to us. We aren't responsible to any government agency, only the next man in line above us. And each of us, every one of us knows only a small handful of fellow agents. We don't even know who is actually controlling us." Cummings bounded from his chair and stalked to the window to glare across the intervening blocks at the tall white building down the street. " How did he know of *you* and why did he save *your* life ?"

Dikty shook his head worriedly. " I can't tell you."

The supervisor's fists were clenched behind his back, knotted in an angry ball. " I'm going to find out !" he said savagely. " I'm going to root out everything there is to know about that man, all the way back to the hour of his birth. *If* he was born ! I'm going to find out why his eyes are yellow, why his skin is hardened, why he hasn't aged, why he lacks a past, why he thought you were worth saving, why he's in Knoxville. I'm going to do more than that; I'm going to find out why he's alive. He represents a threat that I refuse to allow to exist; we will either discover exactly who and what he is, or he may cease to exist. I'll tolerate no half-mysteries about him !" Cummings paused in his tirade and half turned from the window. " Has he seen you—since the taxicab incident ?"

" I'd like to say no." Dikty was uncomfortable. " I take a deep pride in my training and my job, and under ordinary circumstances I *would* say no, definitely. I've been extremely careful in shadowing him. But considering the unusual abilities of the subject—yes, he has probably spotted me."

Cummings turned back to the open window and stood in the sun shine. His outward anger seemed to have vanished, and when he spok

his voice was soft, silken. His eyes sought out the distant office building.

" What's his name again ? Nash what ?"

" Gilbert Nash. An assumed name, I suppose."

II.

Gilbert Nash was aware of the man's bewildered footsteps wandering along the corridor just outside, was aware of the stranger's hesitancy for several minutes before the man actually paused at the door and put his hand on the knob. The steps were slow and somewhat baffled, ill at ease, as though their owner had forced himself this far but didn't quite know what to do next—or couldn't make up his mind to do it. They had faded away for some seconds as the man drifted along to the far end of the corridor, and then they returned to pause at last before his office door. The shape of the bewildered man appeared only as a fuzzy haze on the door's frosted glass pane. Gilbert Nash remained in his chair and watched the indistinct shape, watched to see what it would finally do.

The knob turned suddenly and the man darted in.

He stopped just past the doorway staring at Nash, looking to see what a private detective would be like, looking around the room without actually seeing it, still undecided what to do.

Nash slowly got to his feet. " Come on in. I won't bite you." His voice was low, casual and pleasant; it sounded as though the speaker didn't really care if the stranger entered or not. Whatever the bewildered man chose to do was acceptable.

The newcomer made a move to push the door shut behind him. " I'm—I came up to see you. My name is—is it quite all right ? May I talk ?"

Nash nodded, amused. " Quite all right. You are here with a problem. There is the same confidence between a client and myself as between doctor and patient." He reached out a casual hand to half turn an empty chair toward the visitor. " Come in and sit down."

The man was wearing most of his troubles on his timid face. It needed no second glance to reveal that he wasn't merely having domestic difficulties, he was drowning in the miseries. It was in his walk, in his unconscious slouch as he sank into the proffered chair, it hung from his shoulders like the unpressed coat he wore and it preyed on his mind constantly, spilling out over his face. He failed to see Nash's outstretched hand, may have failed to see the man himself very clearly. He slumped in the chair and ran a moist palm across his forehead,

moist from things other than the mild summer heat. Knoxville in the summer could be hot, but not that insufferable.

" I don't want this in the papers," the man said.

Nash smiled politely. " It won't be. Unless you've murdered someone."

" Oh, heavens, no !" His voice and his body had risen with alarm at the suggestion, and now he slowly dropped back into the chair, forcibly relaxing. " Nothing like that, oh no, nothing. It's my—my name is Gregg Hodgkins. It's my wife . . ."

Nash nodded. " Of course."

Hodgkins was well dressed but he wasn't so well pressed. He crushed an expensive straw hat in his hands and occasionally discovered himself worrying his twisted necktie. He wasn't a soft man by any

measure; he possessed no paunch, his fingers were long and sure even though they were nervous now. His eyes were intelligent enough behind their blanket of worry, and his hairline was beginning to recede. He smelled pleasantly of a fresh after-shave lotion and the white shirt he wore was only barely beginning to muss. Hodgkins also wore a small *A-C-T* pin in his lapel.

"What about your wife?" Nash prodded gently. "Is she objecting to your work over on the Ridge?"

Hodgkins shot upright with sudden suspicion. "How did you know about that?"

Nash indicated the lapel pin. "I recognize that. I know that the American Chemical Trust runs the plant for the government, and I know that not every employee may wear one of those pins. You're some sort of a scientist out there; I wondered if your wife was objecting to your work."

"Oh . . . yes." Hodgkins fingered the pin absently. "Silly of me not to recognize the public significance of the thing. I'm afraid I'm not thinking very clearly any more. No, it isn't that—isn't my work. My wife, she . . . Mr. Nash, you just *have* to find my wife!"

"Is she lost?"

"She ran away."

"Oh? When?"

"Less than . . . I'd say three weeks ago."

"Why?"

Hodgkins seemed to grow more miserable. "That's a long story, a very long story."

"All right. I'll listen—I've got all afternoon. You do want to tell me, don't you?"

The scientist sat up stiffly and stared into Nash's probing, yellowed eyes while the words tumbled eagerly out. "Oh, yes, everything—I want to tell you everything, Mr. Nash. I don't know where else to turn. But you probably won't believe me. They didn't."

Gilbert Nash interlaced his fingers and relaxed in the desk chair, seeking comfort. "Who are they?"

"My doctor, and the company psychiatrist recommended by the doctor." He jerked out a crumpled handkerchief to swab his face. "I went to my doctor first from force of habit; I grew up in the habit of taking everything to the doctor, and he never failed me before." Hodgkins hesitated only long enough to risk a glance across the desk at Nash. "I could have saved myself the trouble," he added bitterly.

Nash almost folded himself into the chair, seeking the most comfortable position. His eyelids closed and his interlaced fingers were

still. " The doctor said perhaps that you were imagining things ? That you needed a rest ?"

" Yes."

" And the psychiatrist ?"

" He agreed with my doctor," Hodgkins continued in the bitter voice. " He sent me home. And I haven't worked for three weeks—that hurts, too. I haven't worked since she left me."

" The psychiatrist ?" Nash prodded.

" He said almost the same thing as my doctor but of course stated it in a different manner; a mild neurosis, he told me, cumulative anxiety brought on by my exacting work and the attendant, continual pressures. Oh, he made it sound impressive, but mild and altogether harmless." Hodgkins paused again to look across at Nash. "I can't tell you what my work is."

" I'm not going to ask." He didn't move, didn't open his eyes but the hint of amusement returned to his face.

" Do you know what that silly psychiatrist said to me ?" Hodgkins demanded. " He said I would probably be a very happy man in a matriarchal community, but that for the present there was nothing to worry about. And he sent me home from work; he comes around a few times a week to look in on me. Me—a grown man." He hesitated again. " And Mr. Nash, he reassured me that I am reasonably sane, as sane as any man can be in *this* world today. I say that because I can't be sure what you are thinking of me."

" Never mind what I'm thinking. Your work and mine are alike in one respect; I don't form opinions until I've heard the entire story. And if it is any comfort to you, sanity is a legal term, it doesn't properly belong in medical terminology." Nash nodded his head. " Please go on."

" Thank you." Hodgkins exhibited a minute measure of satisfaction. " I need someone who can place faith in me, in what I have to say."

Nash nodded again, still with a faint trace of amusement. " And so you came to me."

" Yes. I read a great deal, both fact and fiction. And in a vicarious way I believe I know the detect—the business of investigation fairly well. I have a healthy respect for your profession I've come to look upon your kind as trouble shooters, jacks-of-all-trades. Frankly, Mr. Nash, you are the only remaining person I *can* turn to." He broke off again to stare intently at the listening man. " Will you do me a very great favour ?"

Nash slowly opened his eyes to regard the scientist with speculation. " If I am able—yes."

" Please "—the words were tumbling again, rushed and unsure—" don't laugh at me. Don't laugh at what I'm going to say. I know very well my facts will sound silly and childish, perhaps even fantastic, and under other circumstances I might well laugh myself. But they aren't silly, they are bare, bald *facts*, the only things I have left to cling to. And I don't want you to laugh, no matter what you choose to believe of me. I don't want you to pat my shoulder and tell me I am imagining things, that I need a long rest, that I would be happy in a matriarchal state." He paused for breath. " If you choose *not* to believe me, tell me so and I'll leave. Refuse me—my case, if you so desire, and stop right there. I'll walk out that door and not bother you again. But don't laugh at me."

Nash nodded assent. " That much is easily granted." He closed his eyes a second time and relaxed in the chair. " Where are you going to begin ?"

" With my wife, with Carolyn. Everything begins with my wife—and ends there. The entire affair seems to be a complete circle of zero, our marriage, our life together; everything comes right back to her and ends where it began." He paused, summoning courage for what he had to say next. " She's too damned smart !"

With that he came to a full stop, looking for a reaction on the part of Nash. There was none. Nash remained curled in the chair, patiently waiting for him to continue.

" Have you ever had the misfortune to marry a woman far more intelligent than yourself, Mr. Nash ?"

" No."

Hodgkins rushed on. " But surely you can imagine what a man desires in a woman. It has been said before by men more gifted than myself—an inspired chef in the kitchen, a patient mule about the house, a . . ."

Nash finished for him when he hesitated, " And a whore in the bedroom."

" Eh—yes. Among other things, the usual and attractive physical attributes, a man wants a smart and very intelligent wife, a woman possessing sufficient mental abilities to understand him and his world. A woman who can stride alongside him, who can understand his problems and to a degree, help him solve them. But still—and this is a paradox, I will admit—a woman who is necessarily inferior to him, just a trifle inferior. A sort of delicate balance to the male ego. For a man also wants a woman who *needs* his advice, who must lean on him, who has need of his greater reasoning powers as well as his mechanical knowledge. That is the kind of woman every healthy man

desires, Mr. Nash. I fully believed I had found such a woman in Carolyn."

Nash nodded again, seeing the image of Hodgkins's desired woman on his inner eyelids. He thought he knew what was coming.

"Just how old is your wife, Mr. Hodgkins?"

The question was met with a small silence, and when the answer finally came it was in an embarrassed tone. "I—we don't know really. She is an orphan you see, and we were unable to locate the birth certificate. The situation stirred up a bit of fuss when I first took a job with the Manhattan people, as you can imagine. They delve into everything, but they couldn't find a certificate either. Carolyn and I finally agreed that she was about five years younger than myself—that needed bit of inferiority, you must understand."

"I understand. And you are . . . ?"

"Forty-six, now. So by our agreement she would be forty-one—we think. Sometimes I am not sure. She hasn't grown much older than the day I married her."

The yellow eyes snapped open to fasten on him. "What?"

"She never changed much." Hodgkins smiled with the memory of her. "I liked that, really. What man in love doesn't prefer his wife to cling to her youth and beauty? She was a handsome, striking woman on the day we were married, and still is. She could have easily passed herself off as being in the middle twenties then; today, I would judge, she could get by very well indeed in the early thirties. Her youth seemed to cling to her."

"Did she use anything to maintain that youth?" Nash asked curiously.

"What do you mean?"

"Creams, lotions, the usual jars in her bedroom?"

Hodgkins was embarrassed again. "I don't know, Mr. Nash. We had separate bedrooms. Oh—I don't mean by that, that we—well—but we always had separate bedrooms. She wanted it that way." He shrugged. "Offhand, I don't recall seeing such jars around. I suppose she kept them out of sight. Carolyn was very tidy—marvellous wife and housekeeper."

"Yes, I can imagine." Nash's gaze lifted above the man's head and climbed the wall, absently speculating. "All right, she was your perfect companion. And you are a success in your field."

Hodgkins fingered his lapel pin and nodded, unaware that Nash was no longer watching him. He began talking about himself, about his schemes and plans and desires upon leaving college, about the lean days that closed in on him toward the end of the depression years, about his frantic struggles in the early days of the war and how he saw

it coming long before the tide actually lapped American shores. He told the investigator about the day that strange men approached him on an even stranger subject, and how he eventually found himself working in a concrete cell which was a part of many other cells, the whole making up an organization called the Manhattan Project. That name in itself meant next to nothing to him, for he was aware only of what he was doing and some of the work in process of those nearer cells around him. In time, of course, he guessed what was building.

He recounted to Nash his later days, after he was transferred to Oak Ridge and the superior position gained there, recounted the full and fruitful years of labour when his problems were knotty but which almost always seemed to solve themselves with short passages of time. He mentioned in passing his hurried journey to New Mexico and the explosive miracle witnessed that chill July dawn, his return to Oak Ridge a stunned man. And he told of the slowly growing strain of unhappiness between his wife and himself, despite his recognition of it and the striving to overcome it. He wanted desperately to wipe out the menace for he remained deeply in love with her.

Hodgkins wound up by asserting, " I consider myself an intelligent man, Mr. Nash. You'll grant me that, leaving false modesty aside."

" Easily granted," Nash said again. " But back to your wife . . .?"

" Yes—Carolyn."

He lapsed into what was obviously a painful silence while his memory skittered back over those years, tracing again the days of his ripening love for her.

" In the evenings after work," he finally broke his silence, " I studied the technical books and journals I could not then afford. Censorship had not become so effective and so widespread until 1940 or shortly thereafter, and one could still find the desired studies in some of the libraries, or could borrow them from some of the universities. Some of those early reports aroused my first active interest in nuclear physics, I remember. The Germans had access to heavy water but didn't quite know what to do about it. Well, anyway—I wanted to climb as rapidly and as safely as possible, and I realized that if I waited until I could afford the publications it might be too late. I had a poor job, and the desire for a brighter future, a future with security and a wife. Then I discovered Carolyn in the library.

" Oddly enough, I first saw her looking at a schematic drawing in a radio magazine. She was tracing it with her finger. It startled me, and when I looked closer to discover what she was really doing it pleased me. You must realize it was—and is—a very unusual thing to find a woman interested in such technical details. But she was. Have you

ever read a schematic? It is done in two ways: either you have a surface interest in the drawing and you follow each line from origin to terminus, with your interest being in that line alone; or you attempt to grasp the plan as a whole and retain the mental impression of each circuit, enmeshing it with the next circuit as you trace it. The end product is that you have a fairly cohesive picture of the scheme by holding the image of each circuit in your mind, meanwhile interlacing them all. I stood behind her chair and watched her finger; I don't know that she was reading the drawing as a whole, but I think she was."

"You couldn't judge by her finger?"

"No, of course not. The finger was merely a guidepost to the mind behind it. She went along splendidly for a few moments and then she seemed to run into trouble."

Nash nodded. "Yes, I was expecting that."

"You were? Oh, my. Well—I don't recall at this late date what it was, but some difficulty arose that threw her completely from her train of thought. It may have been my presence behind her. And when you lose the thread of thought in a schematic, Mr. Nash, you may as well begin all over again. She was annoyed."

"I can well understand. Go on."

He did so. "Well, she pushed the magazine away with a little sound under her breath and started to get up. And I, like a damned fool, had to butt in; without thinking of what I was doing, I leaned over her shoulder to point to the trouble spot."

"You did as expected."

"I did?" Hodgkins was uncertain whether to be pleased or confused. "Not *that* way, I remember saying to her impulsively, and then I rather choked up and could say no more. She threw me one withering glance over her shoulder and I hurriedly left the library, in some confusion I must admit. She had created quite a disturbance within me."

Nash turned his bemused attention to the man. "Was it an act?"

"Do you mean, was she pretending to something false? No, I can't believe that. She was an utter stranger to me before that evening and I can't imagine why she would pretend to something, merely to gain my attention. I must remind you, Mr. Nash, that I was nobody at the time. I hadn't even a decent job. My clothing couldn't have been too acceptable." Hodgkins shook his head. "However, I avoided the library on the next few nights because I still felt some embarrassment over the incident, but less than a week later I had to go back. My studies were suffering—and the overpowering desire to see her again swept away any misgivings I may have had. The desire amounted

almost to a pull, a compulsion. The memory of her continued to haunt me, disturb my days and nights, and I realized I could never rest until I was near her once more."

Nash regarded him silently and with calculation. He was beginning to learn vast things about Carolyn Hodgkins.

The physicist said, " I finally returned to the library . . ."

". . . and there she was," Nash finished the sentence for him. " You might say, waiting for you."

" Yes, really !" Hodgkins missed the intended irony. " I found her studying a book that I had turned in only a few weeks before. It dealt with a field closely allied with my own, can you understand that ? It had not been easy studying for me, that particular volume, but there she sat almost swimming through it ! I was both astonished and delighted ! But still, I carefully avoided her that evening, preferring to sit in another part of the room just watching her—her profile was wonderful. Well, eventually the attraction of her body, her personality, overcame my reticence and I—that is, we—I don't quite know how to explain it," he finished lamely.

" No need to," Nash assured him in what he hoped was a sympathetic rather than an amused voice. " Easily understandable, it happens all the time. Mutual interest in your sciences, each of you obviously alone . . ." He let it hang there, casually watching Hodgkins.

" Yes, yes, of course. You do understand. So then I finally summoned the courage to approach her and introduce myself. She was not angry at all, she was most friendly." He closed his eyes for a brief moment of retrospective dream. " In time we became fast friends. We met again at the library several times, and then elsewhere; in a very short while I began entertaining ideas. I surprised myself, Mr. Nash, with the quickness and audacity of those ideas, for until then I had been something of a backward man half afraid of a woman's shadow. But you must understand, Carolyn's presence seemed to invite ideas."

" I'll just bet," Nash mumbled.

" I beg your pardon ?"

" Go on with it, please."

" I thought," Hodgkins said after a small pause, " she was—or rather she would be what any intelligent man might call a perfect wife. The woman was beautifully endowed with everything I could possibly ask in a mate, including the remarkable intelligence I had always desired in my dream woman. A hundred enchanting little things came to light about her as we spent many pleasant evenings together. I had fallen in love of course. I still am. And I may as well make

this brief, Mr. Nash. We were married." Hodgkins came to a full emotional stop, expecting some reaction to his tale. He got it.

Gilbert Nash stood up from the chair, stretched his arms lazily above his head and took a turn about the little room. He came back to stand beside the window overlooking the street, his back to his client. His voice, when he spoke held a strange and muffled quality as though he were vocally hiding something.

"Hodgkins, can you stand a jolt?"

"A jolt? Well—I suppose so."

"All right, here it is. Just about any other man in the world who had his feet on the ground instead of in the air would know what happened to you. Quite plainly and frankly, you were taken in."

"Taken in?"

"Hooked. And if you aren't familiar with current slang, you were baited and trapped in a fine-mesh net. The net was that schematic drawing. But don't be alarmed"—Nash waved a negligent hand—"that happens all the time, too. A million women employ a million ways to catch a million men. Yours was the technical touch. Quite common, Mr. Hodgkins."

Hodgkins stammered, "I see."

"I wonder?" Nash asked under his breath. He remained at the window looking down into the street.

Behind him, half oblivious to any other presence in the room, Hodgkins was tightly wrapped in the warm memories of his wife. He had married Carolyn because he was madly in love with her, in love with her seductive body, her unusual beauty, her personality and her intelligence quotient, in love with the complete woman. Overwhelmed with love of her because she had noticed him and had not passed on, had paused to look. He was positive theirs was the greatest love since time's birth, all unaware that others without number thought the same. He had married her because he would possess something few other men could boast: an alert, brainy woman who was nearly his equal in any field he chose to explore. *Nearly*. He had married her because she could read a schematic drawing *but* encountered trouble on certain parts of it. That iota of necessary inferiority was present. He had married her because she would be a most valuable asset to his own standing and mentality. As she had been—for a time. But somewhere, somewhen along that golden line between the honeymoon and the ill day three weeks ago, the bubble had burst. Or half burst. He still loved her, if only she would continue to love him. *If*.

Nash turned around to find the man slouched in the chair, dreaming his dreams. "Which brings us to the present," he suggested briskly.

"What?" Hodgkins sat up. "Oh, yes—the present."

"You're still married, still in love?"

"Yes indeed!"

"But your wife has walked out on you?"

"I'm afraid she has."

"Has this ever happened before?"

"Why—no. Not like this."

"What do you mean, not like this? Has she or hasn't she?"

"I meant to say, she took vacations. Without me. She thought it best, you understand." He seemed embarrassed. "Carolyn would go away for a time—perhaps a week or so, perhaps a month. She thought we should have separate vacations."

"Where'd she go?"

"Oh, I don't know. I didn't ask that."

"And now she has gone again and you want me to find her?" He paused. "This isn't just another vacation?"

"Not—not this time."

"Are there any other men?"

Hodgkins visibly cringed from the thought. "I don't know. I don't think so. I've never seen them."

Nash felt a fleeting moment of wonder at the man's startling naïveté. Gregg Hodgkins—scientist, scholar, valuable enough to be invited into the Manhattan District, naïve enough to be roped into marriage by a woman who carefully used his own special knowledge to lure him.

Nash said, "If your wife were only half as smart as you claim, friend, you *still* would not see the other man. You never do, believe me; he's always standing behind your back. But in the meantime there are some muddy points in your tale of woe which need clearing up. What was the cause of your separation?"

Hodgkins stared at him, sudden anguish in his eyes. The crisis had been forced upon him with those few words, a crisis he had clumsily tried to avoid all during his recital. Why had he split with Carolyn—or rather, why had she run away from him? The answer was painted on his face and written between the lines he had spoken earlier, but Nash waited for him to spell it out with harsh words. What had caused the sudden separation after long years of married bliss?

"Because she has surpassed me!" Hodgkins cried at last, half ashamed to be admitting it.

"Surpassed you?" Nash prodded relentlessly.

"She is an unimaginable distance ahead of me! No, please—don't mistake me. I'm not mad, not angry. Jealous—yes, I'll admit to that. But I'm not angry at her for what she has done. Carolyn has passed

me by ! During all the years we have lived together, she sucked my mind of knowledge the way a vampire bat is said to suck blood."

Nash sat down abruptly to stare at the physicist. " *What* ?"

" Everything I've learned in the past ten years," the man cried, " everything I've gained by hard work and sweat, Carolyn knew the next day ! Will you believe me when I say she plucked from me every iota of knowledge I have, pulled it piece by piece from my poor head without my uttering a word !"

" Carolyn Hodgkins did that ?" Nash reached out to grip the edges of the desk. " You say she pulled you back into that library with a physical compulsion, you say she hasn't grown much older than the day she married you, you say she takes separate vacations and you don't know where she goes, and now you tell me that she ransacks your mind of knowledge ? Carolyn Hodgkins has done that ? Your wife ?"

Hodgkins nodded miserably. " Yes."

" Well !" Gilbert Nash exclaimed in mild wonder. " Well—finally."

III.

The corridor outside was fairly quiet with only an occasional passer-by stepping out of the elevator and clacking his heels on the hard. flooring as he sped for some remote room in the depths of the building There weren't many public offices on the seventh floor, one of the reasons Nash had chosen the location. He desired privacy above all else, despite his indicated profession, and the one room high on the seventh floor was ideally situated.

Nash stood at the partly opened window overlooking the city, overlooking the smallish cars and still smaller people crawling the pavement below. The sunlight slanted past, leaving that side of the building and his single window in shade. Nash batted his eyes at the warm, sunlit city and turned about to face the room, his face an expressionless mask and his voice a flat monotone.

" Let's go into that more fully," he suggested.

" About Carolyn ?"

Nash nodded. " About Carolyn."

" I warned you—you might laugh at me."

" I'm not laughing," Nash pointed out.

" Well, I've formed a theory."

" I want to hear it," Nash said.

" I'm a careful man—by training and habit. I must be careful in my work. I proceed on a theory someone else has assigned to me, following it to its ending whether that ending is a success or a failure.

Or I formulate my own theories based upon previous knowledge and observation and then proceed in the same manner. I have formed a theory about Carolyn." He looked up, somewhat confused. "But you must understand I still love her. I do—to this day!"

"You love her. Keep going on the theory."

"In the beginning I didn't realize of course what was taking place; our marriage was too new, Carolyn was too new and I lacked previous data. I don't recall now just when I first suspected the truth. It was one of those years . . . One of those years I discovered that Carolyn was learning my most precious secrets, the most confidential government secrets that we at Manhattan were exploring. Manhattan was very strict you must understand. *Nothing* was to be carried home to the wife and family, and following those dictates my lips were sealed. Never, never in the many years of our marriage have I spoken a confidential word to my wife—about my work, I mean. Not one word. I wouldn't even so much as mention the name of another man I happened across at the laboratory, for fear the mere name and presence of that man would partially reveal the particular experiment under consideration. You see, in our work, a man's name immediately identifies him with his subject."

"Yes, Newton and gravity, Heinlein and the moon. Keep going." Nash had again closed his eyes and was hunched in the desk chair, listening intently.

"So I *said* absolutely nothing to Carolyn about the work, nothing! But in a short while she knew everything I was doing, and everything I had observed others doing. I worried about it, puzzled over it, told myself I was deliberately fabricating false premises—but she *knew*, and in the end I realized that she knew. She would prove that to me when certain instances arose in my work that stopped me cold. I would stand still for days, unable to progress by so much as a single decimal point and meanwhile she would grow irritated with me. Impatient with me really, for I was holding her back as well. Finally her irritation and impatience would reach the point where she would drop some hint in our idle conversation—not about the work stoppage, no, but she had the knack of inserting an irrelevant phrase or thought into whatever subject we were discussing. That irrelevant something would grow in my mind and in a day or so I would change it—that is, reassign the values, and apply them to the work under consideration. And immediately the problem would vanish, the knot would disappear and the work would go forward once more. And Carolyn's mood would change for the better. I have included all that in my theory of her.

" Carolyn helped me actively push my work, and in return Carolyn shared the results of that work. Against my conscious will. I puzzled a long, long time over the method she employed to gain access to my knowledge. Mr. Nash, the following is apt to be . . . to be . . ."

" Confidence of the client, remember ? Don't worry about what it is apt to be. Just spill it."

" Yes, sir." Hodgkins fidgeted. " At first—at first I considered mental telepathy, those Rhine experiments with ESP and that sort of thing. I wondered if Carolyn was—say sitting across the room from me and reading my thoughts; and although I blush to admit it, I toyed with that idea for quite some time and would find myself devising mental traps for her. I used to *think* things, sometimes revolting and horrible things—nasty little thoughts—and watch to see if she reacted to my thoughts. She never did, never gave an indication that she was ' reading ' those thoughts or ' reading ' my mind. In time, I discarded the theory of mental telepathy. That is, I discarded that particular theory of telepathy. Mr. Nash, I can't prove what I am about to say and so it must remain my theory only, but I believe I have discovered the channel of workable telepathy—at least between Carolyn and myself."

" I know one thing right now," Nash told him. " I guessed it by your manner and your growing discomfort. It is a rather delicate channel, isn't it ?"

Hodgkins eyed him in wonder. " Very delicate. I've come to believe this telepathy of ours requires a physical contact. A very intimate physical contact."

" I'm anticipating you. But go on."

" This—I haven't even told this to my doctor—but as our years of marriage went by and I modulated my theory, I finally came to realize that we *must* have this physical contact for her to know my innermost thoughts. I've already told you that we maintained separate bedrooms." He broke off to fidget, to glance with embarrassment at Nash. " I'm afraid this becomes very personal, I hope you will understand. In the beginning of course we were very much in love, always together, and incidentally unable to afford separate bedrooms. You've never been married, have you ? Marriage begins with a maximum amount of *closeness*, of clinging together physically and mentally, of being constantly aware of one another and the desire to be near one another. But over the course of years that tends to wear away and you experience only periodically what you felt at first.

" It was during this latter period that I formed my theory of Carolyn. We had moved to Oak Ridge by this time, we could afford separate bedrooms. Will you—will you forgive me this ?"

" Easily done."

" I have formed the theory that Carolyn can know my thoughts by physical contact, that her mental powers are limited to that means of conductivity. Let us assume that we were holding hands—when you are in love, Mr. Nash, there is much of that. When we were holding hands, Carolyn could know my surface thoughts, could know what I was thinking of in a vague distant manner. When we kissed, she was able to plunge deeper, able to read and know everything I knew. I could feel *that*, I could feel her plumbing my mind for knowledge. It amounted almost to a physical probing. I knew what was happening and yet I was powerless to prevent it. I—was and am in love with Carolyn. I couldn't deny her affection.

" But when "—Hodgkins cast a sheepish, half-defiant glare at Nash —" but when I would return home from work after having solved, or nearly solved, some particularly important problem, Carolyn would be extremely affectionate. She—she would sleep in my room that night."

Nash said nothing, waiting.

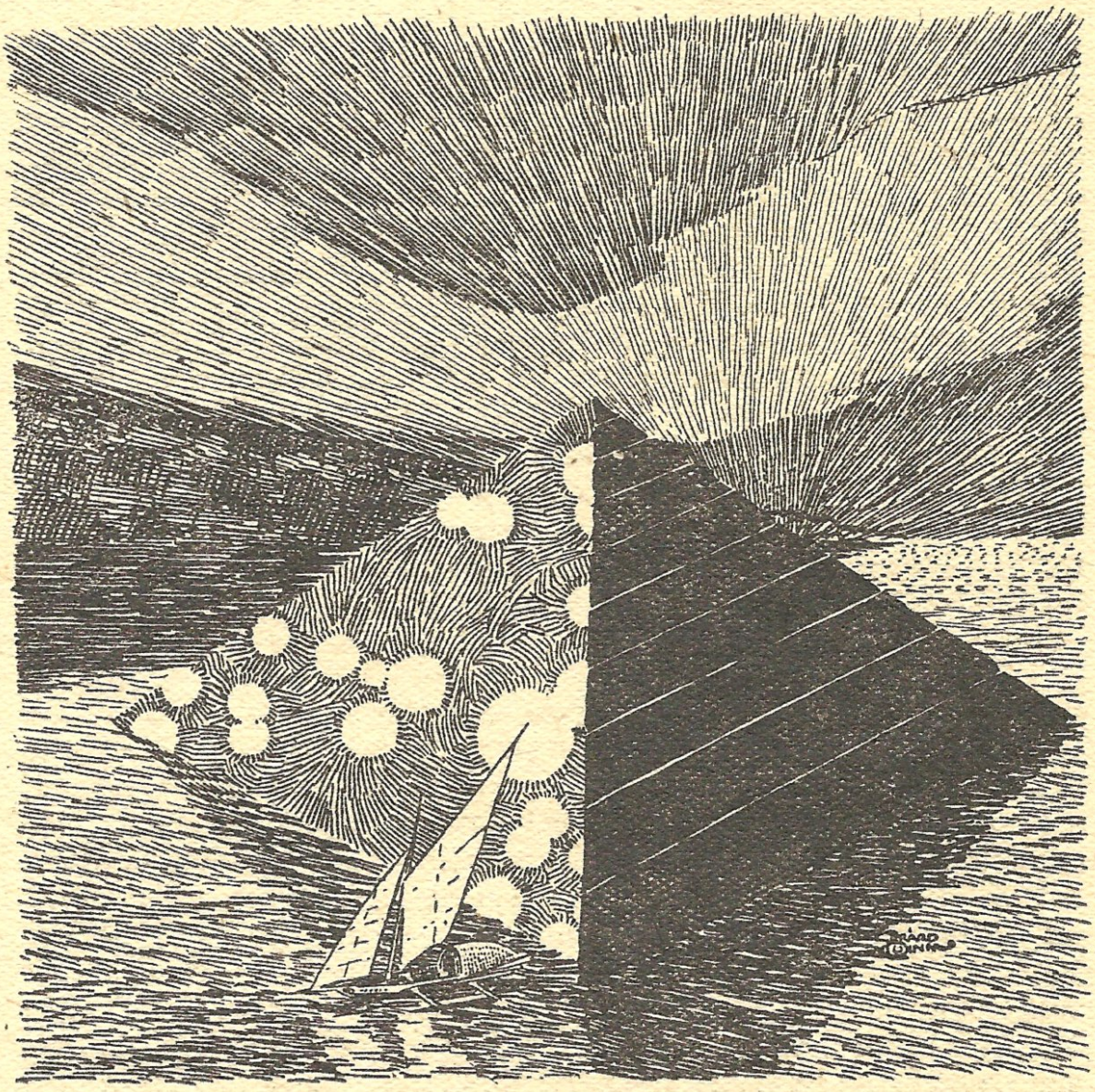
" As an illustration," Hodgkins continued after a moment, " let me use that schematic drawing I spoke of before. While I would be working my slow way through that drawing, Carolyn would keep pace with me by holding my hand, by kissing me warmly each evening as I came home. But on the day I had mastered it, the day I had enmeshed the whole and understood the scheme completely—on that day Carolyn would know what had happened, would know that I had solved another knotty problem and it was on its way to the proper government agencies. That night, then—that night she would delight me, would live with me again the early days of our marriage when I was a younger and more active man, and before the next morning she would know what had been accomplished. She would know each exact detail and could, if need be, sit down and make a copy of that drawing. All this without a spoken word passing my lips."

He used the soiled handkerchief to mop his face. " And that, Mr. Nash, is my theory. I believe I know how mental telepathy works and I believe I have unwillingly proved it."

Nash opened his eyes and shifted his position in the chair. He fastened his penetrating gaze upon Hodgkins. " If you were an archeologist instead of a physicist, that form of telepathy wouldn't have startled you so. Astonished and pleased you—yes, but you would have probably recognized it."

" I would ?"

" Yes. Making due allowance for the scanty information available today, there's reason to believe your telepathy was practiced among



the Sumerians some five to seven thousand years ago. The art has since become lost."

"Is that a fact? Are you an archeologist?"

"The armchair variety," Nash said. "But you seem to have overlooked the most important point right now. What did your wife *do* with the knowledge she gained from you? What did she do with those government secrets? Pass them along to someone else perhaps?"

"I don't know. I have no idea. I never saw anything suspicious that would suggest such a thing. But then, I wouldn't see that, would I?"

"No, that too would be behind your back."

"Do you—do you think perhaps Carolyn ran away with a spy?"

"Don't be so melodramatic," Nash snapped. "Spies don't run away with anyone—they travel alone. No, she didn't run away with a spy."

Hodgkins melted back into his chair, dejected. "Do you understand the terrible trouble I'm in? I have my convictions and I believe utterly in them. But can I take them to the police? Would they believe me? Would they examine their files for your Sumerians? Can I tell my troubles to the security agents who guard the plant out there? What would that psychiatrist say if I told him all that I have told you? What would happen to me? And think, man—do I want to turn my own beloved wife over to the law, assuming they would believe me?"

Nash shook his head. "Friend, you've got my sympathy. You're in a very clever trap, the damn'dest and most foolproof trap I've ever seen." He interlaced his fingers, staring at the scientist. "You were trapped into marriage, believe me. Baited and trapped by a beautiful woman because of what you would become in the future, not because of what you were then. To add to your own misfortunes, you fell in love with her . . ." He paused, let his gaze drift slowly around the walls of the room and then back to the man. "Or maybe you were made to fall in love with her."

"I—don't think I understand."

"I'm not surprised. Few mortals do." Nash paused again, frowning. "You still haven't told me why you and Carolyn separated."

"Why—I was sent home from the plant! That silly psychiatrist prescribed rest. And I was of no use to Carolyn after I had left the Ridge."

Nash considered the answer. "That isn't all of it." He bounded from the chair and strode to the window.

"I don't know what you mean."

"I think you do. Which happened first, your being sent home, or your wife walking out?"

"They—they both happened on the same day. Carolyn left the same afternoon I came home."

"That's better, and that's quite interesting. We will assume that she deserted you when she discovered your usefulness was over. As you say, she could—siphon no more secrets from you if you no longer worked there. But that still isn't all. Before that afternoon, what caused your dismissal? Why were you in such a state that the psychiatrist told you to go home?"

"Carolyn."

"Carolyn? What did she do?"

" Nothing obvious. But for weeks she gave every indication of—being finished with me. I gained the distinct impression that she was mentally packing up and preparing to leave. I worried about it, I didn't want to part with her. I suppose I worried myself into such a state that I visited the doctor. And he—you know the rest."

Nash put his forehead to the pane of window glass and looked down. " I know that your wife realized you were finished before you did. The point is, finished in what way ? You still have your mental and physical health, you still have an excellent job, and that particular agency of the government doesn't send you to a glue factory when they are done with you. So how and why were you finished ?"

" I can't imagine," Hodgkins answered evasively.

Nash stared at his own close reflection in the window glass. "Perhaps not—and perhaps you can. I want to think of that for a moment. It's highly important that we discover *why* your wife decided you were finished, *why* she prepared to leave you." He fell silent for a moment, musing. Traffic noise reached up, thin and diluted with distance. " What about your work on the Ridge ? Had you just wound up some really important job ?"

" Well—yes." Hodgkins grew uneasy.

" Don't worry—I'm not going to pump you."

" Official secrecy, you know," the man said pompously.

Nash turned slowly around to stare down at him, not attempting to conceal the scorn in his expression or his voice. " Hodgkins, I'm laughing at you now. Not at what you have told me up to this moment; I made a promise and I intend to keep it. But I'm laughing at what you've just said."

The physicist returned his glance, puzzled and ill at ease.

Nash flicked a pointed finger. " Other than those people down there on the street who aren't able to think beyond the printed lines of a newspaper, there are only two kinds of men in all the world who still believe there are keepable secrets in nuclear physics ! One of those men is the blind, awkward and fumbling politician—and we can dismiss him because he suffers his occupational disease. The other man is a jealous researcher."

" But I—" . .

" But you have so narrowed your mind and your former capacity for intelligent reasoning that you now fall into the second category. You were even startled when I looked at that signboard stuck in your lapel and told you where you worked. Can you comprehend the iron grip that the secrecy fetish has on your mind ? Realistic secrecy in nuclear physics is a farce. What did you tell me awhile ago about

borrowing books and magazines from the library to aid your studies ? Do you think men all over the world have forgotten what was printed in them—that tens of thousands of scattered copies were gathered up and burned ? Do you actually believe that only your group and your government know how to build weapons ? Control all the knowledge?" Nash stabbed out a finger to emphasize his point. " I feel sorry for you, Hodgkins—and all those others who think as you do. You have no secrets."

" Our security people—"

" The security people worship at the feet of the same idol and believe in the same religion; and in a half-dozen other countries a half-dozen other security forces worship similar idols. I'm laughing at you, Hodgkins, because all the idols are images of the same god, all the religions are one. All the security forces struggle to prevent the same ' secrets ' leaking to the outer countries."

" I've heard the theory discussed," Hodgkins said.

" So ? You think it an abstract matter ? Listen then, friend, while I destroy your religion. Your government long ago invented and put to use an inverted-Y gun for detonating the atomic bomb. One or two years ago, Russia developed an inverted-Y gun for detonating the atomic bomb. Less than six months ago, England examined and discarded the principal of an inverted-Y gun for detonating an atomic bomb. Secrecy—hell !"

Hodgkins looked his firm disbelief.

Nash's voice dropped softly. " A great and pompous to-do is made about the size of the critical mass necessary to detonate that bomb. The people making the greatest fuss are the most deluded." His voice dropped still lower almost to a whisper. " Hodgkins—what would happen in this room, to this building, if I were able to bring together very quickly just twenty-two pounds of pure U-235 ? Twenty-two point seven pounds, to be exact ?"

He waited for an answer but there was none. The physicist stared numbly at his hands lying limp in his lap.

" I didn't obtain that information by stealth or trickery," Nash declared. " And you can tell your security agents about me, if you like. When they come trooping in here I'll show them where it was published, chapter and verse." He moved away from the desk to pace the room. " I can also tell you the present size of the bomb casings, as opposed to that ungainly giant dropped on Hiroshima—surely you recall that it was necessary to gouge out the interior of a plane to house that one. And I know—if you don't—that an inglorious thing like a three-dollar alarm clock was the timing device in that first bomb. Today they are using frequency impulses. Now will you believe me —there are no real secrets ?"

"I can't—tell you anything. I have sworn."

"All right," Nash said in resignation, "keep your oath if it will help you keep your sanity. I'll tell you. You don't have to answer, you needn't say a word. I'll know by your face whether I'm right or wrong."

He went back to the window to place his forehead against the cool glass. Hodgkins glanced up briefly, stared at the back of his neck and dropped his eyes again.

"I think your wife left you for two reasons," Nash began. "And I think she knew you were finished in more ways than one. First and foremost, she knew you had finished the very important work you were doing on the Ridge. What could that work be? The major restrictions of the place were dropped in 1949 and now the public runs through the town as if it were a railroad station. Other plants in other places have seized the initiative and Oak Ridge could be compared to a ghost town, it played the star role years ago." The tall man turned his back to the window and settled his gaze on Hodgkins.

"Today, places like Hanford and Brookhaven and the Savannah River are the stars—while Oak Ridge is supposedly a has-been. Only supposedly. Actually it isn't—you are still there, or were until three weeks ago, working on highly important matter. What is so important in nuclear physics these days to keep you at Oak Ridge?"

Hodgkins did not look up.

"It might be a reaction motor," Nash said softly, watching the other's half-averted face. "They're installing one in that submarine over on the east coast. And one of the electrical companies up north is attempting to build a plane on a similar principle." He paused again, waiting a few seconds for the effect. "It might be an atomic drive for another type of vehicle—a stepchild of the submarine." Hodgkins had moved. Nash watched him. "It might be a heavy-duty reaction motor, designed to fit into a special kind of ship with a special kind of problem to overcome." The scientist was becoming visibly nervous. "It *could* be a small-scale pile capable of developing a tremendous kick—something, say, which would drive the children of the *Wac Corporal* into space."

Nash whirled to the window, suddenly satisfied with the results of his probing. That last shot had told.

"As a matter of fact," he continued calmly, "the Army's *Wac Corporal* and the *V-2* as well as the Navy's *Viking* are dodoes; they are the has-beens that Oak Ridge is supposed to be. The Army passed them by long ago—what was the date? I think it was in February, 1949, that man first jumped into space. Remember that, Hodgkins?

Remember the *V*-2 that carried the *Corporal* toward space? The *V*-2 managed a hundred miles before it fell back, but meanwhile the *Corporal* had leaped from its nose and continued on for another hundred and fifty miles. A total of two hundred and fifty miles off the earth, Hodgkins! The *Wac Corporal* reached empty space. But what have they done since then? How many hundreds of miles more have they gone?" He turned on the physicist eagerly, demanding. "Has Heinlein reached the moon? Has he made the big jump? And in what year of the future will the Army get around to announcing it?"

"I—don't know," Hodgkins told him slowly.

"No, I suppose you don't. The idol must be worshipped at all costs." He lapsed into silence.

For long minutes there was no sound in the room but the curiously loud ticking of a watch somewhere in Hodgkin's clothing. Down the corridor an elevator door clanged.

"Uh—about Carolyn."

"Yes, we still must face the problem of your missing wife." Nash sighed and his body relaxed. "We can safely assume we know *one* of the reasons why she left you. Once she learned all there was to know about your latest work, learned the type of vessel for which it was designed, your usefulness to her was nearly over. Mind you, I'm not saying that she couldn't have continued to live with you, couldn't have continued to pry out your trade secrets. She could have stayed. But she didn't. That is the most important, and I want very much to know why she didn't stay."

"I'm very glad you understand," Hodgkins said wearily. "I didn't know where else to turn."

Nash looked down on him curiously. "You want me to find her, I take it—to attempt a reconciliation?"

"Anything, Mr. Nash, just anything at all! I want to see Carolyn again, to touch her, to talk to her. I'm miserable without her and I want her to know it—if she will consent to see me again if only for a little while. I want her near me, I want to persuade her to come home."

"How do you know she is still in town?"

"I just think so—I sort of sense her presence. I saw her once, you know, just once about a week ago. She was entering a hotel, I ran after her but she was gone. The man at the desk threatened to have me arrested for creating a disturbance."

Nash pushed a pencil and paper across the desk to him. "Write down her description—make it complete. The date you last saw her, the clothes she was wearing, the clothes she took with her when she

moved out. How much money did she have; did she have a separate bank account ? Can she drive a car; does she have one ? The names of her friends, if any. The name of the beauty shop she patronized, the stores where she usually bought her clothes. Did she have a checking or charge account ? Put it all down—everything you think of."

Hodgkins held the pencil in a tight grasp, staring at Nash.

" What's the matter ?" Nash asked.

" There is one thing about her description . . ."

" What ?"

" Her eyes are yellow—like yours."

" Put it down," Nash replied. He studied the scientist closely as the man bent over the pencil.

There was still something here that hadn't come out. Still a vital and important something which lacked an answer. Perhaps Hodgkins himself wasn't aware of it, couldn't tell it. He seemed alert enough within the bounds of his own profession (making due allowances for the crippling security fetish) but he was woefully ignorant in other matters. The woman (and a hidden confederate, perhaps?) had skillfully trapped him into marriage and then patiently waited several years for the jackpot to pay off. Three weeks ago it had apparently paid off. She had traded on his gullibility and his lofty ambitions for the future; it wasn't too fantastic to assume the woman knew or had learned of those ambitions and wanted desperately to be with him when they bore fruit—that she might benefit personally from them.

The woman could have judged or gambled on what her husband might become in the future, and then deliberately placed herself in the position to know what comparatively few others would ever know. She gambled—in the sense that she could always abandon him if he failed and attach herself to another man who had not failed.

She had abandoned him now, not after failure but on the threshold of his success. Why ?

Not because of his emotional breakdown. She herself had caused that, had caused his growing anxiety long weeks before the breakdown and the dismissal. Had she not given him cause to suspect she was leaving, not demonstrated in some way that she was breaking up their marriage, he would not have been sent home from his job—thus cutting off her supply of information. She was the direct cause. But why ? And that long thirst for information, the continual prying in a field far outside the usual woman's world—that was to be remarked. It revealed much of Carolyn Hodgkins. He didn't need the man's information that Carolyn Hodgkins too had yellow eyes. It was her

search for information that revealed her to him. The thirst, and the method of obtaining it. Nash held a brief moment of genuine pity for Hodgkins. His very early years of marriage, during their "closeness," must have been enjoyable in the extreme.

But there remained the enigmatic missing factor. Why had Carolyn Hodgkins coldly abandoned a first-class information carrier? And long before his usefulness was over, reasonably long before his latest work could be put to a practical use? If he had finished that work some three weeks ago, the children of the *Wac Corporal* could not leap into space today or tomorrow.

Nash shook his head.

Hodgkins pushed the paper back across the desk. "I'm afraid that's the best I can do. It is strange how few details of a woman's dress you can remember—when you have to."

"Good enough." Nash studied the neat handwriting. "Did your wife have any hobbies? Collect anything, stamps, coins, anything? Bric-a-brac, maybe?"

"No, not that I recall. Oh, she did have a bull." Hodgkins closed his eyes, picturing it.

"Bull?"

"A toy of some sort, I think. Stood about six inches high; I thought it was a china bull but it was made of some unbreakable material. She kept it in her bedroom. Do you mean to tell me you can make deductions from that?"

Nash shrugged. "You never know. People don't abandon hobbies and habits when they change their lives. I wonder if I could drop out to the house some evening . . .? Look around, get the feel of the place? I might be able to find something you'd never think of."

"Why—certainly. I'd be pleased to have you. You can find my number in the phone book."

"Will do—soon. I'd like to talk to you in your own home; maybe the familiar surroundings will help to relieve your nervousness. And I may have something to report."

"I've never done this sort of thing before, you know. My doctor . . . you seemed to be the only one I could confide in. I'm very glad you didn't laugh at me." A shadow crossed his face and he abruptly arose from the chair, shifting the straw hat from hand to hand. "Is there anything else, Mr. Nash?"

"No." Nash put out his hand, clasped that of the still bewildered scientist. "Leave the rest to me. If she can be found, I'll find her. If she can be persuaded to see you again, I'll bring her or arrange a meeting place. If she refuses, I'll deliver her answer with the reasons why." He fought to hold his face still and his eyes expressionless.

" I can't promise you what kind of a result I'll get, but it will be a definite one. And in the meantime I'm going to give you the same advice that psychiatrist gave, but with a difference. Stay home and get some rest. Get quietly drunk if you want to." He broke the handclasp.

And then the physicist was gone, moving slowly and dreamily toward the door peeping cautiously out into the corridor before entering it himself. He forgot to close the door behind him, and Nash could hear his hesitant steps wandering toward the elevator.

Gilbert Nash shut the door quickly and leaned against it, staring down at his open palm. Beads of sweat stood out on the skin.

He realized that Hodgkins had no idea of what kind of ship was to use his power supply.

And he knew with certainty why Hodgkins's wife had run out on him, three weeks before.

IV.

Dikty approached his base of operations and his morning routine with a cold pipe and still colder thoughts. He felt old and washed out. The morning was already cloudy and damp with promise of rain to come, and that served only to increase his irritation. His breakfast had been tasteless on his tongue, gulped down automatically and without appreciation, while innumerable cups of too-hot coffee had failed to wash away the weariness within him. And his wife—He couldn't remember when it had been necessary to apologize to his wife before, but he had done so this morning, halfway through the meal. He hadn't realized he was talking so roughly, so thoughtlessly. And he might as well admit it—he was getting old for the job; he could no longer stay up all night and still feel human the next day. This was a job for younger men.

His was a second-floor office, consisting of two plain rooms tucked away at the back of the corridor. The solid, metal-sheathed door opening into the first room bore only a number, nothing else.

Shirley Hoffman waited behind her typewriter, doing nothing. She looked up brightly as he came in.

" Good morning, Mr. Dikty."

" Don't be so damned cheerful," he retorted. " I'm not in the mood."

Hoffman regarded him owlishly. " Little woman been beating you again ?"

Dikty stopped. " I'm sorry. I was short tempered with my wife too, and that shouldn't happen. Business is on the bad side this

morning. I don't like unpleasantness and I don't like night work; these last seven or eight hours have given me a bellyful of both." He removed the raincoat from across his arm and hung it up. "Lock the door and come in."

Hoffman moved from behind her desk. "The telephone operator tells me that Washington has been calling. They will call again at nine thirty." She snapped the lock on the metal-covered door.

Dikty glanced at his watch and absently studied the phone. "Cummings has my telegram, apparently. He doesn't like it either." He stalked across the room into the inner office, the girl trailing after him. Dikty seated himself and stared moodily through the window at the dullish sky, while the secretary poised pencil over pad and waited.

"Hoffman," he said tiredly to the window and the sky beyond, "when you grow up, marry a dull and stolid man and have a happy life. Marry a painter or a plumber or a projectionist, I don't care. But don't be a career girl and above all, a career girl in our dirty racket!"

"Thank you, Mr. Dix."

He moved slowly round to face her, scowling. "All right, do as you damned please! But I'm the kind of a man who says, I told you so."

"Rough, I gather?"

"Rough." Dikty nodded and absently pulled his pipe from his pocket. "Rougher than hell on an old man like me." He discovered the pipe in his hands, filled it and lit up. "This is for Cummings," he said after a moment. "It concerns an Oak Ridge man plus the subject under previous discussion." He pointed the pipestem at her notebook.

"Gregg Hodgkins, age forty-six, married, owning a home at 2334 North Shasta Drive. No children, no near relatives. Now— Until three weeks ago, Hodgkins was a competent and dependable nuclear physicist employed on a special and hurry-up project at Oak Ridge." Dikty paused to collect a memory. "Hodgkins was working on Code four-four-seven, sharing co-responsibility for leadership on same. For some six or seven weeks prior to the particular date three weeks ago, Hodgkins exhibited growing signs of nervousness, mental fatigue and possibly instability. This was noted, but beyond a constant watch nothing was done about it, due to the fact that Code four-four-seven was rapidly nearing completion ahead of schedule and the stress was attributed to that. In addition, his co-leader and several of his fellow workers on the project all exhibited similar nervousness, leading the plant authorities to believe that all concerned were sharing the same anxiety over the coming ultimate success or failure of the experiment.

" Code four-four-seven was completed successfully and all men concerned with the thing reverted back to their normal selves with varying degrees of rapidity, except Hodgkins. He was then moved to a separate and harmless project and placed under continuous observation, but before plant authorities could do more he took matters into his own hands.

" He first visited his family doctor, Charles Barrett, 260 Weinburg Building. He told his doctor that he was experiencing domestic difficulties which had become rather acute in recent weeks, and attempted to fix the blame for said difficulties on his wife. He further stated that the wife was—or had recently become—more intelligent than he, and that this matter embittered him. The doctor assured him that he was a healthy man, physically and sent him to the plant psychiatrist."

Dikty lifted the pipe to his mouth, discovered that the glow had died, and applied a second match.

" Montgomery, the psychiatrist, reports a similar story. Hodgkins visited him, told him of his difficulties at home and repeated the belief that his wife now outranked him in intelligence quotient. Hodgkins gave a long and involved recital of his aims, hopes and beliefs, chief among which was that as a young man he had wanted a smart and intelligent mate to help him reach his goals, and that he had deliberately and with study aforethought chosen this particular woman as being suitable to his purposes—or ideals. In recent years however he had become dissatisfied with their marriage because, as he put it, she apparently continued to gain intelligence at a rate exceeding his. This condition unnerved him, coupled to the strain connected with Code four-four-seven.

" Pending further study of the case, the psychiatrist sent him home and thereafter made periodic calls at the house to check up. Hodgkins's mental condition became worse for reasons mentioned next below.

" His wife deserted him on the same day that he was sent home. Actual reason for separation not apparent to me, beyond those statements mentioned above. After two weeks of continued study, the psychiatrist prepared a recommendation that Hodgkins be permanently dismissed from government service—although that recommendation was not made known to him. In addition, the usual shadow was assigned to him to determine if he could hold his silence.

" Meanwhile the wife had moved into the May Hotel here; but moved out again several days later when she discovered that he had followed her and created a scene at the desk. The wife's present location is unknown to me. She left no forwarding address and no discernible

trail. I am of course concentrating on that angle in an attempt to locate her. Nothing more happened until yesterday.

"Early yesterday morning, Hodgkins left his home in a state of visible agitation and after wandering about the streets for many hours, called upon our subject—the subject under previous discussion and investigation. I am totally unable to discover what went on between them. The shadow reports that Hodgkins was closeted with subject for more than an hour, but that he could determine nothing of the conversation they held. In regards this failure, I decided to wire the subject's office for sound and have taken steps to plant several microphones there. I regret that I did not do so earlier.

"As to Hodgkins's visit to subject, I am unable to decide which of two reasons is the probable one. Fresh in mind is the McKeown case of some time back; Hodgkins may have decided to sell his information, but if this be true, how he became acquainted with our subject and what led him to believe the subject was interested in buying, I do not know. As mentioned in previous conversations, I have no knowledge or suspicion that subject is purchasing information.

"Unofficially, I am inclined to think that Hodgkins visited the subject for a second and rather obvious reason. Considering the subject's advertised profession, Hodgkins's recent separation from his wife and his subsequent failure to meet her again, only one fact prevents me from leaping to that rather obvious conclusion. The fact that the man is under our investigation, and that the coincidences involved are far too numerous and too startling. Are we to assume that this is but another one?"

Dikty turned slightly in his chair to waggle the pipestem at the girl. "And Hoffman, if you haven't discovered by this time the identity of the subject we are discussing, you may as well kiss your career good-bye." He studied her for a brief moment, the lines of weariness standing out on his face. "On the other hand, if you admit to being nosey and mention his name aloud, you can also kiss it good-bye." He gave her a tired smile. "Now, do you want to marry the plumber?"

The girl returned the smile with spirit. "Not just yet. I don't plan to marry early."

"That's what I said, a long time ago. I met her at a square dance. And this morning I had to apologize to her for the first time in my life." His eyes went back to the window and the threatening sky. "Well, suit yourself. You and I and the rest of us are involved in a game that is alternately boring and deadly. You'll have to make your own decision. Let's get back . . .

" After leaving the subject's office in an apparently calmer state of mind, Hodgkins again wandered aimlessly through the streets for several hours and finally entered a secondhand shop where he attempted to purchase a revolver. The proprietor refused to sell him a weapon at that time, explaining that first he must obtain a police permit to carry a weapon. Hodgkins told the proprietor he would obtain one, and picked out a gun, asking the proprietor to lay it aside until he returned. The proprietor did so. Hodgkins then left the shop and did not return.

" He next visited a sporting goods store and again attempted to buy a revolver, again being told that first a permit was necessary before they could sell him the weapon. Hodgkins repeated the earlier procedure of choosing a gun and the store clerk set it aside for him. The shadow reports that both shopkeepers were in no way suspicious and that Hodgkins exhibited a calm, friendly manner at all times. (These men have learned to judge to some degree the type of person wanting hand weapons). After these two attempts Hodgkins purchased one copy of each of several newspapers available at a corner stand and retired to a small restaurant. He read them all thoroughly. The shadow states that it was quite apparent Hodgkins was searching for some particular item.

" He finally discarded the papers and took a taxi to his home, remaining there the rest of the day and evening." Dikty paused to examine the ash in his pipe. " And I wish I could do the same."

Hoffman glanced up at him with a shy, speculative expression. She rolled the pencil between her fingers.

" Go on," Dikty invited, " say it."

" I would judge," she answered slowly, " that Hodgkins visited subject and retained his services. To find the missing wife. I would further judge that Hodgkins intended to shoot his wife—when they again met."

" Correct."

A roll of heavy thunder followed his agreement.

" And that he lost his nerve when he discovered the red tape necessary to buy a gun . . ." She paused to frown. " No, not quite that. He didn't lose his nerve, he merely realized a gun would have to be obtained in another way."

" Nearly correct," Dikty nodded. " He also may have realized that a gun wasn't necessary at all. He's a smart chap, remember that. You or I could name a dozen seemingly innocent things to put into her coffee, but then he was no longer in a position to feed her anything. It may be that he searched for some other means of reaching her over a distance." He went back to searching the dull sky. " I wish I knew what it was he was looking for in the papers."

" The personal advertisements— No, he read them quite thoroughly didn't he ?"

" He did. He was searching for news of some nature."

" Something the subject planted in his mind ?"

Dikty made as if to answer and then paused, " Yes," he said after a moment. " It could be."

The telephone rang. He consulted his watch. Hoffman answered the instrument, nodded, and handed it to him.

" Dikty, here." A pause. " Yes, he did. Shortly after midnight last night. No, not yet. They are searching." Another and longer pause. " I am, constantly. Subject has made no move. The occurrence hasn't yet appeared in the local papers. It will to-night." Another pause. " Oak Ridge will issue the explanation. Yes, probably. You what . . . ?" There was a long period of silence in the office. " I'm making out a detailed report now. It will in your hands in the morning. Hodgkins and our subject made personal contact, rather suddenly. Sought him out, yes. Yes, I think that too. All right." One final pause. " I will." And he hung up.

Hoffman waited expectantly.

Dikty regarded the cradled phone rather sombrely, moved his eyes to the darkened sky beyond the window for a reflective moment and then swung back to the girl. " The new operative is on the job, but hasn't yet reported in. Apparently he still doesn't know what happened last night." He pointed to the notebook with a stained pipestem.

" At ten minutes past twelve last night, a neighbour at 2336 North Shasta Drive telephoned the police, reporting that she had heard a noise next door resembling a gunshot. The police arrived at twelve sixteen to find the house dark and locked; after some wasted minutes they gained entrance by forcing the kitchen door. Hodgkins was discovered dead in his wife's bedroom, stretched across the bed.

" The man was shot through the head from front to back, the gun being placed in the open mouth and fired. It was a .32-calibre Smith and Wesson and was found on the floor near the body. The weapon was well oiled and of course contained no prints whatsoever. Police immediately made skin tests of deceased's fingers and found slight traces of oil but none of burned powder."

" Dead," the girl said in a small voice.

" Very dead," Dikty agreed. " Through the mouth. We will have to await a criminologist's report on that, but I've heard that sailors and women frequently choose such a method in suicide. Messy. You should have seen the bed."

" No, thanks." Hoffman repressed a shudder. " What does that last mean ? Oil and powder stains ?"

" A well-oiled gun will not retain fingerprints, fiction to the contrary. Oil stains on Hodgkins's fingers indicate he handled the weapon, but the lack of powder stains indicates he did not fire it. Again we'll have to await an expert's opinion; it's out of my field. I believe they have some sort of iodine vapour treatment to develop hidden stains and prints and so forth. Well—here's the rest of it.

" Police searched the house and found oil spots on certain items of Hodgkins's clean clothing in a drawer, leading them at first to believe he had hidden the gun there. In the light of subsequent disclosures mentioned above, they now believe he did not possess a gun and was murdered by the assailant's weapon. Assailant of course did not know that Hodgkins had twice attempted and failed to purchase a gun earlier that day; therefore the planting of oil spots and leaving the gun on the scene to suggest suicide were patently false.

" Meanwhile, the assigned shadow (or his relief), waiting in a car near by, was of course on duty and reported that no one entered or left the house to the best of his knowledge. He heard the shot but decided against entering for fear the police would discover him there, and because his routine instructions did not cover such emergency action. Oak Ridge has not seen fit to notify the police that the shadow was near by or even to reveal his existence, or the reason he was trailing the deceased, believing that it can add nothing to the case.

" Police of course are seeking Hodgkins's widow for information. So am I. I'm attending the funeral tomorrow to see who might turn up. End of report."

Outside, the rain began to come down. Dikty glowered at it.

Shirley followed his glance to the window and watched the rain for long minutes before asking, " The widow ?"

" Not in my book."

" But definitely not suicide ?"

" No."

She said, " I wonder . . . ?"

" Police action in a murder case," Dikty explained, " is first to establish method and motive, I believe. The method was quite plain, quite messy. The motive frequently leads them to the murderer." He searched through the rain, seeking the outlines of a building down the street.

" I can read the thoughts on your face," Shirley told him.

" Can you, now ? Do you also see his name there ?"

" You told me never to mention his name aloud."

V.

Gilbert Nash waited motionless in the rainswept darkness, a tall and lonely figure unseen and unsuspected in the drenched night. His eyes were focused on the house. Most of the neighbouring homes were darkened, their occupants long since retired while only here and there an occasional window continued to spill light. The houses to either side of the Hodgkins domicile were black and silent; the neighbourhood's brief moment of excitement and scandal was done. No automobiles moved on the rainy street.

Still Nash waited, his eyes watching for movement and his thoughts turned inward upon Hodgkins and the place he had called home up until twenty-four hours ago. Hodgkins had left home. He had briefly seen the man again that afternoon, seen the remains; the mortician had worked minor miracles on a face which had been troubled, on a skull which only half existed. Hodgkins's face, ridden with uncertainty and gnawing fear, a face that hadn't known true peace for many years—until shortly after midnight last night. The bewildered man and his dreams, his many plans for the future, his discoveries—including the one in the library who had soon become his wife.

There were many things an eulogist might say on behalf of Gregg Hodgkins, but two of his outstanding discoveries had small chance of being mentioned. Physicist Hodgkins had helped to discover the means of pushing the offspring of the *Wac Corporal* into space—not that battered old pioneer itself—liquid fuel had done that, but those others which had quickly followed the *Corporal's* last astonishing flight. Hodgkins deserved at least a small monument for that.

On its final trip the *Corporal* hadn't fallen back to earth, it was still up there, out there, in some dark uncharted place. Space travellers might unexpectedly stumble across it someday, lost and forgotten. And then those three other little ships had quickly followed, the *Heinlein I, II* and *III*, each powered with early, inadequate applications of Hodgkins's discoveries. Unfortunately he did not live to see the flowering of his final atomic seed. The eulogy for that small monument could not mention those facts. All that was still hidden, buried deep in some agency's storehouse of confidential matter against the day a slipping politician should need a sensation to aid him in recapturing a public office, or until some state official should need a threat to hurl at an offending nation, or until some zealous military man should need surprise ammunition with which to attack some other branch of the military establishment. Until that far-off day when politicians laboured under the delusion they were statesmen, Hodgkins's work would go unknown. The small monument must bear a blank face until a political hack gave casual directions to the stonecutter.

Nash carefully shifted his position, easing back out of the rain. The remaining windows were going dark.

Hodgkins the husband had discovered another thing—or, more accurately, had rediscovered a lost property although he did not recognize it as such. With his wife's unwitting and possibly unwilling assistance, he had revived a lost art almost as old as humanity. While the Rhine and allied experimenters continued their investigations into mental telepathy over a distance or through barriers with varying haphazard results, Hodgkins almost stumbled over the proper application and unknowingly revived it for a minute in time. Not being a Methuselah nor an unorthodox archeologist, he couldn't know that his new-found system of thought transference was practised as long ago as the Akkad Dynasty—some seven thousand years before his birth. He had no knowledge that the " mental telepathy " occurring between himself and his wife was a part of the lives of the ancient Sumerians, had become lost the first time in that same long ago age, had reappeared briefly during the Third Dynasty of Ur, only to vanish again. Present-day scholars knew there were many things the Sumerians began that still survived in the world today; people avoided black cats, not knowing a superstition more than five thousand years old was responsible. Present-day scholars of the conservative school had nothing but derisive laughter for the notion that the ancients sometimes practiced " mental telepathy" but the unhappy scientist had found himself living a revival of that old Akkad-Sumerian art.

There would be no monument to that, either. Hodgkins hadn't lived long enough to properly exploit his discovery. *If* he would be allowed to exploit it.

Nash left his protected position and advanced on the house.

The police had boarded up the broken window in the kitchen door with a thin sheet of plywood, had locked the door again and taken the key with them. Nash moved softly across the tiny porch and put his weight to the door. It was solid and unyielding. He placed his hands against one corner of the plywood and pressed in, gently easing the nails free of their grip. When a small space had been opened he reached through and turned the knob from the inside. The door opened to him. He stepped silently into the dark kitchen and closed the door behind him, pushing the plywood back into place. The house smelled of stale cigars, of musty unclean odours.

Nash waited there for a long moment, probing the blackened silence of the dead house, imagining that he could almost feel the past presence of the scientist. Hodgkins's personality still clung to the darkened interior, clashing somehow with the stale smoke of the recent intruders.

There was nothing to suggest a similar presence for the wife. Her subtle, feminine aura had departed with her some three weeks before, had swept through the door with her and away like a live, obedient thing. There was not now a wisp to indicate she had ever been there. Nash wondered about her briefly, wondered if she had ever really *lived* in the house despite the number of years she stayed there ? Or had she been akin to the overnight traveller who does not live but exists in his hotel room ?

He wondered too if she had known the eerie, haunting shock he'd felt, when he shook hands with her husband ? Had that shock struck her suddenly as it had hit him, or had it grown with a quiet intensity over a period of months, causing her to become slowly aware of impending events ? That one final handclasp had told him quite clearly why Carolyn Hodgkins deserted her husband. She was about to become a widow. And for some reason she did not care to be at home when the state of widowhood arrived.

Nash moved out of the kitchen to explore the house, shielding the flashlight beam with his hand.

First a bathroom and then a bedroom met his inquiring eye—Hodgkins's bedroom, as he determined after a few minutes examination. The man's clothing still hung in the closet, carelessly rumpled. A few books on the bedside table, a run-down alarm clock, a layer of dust. The dresser drawers had been left hanging open after the visit of the police, and Nash abandoned any hope of finding the clothing containing the oil spots. He peered into the top drawer to discover a few handkerchiefs, a couple of pairs of socks, a neatly folded woollen scarf, a used but unbroken shoestring and a chewed pencil. To judge by the marks in the dust, a large picture had been removed from the dresser top—Carolyn's picture, undoubtedly, taken along by the police to aid them in their search for the woman.

Traces of white powder clung to every surface; the police never bothered to clean up their finger-printing paraphernalia behind them. Nash slipped his hands into his pockets and gave the room a last glance.

He walked through the adjoining bath into another room, quite evidently her bedroom. The bed had been shoved back out of the way, perhaps to clear a space so that the police photographer might completely cover the interior. The mattress was bare, the bedclothing gone—to the police station, the laundry or the incinerator. Nash paused beside the bed to examine the mattress and the dull bloodstain, to judge how the body had sprawled across it. He failed to draw a clear-cut, logical image. Hodgkins would probably have been standing beside the bed if he was murdered; lying on it if he killed himself. The bloodstain gave no hint.

Nash retreated to the bathroom and glanced again at the bed in Hodgkins's room. It was clean, dusty, unmussed. The man had been sleeping in his wife's bed during the three weeks following her departure. A curiously inverted form of revenge, or wishful thinking? Following a sudden thought, he bent down to investigate the catch on her bedroom door. The key still stood in the lock on her side of the panel. Keep out—no trespassing. Unless of course Hodgkins arrived home from work with new knowledge, new developments. Come in—welcome.

Carolyn was a bitch.

He moved around the bedroom, looking for traces of the departed woman, peering at the dust along the window sills and under the bed. Hodgkins had been no tidy housekeeper. The vanity drawers were empty of everything but a fine layer of dust and a few overlooked hairpins. He picked up one of those, held it close to the beam of the tiny flashlight he carried. It imparted nothing but he dropped it into his pocket. There was a small empty bottle that had contained nail polish but now it was covered by the white powder. Nash did not touch it. The room contained nothing more of Carolyn Hodgkins, but he remained there in the darkness, for many minutes searching for an impression, for an indefinable something that might suggest she had once dwelt there. Still nothing.

For a third time he stepped into the bathroom and flashed his light around, peering into the medicine cabinet above the sink, sighting along the small window sill over the tub. He sighed his disappointment and at last walked through the other rooms of the house, rooms that had no real interest to him. They were comfortable by modern standards, well-to-do as fitted their late owner's station in life. No more. No touch of Carolyn Hodgkins.

Nash seated himself in one of the overstuffed chairs beside a cold fireplace, laced his fingers together beneath his chin and contemplated the empty darkness. The steady fall of rain was the only sound.

He thought he understood Hodgkins's wanting to sleep in his wife's bed after she had gone; the man was very human, no cold-blooded scientific monster manufacturing death in underground retreats, no sinister Hollywood ogre. And he partially understood Hodgkins's love for his wife—only partially. He still couldn't decide to his own satisfaction if that love affair had been genuine or had been carefully planted in the man. It must certainly be hell to be human and not know your own mind—not know beyond all reasonable doubt. Not know if an emotion was your own, or a clever counterfeit implanted in you. But

whatever it had been, it was real enough to the husband. He had fallen hopelessly in love with the woman that long ago night in a public library, and had continued to love her hopelessly until the hour and minute of his death.

Why had he wanted a gun ?

To kill Carolyn ? Quite possible. Men desperately in love sometimes did that when the objects of their affections deliberately held themselves aloof. To kill himself ? Again, quite possible. Men desperately in love also sometimes resorted to that when frustrated. And Carolyn Hodgkins had known she was about to become a widow. She had discovered that startling and disastrous fact on one of those erotic nights when her husband was permitted to share her bedroom. Rude, shattering discovery ! Almost obscene, considering the time and place. Like inviting a coming corpse to share your bed. But why had he wanted a gun ? To kill someone else ? Hardly possible. Who else would be a likely candidate in Hodgkins's small circle of friends and business acquaintances ? He had begun his search for a gun the same morning he had instigated a search for his wife. *Quick thought* : had the physicist intended to kill him ? For what possible reason ? Because he and the missing wife had eyes of similar colour ? Suspicions aroused ?

Consider that.

The drumming rain beat against the side of the house.

Hodgkins hadn't been deranged—the doctor and the plant psychiatrist would have known that. But the man had been bathed in misery and despair; he may have intended killing any one of the three of them—or more than one. Wife, investigator, himself, which ? Still, there always remained the possibility he hadn't intended to shoot anyone, except in self-defence. He may have sought the gun for protection—against something unknown. *Was* there still a third party forming a triangle to the Hodgkins marriage ?

Carolyn Hodgkins had known what was about to happen and had deserted the husband before she could become entangled in it. And *he* himself had discovered the approaching death when he shook hands with Hodgkins in the office. A man's future, like his present, like his past, is written on his mind and waiting to be read or lived. Hodgkins had no future. His wife had discovered that and vanished. She had known for some months that her husband was nearing the end of his life; she had been making preparations to leave him long weeks before she actually did, and those preparations were readily apparent to the man, forcing a crisis upon him. Even *he*, a stranger, had foreseen the shortness of Hodgkins's future, the near-by blank ending of the conscious mind during that brief handclasp as the scientist left the office

But was there a third party lurking somewhere close ?

He stiffened in the chair, chopping off his thoughts as the minute sound carried to him from the kitchen door.

There was the gentle forcing of the plywood such as he had done, and a moment later the knob turned to let the door swing quietly inward. The intruder paused a moment in the kitchen, again as he had done, to smell the stale air and probe the darkness of the house. He wondered if his own presence could be sensed. Again a tiny sound as the door was closed and then soft, cautious footsteps creeping across the kitchen floor. The footsteps hesitated in the blackness of the place and finally a small light flashed out, picking out the bedroom door in bold relief. The wife's bedroom.

Nash relaxed in the chair with a self-satisfied grin and let the footsteps go their way.

The newcomer poked about the bedroom in a rather noisy manner, opening drawers and peering behind things, moving the chair and bedside table, flashing the light around carelessly. The sounds came to a full and breathless stop twice. Once as the prowler paused beside the bed and caught sight of the bloodstain, and again at the door leading to the bath and opposite bedroom. Nash listened intently. There was the low, secretive rattle of the key being withdrawn from the lock, and then the snap of purse clasps. The intruder then continued on into Hodgkins's bedroom and repeated the search, only to emerge into the living room after a long and thoughtful interval. The pleasant odour of her perfume arrived with her.

Nash unlaced his fingers from beneath his chin but didn't stir in the comfortable chair. Before she could see him and be unduly frightened, he spoke quietly.

" Hello."

To be continued

With this story readers will no doubt realise that Alan Barclay is beginning to reveal a little more about the mysterious Jackoes—the alien race from outer space no Earthman has yet seen to thoroughly identify. Each story, however, is a separate adventure and does not require previous knowledge of what has been happening.

THE SINGLE SHIP

By Alan Barclay

Illustrated by HUTCHINGS

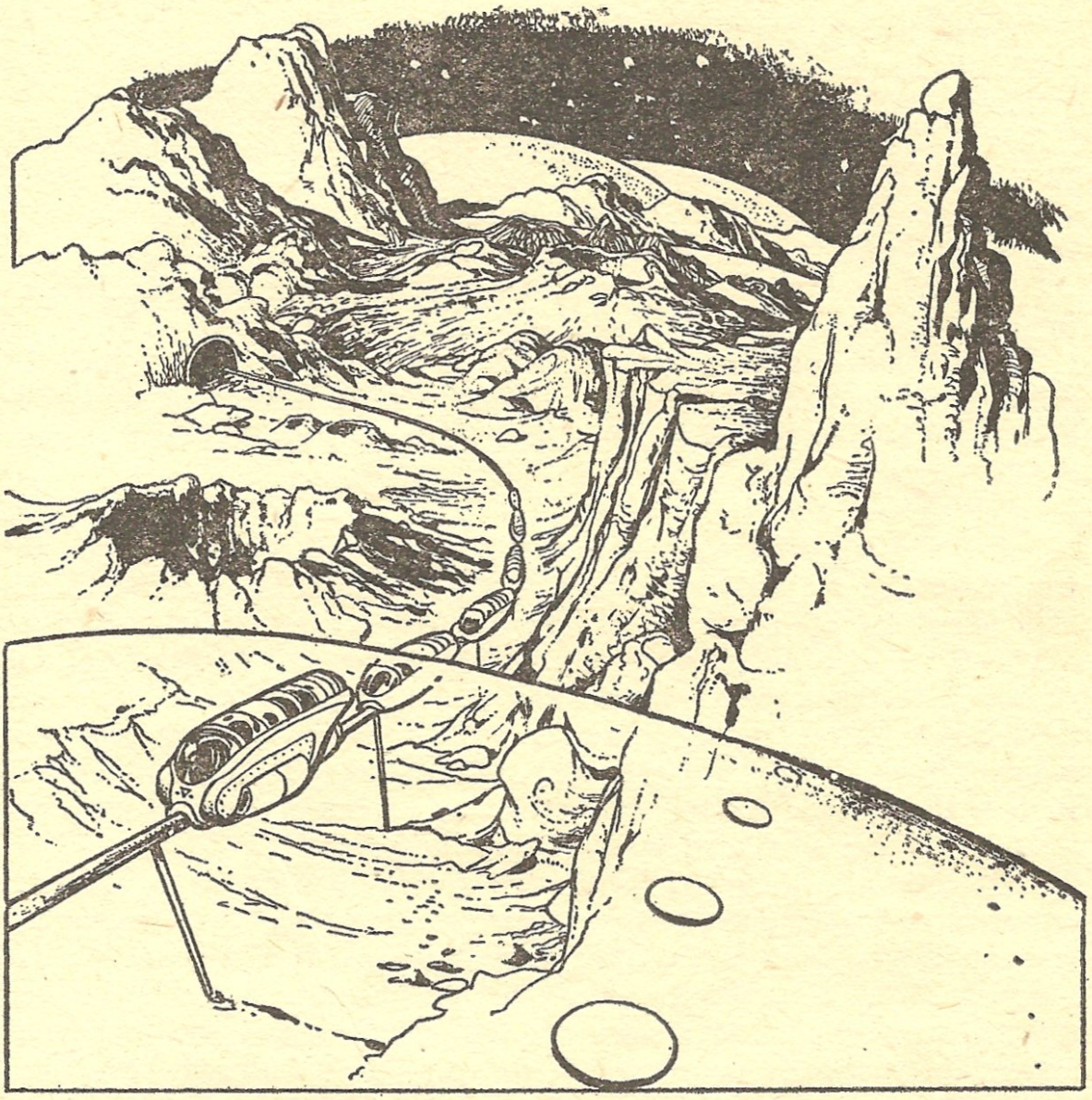
In the committee-room at United Nations Military Headquarters on Moon Base a meeting was reaching its conclusion. There were empty coffee-cups on the table and ash-trays piled with cigarette stubs. Men in the uniforms of several nations, civilians mostly wearing spectacles, and neatly-dressed self-possessed stenographers were beginning to fold documents back into brief-cases and button up uniforms or jackets and glance at wrist-watches.

"Finally," the chairman said, "it remains for Admiral Dickenson to select the man for the job."

Everyone turned to look at Admiral Dickenson. So far this had been a technical discussion, and he was representing Advanced Fighter Group. He had therefore not said much up till now.

Dickenson was a grey-haired American officer, with a face someone had once described as having been carved out of teak with a dull axe.

"What sort of man do you want?" he growled.



"You know what we want, Admiral," the chairman said. "The best you've got."

Dickenson began flipping through the pages of a typed document.

"Our men are all good," he said. "To get out into Fighter Group, stay there and continue to remain alive, they've got to be good."

"The best, Admiral," the chairman insisted.

Dickenson continued to turn the pages for a moment longer, then suddenly tossed the catalogue on the table. "I don't have to look," he told them with a sigh, "I know the man you want . . . I'll give you Jason."

"Jason?" someone asked. "Never heard of him . . . What's his record?"

"Aged twenty-three—English—five kills to date."

"Only five? But we want your top-line man!"

"He's obviously inexperienced," another officer protested.

"If you refuse him for this mission nobody will be better pleased than me," Dickenson snapped. "He's one of the most likeable boys we've got. But you ask me for the most suitable man to do this job, and I say Jason. I stick to that."

"It's Admiral Dickenson's task to select the man," the chairman interposed. "And he tells us Jason. Let us send for Jason."

The committee picked up caps and files and papers, and dispersed. Some of them took the train across the plateau from Base into the lights and civilisation of Moon City, others returned to their offices nearby.

Admiral Dickenson wrote an order and tossed it into his tray. It was picked up by a messenger, delivered to another office, recorded, and passed on to signals. Two hours later a radio-man hammered it out with a host of other messages, orders, advice and information, all crammed together on the high-speed transmitter. It went out on a tight beam from a parabolic aerial carefully aimed towards a point many millions of miles out in space. The receiving aerial of Advanced Fighter Base picked up the whole stream of messages drew them down into the interior of the rock and sorted them out.

Here the order hung fire for a week, for Lieutenant Jason was out on patrol. At the end of that time he returned, received his instructions, and soon found himself travelling back to Moon Base as passenger in a supply ship. When the transport touched down he got a lift in the ground-car over to Base, passed through the lock and was let loose among the maze of corridors and passages which burrowed into the side of the mountain.

He got a lift on a trolley along one of the main passages down as far as stores, and here he drew his kit, and changed from operational rig into uniform—a neat black almost-new, well-pressed uniform, with the scarlet-and-yellow rocket-flare above the breast-pocket.

The stores N.C.O. watched him pull on his cap and give it a tilt to one side.

"All set to give the girls a treat, sir?" he asked.

"I don't know, Sergeant. I've to report to one of the big shots. This visit is business."

"Whatever it is, I expect you'll get a couple of days over at Moon City, sir," the sergeant opined.

"I hope so. Meantime, I must find Admiral Dickenson, I.C. Fighter Personnel . . . How do I get to him?"

" He'll be at Staff Headquarters. Go into the main corridor and thumb a lift on any trolley with a red circle on its front. Don't take a yellow circle, else you'll find yourself down in the dungeons among maintenance and we'll have to send out search-parties for you."

Jason did as advised, and presently found himself at Staff Headquarters. He slid open a door marked ' Admiral Dickenson—Personnel, and came face to face with a young woman operating a typewriter—one of these good-looking, impeccably groomed, self-assured young women who invariably get jobs as personnel assistants to Staff Officers.

She for her part saw a medium-sized rather thin blue-eyed young man, with fair wavy hair. For almost the first time in her life she had the experience of meeting a junior officer who looked neither bold nor shy, who neither called her Gorgeous nor Sis nor Babe. As a matter of fact, all Jason said was: " I'm reporting to Admiral Dickenson —the name's Jason."

" Yes, Lieutenant," she said, with more warmth than she generally extended to junior officers. " Go right in."

Jason went through the inner door and saluted the man at the desk. " Lieutenant Jason, sir," he announced.

Dickenson put down his pen and leaned back in his chair.

" Take a seat, Jason," he said, watching the young man appraisingly.

Jason sat down. He crossed one leg over the other and clasped his hands round his knee. Dickenson noted that he remained in that position without changing, entirely at his ease; no fidgeting, no twiddling of fingers or twitching of uniform. He looked the grim hard-faced old Admiral straight in the eye.

" Ha !" the old man grunted. " Typical English type . . ." He himself appeared to be about five parts Red Indian.

" I've been looking up your record, Jason," he continued abruptly. " I've selected you as a suitable officer to carry out a special task." He paused to lift a questioning eyebrow at Jason.

" Thank you, sir," Jason said. " I'll try not to disappoint you."

" Don't thank me," Dickenson barked. " This isn't the sort of thing one says thank you for. The first thing to be said about this job is that it's strictly a matter of volunteering. You don't have to take it if you feel disinclined. If you refuse, the fact won't be noted in your records. You understand that ?"

" Yes, sir." His hands were still lightly clasped over his knee.

" The second thing is this—a whole lot of time, money and thought has been spent preparing this project and therefore if you know any reason why you might be unsuited to carry out your part, you must refuse the job. That's an order. It's the only order I shall give you in connection with this business. Now," he continued, lifting the desk

phone, " not to prolong the mystery, I'll take you to see the project, rather than just talk about it— Hullo !" he barked into the telephone, " Get me Admiral Hayes . . . Hullo, Hayes, I've got Jason here. I'm taking him down to the hangar to show him round. Like to meet me there ? . . . Good !"

He cradled the phone. " Come along," he said.

The old man loped out of the room like a tiger. Jason, less acclimatised to Moon gravity, followed him more cautiously.

They went a good way along the main corridor and then descended to the lower level by sliding down a pole. They passed into a huge ship-servicing hangar. Row upon row of scout ships, types Jason had come to know out in space, stood in lines. Mechanics swarmed over them. The place was full of the noise of riveting and the sizzle and snap of electric welding arcs. As Jason looked around an overalled man pushed past, carrying on his shoulder a complete motor assembly, a load which back on Earth he could never have lifted off the ground.

" Atomics and fuel-tanks are installed elsewhere," Dickenson explained. " That job has to be carried out under safety precautions. This way."

He led the way diagonally across the hangar, ducking under a fuselage, and stepping over stacks of rods and girders. They passed through a door into a smaller room.

" There !" Dickenson exclaimed, " what d'you make of that ?" A single ship occupied the centre of the room, set high up on trestles. The ship was short and tubby, and it was coloured a deep scarlet.

" A Jacko ship !" Jason exclaimed. " So we've captured a Jacko ship at last !"

Dickenson shook his head. " This was made right here in these workshops. Look there !"

He waved a hand to draw attention to the array of drawings, diagrams and blown-up photographs on the walls.

" As near as we can manage it however," he went on, " this is a Jacko ship. Perhaps it's a little better than a Jacko ship; it'll accelerate harder, and carry more fuel. We've been working on this for more than a year, and a lot of thought and time and money has been put into it. Can you guess what we mean to do with it, Jason ?"

" No, sir—had it been just a mock-up I'd have guessed it was intended for training, for familiarisation, but you say it's a real ship."

" It's certainly no mock-up." The admiral clicked open his cigarette case. " Smoke ?" he invited. He himself lit up and perched on the end of a work-bench.

" D'you know where the Jackoes come from, Jason ?"

" No, sir. All I know is the usual theories; that they come across from Alpha Centauri; or that they come from one of the big planets, Jupiter or Neptune or Saturn; or there's the theory about the big mother-ship hanging around outside the orbit of Neptune. According to this all the little scouts we don't manage to kill go back to the mother-ship to get themselves patched up and re-armed."

" What d'you think of these notions ?"

" I can see serious objections to each one of them, sir. The trip across from Alpha Centauri is no afternoon excursion; it's feasible only if the little beasts have a much longer life-span than ourselves, or can put themselves into a state of suspended animation. And even if one of these things is true, why do they bother ? What do they hope to get out of it ?"

" What about the Neptune or Saturn theory ?"

" Their ships aren't able to lift off a high-gravity planet, that's certain—of course our own scouts can't take off from Earth either, I know, but even so in our case the gravitational difficulties are not insuperable."

" And what d'you think of the mother-ship idea ?"

" Well, I see it this way—there's a whole race of Jackoes somewhere, living and eating and sleeping and breeding. They build a lot of ships, or at any rate they service and repair and maintain a lot of ships; all that amount of life and activity can't possibly be expla ned by the mother-ship theory. No ship however large could carry that amount of life."

" All quite sound reasoning," Admiral Dickenson agreed. " And to tell you the truth not one of us has any better ide s on the subject than you have. But we're going to find out."

" Yes, sir ?" Jason asked politely.

" Here's how we're going to do it. Somebody, yourself if you choose to volunteer, somebody's going to take this ship out to the asteroids in company with a squadron of our own ships. Sooner or later out there you'll meet up with a pack of Jackoes—do I have to tell you any more ?"

" I get the idea now all right," Jason agreed. " In the mix-up our imitation Jacko ship attaches itself to the Jacko squadron and goe s along home with them. But I can see a lot of difficulties."

" I'd like to know what difficulties you see."

Jason had no inhibitions, no shyness, he was able to speak calmly and frankly even to very senior officers.

" First," he said, " the difficulty of killing an enemy ship and substituting this one un-noticed. It's a trick we can only try once."

"That's a problem of manoeuvres—it's got to be worked out between yourself and the squadron detailed to act with you."

"Very well," Jason nodded, accepting the point. "Next difficulty—the Jackoes have radio; I've heard them often enough chattering to each other. Now I'm to join their formation and ride this ship back home with them. Some Jacko might possibly think it odd if one of their pals stayed speechless for maybe so long as a week."

"As to that," Dickenson said," here's Admiral Hayes, who's responsible for the technical side of this project. Ah, Hayes!—Lieutenant Jason. He's being considered as a possible pilot for the ship. Show him our answer to the problem of radio conversations between our man and the Jacko squadron."

"It hasn't taken you long to spot the snags," Hayes commented. "Come up on top and I'll show you our answer to that one."

Hayes leapt the twenty feet up onto a platform which extended above the ship. Jason followed.

"That projection there," the former explained," "that's the root of radio antenna. Now see that dirty long groove across the hull? What would you say had been the cause of that?"

"A solid projectile from one of our guns grazed across the hull, made this diagonal groove, and clipped off the radio mast at the root. I see what you're getting at," Jason nodded.

"Any objections?" Hayes asked, smiling.

"A few small ones," Jason told him. "Perhaps their ships have two independent radio systems—perhaps they have other non-electronic means of communicating—perhaps their radio is effective after a fashion even with the antenna clipped off. All the same sir, I think these are small chances, well worth taking."

They jumped back down on to the floor.

"Well, Jason," Dickenson asked, "what d'you think of our project now?"

"Frankly, sir, I don't think much of it as yet. I agree the ship has a considerable chance of joining up with the Jackoes and of going along with them undetected, but the chance of ever getting back with any information is smallish."

"We have an answer to that too," Hayes told him, stepping over to a bench. "This gadget here is a camera. Not quite an ordinary camera, for it cost more than ten thousand pounds, and it carries nearly a mile of film. Whenever the destination is reached, our pilot starts up the camera motor and films everything in sight."

"But the information, whether it's stored on this film or merely in the pilot's brain, has got to be brought back," Jason pointed out.

" Ah !" Hayes exclaimed enthusiastically. " But wait—whenever the filming's done, as soon as the pilot thinks he's collected every possible item of information, he moves this big switch here . . . A television eye then begins to scan the film and broadcast it back to us. We'll have a ring of ships waiting to pick the stuff up. In addition, this scanning and broadcast can be done at high speed, so that what takes half an hour to film will be sent back to us in five minutes. What d'you think of that, eh ?"

" So far as the success of the project is concerned, it's the perfect answer," Jason agreed dryly. " I can see one objection still, but it's so minor that it's hardly worth mentioning."

Hayes' enthusiasm was so open and child-like that Jason's remark merely puzzled him. Admiral Dickenson however stepped into the breach.

" When the film's been shot back, the pilot's job is done and he can blast for home."

" With every Jacko in every squadron of every Jacko fleet hot on his tail," Jason added. " And how many millions of miles will he be from home ?"

" Quite true," Dickenson admitted. " I said it was a dangerous job . . . But there are one or two factors which favour the pilot. This is a very special ship. It carries twice the usual load of fuel and it can accelerate a little harder and a little longer than any Jacko. Therefore, given even a small start you should be able to show them a clean pair of heels."

" It's unarmed ?" Jason asked.

Dickenson hesitated. " Yes. Remember the ship will be riding in close formation with an enemy squadron for some days. If we mounted a pair of Sandbatch cannon they'd give our game away at once."

" There's something up there looks like a D-ray bell-mouth," Jason remarked, looking up at the bows of the ship.

" A dummy," Hayes explained. " You know the D-ray gives out a back-lash of hard radiation; that's a problem we haven't managed to lick yet. Anyone using an unscreened D-ray is going to make himself a very sick man indeed. We calculate the pilot gets a better chance if we give him all possible speed and fuel."

Jason was introduced to other details of the project, then Admiral Dickenson concluded: " I don't want your decision now, Jason. What I want you to do is to draw some of your back pay from the accountant, take the train over to Moon City and have a small spot of amusement. Give yourself time to think. Report back in twenty-four hours, with your decision."

Jason saluted and went off.

" Better start looking out another volunteer," Hayes told Dickenson ironically.

" Why so ?" the other asked.

" You know the chances of getting back from this little expedition are about twenty to one against, and Jason has worked out the odds already. He spotted all the difficulties immediately and he's sane and balanced, not a suicidal fanatic. You must look for someone less intelligent and more fanatical, Admiral."

Admiral Dickenson scowled. " Sure the boy's intelligent. This is no job for brute force or ignorance or fanaticism. Not only is he intelligent, but he's calm, level-headed. Did you notice how still he stood—no twiddling his fingers or puffing nervously at cigarettes ? He's got no complexes; he's polite all right but not over-anxious to win my approval. No false humility either, no protesting he's unfit for the job."

" All of which seems to add up to just what I said. He's intelligent; he's no fanatic; he's got no complexes—he'll turn the job down."

" I know these English," Admiral Dickenson stated. " There's times when I hate their damn guts, but the best of them have got something. It's tradition, I guess. Always doing their duty. Never let the side down, whatever the job is, whether it's inglorious or otherwise. Do it with all your energy, just because your grandfather did it in the second world war, and his father before him, and so on right back to Waterloo." Admiral Dickenson said this in a poor imitation of an English accent.

" For a man who can't stomach the English, you're quite a fair advocate," Hayes grinned.

Next day, precisely twenty-four hours later, Jason reported to Admiral Dickenson and agreed to undertake the job. Dickenson looked at the fair-haired youngster, the girlish complexion, the slender hands and thin fingers. The ancient warrior nearly burst into tears.

" Very well, Jason," he said gruffly. " Any comments on the scheme as a whole ?"

" Yes, sir. I'd like to have that dummy D-ray removed and one of the genuine articles fitted instead. I understand that with a bit of luck one may survive a short squirt of radiation, and a short squirt might be just the one thing necessary to ensure my safe return home."

" Very well, Jason. I'll get Hayes to fix it."

Even in these modern times, and even though the United Nations had been managing human affairs for several hundred years, human nature was still human nature; Italians, Russians, Germans, Spaniards,

Americans and even Esquimos each considered themselves to be finer, braver, handsomer, more intelligent, or perhaps merely cleaner than other races. This oddity of human thinking had its consequences even out at Advanced Fighter Base, where the squadrons of one-man scouts were organised on a national basis. The Spanish Squadron was captained by a large individual named Louis Alvarez—or Lucho to his friends—and was entirely Spanish speaking, although only one member besides Alvarez was actually Spanish. There were two Peruvians with traces of Indian blood in them, a Mexican, a Chilean and a character called Don Miguel Macdonald, whose existence was due to the Scotsman's propensity for leaving his native land, settling down elsewhere, and marrying a local girl.

The Spanish Squadron monopolised one corner of the mess where it habitually talked Spanish with much gesticulation. It had recently been ordered to stand by to undertake a special and particularly difficult task; it thought it quite proper to be given the most difficult and dangerous work, but this opinion did not hinder its members from grumbling and complaining about the matter.

They were so much occupied with this job of grumbling that they scarcely noticed a newcomer who came into the mess. He asked a question of someone near the door, then drifted over in their direction. Captain Alvarez gave him a cold and haughty look, and went on talking. The newcomer made to sit down in the one empty chair. Alvarez put out a large hand to restrain him.

" Your pardon, hijo," he said, " here we are all Spaniards together; this corner is exclusive to us. And in addition, that seat is reserved for one whom we expect here presently."

The newcomer did not make any objection to being called sonny. He said in an extremely casual English sort of way: " Sorry, old boy—not the slightest intention of intruding. What's the name of the bloke you're keeping the chair for ?"

Alvarez paused dramatically, gesticulating hand still in mid-air. He gave an imitation of a man interrupted in some serious business by an ill-mannered child. He looked the questioner up and down.

" Boy," he said, " you are new here so I excuse you. When you have been with this group for some time, and if we think well of you, we may then invite you among us, but for the present you do not interest us."

" This'll surprise you, old thing," the other told him calmly. " I'm the fellow you're expecting. My name's Jason—I've just got here. We're to carry out an operation together." He twitched the chair round and sat down on it, smiling round the group.

Alvarex recovered himself swiftly. " But, Senor," he exclaimed, " A thousand apologies. For this project we expected a seasoned fighter, some grandfather of forty with a hundred kills to his credit. I do you no insult when I say you are almost a child . . ."

" Don't blame me, Captain," Jason smiled. " I was asked to do this job and said yes. That's the whole story from my end."

They looked at him—young, fair-headed, boyish, smiling. Alvarez was forty; Macdonald just a little younger. The youngest of the Spanish Squadron was twenty-eight. Jason was twenty-two and looked eighteen.

Alvarez swore rapidly in Spanish, and muttered his opinion of Headquarters, who chose to send children out on dangerous tasks.

"No doubt Headquarters knows its business," he said, "and one does not of course question your courage or determination. But, have you encountered these Jackoes before, Senor?"

Jason told him. They settled down to discuss the manoeuvre which they had to perform together.

Jason went out several times during the next week with the squadron to rehearse. After a number of trials, Alvarez asked to have two additional men attached to his squadron.

"I see it like this," he explained. "The Jackoes know we operate in squadrons of seven. If they see less than this number, they will begin to be suspicious. Therefore we will have seven operating together, plus two in hiding. We will engage a Jacko squadron, we will allow ourselves to be split up, and we will turn and run. Out of seven it is certain that one of us will have a Jacko on his tail. Let the Jacko think his guns are jammed, or what he will. In any event, our man runs, the Jacko pursues. Our man makes for the rocks. Nothing surprising in this. Quite usual under the circumstances. Behind one rock there is lurking ' . .' he paused and looked round the group, ". . . there is lurking our two additional ships, and Senor Jason also. As our man approaches the hiding-place he signals 'I come'—he sweeps behind the rock—following him comes the Jacko—the two in ambush leap upon him. Before he can turn, before he can signal his companions, Pam! Pam! Pam!—he is gone—then a moment later, an apparent Jacko ship emerges from cover and joins his companions—our job is done."

Alvarez was an able and determined commander. Using another squadron to take the place of Jackoes, the manoeuvre he had described was rehearsed again and again until they felt themselves ready to try it in earnest.

Five days later the manoeuvre went off without a hitch. Behind a screen of rock Jason saw a Jacko ship pounced on by those two ancient and skilful killers Alvarez and Macdonald, and destroyed in an instant. Immediately, he fired his jets and slid out into the open. The Jacko squadron had been scattered by the engagement, but as it began to reform he moved in and took position in it.

The Jacko ships accepted him without question. They turned and headed—outwards.

Alvarez sent off a signal which in due course reached Dickenson and Hayes at Moon Base.

"Well," the old warrior sighed, "the boy's on his way. Good luck to him. Now let's make sure they're getting a screen of ships

out to pick up his television broadcast when he sends it, and I think we'll have some patrols well forward in case he comes back with a hoard of Jackoes swarming on his heels."

" D'you really think he'll get back ?"

" There are times when I think his chances are good. He hasn't been spotted at the start, so why should he be spotted later ? He need only keep along with them, spend ten or fifteen minutes filming, then blast for home, and his ship's faster than theirs. Nevertheless, playing war is not like playing chess. Unknown factors invariably crop up—plans begin to go wrong and get out of hand."

The Jacko squadron accelerated hard for half an hour, then cut its jets. The ships lay about half a mile apart. Though their actual speed relative to the sun was now several thousands of miles an hour they appeared to be quite motionless. Jason's ship had a radio receiver and for a little while he was able to hear his strange companions communicating with each other in their rattling chattering tongue. No doubt they made attempts to call him, but to any fighter-pilot his silence would be immediately explained by the sight of the long groove in his hull and the ruined aerial. No move was made to investigate him closely.

The chattering stopped after a while. Perhaps like human pilots they were accustomed to sleep during periods of coasting. At any rate Jason had a chance to relax from his first state of anxious vigilance.

After several hours of silence a sudden babble of chattering woke him to alertness. He deduced that some object had been sighted, but as he had no radar detector fitted he was blind to everything outside visual range.

Watching anxiously he saw flickers of flame from nose-jets. Imitating the manoeuvres of his neighbours he managed to keep in formation while the ships turned through ninety degrees. Immediately after this turn-about the squadron formed itself into line astern. Jason did not need to wonder what was happening; some group of earth-ships must have come into range, some squadron which had no business to be so far out, which ought not to be operating in this sector at all. Thus he found himself in the middle of an enemy formation rushing to attack his fellow humans.

There was nothing he could do about it without spoiling the plan; he must stay with the Jackoes, and hope that none of his friends got in position to take a shot at him.

Things began to happen with bewildering speed. In a moment seven familiar-looking shapes were in sight, rushing towards him.

Jason knew the Jackoes always tried to maintain their line-astern formation so he kept his eye on the ship ahead of him. The two formations met. Jason's field of vision was filled with wheeling ships and flaring jets, and the stabbing blue flame of D-rays. He saw the Jacko leader blow up. He saw—a thing he had often heard of but never seen before—a Jacko turn out of line and destroy one of his own companions who had been seriously damaged by gun-fire. Then, how it came about he could not say, but he found himself pursuing an earth ship.

Admiral Dickenson knew that any military plan, however good, will inevitably show signs of breaking down during its evolution under the impact of chance factors. He knew that nothing but resourcefulness, decisiveness and intelligence could repair such break-downs and keep the plan in being. He understood human nature and had picked Jason for this job because he believed the young man had the necessary qualities. He had picked him in preference to other more experienced and more dashing and picturesque pilots.

Jason lay in his cushions while the problem revolved swiftly in his mind. From the point of view of a Jacko pilot, he had a sitting target just ahead. Behind him, watching him closely, were a couple of real Jackoes. They were waiting to see him do his job. The ship ahead jerked back and forth on its lateral jets but there was no excuse for holding fire, and very little excuse for missing.

If Jason refrained from firing, would the Jackoes suppose that his D-ray was out of action ? If so, would they refrain from investigating him closely ? Jason concluded that he could not hope to get away with it. He would be examined, discovered, and destroyed, and the project which had taken so much time and effort to plan would be destroyed also—and destroyed finally, for it could not be made to succeed at a second attempt once the enemy had discovered the ruse.

His problem was clear. Either spare the unknown young man in the ship ahead, and lose his own life and ruin the plan, or kill him and save the plan.

At this moment Jason demonstrated that Admiral Dickenson had made no mistake in selecting him. His fresh young face was calm as he sighted along the tube of the unfamiliar weapon. His finger pressed the button without hesitation. A long thin ray lanced out ahead of him and licked the rear end of the ship in front. A brief instant, and then it blew up.

As Jason manoeuvred his ship into line again, a sudden wave of heat poured through him. This hot sensation passed quickly, but the unpleasant prickling continued. He realised that he had been subjected to a back-lash of hard radiation from the D-ray apparatus.

The engagement broke off. There were only four Jacko ships left, counting Jason's ship as one. They re-formed and resumed their journey—outwards.

The ships coasted forward, outwards, away from the sun. Jason had no doubt that his Jacko companions lay half-asleep as did all pilots in such circumstances. But Jason was not asleep. Although he had acted without hesitation, although his brain still assured him that he had made the right decision, he was filled with horror at what he had just done. He would be court-martialled, of course. For a moment he contemplated the fact that no-one need ever know, but he knew he would have to confess and take the consequences—if he got back. A wave of prickling discomfort assailed him again and he began to wonder whether a man could really survive such a dose of hard radiation as he had experienced. If he did not, he reflected, his fate would have a flavour of classic justice.

As the ships slid forward through the velvet dark these thoughts went round and round in his mind.

Jason must have slept finally. He was awakened after what seemed like a long interval by bursts of Jacko chatter coming over the radio. He looked out around and ahead. His three companions' ships were still in position beside him. A vast area ahead was filled with points of light. Not the haphazard many-coloured variable brilliance of stars, but uniform reddish points of light lying in orderly rows. He was unable to attach any meaning to what he saw, but he pressed the button of the camera and let the machine take this in for three seconds.

He continued to watch. Passing like ghosts above him a squadron of Jacko ships accellerated inward. He heard further bursts of chatter, presumably from one of his companion ships. There was no impression of motion, but nevertheless the rows of lights ahead slid swiftly nearer. The pattern of them across the sky swelled till it filled his view.

A flicker of flame from the nose of the ship alongside, and for a few moments he was occupied matching speed and changing course. When he had time to look again, the picture had clarified. He saw that each point of light marked the position of a ship. The glow of starlight pouring through the emptyness of space shone dimly on their flanks, while each ship's bulk made a patch of dark against the curtain of the stars. He pressed the button of the camera, and swept it slowly round the array. The super-sensitive film would record this scene better than his eyes could see it.

So this was the answer to the problem of the Jackoes' origin. They came not from one ship, but from many—from hundreds—and what ships ! Immense fat cylinders lying in orderly rows and ranks and files.

Another change of direction—some ships of a shape he had never seen before slid past below.

The group of four ships of which he was one slid in among the mother-fleet. Like fishes in dim clear water they glided underneath a monstrous belly. Jason scanned it with his camera. Another lay ahead. A patch of its surface was brightly illuminated and three round objects were crawling upon it. Another shot of that.

The four scouts slid among these monsters, with only an occasional short flick of jets to change direction. Mounted on top of one of the monsters he saw some unfamiliar object which had the appearance of being a weapon. A long shot of that. Underneath another a huge brightly illuminated hatch hung open; as he watched a Jacko scout of standard appearance emerged from it.

A staccasto burst of chatter on his radio, and a flicker of jets. The four scouts began to manoeuvre underneath the belly of one of the big ships.

A section of the hull swung ponderously outwards disclosing a brightly-lit interior. Jason had the camera running all the time now. On a ledge round the open hatch he saw spherical objects moving purposefully, slinging out grapples; further inside he caught a glimpse of rows of scout-ships stacked closely side by side and one above each other.

One of his companion ships edged forward underneath the open hatch. Grapples seized it and pulled it into the hold where it was manoeuvred out of sight.

And now Jason knew that his time was nearly up. Once inside that hold his chance of escape would be negligible. As he reached this conclusion, and as he began to consider the moves he must make to escape, he had an inspiration, a wonderful and terrible inspiration.

A second ship was drawn into the hold. He heard a brief staccato rattle of Jacko speech. Just as certainly as if the words had been spoken in English he knew this was an order to him to move forward.

He took a quick look round to determine the position of the fourth ship which still remained, then gave a touch to his jets, to send the ship forward and upward into the hold. He checked that the camera was running, and grasped the controls of his D-ray. He was sweating and trembling with excitement; his teeth ground together and his mouth was clamped tight shut in a sort of grimace of concentration.

One of the row of stacked scout-ships came into the line of his sights—he aimed at its stern, at the motors and fuel tanks, and flicked the firing-button. Instantly he swung the weapon and did the same

to the next ship—then the next—then he swung the ray round and about and up and down, slashing like a sword.

At the final instant he pushed the nose-jet lever hard over, his ship shot backwards as if kicked out of the hold by a giant. When a ship has its fuel tanks hit by a D-ray there is an interval of a second or so before its fuel tanks explode. The scout he had hit first blew up just as Jason finished his backward run. He paid no attention to the chaos of bursting ships he had created, for there remained the fourth Jacko ship just behind him. He slid past underneath and gave it a short stab with the ray in the region of its motors, then he spun his ship round, glanced at his gyro to verify direction, and began to weave his way back among the big ships, accellerating hard.

Behind him, reflected in the mirror, he saw flash after flash as the scouts exploded one after another in their racks. Finally there was a much bigger flash, as if a number of them had exploded simultaneously.

He set a mechanism running in the camera which caused the film to undergo a developing process, and wound out his concealed transmitting aerial.

A sudden awful wave of nausea overwhelmed him. For a moment he could do nothing but dig his fingers into the cushions and try to master it.

He switched on his radio and called, " Jason here ! Jason here ! Stand by ! Stand by !"

He was still sweeping in among the big ships. As he passed by the rear end of one of them he shot a long dose of D-ray at the bulge on its stern which he took to be a motor. After he passed something exploded.

Just as he passed out clear of the fleet he was violently sick.

Then he saw that the developing process had been completed and the film was ready for transmission.

" Stand by ! Stand by !" he called thickly. " Ready to transmit. Ready to transmit."

He was feeling unwell in a way he had never known in all his life, but he continued to do his job carefully and thoroughly. He checked that his sending aerial was aligned correctly, that the film had engaged itself in the sending mechanism, and that the transmitter was live.

He moved the lever. Things inside the machine clicked and purred.

He laid his head on the cushion and was sick again. When he had recovered a little he tried to look around. He had no radar and so was unable to tell what ships might be converging upon him, but he reckoned that by this time something must have been organised against him.

In between waves of nausea he kept a watch out rearwards, but at one point when he looked ahead he saw a squadron of Jackoes across his path. They were some distance away, and judging by the flare of their jets, were changing course.

The film completed its run-through; he re-wound it and set it to run a second time.

"Jason calling," he transmitted. "Setting film for second run-through. Stand by."

His stomach heaved dreadfully in an effort to be sick. This time nothing came up but gouts of blood.

The Jacko squadron ahead completed its turn-round, but did not appear to have spotted him. He continued on a straight course towards them while the film had its second run-through.

By the time this was completed he was almost among them. No doubt they had already been receiving instructions from some central control, but it was doubtful whether any of the Jacko community knew exactly what was occurring. Perhaps they thought that there had been an accidental series of explosions, or more likely, that one of their own scouts had run amok. At any rate this squadron let him approach without taking any action.

His head was swimming, and his eyes streaming with tears. He passed right among them and chopped the three foremost with quick stabs of the ray. They blew up one after another in rapid succession after he had passed.

Looking behind him again he saw a considerable number of the enemy, in no particular formation streaming after him.

At this stage he was out ahead of his pursuers, and so far as he knew there was nothing between him and home except whatever outlying Jacko patrols could be brought onto his line of retreat. There was no reason why he should not make a run for it—except he knew he would never live to reach home now. Except that since he had killed one of his own comrades on the way out he had known he would never return, he had ceased to want to return.

His head cleared momentarily. He fumbled for levers, fired jets, and changed course back towards the Jacko mother-ships. While pursuing scouts were still uncertain about what was happening; before they could re-act to this change, Jason was speeding back through their midst. None of them attempted to hit him, but he hit two more.

Then he was in among the big ships once more. He made no attempt to damage them, for he thought his ray would merely over-heat part of their massive structure and cause only local damage. But there was plenty of game for the hunter. Jacko scouts, and other types of ship he had never seen before were wheeling about in every direction.

He slid among them. Many paid no attention to him. At every opportunity he chopped one. Every couple of minutes there was the blinding flash of a detonation.

But at every pressure of the button he received another dose of radiation; every instant he became more dreadfully ill. When he tried to spit some of the foulness from his mouth two of his teeth came out.

The Jackoes identified him at last. They managed to bring their forces into order. Their ships drew off so that for a short while he drifted alone among the big ships.

Jason, whose mind and intelligence was flickering and dying, was still conscious of his duty; he must not allow himself to collapse and die and leave his ship floating for the Jackoes to examine.

He raised his head from the cushions and looked around out of bleary eyes. The dark looming hulls of the big ships were around him. Beneath one he saw an open hatch with light streaming from it. The Jacko scouts had withdrawn, but soon they would be re-organized and ready to deal with him.

He set his ship on a slant, upwards towards the open hatch of the big ship. He pushed the power-lever forward to maximum acceleration and placed his finger on a red button marked DETONATE. Precisely as the nose of his ship passed inside the hatch he pressed this button.

Alan Barclay

We constantly hear references to the dwindling coal and oil deposits of the world but seldom is the problem emphasised in relation to our own times. In the following article Mr. Newman points up the relationship between the increasing world population and the decreasing stores of unrenewable fuel in terms of energy demand for our high-level technology.

P's AND Q's

By John Newman

Man is inherently a lazy animal and it is typical of human nature that he spends a great deal of effort in reducing the amount of work that he has to do. It was because of this that he first used domesticated animals to do the heavier work and, with a small population and lower standard of living, he found such slave labour quite satisfactory until misguided inventors showed that a steam engine was not only workable but enabled greater profits to be made. From then onwards, both his numbers and the complexity of his civilisation explosively increased until, now, a large part of the human race depends upon the torrents of energy poured into its machines from thousands of oil wells and coal mines.

The quantities of energy used are so enormous that a new energy unit, the Q, has been evolved to express it. One Q is a million million million times the amount of energy needed to raise the temperature of one pound of water by one fahrenheit degree. We act as if our presentday fuel resources were limitless—but they are not and already, as coal becomes more difficult to mine and oil wells have to be drilled deeper, this fact is making itself evident and has to be combatted by

increasing prices and technical gadgetry. It is as a direct result of this that so much of this country's capital is being used in nuclear research and the building of the dozen nuclear power stations at a cost of £200 million that, even at their best, will be unable to produce electricity at less than the present cost.

This generation has little to worry about, but what of the future? What will the position be like a hundred years hence? It is more than possible that our great-grand children will look back on us not as the pioneers of a technical utopia but as the parasites in an era of unparallelled waste.

The trends in the increasing use of energy, together with the rise in the world's population and depletion of natural resources, can only be seen in a proper perspective if a long term view is taken over at least one hundred years. In spite of two global wars, the world's population, the P in the title, is increasing by 70,000 people a day; twenty-five million more humans are born each year than die! There are many reasons for this, the chief ones being the improvements in medicine and elimination of epidemic diseases so that the expectation of life of all age groups has risen by many years, nationalism with its need for large armed forces in every nation, industrialization of agriculture and manufacture causing the change-over of the family group from a plot of land capable of supporting only a limited number of people to a town and, most of all, ignorance of birth control. The latter, more euphemistically called family planning, is not available to the larger part of the human race because of deliberate policies, ignorance of methods and lack of money. In spite of the fact that the welfare of any society depends upon a balance between natural resources and population—between the fertility of the soil and of humans—the curve showing the increase in the world's population is an exponential one continually getting steeper. Some day, however, it will have to flatten out so that the population is stabilized. Because of improvements in agriculture this will not happen for many centuries yet and we cannot clearly see just how it is going to happen although we can postulate that it will be due to integration of world powers, decrease of nationalism and the widespread, psychological acceptance of the need for birth control once people become frightened by the effects of over population.

We can consider the present trends of human life on this planet and extrapolate them to A.D. 2050, ignoring the possibility, or probability, of there being an eternal cycle of barbarism, civilization and barbarism the survivors of thermonuclear wars having to repopulate a blasted Earth. With the awakening of the political consciousness of backward nations there is a trend towards their industrialization with

the consequent concentration of population centres and the need for more energy to support the inhabitants. Even if there was no increase in the numbers of the human race there would be large annual increases in the demand for energy. Any improvements in a standard of living must involve the use of more energy.

The present world population is 2,400 millions, half of whom live on farms, and a careful evaluation of its growth during the next one hundred years, using two different statistical methods, shows that it will have increase three-fold to 7,000 millions by A.D. 2050. But it will be possible to comfortably feed, clothe and house this number without straining Earth's resources although there will have to be considerable alterations in the patterns of raw material usage. A three-fold population expansion does not mean only a three-fold increase in energy requirements; far from it, for the total energy used per person is rising even more rapidly than the population. The whole problem is complicated by the extraordinary concentration of energy users in one country, the U.S.A., which now takes 37 percent of all the energy employed in the world. As other nations reach for diminishing evergy resources, an unstable situation will arise and it is more than possible that nations will go to war over fuel resources as they once did over land and food. A pattern of energy scarcity is unlikely to exist for long if one nation has fuel and another has thermonuclear weapons.

Between 0 and 1850 the world's total use of energy was seven and a half Q's, most of it animal and man power and equivalent to only .004 Q's a year. Between 1850 and 1950 the amount used was four Q's, increasing from a hundredth of a Q per year to a tenth of a Q per year, a ten-fold increase in a century. But these are the total figures for the whole world, including the vast areas of large population that have little changed their ways during the last hundred years. During this period the proportion of energy in the U.S.A. obtained from the use of water power and fossil fuels rose from 5.8 to 94.0 percent.

With backward peoples looking up to the high standard of living in the most industrialized country in the world, it is not surprising that a burst of industrialization is sweeping the globe and we can expect that the global energy demands in a century's time will at least reach the level of the present-day U.S.A. This, combined with the larger population, will raise the energy requirements of the world to twenty-two times what it is at the moment. But industrialization is intensifying in the U.S.A. and it is probable that by 2050 the rest of the world will have passed its present level. The speed with which China and Russia are becoming industrialized gives some idea of the growth that is possible.

On top of this, there are two future applications of energy that will soon be developed on an enormous scale, the recovery of fresh water and minerals from the sea. Already a third of the cultivated areas of the world have, by carelessness and ignorance, been turned into dust-bowls and deserts and this, with the destruction of a third of the forests, is resulting in climatic changes leading to the ultimate catastrophe of more deserts. This trend can only be halted and soil restored if large scale irrigation is used and, as these areas often lack rivers, this water must be obtained from the sea. The cost will work out at about two shillings a thousand gallons.

At the same time, the sea is one of our greatest mineral reserves and, with the depletion of our mineral wealth on the land, we must turn to its 300 million cubic miles for many raw materials. Each cubic mile of sea water contains 23 tons of gold, 4 million tons of potassium sulphate, 40 tons of copper and 8 tons of uranium. Bromine and magnesium are already extracted from sea water, one plant handling 300 million gallons a day, but the treatment of cubic miles will require more energy than any of today's consumers.

From all these points, it is estimated that by A.D. 2050 the annual energy needs of the world will have risen at least twenty-fold, more probably a hundred-fold, so that between two and ten Q's will be required each year at costs not more than twice those of today. How does this fit in with our reserves of energy? Our present energy mainly comes from fossil fuels that were created by imperfections in the balance of nature and are irreplaceable. Only a certain percentage of the oil and coal can be recovered from under the Earth and the total reclaimable quantity, including estimates of deposits still to be found, is round about twenty-seven Q's. Of this, twenty-one Q's are made up of coal, six Q's of oil and gas and one Q of oil shale.

This means that, at our present increasing rate of use, if we have to rely solely on fossil fuels then all our resources will be exhausted within 75 years, oil within 50 years. But this is an idealized picture, for oil and coal have more value as raw materials in metallurgy and chemical synthesis and prices will rise so that it will be more economical to use other resources, particularly nuclear energy, for energy production. When the oil supplies begin to fail and fifty percent of our present oil production is used for transport, there will be an increasing tendency to convert coal into oil and petroleum by reacting it with hydrogen under high pressure. Several large plants in the U.K., U.S.A., and South Africa are already doing this.

At the same time, there will be an increase in the efficiency of utilization of fuels; this has already risen from 10 percent at the beginning

of the century to the present-day 30 percent but, unless a method is found to circumvent the conversion of chemical and nuclear energy into heat before turning into electricity, the efficiency is limited to a maximum of about 50 percent.

Nuclear power stations are already a reality and, as the potential supply of energy from recoverable uranium and thorium is twenty times that from fossil fuels, we have increased our resources many-fold by the application of research. Assuming that the 'breeding' of uranium-238 and thorium to fissionable fuels can be carried out with an efficiency of 30 percent, this raises our resources by 575 Q's, available as electricity and waste heat for the heating of buildings.

But here we run into a snag; nuclear reactors are essentially massive units and can only be used as mobile units in heavy transport such as ships, submarines, large aircraft and locomotives. Light transport will have to continue to rely upon chemical energy—nuclear energy could be used if an electrical accumulator of less than 300 lbs. with a storage capacity for 500 miles could be developed but we are a long way from meeting this standard.

All our available energy, except that of the Earth's rotation, comes from the Sun or fissionable fuels. The latter and fossil fuels are *unrenewable* sources whilst most of the others are *renewable* sources constantly replenished by solar radiation, including water power, wind power, the energy of the tides and waves and the differences of temperature found at various parts of the Earth's surface. Renewable sources have many drawbacks to their large scale use but Man will have to increasingly rely on them in the centuries to come.

There are few sites where the tides are high enough to be of use, wind power is neither dependable nor of potential magnitude, the heat of the Earth's interior is available only through a few geysers. Water power is being extensively developed in the form of hydro-electricity but its production can be only increased about eight-fold and, even then, will only give a small fraction of that which is needed. Attempts have been made to utilize the differential temperatures of the surface and deep ocean waters in the tropics and air and water temperatures in the polar regions but the capital expenditure is enormous to produce a small quantity of energy. All of these minor sources will probably never contribute more than a fortieth of a Q a year.

This leaves us with solar energy and, at first this appears extraordinarily promising. 3,200 Q's are received over the whole of the Earth's surface in the course of a year so that, if this could be used 100 percent efficiently, our present needs could be supplied by an area 80 miles square, a supply that would last for millions of years. But

we lack the knowledge of how to harnass this and, so far, we can use only relatively inefficient methods such as photosynthesis (not more than 2 percent efficiency), thermocouples (3 percent), photocells such as the Bell laboratories' solar battery (6 percent), green-houses and reflectors in conjunction with small boilers.

The large scale, direct utilization of solar energy would involve the human race in the greatest and most expensive project that it has ever tackled. The disadvantages that would have to be overcome include intermittent supply, small concentrations and the problem of storage. But all of the known methods can be used to a greater extent than at present; alcohol for fuel from wood and vegetation and the greenhouse principle for the heating of buildings.

From this article it can be seen that it will be difficult to meet the minimum of two Q's, whilst ten Q's a year will be almost unachievable. We need far more research into the problems of solid physics and fundamental conceptions, based on twenty year rather than the usual two year programmes of research. And we need this now, not twenty years in the future when the crisis is already upon us and the fabric of our civilization begins to crumble for the lack of one thing—*Energy*.

John Newman

THE LITERARY LINE-UP

Apart from the second instalment of Wilson Tucker's *The Time Masters* which really becomes fast-paced and intriguing as Gilbert Nash becomes irrevocably involved in the search for the atomic scientist's missing wife, next month's issue is made up by some of our regular British contributors. Lan Wright, after too long an absence, returns with " The Con Game," another of his interstellar political themes, and Francis G. Rayer presents what is very obviously his best story ever—" Stormhead," a plot in the best tradition of the new type of *science* fiction story as produced usually by American author Hal Clement.

There will be another Alan Barclay story, " Rock 83 " and the proverbial E. C. Tubb with a short feature, plus John Newman's regular science article.

Story ratings for No. 36 were :

1.	Star Ship (Part III) - - - -	E. C. Tubb
2.	Bluebird World - - - - -	J. T. McIntosh
3.	Our Kind Of Knowledge - - -	Brian W. Aldiss
4.	Man Of Parts - - - - - -	Horace L. Gold
5.	Highwayman Green - - - -	E. R. James

It is a distinct pleasure to introduce yet another new American author to our readers—and save to predict that Chad Oliver has quite a literary career before him when he has completed his studies at the University of California. His first novel, Shadows In The Sun, *will be published in Britain by Max Reinhard later this year.*

Any More At Home Like You ?

By Chad Oliver

Illustrated by HUTCHINGS

The ship came down through the great night, across a waterless sea where the only islands were stars and the warm winds never blew.

It glowed into a high, cold yellow when it brushed into the atmosphere above the Earth. It lost speed, floating down toward the distant shore that marked the end of its voyage. It whistled in close, feeling the tug of the world below.

At first, only darkness.

Then lights.

A new kind of darkness.

The ship angled up again, trying to rise, but it was too late. It crashed gently and undramatically into a hillside and was still.

Journey's end.

The ship's only occupant, cushioned by automatic safety devices, was shaken but unhurt. He spoke rapidly in a strange language into a microphone. He wiped his forehead with a handkerchief and climbed

out of his broken ship, his hands trembling. A damp and chilly night closed in around him.

If he could get away before he was seen it would simplify matters greatly. He looked around. He seemed to be about a quarter of the way down a brush-covered hill. There were lights on the black ridge above him, and a string of lights marking a canyon road below him. There was a house on the hill, not fifty yards away. He would have to hurry . . .

No. Too late for that now.

A flashlight moved toward him along the path, picking him out. He had been seen. His hand moved toward his pocket, nervously.

A voice, " What happened ? Are you all right ?"

He tried to remember his instructions. He must be very careful. Everything depended on these first few moments.

" I'm all right," he said, blinking at the light. " There's been an accident."

The light shifted to the ship that had smashed into the brush. " What's that ? I never saw a plane like that before."

Be careful. " It's an experimental model."

" You a test pilot ?"

" No."

" You an Air Force man ?"

" No."

" I think you'd better come inside. It's cold out here."

He hesitated.

" I'll have to report this, you know. You got any identification ?"

He tried to change the subject. " Where am I ? I lost my bearings."

The man with the flashlight waved down below. " That there is Beverly Glen. Up on top is Bel-Air road, right at the end of it."

" What city is this ?"

" Man, you *are* confused. This is Los Angeles. Come on inside."

Los Angeles.

He followed the man along a path flanked by orange trees to a small bungalow. He walked into the house, into the light. A refrigerator hummed in the little room back of the kitchen.

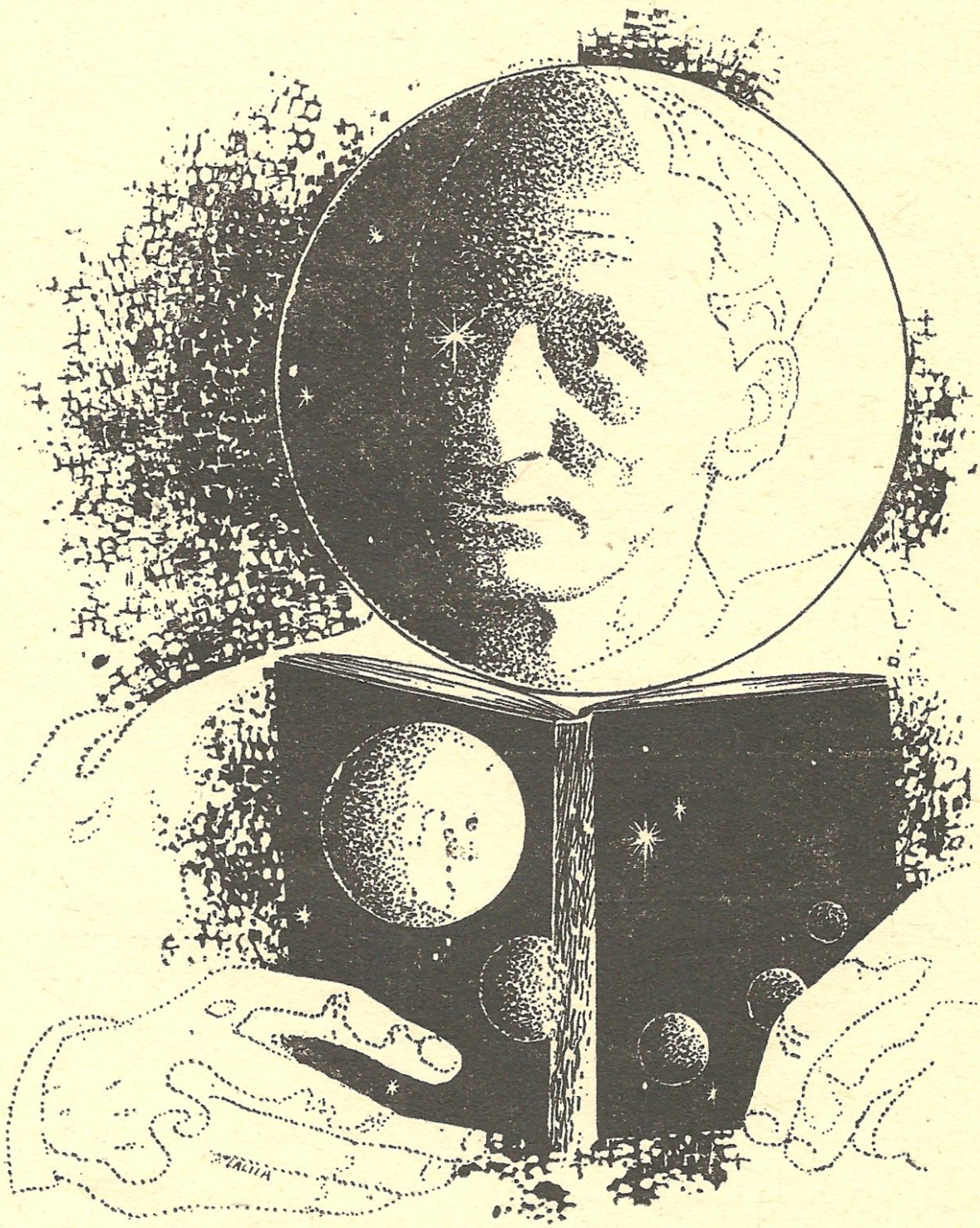
" Let's have a look at you," the man with the flashlight said.

The man from the ship stood still, his face expressionless. He was quite young, tall, with straw-coloured hair. He was dressed in sport clothes.

" You *look* okay," the man said, still holding his flashlight. " My name's Frank Evans."

" I am called Keith."

" Keith what ?"



"Just—Keith."

"Ummmm."

A young woman came in from the living room. She was dressed in matador pants and a red shirt, but was passably attractive.

"My wife, Babs," Frank Evans introduced them. "This guy is Keith Somebody. He was in that ship that tore up the hill."

"I thought this was the Arizona desert," Keith said, trying to smile.

"I'd hate to see you make a *real* mistake, mister," Babs said throatily.

"So would I," Keith said seriously.

"You got no identification, you say?" Frank repeated.

"No. It's not necessary."

"Well, I have to report this. You understand. Unidentified aircraft and stuff. You got nothing to worry about if you're on the level. Phone the cops, Babs."

The woman went into the living room. They were alone.

"Care for a beer?" Frank asked.

It's too late. I'll have to play along. "Thank you."

"Come on in and be comfortable while we're waiting," Frank said. "You were lucky to get out of that one alive."

He followed Frank into the living room, which was painted a singular shade of green, and sat down on a couch. He lit a cigarette and noticed that his hands were still shaking.

"You like bop?" Frank said suddenly.

"Bop?"

"You'll like *this*," Babs said, coming in from the telephone. "Frank knows his music."

"It'll help you relax," Frank said. "Hi-fi and everything. I work in a record shop over in Westwood." He adjusted a mammoth speaker. "You go for Dizzy? Theolonius Monk on piano. Great bongo solo, too."

Noise filled the room.

The man called Keith sipped his beer nervously and was almost glad when the police arrived ten minutes later. The two policemen looked at the wrecked ship, whistled, and promised to send a crew out in the morning.

"You'd better ride in with us," one of them said finally. "You must be pretty well shaken up."

"I'm all right," Keith said.

"I think you'd better ride in with us. Just a formality, really."

Don't get into any trouble. Don't antagonize anyone. "I suppose you're right. Thanks for the beer, Frank."

"Don't mention it. Hope everything turns out okay."

The policemen led him up a narrow, winding asphalt trail to Bel-Air Road. A black police car, with a red light on top that flashed monotonously on and off, was parked on a bluff. There were people gathered around the car.

Keith paused a moment, ignoring the crowd. They were high above the city, and he could see Bel-Air Road winding down the hill like a string of white Christmas tree bulbs. Far below was the city of Los Angeles, a design mosaic with a billion twinkling lights.

"I guess I'll have to go all the way to the President," he said wearily.

"Yeah," said one cop, not unkindly. "Come on, we'll see if the door's unlocked at the White House."

They got into the black car and went down through the night, past all the palaces of the Bel-Air elite. It was cold and damp, and a long way down.

The next day the papers had the story, and they kicked it around joyfully.

Four of them played it strictly for laughs :

COFFEE SPILLED IN BEL-AIR AS SAUCER FALLS.
PROMINENT MARTIAN ARRIVES HERE FOR VISIT.
SPACE INVADER FOILED BY SMOG, INTERPLANETARY PATROL GETS SIGNALS MIXED.

One tabloid, with tongue firmly in cheek, ran it straight :

FANTASTIC SHIP FALLS IN BEL-AIR; SCIENTISTS TO INVESTIGATE.

All of the papers carried pictures of the crashed ship, which looked nothing whatever like a saucer, flying or otherwise. All of the papers carried pictures of the man called Keith, and the overwhelming impression given by the photographs was that of his extreme youth. He could not have been over twenty-five, by Earthly standards, and it was difficult to take him seriously as a menace.

The second day after the crash the papers had two further bits of concrete information to pass along to their readers. The first was that engineers were subjecting the ship to a surprisingly intensive analysis. The second was that Keith had taken to writing down in a strange script all the conversations that occurred within his hearing. By this time, of course, the stories were buried in the back pages of the papers.

In a way, the most interesting thing was what the newspapers *didn't* print. The usual follow-up story was conspicuous by its absence. No one tried to explain the so-called flying saucer away as a promotion stunt for a new George Pal movie. No enterprising reporter dug up the leads that would connect Keith to the Pacific Rocket Society, the Los Angeles Science Fantasy Society, the White Sands proving grounds the Rosicrucians, the November elections or the end of the world.

And Keith wasn't volunteering any information. He went out of his way to be agreeable, and he kept on taking careful, detailed notes on what people said to him. After the third day, there were no more

stories. As far as the readers were concerned. Keith had been a three-day wonder who had run his course, and there were two diverting new Hollywood divorces to fill up the headlines.

What the papers knew, but couldn't print, was that Keith had been quietly hustled off to Washington.

Eventually, after being shuttled through the Federal Bureau of Investigation, the Central Intelligence Agency, and the UnAmerican Activities Committee, Keith reached the State Department.

He was still taking elaborate notes, often asking a person to repeat a word or phrase that he had not heard clearly. His writing might have been anything from Aztec to the International Phonetic Alphabet, so far as anyone could tell.

John William Walls of the State Department looked so much like a diplomat that he could hardly have found employment as anything else short of a whisky ad in *The New Yorker*. He was slim to the point of emaciation, immaculately dressed, and his perfectly brushed hair was greying at the temples. He drummed his well-manicured nails on his highly polished desk and pursed his thin lips.

" Your case poses many extremely serious problems for us, Keith," he said, smiling disarmingly.

Keith scribbled in his notebook. " I didn t mean to cause any trouble," he said. His hair was freshly cut but he had deep circles under his eyes. He lit another cigarette and tried not to fidget on his leather chair.

" Of course you didn't, Keith. But the unpleasant fact remains that we must deal with actions, not intentions. You have placed this government in a quite intolerable position."

" I'm sorry. I have tried to explain my willingness to co-operate fully with the authorities here."

John William Walls leaned back in his chair and built pyramids with his long, clean fingers. " Your reticence really gives us very little choice in the matter, Keith," he said, warming to his topic. " I wish to be entirely frank with you. Your ship is unquestionably of extra-terrestrial origin. You have come through space, from some unknown world and landed on our territory without official permission. Do you realize what this means ?"

" I'm beginning to," Keith said.

" Of course." Walls inserted a cigarette in a long ivory holder and lit it with a gleaming lighter. " Let us proceed, then. You have crossed the void between the worlds in a ship of very advanced design. There is no getting around the fact that you represent a civilization far more powerful than our own. Candidly—for I wish to be entirely honest

with you, Keith—you are stronger than we are. You would agree to that?"

"I suppose so."

"Yes. Exactly. Now, we would like to believe that you have come to us with peaceful intentions. We would like to believe that you have come here to facilitate peaceful commerce between our two civilizations. We are, I may say, willing to make some concessions. However, we would *not* like to think that your intentions toward us are hostile. We should really be forced to take stern measures if we had reason to doubt your good will. I hope I make myself entirely clear, Keith. We want to be your friends."

The implied threat was not lost on Keith. He looked up wearily, the stub of a cigarette burning in the corner of his mouth. "I have no hostile intentions. I've told you that, just as I've told about one million senators and policemen. You'll just have to take my word for it."

The refined mouth of Mr. Walls curved gently into a smile. "We are grown men, Keith. We have larger considerations to think about. It is imperative that we nail this thing down, so to speak. You have been briefed on the political situation that exists on this planet. It is necessary that we establish the relationship between our two civilizations on a firm foundation. Do you understand me?"

"Well——"

"Clearly, there is no alternative." John William Walls crossed his long legs, being careful not to disturb the razor crease in his trousers. "I think you will agree that we have extended to you every courtesy. The time has now come for you to demonstrate your good will in return. We have indicated to you the proper way to proceed, and our staff is willing and able to give you every assistance. I trust you will not disappoint us." . .

Keith wrote earnestly in his notebook. He remembered his instructions. "I've told you that I don't want to cause any trouble," he said. "We'll play it your way."

Mr. Walls beamed, his well-tended face radiating pleasure like shaving lotion. "I knew we would be friends, Keith. I'm proud to have had a small part in the birth of a new era."

Keith started to say something, but changed his mind. Nervously, he lit a fresh cigarette.

Within a week, photographs of Keith shaking hands with the President appeared in every newspaper in the world. The President looked exceptionally serious, and Keith looked very young, and vaguely troubled. The government played its hand with considerable skill. Keith was kept under wraps while the tension built up, and around the world people wondered and worried and hoped.

This concise editorial appeared in *The New York Times* :

" A young man has come from nowhere to our planet. He has come in a ship so advanced that it makes our finest aircraft look like the amusing toy of a child. It may be assumed that the civilization which designed and built that ship has also designed and built other ships.

" The emissary they have sent to us appears to be a rather shy, personable young man. He seems well-intentioned, although the evidence on this point leaves much to be desired. We can meet this man on his own terms if we wish, if not as equals, then at least as friends.

" But as we look at this man, so much like ourselves, we cannot but wonder why *he* was chosen for this task. We know nothing of his world. We know nothing of the people he represents. They may, as he says, wish to be our friends. They may be offering us the greatest opportunity we have ever had.

" We remember the Indians who first lived in our land. The first white men they saw did not frighten them. They thought these men were godlike and they admired their strange ways and vastly superior technologies. The Indians knew nothing of the white men who were still to come.

" We look today at this young man who has come among us. We look at him and like him and admire the ship in which he came. We would ask of him only one question :

" *Are there any more at home like you* ?"

The editorial was widely quoted, and seemed certain to bring another Pulitzer Prize to *The New York Times.*

Late in January, Keith lived up to his obligations by addressing the United Nations. There was, of course, tremendous popular interest in his speech, and the television and radio crews turned out in force.

Keith took careful notes all during the elaborate introductory speeches, and seemed genuinely interested in listening to what the assorted delegates had to say. His appearance was still on the haggard side, and he looked anything but eager.

He took his place under the bright lights before the cameras and microphones with reluctance. His hands were trembling. He had to clear his throat several times.

Once he got going, however, his speech was impressive.

" I have come to a New World," he began in English, pausing to permit accurate translation of his words. " I have come across the greatest sea of them all. I have come not at the head of an armed

flotilla, but alone and defenseless. I have come in peace and in friendship, to extend the hand of welcome from one civilization to another."

There was spontaneous applause from the assembled diplomats.

"It is time," he went on with greater confidence, "that you put your differences aside and take your rightful place in the family of the worlds. War must be a thing of the past, so that we may all march forward side by side down the long corridors of Destiny. On all the planets of a million suns, there is no stronger might than friendship, no finer aspiration than the harmony of strong men."

More applause.

He talked for over an hour in the same vein, and finally concluded: "Be proud of your great world, and yet know humility, too. I have come to say something good about the human race, and to hold out to you the torch of confidence and faith. Remember my visit well in the years that are to come, and I pray that you are today all my friends, even as I am yours."

He brought the house down.

Everyone seemed satisfied.

Several days passed before a few people began to wonder about the speech they had heard. What, they asked themselves, had Keith really said beyond glittering generalities and vague sentiments about friendship?

Most people, having never heard any other kind of speech, continued to accept it as a masterpiece.

Keith was troubled and nervous, and locked himself up in his suite. He worked with almost desperate haste on his notebooks, going over even the most trivial phrase again and again. He refused to see anyone, pleading that he had an urgent report to prepare for his government.

When he did leave, much to the consternation of the secret service, he simply disappeared. The last person to see him was a paper boy at a busy intersection. He swore to investigators that Keith had paused at his stand and bought a paper, muttering to himself what sounded like, "God I just can't go through with this any longer."

There the matter rested.

Keith reappeared somewhat furtively several days later on the third floor of the Social Sciences Building of Western University in Los Angeles. He had dyed his hair black, and he walked quickly down the hall past the Anthropology Museum and stopped at a closed office door. A white card on the door had a name and title typed on it: *Dr. George Alan Coles, Professor of Linguistics.* He took a deep breath and knocked.

"Come in!"

Keith walked inside and shut the door behind him.

"Are you Dr. Coles?"

"I have that dubious distinction, yes." The man behind the desk was slightly built and his rimless glasses were almost hidden behind the fumes from a virulent black cigar. "What can I do for you?"

Keith took the plunge. He had tried to follow his instructions to the letter, but the strain had told on him. There came a time when a man had to act for himself. "Dr. Coles, I'm in terrible trouble."

Coles lowered the cigar and looked more closely at the young man before him. He arched his rather bushy eyebrows. "Dyed your hair didn't you?"

"I didn't know it was that obvious."

Coles shrugged. "Keith, I've seen your picture in my morning paper every day for what seems to be a lifetime. I can't claim to be any Sherlock Holmes, but I've patterned my existence on the assumption that I'm not feebleminded."

Keith sank into a chair. "I was going to tell you anyway, sir."

"Look here, young man." Coles waved his cigar. "You really can't stay here. About half a billion people are looking for you, at last count, and if the Board of Regents stumbles over you in my office—"

Keith lit a cigarette and wiped his hands on his trousers. The circles under his eyes were more pronounced than usual, and he was in need of a shave. "Sir, I'm desperate. I've come to you as one man to another. You're my last hope. Won't *you* listen to me?"

Coles chewed on his cigar. He took off his rimless glasses and polished them on a Kleenex. "Lock the door," he said finally. "I'll hear you out, but I'll hate myself in the morning."

A ray of what might have been hope touched Keith's face. He hurriedly locked the office door.

"Cards on the table now, young man. What the hell is going on here?"

"Believe me, sir, this is all damnably embarrassing."

"As the actress said to the Bishop," Coles said, knocking off the ash from his cigar.

Keith took a deep drag on his cigarette. "My people will be coming for me very soon," he said. "I got a message off to them when I crashed. If they could have only got here sooner, this whole mess would never have happened."

"That's Greek to me, son. I had hoped you might be able to make more sense in person than you did at the United Nations."

Keith flushed. "Look," he said. "There's nothing complicated about it, really. You just don't have the picture yet. You'll have to toss out all your preconceived notions to begin with."

"Haven't got any," Coles assured him.

"Here's the first thing, then. There *is* no galactic civilization. I'm not the representative of anything."

Coles blew a small cloud of smoke at the ceiling and said nothing.

Keith talked fast, anxious to get it all out. "I landed in Los Angeles by accident; you know that. I'd hoped to come down in the Arizona desert, where no one would see me and I could go about my business in peace. But, dammit, I was spotted right away, and from then on I never had a chance. I had strict instructions about what to do if I was discovered by the natives—that is, by the citizens of Earth—"

"Just a second." Coles crushed out his cigar. "I thought you said there *wasn't* any galactic civilization."

"There is a civilization out there, sure, if you want to call it that," Keith said impatiently. "But not that *kind* of a civilization. There are hundreds of thousands of inhabited worlds in this galaxy alone. Don't you see what that means, just in terms of your own science?"

"Well, the notion did pop into my cerebrum that the communications problem would be a tough nut to crack. I admit I did wonder a little about this mammoth civilization of yours. I couldn't quite figure how it could *work*."

"It *doesn't* work. There's some contact between us, but not a lot. Why, one whole planet couldn't hold the government officials for a set-up like that! There isn't any uniform government. War isn't very popular except for would-be suicides, so each of us goes pretty much our own way. The plain fact is—excuse me, Dr. Coles—that we don't really give a hoot in hell about the planet Earth. The last time one of us visited you, so far as I know, was in 974 A.D., and I expect it'll be a few more centuries before anyone comes again."

"Ummm." Dr. Coles prepared another cigar and stuck it in his mouth. "I believe your speech mentioned the hand of friendship clasping ours across the great sea of space—"

"I'm sorry." Keith flushed again. "I did have to say all that hokum, but it wasn't *my* idea."

"I'm glad to hear it, frankly. I'd hate to think that our friends out in the stars would be as tedious as all that."

"All I did was to be agreeable!" Keith shifted on his chair and rubbed his eyes. "Our instructions are very explicit on that point: if you get found out in a primitive culture, play along with them and stay out of trouble. If they think you're a god, be a god. If they think you're a fraud, be a fraud. You know—when in Rome, and all that. I tried to be what I was expected to be, that's all."

Coles smiled a little. "Once we found out you were a spaceman you were cooked, hey?"

" Exactly ! I not only was a spaceman but I had to be *their* kind of a spaceman. They couldn't even consider any other kind. I never had a chance—it got to the point where I was either the emissary from a benevolent super-civilization peopled by fatherly geniuses or I was some kind of monster come to destroy the Earth ! What could I do ? I didn't want to cause any trouble, and I didn't want to go to jail. What would you have done ?"

Coles shrugged and lit his cigar.

" I haven't handled things very well," Keith said nervously. " I've botched it all. It was rough learning English from radio broadcasts—you can imagine—and now everything is ruined."

" Let's start at the beginning, young man. What the devil *are* you anyhow ? An anthropologist from the stars doing an ethnological study of poor, primitive Earth ?"

" No." Keith got to his feet and paced the floor. " I mentioned a previous visit by a student in 974 ? Well, I wanted to follow it up. I'm studying the vowel-shift from Old English to the present. We'd predicted a shift of the long vowels upwards and into dipthongal types. I'm happy to say I've been able to confirm this, at least roughly."

Coles put down his cigar. " You're a linguist, then ?"

Keith looked at the floor. " I had hoped to be. I'll be honest with you, sir. I'm still a graduate student. I'm working on what you'd call a Ph.D. I came here to do a field study, but my notes are hopelessly incomplete. I'll never be able to get another research grant—"

Dr. George Alan Coles put his head in his hands and began to laugh. He had a big laugh for such a small man. He laughed so hard the tears streaked his glasses and he had to take them off. He had the best laugh he had had in years.

" I guess this is all very amusing to you, sir," Keith said. " But I've come to you for help. If you just want to laugh at me—"

" Sorry, Keith." Coles blew his nose, loudly. " I was laughing at us, not at you. We've built ourselves up for a huge anticlimax, and I must say it's typical."

Keith sat down, somewhat mollified. " Can you help me ? *Will* you help me ? I'm ashamed to ask, but my whole lifework may depend on this thing. You just don't know."

Coles smiled. " I do know, I'm afraid. I was a graduate student once myself. How much time do we have ?"

" Three days. If you can help me, just give me a hand this once—"

" Easy does it." Coles got to his feet and went over to a section of the metal bookcases that lined his walls. " Let's see, Keith. I've got Bloomfield's *Language* here; that's got a lot of the data you'll need in it. We'll start with that. And I've got some more stuff at home that should come in handy."

Keith wiped his forehead, his eyes shining.

He had learned many words in English, but somehow none of them seemed adequate to express his thanks.

Three nights later it was clear and unseasonally warm. The two men drove up Bel-Air Road in Coles's Chevrolet, turned out the lights, and parked on the bluff.

Silently, they unloaded a crate of books and journals and started down the winding asphalt trail to the house where Frank Evans lived.

"We'll have to sneak along the back of their house," Keith whispered "If we can just get out past that patio we'll be okay."

"Shouldn't be difficult," Coles panted, shifting the crate. "I don't think they could hear a cobalt bomb with all that racket."

The hi-fi set was going full blast as usual. Keith winced.

They made it undetected, and proceeded along the dark path under the orange trees. They went fifty yards, until they could see the brush scar where Keith's ship had crashed.

Coles looked at his watch. "Five minutes, I figure," he said.

They sat on the crate, breathing hard.

"Dr. Coles, I don't know how to thank you," Keith said quietly.

"I've enjoyed knowing you, Keith. It isn't every professor who can draw students from so far away."

Keith laughed. "Well, if they ever figure out how that ship of mine works maybe you can send a student to me sometime."

"We'll both be long dead by then, but it's an intriguing idea anyhow."

Exactly on schedule, a large sphere, almost invisible in the night, settled into the hillside next to them. A panel hissed open and yellow light spilled out.

"Good-bye, sir."

"So long, Keith. Good luck to you."

The two men shook hands.

Keith lifted the crate into the sphere and climbed in after it. He waved and the panel closed behind him. Soundlessly, the sphere lifted from the Earth, toward the ship that waited far above.

Coles worked his way silently back along the path to the house, and up the asphalt trail to his car. He paused a moment, catching his breath. As Keith had done before him, he looked down on the great city glittering in the distance. Then he looked up. A blaze of stars burned in the sky, and they seemed closer now, and warmer.

He smiled a little and drove back down the hill, into his city.

Chad Oliver

Once again we have pleasure in devoting space to the announcement of this year's International Award, discussed by our book critic, Leslie Flood, who is also Secretary of the I.F.A. Committee

INTERNATIONAL FANTASY AWARD 1955

By Leslie Flood

Looking back over 1954's output of hard-cover science fiction books, the selection of suitable candidates to be judged for the 1955 International Fantasy Award proved to be a far less rewarding task for the I.F.A. Committee than in previous years. The quantity of original novels had decreased, and more significantly, the number of outstanding stories could be counted on the fingers of two hands. Reprints are, by rule, excluded, also anthologies and paper-covered editions. Even the greatly increased issue from British publishers did not help, since most of the better ones were reprints of American novels which had been considered for earlier Awards, or were included among the 1954 candidates for the same reason. An interesting point here is that, of the final list of 42 books under survey, 4 had been published both in America and Great Britain during the same year, whilst two of the British titles have appeared in America so far in 1955 and no less than 14 of the American books either have been published already during 1955 so far or are scheduled for early publication.

Since its inception the I.F.A. Trophies have been awarded outright to George Stewart for *Earth Abides* (1951), John Collier for *Fancies And Goodnights* (1952), Clifford Simak for *City* (1953), and Theodore Sturgeon for *More Than Human* (1954), thus revealing a tendency for the books so honoured to be those which not only received great critical acclaim but which were successful with both science fiction enthusiasts and the wider reading public. The reason for this is readily apparent. Imaginative concepts are insufficient in themselves, and scientific gadgetry, unless supported by strong characterisation,

plausible plotting and above all, good story-telling, can appeal to no one but those science fiction fanatics who relish any stale, badly written pot-boiler with the desperation of a dope addict—as long as it has a space-ship or two, a monster threatening a beautiful heroine and some trite slam-bang action. The science fiction field in general has suffered from this limitation, and it is fairly obvious that editors and publishers have come to realise that their readership is not satisfactorily expanding and has perhaps reached a saturation point with sales figures insufficient to ensure a healthy permanence.

Happily there are exceptions. The annual anthologies prove that there is an upper level of science fiction authors who can write good short stories for the magazines, and there are enough outstanding novels each year to maintain the faith of those who believe in science-fiction's future. As in other media of entertainment—and the prime objective of a story-teller is to provide entertainment—the average moronic level of mass-culture is occasionally surmounted to help maintain standards of comparison (a matter of importance, except to the cynic, if only for historical development). And surely literary quality is the bootstrap by which the specialised medium of science fiction must raise itself from its present suspect position into the mainstream of respected literature ? H. G. Wells' scientific romances showed the way. Let us admire and encourage those who follow in his steps.

Thus with the objects of the International Fantasy Award in mind, the panel of fourteen judges from America, England and France, including such noted critics as August Derleth (for the *Chicago Sun*), J. Francis McComas (for the *New York Times*), Tony Boucher (for the *New York Herald-Tribune* and as editor of *Magazine of Fantasy*), Georges Gallet (of *Le Rayon Fantastique*), P. Schuyler Miller (for *Astounding Science Fiction*), Groff Conklin (for *Galaxy Science Fiction*), and John Carnell (editor of *New Worlds*) to name but a few, have selected their five choices in order of preference, and by a points system of voting, the Committee has chosen as winner of the 1955 Award a book which is well in the tradition of previous winners.

This is A Mirror For Observers by Edgar Pangborn, first published in America by Doubleday & Co., Inc., and recently published in England by Frederick Muller Ltd. Mr. Pangborn is a native New Yorker, late of Harvard University and the New England Conservatory of Music. He suddenly switched from composition to creative writing and is now launched upon a successful science fiction career. This is only his second published book although there are many short stories to his credit, one of which won the Special Award of Merit

from *Ellery Queen's Mystery Magazine* in 1951. His first novel, *West Of The Sun* (Doubleday, and Robert Hale) was very well received, but **A Mirror For Observers** is a brilliant and enthralling piece of craftsmanship which was easily voted with a big lead in points as the finest science-fantasy novel of the year. Mr. Pangborn will be presented in due course with the customary Award Trophy consisting of a classic model spaceship, chromium-plated and mounted on a suitably inscribed oak plinth together with a cigarette lighter. For once I feel the design could have been aptly altered into a bronze mirror.

The runners-up were bunched pretty closely together far behind the winner. Although widely varied in theme and style, all have in common the grace of good writing, interesting story-telling and attention to recognizable human behaviourism reacting to the varied circumstances of the authors' imaginations. In second place, to receive the Certificate of Merit, was Hal Clement's **Mission Of Gravity**—a marked success for the purist science-fiction style—which was also published in America by Doubleday, and in England by Robert Hale. Tieing for third place were our own J. T. McIntosh's **One In Three Hundred** (again by Doubleday, and due next year from Museum Press) and Isaac Asimov's **The Caves Of Steel** (yet again by Doubleday, a remarkable achievement, and by T. V. Boardman & Co., Ltd., in England). Fourthly came Robert Sheckley's fascinating collection of short stories *Untouched By Human Hands* (published by Ballantine Books Inc., in America, and due soon from Michael Joseph over here). Jointly in fifth place were Poul Anderson's *Brainwave* (again Ballantine and Michael Joseph) together with Shepherd Mead's satiric *Big Ball Of Wax* (Simon & Schuster in the U.S.A. and due from Boardman later this year). Last for particular mention came Chad Oliver's novel *Shadows In The Sun* (published by Ballantine and announced for September by Max Reinhardt Ltd., in England).

One of the names which cropped up favourably in the judges' reports were J. R. R. Tolkien's monumental fantasy *The Lord Of The Rings*. However as this is being published in three parts, of which only the first two books, " The Fellowship of the Ring " and " The Two Towers " have been issued so far, it was decided to postpone entry until the trilogy is complete and to consider it for a later Award.

Gratified that my own choice *A Mirror For Observers* achieved the success I felt it deserved, I am now looking forward to the 1956 Award for which there are already some strong contenders. My eye is on John Wyndham and Arthur Clarke, but perhaps Sturgeon will bring it off again. Or could it be Ray Bradbury at last ? Whatever the result I hope 1955 will provide you with much good science fiction reading.

Leslie Flood

Dan Morgan's return to our pages is by way of quite a powerful story—when the planets and possibly the nearer star-systems are finally opened up for Mankind the power behind the conquests will not necessarily be the men and ships making the trips—but the political and economic combines who will never leave Earth.

LIFE AGENCY

By Dan Morgan

Illustrated by QUINN

. . . All negotiations of a diplomatic or commercial nature with such alien races as may in the future be discovered, shall be under the control or supervision of this organisation. It may thus be possible to reduce to a minimum the friction which must inevitably result through the impingement of alien cultures, and avoid a repetition on an interplanetary scale of the almost suicidal blunders which were made before the unification of our own planet.

The organisation shall be known as the Extra Terrestrial Relations Agency . . .

43rd Amendment. The Constitution of the Federated States of Earth.

I.

Rodell slammed the card down on the desk of the Embarkation Officer.

" What's the idea of this ? My passage through to Venus was booked by ETRA central office before I left Earth. I've been waiting here on Satellite One for two days—and now you send me notification that my berth has been cancelled." He placed both hands on the desk and leaned forward, a taut, coiled spring of a man, with angry grey eyes.

The blue uniformed captain looked up at him with a mildly apologetic smile. " I'm sorry, Mr. Rodell, but that's the way it is. The *Vashtar* is a corporation ship and I have received instructions from Earth that all berths aboard her are required for a batch of mining engineers who will be disembarking this morning."

Rodell clenched his fists.

" But this trip is official ETRA business," he said sharply.

" I'd like to help you, Mr. Rodell," said the captain. The smile was disarming. " But it's out of my hands. Maybe your Earth office could do something . . . contact the corporation . . ." He picked up a printed sheet and looked at it. " There's another ship in a week's time . . . Would you like me to see what I can do for you ?"

" You expect me to hang around on this damned doughnut for another week !" exploded Rodell.

" Look, let's not kid ourselves, Mr. Rodell," said the captain icily, his smile fading. " The corporation owns the ships on the Venus run, and those berths are needed for men doing an important and dangerous job."

Rodell suppressed his anger, there was no point in further argument.

" When is the next Earthbound ferry ?" he asked.

Rodell walked into the Director's office, wearing his resentment like a badge. Brogan heaved his great bulk out of the chair, heavy black eyebrows writhing like caterpillars on his pale, bald head.

" What kind of a tin pot organisation are you running here, anyway?" said Rodell, his anger simmering dangerously.

" I'm sorry you had to run up against this sort of thing so soon," said Brogan. He motioned the younger man to a chair. " It has happened before, of course—it's just unfortunate that this was your first trip out. I wanted you to have some experience of our field work, as you'd just joined the agency, but it's not important . . . Your main work will be on Earth. We'll consider the trip cancelled indefinitely."


GERARD

" But surely you're not going to allow the corporation to interfere with the workings of ETRA ?" said Rodell. " It's intolerable that commercial interests should be allowed to block government departments in this way."

Brogan smiled. " I seem to remember that you got yourself an Irishman's rise from the State Department for asking a very similar question. I could put through a complaint at a high level . . . and maybe get you a berth on the next ship. But I'm not going to."

Brogan's expression hardened. " I'm not running a crusade here, Rodell. People have been trying to break the corporations for years, but that's not our job. ETRA can afford to stand by and wait for the commercial colossus to collapse under its own weight."

Rodell leaned forward, the muscles of his face twitching. " Look, Mr. Brogan, I'm no menagerie keeper. My interest in wild life, terrestrial or otherwise, is nil. Maybe I was wrong when I accepted your offer. Any law office in this city would be pleased to have a man with my experience. Let's take it that we both made a mistake and forget the whole thing."

Brogan grinned expansively.

" Who are you trying to kid, son ? I know the State Department . . . and Henry Thompson. The people behind him will see that you don't get a second chance. As far as you're concerned ETRA is the end of the line."

The man's brutal, cold turkey manner sobered Rodell. " All right —so I'm stuck with you and your interplanetary zoo . . ." he said bitterly. " But haven't you yourself realised yet that ETRA was a good idea that went wrong ? The diplomatic corps of space—what does that mean when the only alien races we have to deal with are a few million Armadilloes on Mars and a mixed bag of prehistoric marine life on Venus ?"

" Don't pretend to be stupid, Rodell, it doesn't become you," said Brogan. " Some day, somewhere we shall contact an intelligent alien race—when that day comes ETRA will fulfil the purpose for which it was originally intended. It's my job, and yours when you succeed me, to ensure that the agency is still in existence at that time."

" That could be a pretty long term assignment," said Rodell.

" Not necessarily," said Brogan. " The *Astraventurer* expedition should be on its way back from Centaurus now. We have no way of telling what they may have found there."

" And if Centaurus is the same story as Mars and Venus ?" said Rodell. " Perhaps man is, after all, the only intelligent life form in the universe . . . just one lone freak of evolution."

Brogan's huge shoulders sagged. "I can't . . . I won't, believe that. Even if they do draw a blank on Centaurus, it will not prove anything. Think of the billions of other star systems waiting to be explored—this is only the beginning." He was pleading for his dream, his eyes on the younger man. "I want you to stick with it, Rodell."

Rodell smiled. It was impossible to maintain his anger in the face of Brogan's sincerity.

"Thanks for not letting me talk myself out of another job," he said.

II.

For the fiftieth time Senator Miller stopped pacing the polished floor and lowered himself into a chair. The lines of strain were etched deep on his grey moustached, fleshy face. The antiseptic stench of the hospital oozed into his nostrils and seemed to choke him. He ran his fingers through his close-cropped hair.

He was on his feet instantaneously as he heard the click of a door opening along the corridor. He rushed to meet the white-smocked surgeon who was walking slowly towards him. His stomach lurched as he blurted out the question that had been hammering in his mind for the last two hours.

"What happened—is she all right?"

The surgeon, veteran of a thousand such encounters, looked at him with cool grey eyes.

"Your daughter is dead, Senator . . . We did everything we could, but the child was a non-viable monster . . . a mutation."

Miller turned without another word. His eyes were blurred as he staggered along the corridor, suddenly a very old man. Margaret . . . dead!

Dead because she had married a space man who carried the poison of twisted genes in his loins. A mad, romantic looking young fool who had captured her heart . . . and brought her to this. Twenty-five years of parenthood and growing devotion . . . ended in futile death on an operating table. And the man who was responsible was somewhere out beyond Mars—one of the *heroes* of space.

Miller pulled the ethergram out of his pocket and crumpled it viciously, symbolically crushing its sender. It would have helped to have run madly along the corridor screaming his hate at the man who had caused this thing. He thrust the thought from him and flung the ball of paper to the floor.

His private copter was waiting on the roof park of the hospital. The pilot looked round, sensing the situation, as the old man stepped aboard carrying his desolation like a heavy burden.

" Where to, sir ?" he asked quietly.

" The Senate Building," said Miller, jerking himself erect in the seat. His face was a pale mask of suffering.

Henry Thompson, Secretary of State to the World Federation, rose from his desk and walked to meet Miller as he entered the office. He was a small, delicate looking man in exquisitely tailored black clothes. His pale, neatly manicured hands fluttered in a characteristic gesture as he approached.

" My dear fellow. I heard the news a few moments ago. What can I say ?" He waved Miller to a chair. " Do sit down."

The muscles of Miller's heavy features writhed as he sat staring unseeingly out of the window at the placid gardens of Government Square. *Margaret was dead . . .*

Thompson stood for a moment with a birdlike expectancy, a sympathetic expression frozen on his thin features. Miller turned and looked at him with red rimmed eyes.

" We've known each other a long time, Henry," said the old man. " I don't remember which of us owes the other a favour, but I want you to do something for me. I need your power to help me push through a piece of legislation. I did some research when Margaret was nearing the end of her term to find out what the odds were. Do you realise that this horrible thing happens to over seventy per cent of the wives of spacemen ?

" There's only one way to prevent this suffering and we owe it to the people to take action now. We must put through a Bill that will make the sterilisation of all spacemen compulsory."

Thompson's eyebrows rose slightly, but the expression of sympathy remained.

" You're still suffering from the shock of this thing, James," he said quietly. " You, of all people, should know that a thing like that takes time. Wait a while . . . think about it."

" I did my thinking beforehand," grated Miller. " Months before the crucial time arrived, I vowed that if anything happened to Margaret I would do this much to help those wretched women."

Thompson leaned forward interlacing his fingers. " My dear fellow, where would we get spacemen if a law like that was passed ? The flower of our race volunteer to man the ships, but would it remain so if it entailed the deprivation of their manhood ? The psychological effect of such a measure would be disastrous—it would mean the end of interplanetary travel."

" You mean it would be bad for the corporations !" A red flush suffused Miller's features. " Nobody to do the dirty work and fill their pockets with the plundered wealth of the Solar system."

Thompson moved round to the other side of the desk and seated himself slowly. He puckered his eyebrows as he looked at the old man in pained bewilderment.

" Really, James, you're talking like a radical. After all, you've not been above taking some of that tainted money yourself in the past. I sympathise with you in your loss, but don't let it blind you to the facts. You must realise that the whole economy of Earth today is based on the importation of raw materials from space. Without men to pilot the ships the whole system would collapse. Don't you realise what you're asking ?"

" I'm not asking it for myself, God knows !" said Miller angrily. " The way I see it, you and the people you represent are willing to perpetuate this human suffering rather than sacrifice your greed for wealth and power." He stood up abruptly. " I shall put through this bill—with or without your help."

" Are you sure you mean that ?" said Thompson quietly.

" You . . or the corporation—you can't touch me now," said Miller. " Everything I had is gone . . . dead. I've nothing more to lose." He realised that he was signing his political death warrant, but that was not important beside what he intended to do.

Thompson watched him leave, a quiet smile on his thin face. The next stage in the game was too big to allow him to worry over such trifles. The old fool would be crushed like an insect by the political machine he intended to oppose.

III.

The cafe was just off Government Square. A cosy little bohemian place where the minor officials of the Senate building spent their leisure hours. A feeling of nostalgia swept over Rodell as he remembered that he was no longer part of that particular rat race. He nodded to several acquaintances and former associates as he walked over to a vacant stool at the corner of the bar.

He ordered a drink and sipped it quietly, letting the familiar murmur of conversation flow around him. He caught Lizbet Benedict's eye as she came through the door and she walked over towards him, smiling.

She was blonde and tall, with jewel-rimmed spectacles—and she gave him a warm feeling. The spectacles were necessary; with them, she looked like a beautiful woman who had been played a dirty trick by nature—but without them she was . . . plain.

" Well, if it isn't Mr. Noah himself," she said sitting beside him. " How's the zoo business ? What happened to those chips on your

shoulders—you look almost integrated ? Don't tell me the ex-state Department's wonder boy has finally settled down in his new job."

Rodell ordered a drink for the girl. " Funnily enough, I think I'm going to like working for ETRA," he said. " That Brogan is one helluva a guy—it's taken me the past couple of weeks to realise what a wonderful organisation he has there."

Lizbet eyed him wickedly over her glass. " And those dear little Armadilloes," she cooed. " Do they let you keep one for your very own, personal pet ?"

" Of course," said Rodell. " Maybe I could get one for you—you'd have a lot in common. What's new at the seat of government ?"

" Mainly a soporific debate on Hydroponics appropriations," said Lizbet. She leaned closer to him and dropped her voice. " Incidentally don't get too attached to that new job of yours—there's something in the wind. The Carmichael group tabled a motion today demanding an investigation into ETRA expenditure. That wonderful organisation of your Mr. Brogan's seems to be costing too much money."

Rodell stared into his glass thoughtfully. ETRA had served a useful purpose in the past, if only in its function as a political exile colony. He wondered what deeper meaning lay behind the move.

" And that stooge you stooge for how does he feel about this ?" he asked.

A shadow passed over Liz's face. " Things are not going so good for Senator James Miller," she said. " I'm even beginning to feel sorry for the old buzzard. You remember his daughter, the one that married that freighter pilot on the Martian run, despite his opposition? She died four days ago in childbirth."

Rodell lit a cigarette and offered one to Lizbet. " What was it—the usual thing ? Why don't these young fools consider that side of it before they rush into marriage ?"

Lizbet inhaled deeply as he held out a light, and said: " She was a woman, Clark, and women aren't practical about things like that. I talked to Margaret before she married the guy but she was convinced that somehow with them it would turn out differently. The shock of losing her seems to have sent the old man a bit off centre and he's not been near the debating chamber since then. Every time I go into his office he's sitting there surrounded by charts and sheets of statistics on mutation births. Margaret was all he had in the world, you know."

" Tough," said Rodell flatly. Lizbet looked at him resentfully and they sat for a moment in silence.

" Hi there, people ! Can't keep away from the old barnyard eh, Clark ?" said a fruity voice. Rodell turned, glad of the interruption.

Dave Clay was a thick-set, barrel-chested little man with a ruddy, good natured face. Approaching baldness had left him with something resembling a monk's tonsure, the fair hair that remained stuck out over his ears like an unruly halo. Rodell had known Clay, the Senate correspondent of the *Central City Times*, for a number of years—long enough to appreciate the astute mind that lurked behind the bucolic exterior.

" Sit down, Dave," he said smiling. " What are you drinking ?"

" Why should I be an acrobat ?" said Clay. " Those stools are a bit high for me. Come over to the corner booth and have a drink in comfort." Lizbet and Rodell followed the chunky figure over to the vacant table.

Clay insisted on paying for the drinks. When the waiter had gone, he leaned over the table towards Rodell.

" I expect Laughing Water, here, has told you what's going on in the hot-air department. If I were you, boy, I'd mug up on a few snappy answers. If Carmichael and his mob push this through, there'll be a Senate Investigation Committee—and you know what that means—the usual three ring circus with Tri-Di cameras and an audience of crucifixion-minded citizens.

" But maybe you know what's behind it ? I caught a whisper that there's something big going on in the corporation group, but all my usual sources either don't know what it is, or they're too scared to talk."

" Sorry, Dave, you'll have to dig somewhere else for your copy," grinned Rodell. " I'm as much in the dark as you are, but if it comes to a public hearing, I'd back Brogan against those Senate yes-men any day of the week."

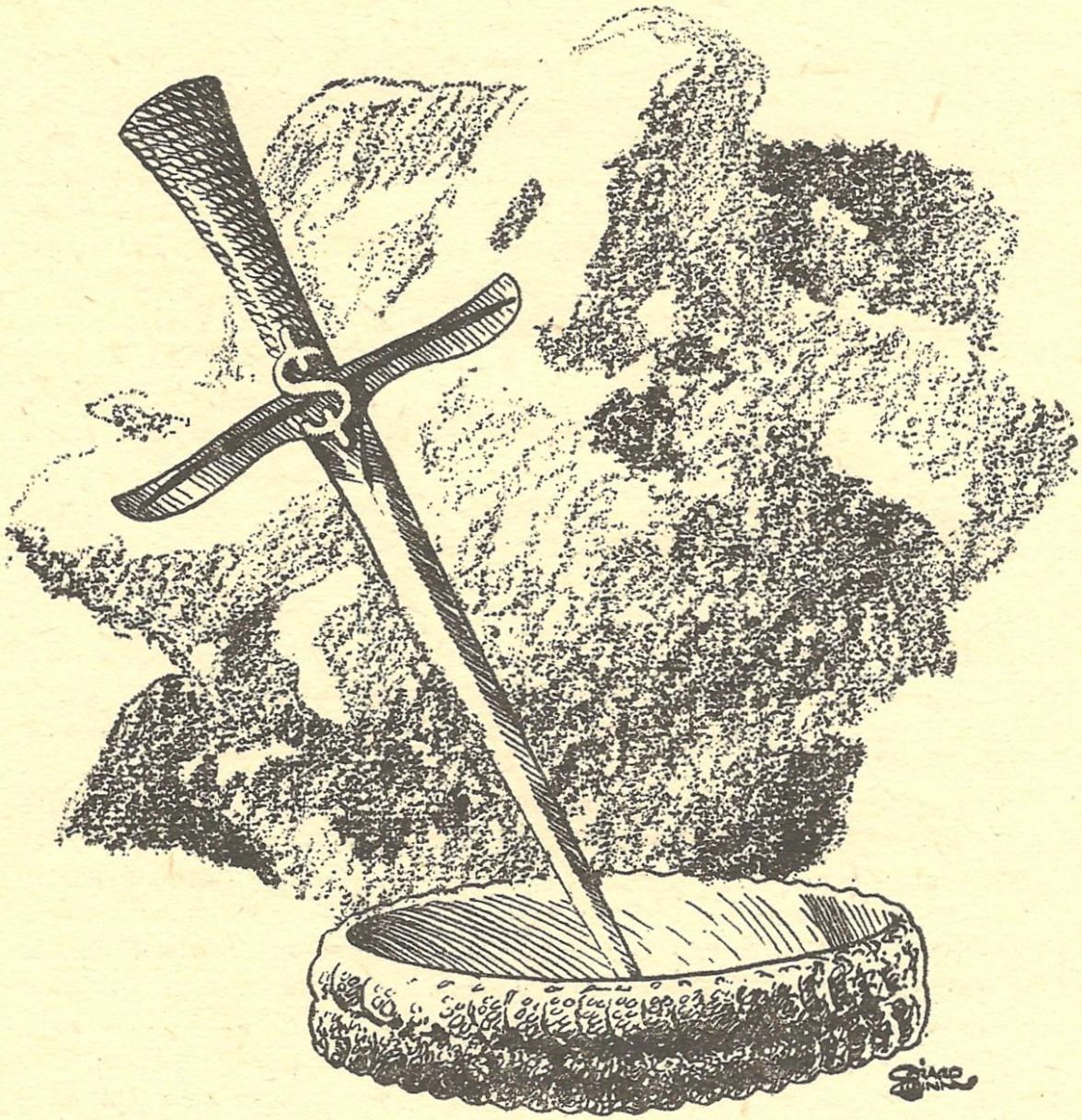
" He's inclined to make a one man show of anything he runs, but Brogan is a good man," agreed Clay. " What I want to know is—why have they suddenly decided to move against ETRA ? Hell, we've all known for many years that the agency is a waste of government money, but nobody's kicked about it before."

Rodell lowered his eyes to the table top, frowning. Clay was merely echoing the questions that were pounding in his own mind.

" Really, Dave, you shouldn't talk that way," said Lizbet. " Buster is now an ETRA man right down to his sheer nylon underwear. Look —you've offended him."

Rodell looked up to return the crack. He stopped as the waiter approached and tugged at Clay's sleeve, " You're wanted on the phone, Mr. Clay."

The little man jumped to his feet and walked quickly out of the room. Lizbet took off her spectacles and peered at Rodell short-sightedly. Her expression was serious.



"Why did you have to get into this thing, Clark? If you'd kept your big mouth shut, you had a fine job there in the State Department."

"We've been through all this before," said Rodell resentfully. "Knock it off, huh?"

A moment later the newspaper man was back. He leaned over Rodell and said: "I just had a call from the office that there's something cooking over at the ETRA building. I thought you'd like to know."

Rodell rose. "Are you going there now?"

Clay nodded.

"Right," said Rodell. "I'll come along with you."

"What did I tell you?" said Lizbet as they turned away. "Right down to the epidermis, in fact. I'll stick around here and see if I can pick up a boy friend with less principles and more interest in the important things of life."

IV.

The great, grey-clad body of George Brogan lay on the maroon carpet like a stranded whale. A Medic was replacing his instruments in a black carrying case with an air of finality. A few feet away, Eysenck, the head of the Martian department, was perched on the edge of the big desk. He looked up as Rodell and Clay entered, toying nervously with a jewelled ring on his third finger.

" What happened ?" said Rodell. " Who found him ?"

The dislike in Eysenck's brown eyes was obvious.

" I came in here about ten minutes ago," he replied. " Brogan was lying face downwards. Must have been his heart, I suppose. We've been half expecting something like this for a long time."

Rodell looked at the body again and noticed a small pile of shattered glass beside it on the carpet.

" What's that ?" he said, pointing.

The Medic looked round. " He must have been holding a glass as he fell. It was crushed under him as he hit the floor."

Dave Clay was bending down, examining the body closely.

" Well, I suppose that puts you in charge," said Eysenck. " The Director is dead—long live the Director. Any orders . . . sir ?"

Not for the first time, Rodell realised that Eysenck looked upon him as an interloper who had been brought into the agency and promoted over the head of more experienced men like himself.

Two white-coated orderlies entered with a stretcher. They lifted the elephantine body and placed a white sheet over it. Clay watched the operation keenly, a sombre expression on his usually good natured face.

Although it went against his grain, Rodell decided to placate Eysenck. Now that he was in charge he would have to bear the main force of the Senate investigation—he would need the loyalty of his staff if he was to succeed.

" I have no intention of attempting to tell you your job, Eysenck. Just carry on as before. There'll be a lot of cleaning up to do at this end—George Brogan is not an easy man to follow. I hope the departments will be able to run themselves for a while."

The corners of Eysenck's thin mouth rose slightly.

" I appreciate your confidence," he said. With a slight bow, he turned and walked out of the room.

The Medic lifted his carrying case and was about to follow as Dave Clay walked over.

" Excuse me, Doctor. Can you give me some details on the cause of death ?"

The Medic stopped and looked at the chunky little man sharply. "Who are you?" he asked.

"Clay, *Central City Times*, we like to get these things straight, you know."

The Medic gave a smile that was more an effort of will than a sign of good humour. "Yes . . . of course. I'm Jones of Northboro Clinic. I shall make out the certificate as heart failure. Mr. Brogan was a difficult patient, I understand he had been warned of the chance of something like this happening. He was grossly overweight—perhaps in the Lunar City San he would have been still alive, but here . . ." He shrugged.

"Thanks a lot, Doctor Jones," said Clay. The Medic hurried out of the room and closed the door behind him. Rodell and Clay were now alone.

Clay walked over to the window and stood looking down onto the street. Summer dusk was creeping softly over the city. His stubby fingers scratched at his already ruffled halo of hair.

"I don't think Brogan expected to go quite so soon," said Rodell. "And I for one wish he hadn't."

"Not quite in this way, either," said Clay, turning. "In case you haven't realised it yet—your boss was murdered!"

Rodell looked at the newsman with annoyance.

"This is a hell of a time to be joking," he said.

"This is no boffola," said Clay quietly. "You saw that broken glass Brogan had fallen on. He must have been holding it in his hand at the time of his death. There were several cuts on the palm of his right hand and a gash about half an inch deep in his wrist." He pointed to the shards of glass. "Take a look, a close one, at the carpet in that area—and tell me if you can see any blood stains."

"What are you driving at? Dead men don't bleed."

"I don't mean a pool of the darned stuff, but there should have been some seepage," said Clay. "I looked closely at the wounds—they were like slices in a piece of kosher beef—not the *slightest sign* of blood. Normally, even if he had been cut at the moment of death, there should have been a certain amount. My guess is that Brogan was killed by a hypersonic beam—the vibrations coagulating his blood instantaneously. Whoever is out to smash ETRA hadn't time to wait for him to die of natural causes—and I'll give you one swift guess who that is . . ."

Rodell looked at Clay in silence for a full minute, then he said: "If you're right, I'd better call the police."

"Hell no!" said the little man in alarm. "What would be the point in that? Doctors, police . . . they can all be fixed if you've got the

right kind of pull, and money. That body will be in the crematorium within thirty minutes and there's not a damned thing either of us can do about it. The best thing you can do is to play dumb and forget about the whole thing. As far as I'm concerned, this is a death by natural causes—and that's the way it will go in print—I'm just telling you what the score is, as a friend." He walked out of the room hurriedly.

Rodell watched the door close, sickened by the knowledge that the newspaperman was right. That was the way it had to be. To announce that Brogan had been murdered would probably mean his own removal at this crucial moment of ETRA's history. The only way to avenge Brogan was to ensure that the agency lived.

The desk visorphone buzzed. Rodell flipped the switch. The sharp features of Henry Thompson appeared in miniature on the small screen.

" My dear, Rodell," said the Secretary of State unctuously. " I just heard about George Brogan—charming fellow—knew him many years. He'll be a hard man to replace—do you think you will be able to manage ?"

" I'll get by," said Rodell ungraciously. " He was training me for this."

" Good !" said Thompson with a smile. His eyes narrowed a trifle. " I think you will. We've missed you, here at the department. Confidentially, dear boy, I'm beginning to feel that I may have misjudged you."

" That's all finished," said Rodell, thinking it must have cost Thompson's pride a great deal to make the last remark. " I made my move."

" Of course, of course," said Thompson. " But bear it in mind, my boy—and if there's anything I can help you with, don't hesitate to call. Goodbye." The image faded.

Rodell shrugged off an impulse to spit and started to leaf through Brogan's appointment pad.

V.

For the first time in many years, Senator James Miller had the comfortable feeling that he was doing a worthwhile job. Through the conviction that, for once, he was on the side of the angels he found himself almost able to ignore the gaping wound that had been left by the death of Margaret. He was now a man with a mission, untrammelled by the nagging doubts of a corrupt politician.

In consequence of this his public speeches and video appearances were catching the imagination of the people. The first draft of the Miller Bill was beginning to take shape. There was some opposition, naturally,

but he was confident that the majority of earthbound people were in favour of it. Pushing the bill through the Senate was another matter, of course, but even the corporations could not ignore the weight of public opinion entirely.

The stenographer looked up at him as he walked into the outer office.

" Good morning, Senator. Please go right in—the Secretary is expecting you."

Miller closed the door behind him with mixed feelings. His last visit had been . . . unfortunate, but not entirely disastrous.

" Ah, good morning, James." Thompson showed his small teeth in a welcoming smile. " You're looking much better."

" I feel fine," said Miller.

" I hear whispers that your bill is obtaining considerable popular support," said Thompson. " But then you always were a wily old campaigner. I wish you luck when it comes to the vote—but I doubt whether it will get through."

Miller found himself uneasily wishing that the man would come to the point. Thompson was not the type to waste time on purposeless small talk.

" All right, Henry—what is it ?" he said, putting both hands on the desk and looking down at the raven garbed figure.

Thompson sighed, as if hating to be brought back to mundane matters.

" It's this wretched investigation committee on ETRA," he said. " I've been discussing it with several people and they seem to think that you're the obvious man to take the chair. After all, you have had considerable experience of that sort of thing."

" What is the object of the investigation ?" asked Miller.

" Carmichael and his group feel that the agency is a sheer waste of the taxpayers' money. Quite frankly, dear boy, I'm inclined to agree with them. Naturally, the chairman must be absolutely impartial and open minded."

" There's nothing else behind it ?" said Miller, looking down at the suave features.

" Why should there be ?" Thompson spread his hands and smiled blandly.

Miller wondered if the man realised the legacy of hate for all things connected with space that Margaret's death had left in his mind. The offer of the chairmanship was tempting. It would enable him to make useful contacts and obtain more information with which to continue his campaign.

" I'll take you up on that offer, Henry," he said quietly. " But remember—the thing will be run *my way*."

" Exactly, my dear fellow," said Thompson. He pressed a button on the desk. " I'll have the girl bring in the files, so that I can put you in the picture."

Rodell looked up irritably from the sheaf of papers he had been studying as Eysenck entered the office. The past three days had been a nightmare; there seemed to be nobody on the staff of the agency who was capable of making even the smallest decision without referring to the new Director, and Eysenck was one of the chief offenders. Rodell was beginning to suspect an organised attempt to wear him down

" Good morning, sir," said Eysenck, grinning insolently. " These are the latest reports from our Martian conservation project, dealing with the illegal traffic in Armadillo hides. Our men have picked up four trappers who are now being held in the New London jail."

" So ?" said Rodell frowning.

" The decision as to whether we prosecute them lies with you, as Director of the agency," said Eysenck, assuming an air of injured innocence. " If you would just give me your signature on these forms . . ."

" Assuming we obtain a conviction—what is the penalty ?" asked Rodell.

" I don't think there's any doubt about the conviction," said Eysenck. " They were caught red-handed. The maximum fine in this type of case is one hundred credits, with the option of three months in a labour camp."

Rodell picked up a pen as Eysenck handed over the papers. " What price have they been getting for the hides ?" he asked.

" Anything up to a hundred and fifty for a male adult hide," said Eysenck.

Rodell slammed his pen on the desk. " Then what the hell's the good of fining them a hundred credits ?"

" What do you suggest . . . Director ?" said Eysenck smoothly.

" Dammit, man ! It's obvious. Get onto the Martian authorities and see if you can get the penalty increased by an amount that will make it an effective deterrent," said Rodell. " That way we may stand some chance of killing the racket. Until then you can hold these people in custody."

" I take it I can give you as the authority for this ?" said Eysenck.

" Of course," said Rodell. " Now, is there anything else ?"

" Just one more thing," said Eysenck casually. He handed over another sheet of paper. " This Memo just came through." He turned and walked away. " I shall be in the Communications room, if you need me."

Rodell's weariness sloughed away as he read through the Memo :

11th August 2050.

From: OIC INTERSTELLAR EXPLORATION PROJECT

Copies to all Departments.

STARSHIP ASTRAVENTURER IS NOW APPROACHING PLUTONIAN ORBIT ON RETURN JOURNEY FROM CENTAURUS. ESTIMATED DATE OF ARRIVAL AT LUNAR BASE 14th AUGUST. ALL MEMBERS OF IEC WILL ATTEND PRELIMINARY HEARING OF COMMANDER'S REPORT TO BE HELD AT THIS OFFICE TWELVE HUNDRED HOURS 15th AUGUST.

Rodell flipped a switch on his intercom.

" Get me Interstellar right away !" he barked. This could be the lever to use with the Senate Investigation committee when he faced them tomorrow. The fate of ETRA could hinge on the report of the agent aboard the *Astraventurer*. He remembered his own words to Brogan—it was a slim chance, but if the report was positive . . .

A smiling face crowned by blonde hair appeared on the viviscreen. " Interstellar Exploration Office, good morning. Who are you calling, please ?"

" Get me General Drevers—this is Rodell, Director of ETRA."

The smile faded. " I'm sorry, Mr. Rodell—the General is in conference at the moment. Can I give him any message ?"

" No, this is urgent," said Rodell. " If the General is not available, get me Colonel Hoyle."

" One moment, please," said the operator.

A few seconds later the broad, moustached face of the Interstellar Exploration second-in-command appeared.

" I'm very busy, Rodell. What can I do for you ?"

" I won't take up much of your time," said Rodell. " The *Astraventurer*—are you in contact with her yet ?"

" Naturally," said Hoyle guardedly. " We picked her up on subetheric about ten hours ago, as soon as she returned to true space."

" I'd like to speak to the ETRA agent on board. Can you arrange that for me ?" asked Rodell.

" Perhaps you didn't hear what I said," Hoyle's moustache quivered. " That ship has been out of communication range for two years—our operators have been working solidly ever since we contacted her, transcribing data. We can't break up top priority work like that to allow you to pass the time of day with your agent. You'll get your report when the personnel arrive on Earth in four days time."

" Give me a break, Hoyle. It's most important that I speak to him now—in four days it may be too late." Rodell struggled to maintain

an amiable expression—to the military mind, ETRA was practically the lowest form of life.

" I'm sorry, Rodell, but I don't have the authority to give you permission," said Hoyle. " You'll have to talk to the General, but he's . . "

" I know—he's in conference !" snapped Rodell. He banged his fist on the cut off switch and the image faded.

Rodell slumped back in the chair. Only his anger was sustaining him now—he could see that ETRA was doomed. For some reason of their own the politicians had decided that it should be destroyed—and no one would lift a hand to save it. There was only one desperate hope . . . if he was prepared to humble himself.

He switched on the intercom again. " Get me Senator Miller's office." The words cost him a lot in self respect.

Lizbet Benedict looked out of the screen, her eyes wide with surprise.

" Well ! Long time no see, Clarke. How is the new Director of ETRA ?" Her forehead puckered in a frown as she answered her own question. " You look rough, I'm sorry."

" Look, Lizbet, I want to talk to your boss," said Rodell. " We'll go into my state of health some other time, huh ?"

" I would have thought he was the last person you'd want to meet," said Lizbet. " You'll see enough of him tomorrow at the investigation."

" Don't worry about me," said Rodell shortly. " Just call him and ask if he'll see me. If he says no—tell him I'm on my way over anyway" He switched off and the puzzled face of the girl faded from the screen.

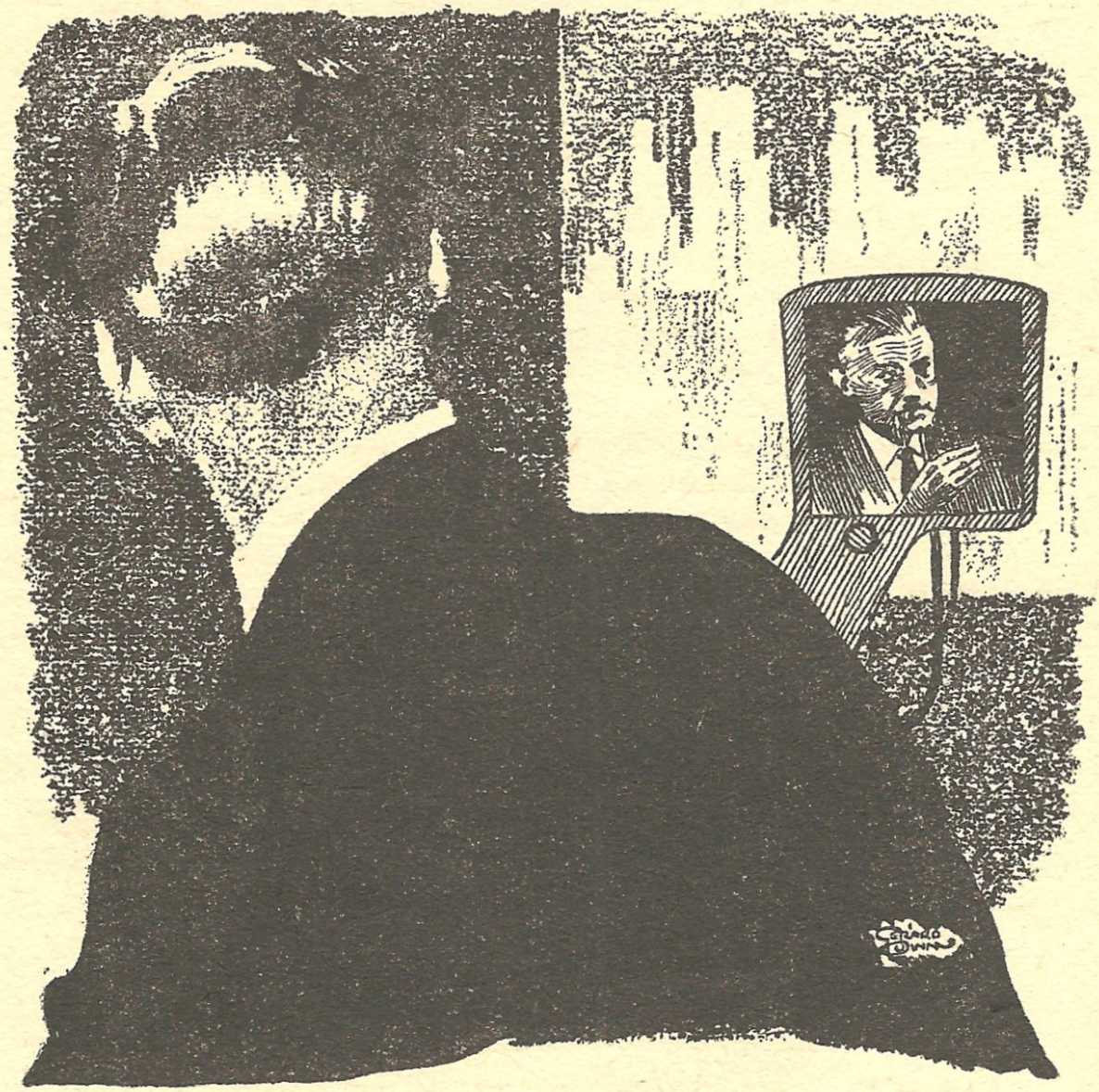
VI.

Miller was standing by the window, erect and well-groomed. Rodell was conscious of his own dishevelled appearance as the old man turned.

" Good morning, Rodell. What can I do for you ?" asked the Senator.

" I want you to be frank with me, Senator," said Rodell, a muscle at the corner of his mouth was twitching uncontrollably. " We both know that somebody is out to smash ETRA—that is why this investigation has been pushed through. What I want to know is—where do you stand.?"

Miller eyed the younger man sternly. " Mr. Rodell, I am the chairman of the committee, and as such it is my duty to be entirely impartial. All I am interested in is getting at the facts of the case. If those facts indicate that the taxpayers' money is being wasted in maintaining your organisation, I shall recommend that it be disbanded."



" But you *do* want all the data—the whole truth ?" said Rodell.

" Of course," Miller eyed the other keenly. " I must admit that with my present knowledge I cannot see that the agency serves any useful purpose. What are you getting at ?"

Rodell wondered whether it was worthwhile going any further. The man was obviously biased. " What if there were some valid and very important reason for the preservation of the agency ?" he said. " I've reason to suspect there is, but I'm being blocked in obtaining information. It won't reflect very well on the Investigation committee or on you, as chairman, if this fact comes out during a public hearing."

Rodell saw that the thrust had gone home, as a slight flush suffused Millers features. " I've been refused facilities by Interstellar Exploration to contact the ETRA agent aboard the *Astraventurer*."

" On what grounds ?" asked Miller. " In any case, is it important?"

" It could be," said Rodell. " If they have found a habitable Centauran planet . . . and if there is intelligent life on that planet. I submit that in your own interest you cannot give any definite ruling on the future of ETRA until these possibilities have been investigated."

" I think you're clutching at straws, Rodell," Miller said. " But I agree that you should be given the opportunity to prove the thing, one way or another." He walked over to his desk. " Get me the Secretary of State," he said into his intercom.

Rodell lit himself a cigarette, and noticed that his hands were trembling. Perhaps he was clutching at straws, but he had to do something, to fight back in some way.

Miller was talking quietly to his viviscreen, the sound tuned low so that Rodell could not hear the voice af the other party. " Yes, Henry, he's here with me now . . . You quite realise that ethically he is in a strong position . . . I wouldn't feel easy in my mind unless the thing were settled before the hearing . . . Oh ! I see . . . In that case there is nothing more to discuss. Thank you, Henry."

Miller switched off and walked towards Rodell smiling. " Well, young man. Good luck with your straw. The Secretary of State will instruct Interstellar to give you priority for a short call to your agent. Satisfied ?"

Rodell was unable to conceal his astonishment. *It had been too easy.*

" You'd better go straight along there now and fix up the details. Good morning, Mr. Rodell."

Rodell realised dazedly that the interview was at an end.

The harassed young Communications Captain looked up at Rodell and grinned lopsidedly.

" We've had it easy for the past two years—but hell, we're making up for it now. I've been on duty continuously since contact was made with the *Astraventurer*. Who was it you said you wanted to speak to ? You must have a lot of pull with the brass—personal calls are supposed to be strictly out at this stage."

" Frederic Rider, ETRA agent," said Rodell tensely.

The captain cocked one eyebrow. " Jeeze, are you one of that bunch ?" He pulled over a bulky file marked PERSONNEL. He leafed through it carefully. " Rogers . . . Rathbone . . . Rakusa . . . Ah ! Here it is," he said at length. Rodell scuffed his feet impatiently as the captain scanned the sheet.

A moment later the young officer looked up, an expression of friendly concern on his face. " I'm afraid I've got some bad news for you, Mr. Rodell. It says here that Fred Rider didn't make it."

A sudden chill ran through Rodell. " Didn't make it—what does that mean ?" he asked.

The captain handed over the papaer. " It's all in there," he said seriously. " It seems that your man was aboard the first scout ship to attempt landing—and that ship crashed, killing him and the other two occupants. Tough luck—three casualties out of two hundred and fifty and your man had to be one of them."

Tough luck, thought Rodell—tough for the poor devil who had died light years away from his home planet, and tough for the agency he represented. A snarl of rage rose in his throat—Thompson was in possession of all the data, he must have known about this when he agreed to allow Rodell a call to the *Astraventurer*.

The voice of the Captain broke in upon his thoughts. " What about this call of yours ? You've still got twenty minutes air time, if you want it."

Rodell hesitated, wondering if he could expect any co-operation from other members of the *Astraventurer's* crew.

" Look, what was the purpose of the call ?" asked the captain. " Maybe I can help you. Data is still coming through, but we've got a pretty comprehensive general picture of this planet."

" Including life forms ?" said Rodell.

The captain's face brightened. " Oh, is that all ?" he said smiling. He flipped on his intercom. " Get me Biology Section . . . Hallo, Louis ? There's a Mr. Rodell here from ETRA . . . Yes, ETRA, you dope. He'd like to have a look at the alien life form reports on the *Astraventurer* expedition . . . Yes, I know you're busy, but you can finagle that much for a pal, can't you ? Sure, if there's any kick back refer them to me, O.K.?"

He heaved his lanky body out of the chair. " Thought I was going to have to pull rank on him, for a minute. Just come along with me, Mr. Rodell."

Rodell followed the captain for about ten yards along the corridor and into another room. A chubby, baby faced lieutenant looked up from a paper-strewn desk as they entered.

" Hi, Louis," said the captain. " This is Mr. Rodell. I'm going to leave him with you—and I want you to do everything you can to help him." He left the room with a cheery wave of his hand.

The little lieutenant eyed Rodell's gaunt features, and smiled uncertainly. Now that he had reached this stage Rodell was almost afraid to go any further—there had been so many obstacles and frustrations.

" Er, there should be plenty for ETRA to do on this new planet, according to the reports," said the lieutenant, forcing an air of friendly chattiness.

Rodell almost staggered under the wave of elation that swept over him.

" You mean they've found life there ?" he walked forward excitedly.

The lieutenant picked up a foolscap sheet and handed it over. " Life !" he said, grinning. " Take a look at that—the darned place is as lively as an ant hill. One of the zoologists reported that . . ."

Rodell was not listening. His eyes were searching feverishly down the roughly classified columns. At length he looked up, a cold fear hammering in his brain.

" Is this . . . all ?" he asked slowly.

" All ! Man, are you kidding ?" said the lieutenant. " What did you have in mind ?"

" Amongst all this, didn't they find an intelligent species ?" said Rodell dully.

" Now I know you're kidding," said the lieutenant, a spasm of laughter shaking his budding paunch. " Even you ETRA characters are not that crazy !"

He was still laughing as Rodell turned and walked slowly out of the room.

VII.

The lights were turned low in the luxurious apartment. Senator Miller lounged back in the big armchair before the old-fashioned open fireplace, enjoying his after-dinner cigar. The mellow aroma of the well-cured leaf blended with his mood of quiet, relaxed comfort.

He heard a click and looked around as the door of the room opened. A tall, dark-haired young man in the uniform of a space captain entered and closed it softly behind him. His pale, Latin features were expressionless in the dim light.

A cataract of emotions flooded into the mind of Miller, sweeping away the carefully erected barriers.

" You !" The word squeezed through Miller's constricted throat muscles. " How dare you come here, you murdering swine. You killed my daughter—haven't you done enough ? Get out ! I don't want to see you—I want to forget you ever existed."

Captain Jeff Arcaro moved forward several paces and stood tensely, looking down at the old man. The cigar suddenly tasted foul—Miller threw it into the fire with an angry gesture.

"I said—get out!" He said, commencing to rise, "You mad young fool—you must have known what would happen, but you had to have her. And now she's dead. There's nothing more . . . Get out—before I kill you." He was on his feet now. Eyes wide with anger he lunged forward and slashed viciously at the pale face with the back of his hand.

Arcaro stood his ground unmoving. A thin trickle of blood ran down his cheek.

"You'll get no arguments from me, Senator," he said softly. "If I were in your position, I'd feel the same way . . . But don't you think I haven't been over it a thousand times? Don't you think I haven't blamed myself for Margaret's death? Nothing you call me, nothing you do to me can be worse than those long hours alone in space with nothing to do but think."

Miller slashed at the pale face again. The very sight of the man was a knife twisting in his heart. His suppressed anguish found expression in the physical violence of the blow.

"Thank God, I've found a way of stopping young fools like you. Margaret will not have died in vain."

"Yes," said Arcaro, ignoring the blows. "That is why I came to see you."

"You won't stop me," shouted Miller. "The weight of public opinion is with me—your poisonous bodies will contaminate no more innocent girls."

"I have no intention of trying to stop you, Senator," said Arcaro. "I've come to tell you that all decent spacemen are in full agreement with what you are doing. For years we've been kidding ourselves that it couldn't happen to us—and again and again the agony of our women has proved us wrong. Now we realise that there is only one cure—the one you advocate. Until a better method of shielding space ships is developed—sterilisation is the only answer."

Miller lowered himself back into the chair stunned. He had expected pleading, anger . . . but not this.

"I've talked this over with hundreds of men," continued Arcaro. "We've only one further suggestion to offer which is not included in the draft of your bill. Before a man goes into space for the first time, a sample of his germ plasm should be taken. With modern techniques it would be simple to store this against the time when he wishes to raise a family. He would then submit to the operation willingly, knowing that with the aid of artificial insemination he still retains the power to become a father."

Miller realised that this was a humanitarian measure that would give the bill an even wider appeal. There could be no objection on psycho-

logical grounds if such a provision were included. His anger was abated now, in the face of the young man's cool reason.

" But the men you've talked to," he said hesitantly. " They are already spacemen, like yourself . . . For them—it's too late !"

" They all realise that," said Arcaro. " We're not really the murdering swine you've branded us—we're just ordinary guys doing a tough job that we're proud of. The men I spoke to were all prepared to undergo the operation . . . Maybe in that way they can atone for some of the suffering they have already caused."

Miller rose from the chair again. He felt suddenly lighter, cleansed of the hate that had been eating away his soul. The memory of Margaret's death loomed less important in his mind now that it was stripped of the emotional charge. Arcaro had done him a great service —only one of their own kind could have explained the bill and talked the spacemen into supporting it. There was now no reason to fear the possible consequences suggested by Thompson—which improved its chances of becoming law considerably; providing there was no chance of it interfering with recruiting, the corporations would be bound to give their support also.

The Senator put his hand lightly on the young man's arm. " Better come through to the bathroom and clean up that face, eh ?" he said with a smile.

VIII.

" But there were in fact no intelligent alien races. ETRA was proved unnecessary by future discoveries and stands today as a glaring example of the fallacy of crossing such bridges in advance . . ." Senator Carmichael was really letting himself go for the benefit of the T.V. audience. The interest of most of the people in the committee room had long since dulled under the impact of the summer afternoon heat.

Rodell listened, his chin resting in his cupped right hand. His thin face was a pale mask of fatigue. The conviction of defeat was upon him, his mind full of disgust at himself and at the system that was crushing him. Only a miracle could have saved ETRA—the miracle that Brogan had hoped for . . . He had been a fool to listen to the man and become involved in this.

". . . . this monstrous organisation of over three hundred men," continued Carmichael. " You have heard yourselves that on Mars it has proved incapable of carrying out the wild life conservation programme. Mr. Eysenck, head of the Martian department, has told us

in his own words of the record of muddle and waste. And this, ladies and gentlemen, is the organisation into whose care it was intended to place the diplomatic relations of our planet and any other intelligent races ! If it had not been the subject of such tragic waste, the situation would be laughable.

" Advance reports from the Centauran expedition serve to underline the truth of our findings here today. On the one Earth type planet of this system our men have found abundant life, but nothing remotely approaching Man in intelligence." Carmichael leaned forward and pounded his first on a table. " Director Rodell has had the affrontery to suggest that there may still be intelligence and that it is only a matter of time before our ships make contact. If such a day comes—and I doubt it very much—we are civilised beings. Surely we would be able to come to some kind of an agreement with these hypothetical creatures—without the dubious aid of ETRA ? I suggest that if we continue to maintain this useless organisation our actions are on a par with those of a neurotic who carries an umbrella on Mars."

Rodell's eyes drifted to Senator Miller. The old man was tapping impatiently on his table as he watched Carmichael's rhetorical performance. Rodell guessed that he was annoyed at the way the other was hogging the limelight.

Finally Carmichael came to the end of his tirade. Miller rapped his gavel on the table sharply and said: " Thank you for your most eloquent summary, Mr. Carmichael. I think we may now consider the meeting ended. The committee will continue its deliberations privately and its findings will be made public in due course."

There was a murmur of relief as the perspiring crowd erupted towards the exits in search of cooler air. Rodell sat unmoving as the room cleared.

" Tough going, Clark," said Dave Clay, walking over from the Press table.

" Tough—it was a massacre," grated Rodell cynically. " The whole thing was cut and dried before the investigation started, but even the corporations have to make some concessions to democratic procedure. The committee report will be presented to the Senate in a few weeks time and its recommendations will be acted upon immediately—so ends ETRA."

Clay sat down beside Rodell. " I've been around politicians for a long time, Clark," he said. " But I don't get it. Why should they suddenly decide to smash ETRA ? You know as well as I do that these boys never do anything without a darn good reason—has the agency been interfering with the workings of the corporation mines on Mars or Venus, perhaps ?"

Rodell rose to his feet. The room was empty now, but it seemed crowded with the echoes of the humiliation he had suffered in the last few hours. " Not to my knowledge," he said. " But if there's anything I can do within the few remaining weeks, the swine will have something to remember the agency for."

" From what I hear, they won't be greatly interested in what happens in the solar system from now on, anyway," said Clay. " According to one of my contacts, radio-active minerals are so plentiful on the new Centauran planet that the corporations may abandon the workings on Mars, at least. He tells me that they had the mineral concessions all sewn up over three weeks ago."

" They don't miss a trick, do they ?" said Rodell, walking towards the door. He stopped abruptly and looked back at the newspaperman. " Did you say three weeks ago ?"

" Yes, why not ?" said Clay.

Rodell ignored the question and walked quickly out of the room. Perhaps his threat of a few minutes ago would prove more than mere words. After such a run of bad luck it seemed almost impossible that the corporations could have laid themselves wide open by such a blunder. As a lawyer, Rodell knew that alongside any claim for an interplanetary mineral concession the applicant was required to file a complete geophysical report on the planet in question. And if the application had been made three weeks ago, *the corporations could not have been in possession of such a report on the Centauran planet.*

Rodell suspected that the corporations had filed a dummy geophysical report, assuming over-confidently that it would not be questioned. If this was the case, he would have the power to smash their claim. He headed swiftly for the roof copter park.

IX.

Senator James Miller was not a coward, but he had been hesitant when Jeff Arcaro had first suggested the idea of him making a speech at Interplanetary House. There, at the spacemens' recreation centre, he would be meeting the tough, hard-bitten men on their own ground, and any who were opposed to his bill would be uninhibited in their comment.

On the other hand, he looked upon it as a challenge to his powers as an orator. That day the first batch of *Astraventurer* crewmen had arrived from Luna—now was the time to appeal to the spacemens' sense of higher purpose.

Arcaro had done his work of preparation well. There was not one dissenting voice amongst the thousand men who formed his audience

as he explained the provisions of his plan. All of them seemed to be prepared to make the sacrifice he demanded and he left the auditorium well satisfied that there would be no opposition from this quarter.

The only irregular incident occurred after the speech, when he and Arcaro were walking towards their copter. A heavily built spaceman lurched towards them. Miller noticed the INTERSTELLAR flashes on the man's shoulders, indicating that he was one of the returned members of the *Astraventurer* expedition.

" Hi there, Senator. Thassa fine speech you made down there," slurred the man. " My name's Walker—Jets Walker, they call me. Pleased to meet you."

Miller took the outstretched hand and shook it with professional heartiness. The man was, after all, what the newspapers called ' one of the Heroes from the Stars.' Along with the rest of the crew members he would be eligible for the ten thousand credits award donated by the corporations, which would be presented ceremonially in ten days time.

The man leaned forward and spoke in the confidential manner of a drunk. " I wouldn't be asking you this, Senator, but they only gave us a lousy fifty credits landing pay to tide us over till pay day . . . When a man's been in space for over two years he needs a lotta booze to wash away the taste of canned air . . ."

Miller smiled. He put his hand in his pocket and pulled out a five credit note. " O.K., son. I know how it is. Here—call this a loan."

" Loan, be damned, Senator," said the spaceman indignantly. " I don't want nothing from nobody that I ain't entitled to—I'm asking you to do a trade." He fumbled in his tunic pocket, having trouble with the zipper. " I've got a little souvenir here . . . Brought it all the way back from Centaurus . . . Should be worth more than five credits, huh ?"

Arcaro grinned. Spacemen never could resist bringing in contraband pieces of junk—he'd done it himself, many times. Finally Walker produced a small object and pressed it into the Senator's hand.

" There—what do you say to that ?" he said. " How's about a ten?"

Miller glanced at the object in his palm. " I'm not exactly a dealer in interplanetary knicks knacks," he said pleasantly. He turned to Arcaro. " Here, take a look at this, Jeff. What do you think—shall I give the man another five ?"

The expression on Arcaro's pale face hardened as he scrutinised the object. " Where did you say you got this, Walker ?"

The drunken spaceman seemed to sober suddenly under the impact of the officer's sharp voice. " Why . . . uh, Centaurus, Captain . . . Like I told you . . . the Centauran planet . . ."

Arcaro stowed the object carefully in his tunic pocket.

Walker lumbered forward. " Hey ! Watcha doing Cap . . .?"

Miller watched astonished as the young officer leapt forward and felled the spaceman with a smashing right to the jaw.

" Have you gone mad, Jeff ? What do you think you're doing ?" he asked.

" Not exactly, Senator," said Arcaro grimly. He bent over the still form. " Here, help me get this slob aboard the copter . . . I'll explain as we travel . . ."

Rodell looked up as Weiner, head of ETRA's geological department, entered the office. He drummed his fingers on the desk. It had taken him two days of inter-departmental intrigue and bribery to obtain the facsimile reports, and he had handed them to the big, shambling geologist for comparison just half an hour ago.

" Well—what's the verdict ?" he asked eagerly. " Will their claim stand ?"

Weiner eased himself into a chair and looked at Rodell with watery, brown eyes. He fingered the sheets nervously.

" Apart from a few unimportant details, which would be open to argument anyway I can find no discrepancy in these reports," said Weiner. " To all intents and purposes they would stand as descriptions of the same planetary body."

Rodell thumped his fist on the desk. " You mean they would stand in any court—they're close enough for that ?"

Weiner nodded.

" Could the corporation report be an intelligent guess on the part of a highly skilled geophysicist ?" said Rodell tensely. " Given the data previous to the expedition—would it have been possible in your opinion, for them to fake such a thing ?"

Weiner shifted in his chair. " They could never have come so near —it would only have been a wild, generalised guess."

Rodell spoke almost to himself, through clenched teeth.

" But the *Astraventurer* report only came through two days ago . . . The corporation claim has been filed for over three weeks—how could they have done it ?"

Weiner shrugged. " I'm afraid it's no use asking me—I can only tell you what I see."

" O.K., thanks a lot, Weiner," said Rodell. " We've both done our best. Might as well confess that we're licked."

The geologist left the room. Rodell stared angrily at the two reports. He might have known that the corporations were too smart to trip up on a little detail like that. Their report must have been more than

mere guess work, as Weiner has said. They must have had definite information. Information obtained over two weeks before the *Astraventurer* had been contacted by the Interstellar Exploration Office.

The buzz of the intercom broke in on his angry thoughts. He flipped the switch.

"Senator Miller here to see you, Director," said the voice of his secretary.

Miller! That was all Rodell needed, that old fool gloating over the organisation he had helped to smash.

"Send him in!" snapped Rodell. He jumped out of his chair—he felt the need to move, to walk around . . .

He glared at the doorway tensely as the grey haired figure of Miller entered, followed by two men in spacemens' uniform. "To what do we owe this honour, Senator?" he grated.

Miller's face was pale with anger.

"To two things," he said coolly. "One, to the fact that I don't like being made a fool of; and two, to the fact that my son-in-law, Captain Arcaro, has convinced me that this is the only ethical way dealing with the present situation . . ."

X.

The assembly hall of the Interstellar Exploration building was filled to capacity. This was the big day—the culmination of many years' effort. In this room the Interstellar Exploration Council had first conceived the project that had sent the *Astraventurer*, mankind's first star ship, on the Centauran expedition.

Outside, the whole solar system was watching through the eyes of the battery of Tri-Di cameras. Commander Pollack, the leader of the *Astraventurer* expedition stood, the focus of all attention, in the centre of the stage. He was a burly, upright man, and he delivered his preliminary report on the Centauran planet in a brisk, military voice.

Rodell sat in the body of the hall, amongst the other official delegates of the IEC. He was a lone island in the sea of victorious pride that welled around him, as he gazed with an expression of contempt at the figure of the speaker.

Had the subject not been of such importance to his audience, the cool, machine-like delivery would have made Pollack's speech boring. He concluded with a flat, unimaginative account of the mineral resources of the new planet.

Rodell glanced round to where Senator Miller was sitting, several rows behind him. The old man caught his eye—and shook his head

briefly. Rodell turned his attention back to the stage, every muscle of his body taut.

Pollock about-faced and saluted the chairman of the meeting, the President of the World Federation. That benign old figurehead smiled in reply and the commander marched stiffly off the stage. A thunder of applause in tribute to the spaceman's cool courage shook the building. Rodell's fists clenched.

As the ovation died down, the dark head of Henry Thompson bobbed up on the front row. He nodded to the President with birdlike condescension and commenced to speak :

" Mr. Chairman, ladies and gentlemen, it is my privilege and honour at this time, to move that we approve Commander Pollock's report. The whole solar system has listened with growing pride to his modest report of the achievements of the Centauran expedition. In his very modesty, the Commander has . . ."

Rodell listened with growing anger as Thompson waxed eloquent on the subject of heroism. He wondered how many others there were in the hall who sickened at the insincere, high-flown phrases. Phrases that were a small price to pay for a commercial empire extending to the stars.

Rodell wiped his clammy hands on the thighs of his trousers and looked round again. Miller was hunched forward in his seat, hate in his eyes.

There was another thunder of applause as Thompson concluded his speech. A moment later Carmichael stood up and seconded the proposal—the corporation stooges were well drilled.

The President beamed down on the assembly with watery grey eyes. " Well, ladies and gentlemen, it hardly seems necessary to take a vote upon such a motion, but as a matter of formality . . ."

Rodell flashed a glance behind him. Miller nodded urgently.

Rodell leapt to his feet.

" Mr. Chairman ! I wish to propose an amendment."

The President hesitated and peered in the direction of the voice. A thousand heads turned to identify the intruder, swiftly followed by a number of the Tri-Di cameras.

Rodell steeled himself, aware that the resentment of the peoples of the solar system was at this moment focused on him. He had robbed them of their moment of triumph.

" I wish to propose that Commander Pollock's report be rejected, on the grounds that it is incomplete and in one important detail, false."

The smile of the President faded. " This is a very serious charge, Mr. . . ."

" Clark Rodell, Director of ETRA," supplied Rodell.

". . . very serious charge, Mr. Rodell. Can you prove your allegation?" said the President. "We shall not look lightly on this besmirching . . ."

Thompson was on his feet. "Mr. Chairman, I demand that you rule this man out of order!"

The President rapped his gavel on the table. "No, Mr. Thompson, he is entitled to speak on the motion. Present your evidence, Rodell."

Rodell placed a trembling hand in his pocket and pulled out the object Miller had given him the previous evening . . . *Jets Walker's souvenir.* He held the small, exquisitely carved amulet high above his head.

"Captain Pollock has told this assembly that there is no intelligent life on the Centauran planet," he roared. "That is untrue. Unknown to the commander, this object was brought back to Earth by one of his crew, who swears that he obtained it from one of the Centauran natives. In his stupidity, the man did not realise that his action was destined to wreck this elaborately built up structure of lies.

"He offered to sell the amulet to Senator Miller, who fortunately realised its implications and brought it immediately to me. When questioned by the Senator and myself, this man admitted that the *Astraventurer* had been in contact with Earth—not with the Interstellar Office, but with certain commercial interests—for several weeks before the IEC announcement.

"This was in accordance with a secret agreement made well before the expedition left Earth. The ten thousand credit, Hero's Award, offered by the corporations is nothing more than a calculated bribe to prevent the crew of the interstellar ship from telling what they know of the Centauran planet—thus enabling the corporations to put through their monopolistic claims on the resources of the planet . . ."

Thompson waved his arms in agitation. "I demand that you rule this man out of order!" he shouted.

The President's jaw was set, his smile gone.

"I shall not warn you again, Mr. Thompson," he said. "The Director of ETRA is an official delegate to this conference, and has my permission to speak. If his allegations are incorrect they will be exposed by the official enquiry which must be made into them . . . Please continue, Mr. Rodell."

Rodell was quick to pursue his advantage—if the full details were available to this huge audience the corporations would be unable to hush the matter up. "There is under consideration at the present time the report of a Senate Investigation Committee upon my agency. A heavily biased report which demands that ETRA be disbanded on the grounds that it is inefficient, unnecessary and a waste of the tax-

payer's money. I believe that this enquiry was only instigated after certain commercial interests had discovered that there was intelligent life on the Centauran planet.

" They had hoped that the agency would be disbanded before this fact became known—as it would then be unable to interfere with their plans for the exploitation of the planet . . . and its inhabitants. I humbly remind you, Mr. President, that ETRA was originally formed to prevent such exploitation.

" I ask you to endorse my authority before this gathering to declare that all claims on the Centauran planet are void, pending a full scale cultural survey by ETRA. Further, that no ship shall be allowed to contact the Centauran natives or land on he planet in the future without the permission of ETRA." Rodell lowered himself into his seat, aware that his entire body was clammy with perspiration.

The President surveyed the assembly for a full minute in grim silence.

" If your statements are correct, Mr. Rodell," he said at length, " you are constitutionally correct in claiming such powers. I trust you are fully conscious of the great responsibility that is thus placed upon your shoulders. From this date, all Interstellar development will be under the supreme control of ETRA—and the peoples of the solar system will look to you to use that control wisely."

He rose to his feet. The ineffectual old puppet had at last turned on his masters. " There will be an immediate enquiry into this matter —and I would warn those implicated in the plot that they will face a charge of treason against the Federation. I now declare this meeting at an end."

He walked off the stage and the suppressed excitement of the audience broke with a babble of conversation. For the first time in over forty years, the iron grip of the corporations had been loosened.

Rodell sat unheeding as the crowd surged around him. In his right hand he held a small object, brought from the stars by a drunken spaceman—in his mind were thoughts of Brogan and the others who had worked through the years to maintain ETRA in readiness for this day.

The task ahead was big . . . *as big as the universe.*

Dan Morgan

Asstronomy

Manchester, Lancs.

I feel sure that E. F. Russell's article in *New Worlds* No. 37 was written with tongue in cheek and with the sole purpose of raising a riot among the many science fiction readers who are amateur astronomers. In all seriousness nobody, except an ass, would take such great pains to advertise his own ignorance and stupidity.

The most outstanding bloomer is Mr. Russell's doubting of the accepted value for the velocity of light, despite the fact that today there are numerous ways of proving it to be correct. Mr. Russell may have noticed that, during the war years, considerable advancement was made in the development of Radar. Amongst which was a certain navigational aid developed for use by R.A.F. Bomber Command. The whole success of the gadget depended on the assumption that the velocity of electro-magnetic radiation is 186,300 miles per second. Needless to say, the device, and many other aids working on the same principles, performed satisfactorily—Mr. Russell may draw his own conclusions.

I might also point out that in January 1946 the American Army conducted an experiment (Project Diana) which involved bouncing a radar impulse off the surface of the Moon and receiving and making audible an echo. It was expected that, providing the Moon lies at an average distance of 240,000 miles, and that light travelled at the above velocity, then the echo would be received two and a half seconds after transmission. Of course, results were positive, as every *reasonable* person expected they would be.

In much the same way, every criticism of Russell's can be effectively dealt with. I would venture to suggest that Mr. Russell would find considerable enlightenment if he devoted a little time to the perusal of *modern* literature. He will I think, also find that his arguments are by no means original; they have been done before, and indeed, could be made by anyone who restricted themselves to publications printed prior to 1930.

I see Mr. Russell quotes Charles Fort as a fellow critic. Anyone who has read Fort's collected works will appreciate that half a century ago Fort probably made the sparks fly, but today he is laughable. Please, no more of these tiresome articles—for there are so many other interesting things that can be discussed. Apart from its doubtful humour value, this sort of bunk can be dangerous, for there are types who would take it seriously.

F. P. Leyland.

Drighlington, Yorks.

I was glad to read the article on " Asstronomy " as it supports some of my own theories. I am also glad that Mr. Russell had disproved the astronomical figures usually given, as my theories to explain the Seasons need different distances from the sun in different years, and before I read the article I did not see how this could happen.

Frank Eldridge.

Bristol, Somerset.

Mr. Eric Frank Russell's remarks on the *weights* of the Sun and Stars show a hopeless misconception of scientific theories. How can anyone be expected to take any notice of his other remarks which appear to be based on the same type of misinterpretations ?

G. Harrison.

Fishponds, Bristol.

I was interested to read Mr. Russell's article on astronomy. It has long been evident that progress has been stagnated by the appeals to authority of experts and the blind acceptance of their statements. Mr. Russell adequately points out the quicksand upon which present-day science is based, and it is to be hoped that intelligent readers will be encouraged by this to bring a fresh approach to modern science.

C. Burdell.

Edinburgh.

Your printing the article on " Asstronomy " in No. 37 is most surprising. Who is this E. F. Russell to contest the statements of such eminent men as Sir James Jeans, Michelson and Moreley, Professor Einstein, and Lord Russell ? It is little wonder that his correspondence with the latter was treated with the contempt it deserved.

L. H. Camden.

Hounslow, Middx.

I was intrigued to read Eric Russell's article " Asstronomy." It was admirable—an admirable example of thought provoking fanaticism as applied to illogical argument. It is really not permissable to argue directly from particular points to general cases, especially when inconvenient facts are ignored and the history of science is dredged for outmoded theories and superceded ideas. For a similar type of illogical argument see the recent article and correspondence in *Astounding Science Fiction* on " The Right To Breed."

The complete refutation of all of Russell's points would take many thousands of words but the following comments may be of interest.

Modern science, including astronomy and physics, is exactly the opposite of dogmatic. It is a systematic attempt to measure and understand the structure and functions of the universe. In general this involves two lines of approach. One is an attack on the problem by means of measurement; by measuring every possible factor in the hope that when sufficient data is available it will *all* fit into a consistent framework. Increased accuracy in methods and instruments leads not only to higher precision but to new ideas that can replace older theories. The extra decimal place added to a measurement often indicates that there are errors of simplification in the then current theory.

Any physicist and astronomer will admit that he and his instruments are not perfect. In the less popular scientific papers the limits of accuracy of the methods and instruments are given as ± figures.

The second line of attack is the development of theories, generally mathematical in form, in the attempt to work out the whys and wherefores. The theories sometimes precede and sometimes antecede the measurements but the two must fit together and it is the theories that are altered when there is disagreement. It is seldom that any extensive theory involving physics or astronomy remains unaltered for any length of time. So much new work is being carried out that most sciences are in a state of flux, as one theory is replaced by another that gives a truer mathematical description of observations.

It is here that lies the trap into which so many laymen, such as Eric Russell, fall. The mathematical description is not a mechanical model nor is it complete in itself—it is as approximately accurate as a few human minds can make it. Complex mathematical expressions—and the universe is complex—are difficult to translate into pictures and models for the layman and even when it is done it is only a very rough approximation to a distortion of an approximation.

The so called duality of light fits into this category. Light appears to have the functions of both solid particles and of wave motions. But these apparently contradictory appearances are the result of a complex

that is neither one nor the other. There is an underlying principle that cannot be accurately expressed in simple pictures just as it is impossible to explain sight to a person blind from birth or the concept of God to an atheist. There is no experience to which comparison can be made. Some things just cannot be simplified down to the level of a simple mind without losing much of their coherence.

Other points include the fact that the velocity of light is now measured in laboratories using very short wavelength radio waves passed through an evacuated tube, the very small time periods being measured by electronic methods. The figure so obtained checks well with that obtained from astronomical measurements. And the time interval for the reflection of radar waves from the Moon agrees with that expected using this figure and the astronomers' distance. There is too much consistency of apparently unrelated facts in astronomy for the whole lot to be dismissed out of hand, although it is ever a good thing for the basis of any science to be kept under scrutiny in the light of any new information.

Much of the quoted material in " Asstronomy " comes from popular science sources and such writers simplify material so that the reader does not have to plough through much uninteresting material—and sometimes they state as a fact some facet of a theory which is later superceded. After all, to the serious student, the original papers are available.

One final point. There are more ways than one of killing a cat and there are other methods of calculating changes than by the direct comparison of large quantities. If it is possible to calculate the change in length of the Earth year, say by considering the effect of other bodies on it, it is possible to calculate the change in the speed of Earth in its orbit and so the change in the orbit itself.

Kenneth Johns.

Peterborough, Northants.

Three great big cheers for Eric Frank Russell and his "Asstronomy." At last somebody ups on his hind legs and tells 'em ! Ever since I first read any science fiction, which is not an awfully long time ago, I have felt myself bewildered by the pundits who leap into technical articles which tell us that " this *is* so and it irrevocably *must* be so " because some fusty pundit with his eye glued permanently to a radio telescope has worked " it " out by some rule he first invented himself. More than once I have felt " what the hell do they want—a story or an argument !" Now we know. *Floreat Russela* !

John Kippax.

Wembly, Middx.

" Asstronomy " by Eric Frank Russell is a humdinger. He hits the nail on the head almost every time. I have of late reached a point where I wonder if there really is any difference between astronomers and astrologers. Still, sometime the astronomers are right, generally the eclipses come off on the dot, and the actual contact of the Moon by radar confirmed their figure of its distance from us. But the moon is the only body in the Solar System, apart from Earth, that they do know a little about—and even then, they've never seen the other half of it. Beyond the Moon's orbit they cannot see clearly enough to do more than speculate, and outside the Solar System they can only guess wildly—and do. In general they talk almost as much nonsense as politicians and have been getting away with it far too much. People like Eric are performing a salutary service in sometimes pulling their pants off.

William F. Temple.

Gomersall, Yorkshire.

I agree with your remark that Mr. Russell's article will cause consternation amongst scientists. It is a broom which should sweep away a lot of cobwebs. Although Mr. Russell uncovers a lot of inadequacies he seems to have missed the main connection between Astronomy and Einstein's theory of relativity.

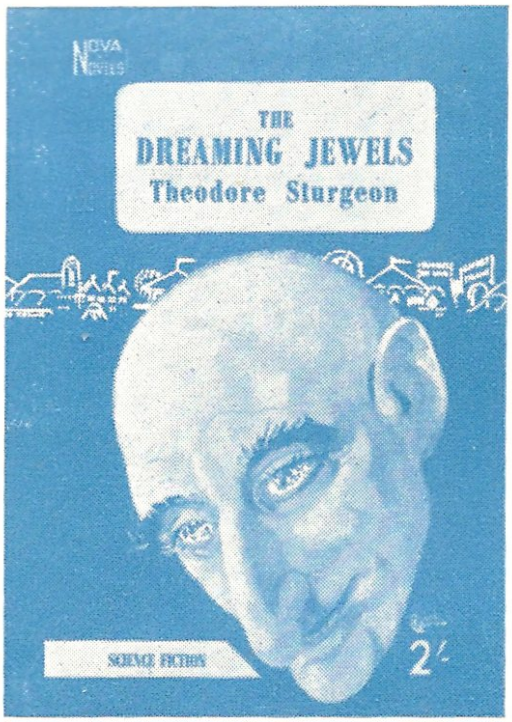
Astronomy has been the subject of recent work by the Institute and as it is a subjective field it does not allow direct verification by measurement. This has necessitated a purely theoretical treatment throughout. The most interesting results were obtained by direct application of relativity theory and without using any of the usual physical constants. It is shown that an object can have several images in different places. At any instant the various images can represent different times in the history of the object but none can represent the present " now."

The second derivative of the field equations shows that an image can have a fixed shift in frequency. This is very similar to the Döppler shift but is not due to movement between the object and the observer; it is due to changes in the observation path. In solving for the time of a particular image it is possible to obtain imaginary terms in the expression. This has not been fully investigated as yet but a tentative explanation is that they refer to times in the future. A detailed treatment of this is available elsewhere but an interesting explanation of the Universe can be derived from the above remarks. We see now that this consists of only one star (Sol) and a series of images. These images represent different times in the life of the Sun and their apparent motions are due to disturbances in the space-time continuum.

I. V. Krantoch, A.Inst., J.Th.

(Mr. Krantoch omitted to mention which Institute he was connected with. Has anyone come across the theory he has propounded? —Ed.)

On Sale Soon



The next two NOVA NOVELS

★

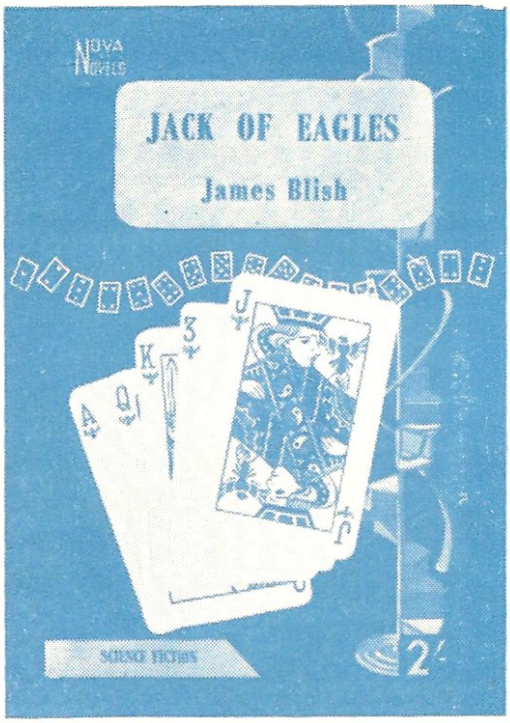
STURGEON and BLISH

Two more outstanding novels by popular American Authors

2/-

EACH

Published for the first time in Britain



Watch for further announcements before ordering