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The third story of Don Miguel Navarro, Licentiate of the Society of Time in Spanish-dominated Europe visits New Castile across the Atlantic for this closing adventure in Spain's meddling with Time travel. See issues 25 and 26 for his earlier stories.

THE FULLNESS OF TIME

by JOHN BRUNNER

Chapter One

"Your people," said the long-faced Mohawk who managed the mines, "came to what you called the New World hungry for gold. You came looking for fabulous kingdoms—Cibola, Quivira, Norumbega, Texas. And so keenly were you disappointed when you found they didn't exist, you set about creating them."

He waved at the hillside opposite, where the mine galleries ran like holes into ripe cheese. Don Miguel Navarro followed the gesture with his eyes. Here where he sat with the manager—his name was Two Dogs—it was cool under the shade of woven reed awnings, on the verandah of the plain mud-plastered house which served as both home and administrative office. But there the fury of the sun lay full, and the Indian labourers emerging from the mouths of the galleries with their baskets full of crushed rock, to be tipped into the sluices for
sedimentation, wiped their dusty faces, swigged water from leathern bottles, and seemed glad to escape underground again.

The heat of the air was such that the world felt silent, although there were always noises: the monotonous creaking of the pumps bringing up water for the sluices, the droning of flies, the cries of the overseers in a local dialect that Don Miguel did not understand. He was almost content.

"More wine?" Two Dogs suggested, raising the jug from the table between them.

"Willingly," Don Miguel agreed. "It's very good. You grow it locally, I understand."

Two Dogs nodded, pouring for his visitor and himself. "Our climate here in California is very good for vines. Take a piece of cheese also; the tastes mingle well." He set down the jug and offered the large baked-clay platter on which the cheese stood, stuck with a silver knife.

"Ye-es," he continued musingly after a moment. "You are indeed a strange people. We shall probably never understand one another."

Don Miguel laughed shortly. He said, "For people who lack mutual understanding, we get on well enough."

"Conceded. But because we serve one another's purposes, no more. And it could have been otherwise—we need only look south past the Isthmus to see what might have been."

Don Miguel stirred uncomfortably in his chair. It was always upsetting for an Imperial citizen to discuss the fate of the great civilisations of Central and South America, sacrificed on the altar of European greed. He said, "There has never been change without suffering—it's the way of the world."

"And as you people saw it, it might as well be the provincials who suffered," Two Dogs suggested.

It was impossible to be sure whether there was hostility in that even voice. Don Miguel stiffened imperceptibly.

"Isn't it so?" the Mohawk persisted. "As you conceive it, you look from the centre outwards; Europe is the heart of the world, and the other continents are its—outskirts. Of course, there's truth in this attitude. A great many local squabbles in Europe over the past five hundred years have created changes out of all proportion here, in Africa, and in Asia. And for my own people's sake, I should be grateful for small mercies."

The words seemed to dig into Don Miguel's mind like the touch of a claw. He felt little premonitory tinglings on the nape of his neck.
“Suppose your Empire hadn’t won its great victory,” Two Dogs went on thoughtfully. “Suppose Western Europe, like Eastern Europe, had split into petty principalities. Suppose you’d lost the Netherlands and never gained England. We might have had four or more different gangs of Europeans fighting over our hunting-grounds like dogs over a bone.”

Don Miguel gave him a look of unconcqued respect. He said, “I see you’ve made a study of history.”

“I have—as part of an attempt to understand the European way of thinking. But as I was saying: we’d likely have had you, and the French, and the Swedes, and the Dutch, and the English, all bringing their local differences to this continent and fighting over them. And we poor Indians might have been ground between them like corn between millstones.” He raised his eyes to meet Don Miguel’s and finished on a challenging tone, “Am I right? You can tell me, I’m sure.”


For a moment a flicker of uncertainty showed on the other’s face, but he returned sternly to his attack. He said, “It should be better known that—having escaped being ground between your millstones once, by the skin of our teeth—we don’t wish to see it happen after all.”

What manner of man have I stumbled on—some revanchist fanatic? Don Miguel shook his head and said, “It’s never likely to happen, so I fail to see—”

Two Dogs cut in. “Perhaps you thought, Don Miguel, that you were at the world’s end here—well, it’s true we’re a long way from Europe. But we hear news eventually. On your way to California you passed through New Madrid; the Prince of New Castile happened to be in residence, making one of his occasional visits to the territory he nominally governs... and you remained a few days to pay your compliments.”

“By the infernal fires!” Don Miguel said. “Isn’t there anywhere on Earth I can get away from it all?”

“What in truth—in truth!—brought you to this hillside mining-town half a world from your home?” Two Dogs demanded.

“A need to be unknown,” Don Miguel sighed. “Nothing more.”

Two Dogs leaned forward on his chair, eyes bright. He said, “Then you don’t deny it!”
"Deny my professional status? No, of course not. I'd simply hoped to have it overlooked for a while. Wherever a Licentiate of the Society of Time shows his face, people cluster like flies on honey, cackling and gibbering over the presence of this 'real live time-traveller.' I'm sick of it. I'd hoped that by coming all the way to California to spend my sabbatical leave, I'd be able to remain comfortably anonymous for at least a little while."

There was silence between them for a moment. Don Miguel's face, twisted savagely to one side by the ill-healed scar of a hoplite's sword-cut, looked in the harsh light as though it might have been copied from an idol carved by one of the Mohawk's Central American cousins. He hoped that Two Dogs would not press him for further details, because he would have to refuse them, and in the few days he had known the Mohawk he had come to like him well; moreover, even the act of refusal would reawaken memories that ached like deep bruises. He would have been happiest had he been able to forget altogether the things that preyed on him—that being out of the question, not having anyone around to remind him of them had seemed the next best cure.

But here, now, Two Dogs had gone to the core of his trouble as directly as a skilled engineer sinking a mineshaft to a lode of ore.

"I will not ask you to swear that," Two Dogs said after a pause. "Perhaps a European might, but I'll gamble on my estimate of you."

Don Miguel said stiffly, "I'm what I seem, and I'm not used to being taken for anything else."

"No, hear me out. We Mohawks realise that we owe to you our present standing, for without the alliance with the Empire which made us militarily capable of dominating so much of the continent, we'd be as we once were—one small tribe among many. Yet to be allied with the Empire is like being brother to a hotheaded adventurer. Any day a feud in which the brother has become involved may explode in the face of his family without their knowledge or desire."

Don Miguel studied the other wonderingly, but said nothing.

"Picture, then, my state of mind," Two Dogs went on, "when I learned that you, the pleasant visitor gratifying a wish for solitude and a curiosity about the Far West, were in fact a
Licentiate of the Society of Time.” He shrugged. “I was—disturbed!”

“Why?” Don Miguel made the word crackle like a fire
arrow.

For a long moment Two Dogs seemed to be struggling towards a decision. Suddenly he drained his wineglass and slammed it down hard on the table.

“I hadn’t meant to come to this,” he said, standing up.
“And least of all I’d not meant to come to it here, now, with such a man as yourself. But I’ll show you the reason, because—before God!—I can’t endure the knowledge by myself any more!”

He started down from the verandah without further explana
tion, shouting at the top of his lungs for Tomas, his dour chief overseer. Some of the labourers on the other side of the valley heard, paused in their work and looked to see what madness had come upon their master. Don Miguel followed more slowly, not being accustomed to the strong sunlight. He caught up with Two Dogs when he had located Tomas and was giving him orders in the incomprehensible local Indian language, and asked for details, but the only answer he got was, “Wait, and you shall see.”

Much puzzled, but eager to find some bottom in this, Don Miguel contained himself in patience while Tomas went in search of two burros with saddles fit for gentlefolk; then, his old but bright serape around him, took to the trail ahead of them, walking steadily with the aid of a staff.

The jogging was so unlike the motion of a horse as to make Don Miguel very uncomfortable; besides, it was nearing the middle of the day and the flies were troublesome. But a glance at Two Dogs persuaded him not to mention these facts; the Mohawk wore an expression like a man driven by demons.

The trail wound over the shoulder of the hill, becoming in places a mere footpath, but the burros found their way and Tomas went uncomplainingly ahead. On the other side, where the attention of the miners had not yet been directed, a smaller valley lay baking in the sun. Only the trail winding across it suggested human visitation; that apart, this land might have lain as it was since Creation Day.

“There!” Two Dogs said, causing his burro to fall back alongside Don Miguel’s, raising his arm and pointing to a rocky slope ahead. Don Miguel saw nothing, and said so.
“Well, then, come closer!” Two Dogs snapped. As he urged his mount forward, Don Miguel wondered what could conceivably have disrupted the Mohawk’s habitual placid calm like this.

Tomas reached the spot first, paused, turned, looked back with an inscrutable face, and tapped a nearby boulder with the end of his staff. Two Dogs leapt to the ground, leaving his burro to wander, and he and Tomas together leaned against the heavy boulder. Shading his eyes, Don Miguel saw it begin to rock back and forth, further—further—and suddenly it gave, rolling through half a circle and coming to rest in a cup of ground. Its displacement revealed an opening in the slope behind it. A dark, roughly square opening. The mouth of a tunnel—of the gallery of a mine.

Don Miguel felt horrified understanding dawn. He dropped from his saddle and came forward. He said, “What’s this?”

Two Dogs shrugged. “We’d very much like to know,” he said grimly. “Aside from being a mine-gallery, it’s a mystery to us. Oh—and aside from this.”

He stepped for a moment into the low opening, having to stoop to avoid the roof, fumbled on the ground, and turned to Don Miguel, holding out something in his hand. Don Miguel took it, stared at it, and felt the world tremble around him.

Chapter Two

His Highness the Prince of New Castile, Commander of the Society of Time, ran his fingers through his short, black beard. He looked at the object on the table in front of him, and at last spoke.

“Well, since you seem to have a gift for turning up uncomfortable odds and ends, Navarro, I suppose I’ll have to inquire what you make of this—this bit of scrap metal. I must say it seems to me an innocuous enough object for such a song and dance.”

Don Miguel drew a deep breath and held it for the space of three heartbeats. He didn’t need anyone to tell him that he was going out on a limb; he would have been far happier had he been able to consult with Father Ramon or another of the Society’s theoreticians before approaching the Commander. But Father Ramon was on the other side of the Atlantic Ocean, and the Commander, fortunately, was here in New Castile. And the quicker some action was taken, the better.
He licked his lips, very conscious of the piercing eyes of everyone else in the Prince’s audience chamber, especially of the eyes of the other Licentiates. He had previously experienced the double edge of his reputation in the Society, but here it was keener-cutting.

He said boldly, “I make of it, sir—though I’m open to correction—a breach of the Treaty of Prague.”

Well . . . there was his bombshell. And it certainly went off to great effect: the Commander himself blanched and jerked back in his chair, while everyone else without exception paled and voiced wordless exclamations.

“By whom?” the Prince said sternly.

“By the other party to the Treaty,” Don Miguel said. “I can draw no other conclusion.”

“You realise that this is the most serious allegation you could possibly make?”

“I do,” Don Miguel agreed fervently. “But having conducted such investigations as were possible to me without time apparatus, I found so much pointing that way that I was compelled to lay the facts before you.”

The Prince put out one hairy-backed hand towards the harmless-looking chip of metal on the table, hesitated before completing the gesture, then drew his hand back as though from a sleeping snake. He said, “Sit down! Let’s hear the whole story!”

The Treaty of Prague, Don Miguel had often thought, was the most fragile bulwark ever interposed between man and the forces of primal chaos. It was like a plug of wet paper in the mouth of a volcano—yet it was all they had.

At the time when Borromeo discovered how time might be rendered a direction like other directions so that men might make voyages along it, he—whom some called very wise, others very cynical—had clearly foreseen the uses to which fools might put his miracle. There were, for one thing, those in the Empire who wished to re-conquer Spain, the old heartland from which Christian civilisation had once more been driven by its virile Islamic rival, and who would not have been above sending back an army to ensure that change of history. This Borromeo feared so greatly that he came close, more than once, to destroying the results of his research.

But on reflection he decided that sooner or later someone else, without so many scruples, might stumble on the same
discovery, so it was up to him to make the best of it. That was why he founded the Society of Time, as an organisation of responsible persons bound by oath to use their techniques wisely and honestly, to increase the sum of human knowledge but not to interfere with the past.

Nonetheless, what he was afraid of happened, and some lunatics began to agitate for the reconquest of Spain. For a while it looked as though madness would overcome sense. Then, however, the balance was swung. The Confederacy of Europe let it be known—discreetly, delicately—that they too had gained the secret of travelling in time. If an Imperial army went back to oppose the conquest of Spain, it would be met by corresponding forces determined to keep the status quo—for the Confederacy regarded the Empire as quite strong enough already without the retrospective addition of Spain to its lands.

It was whispered, but never proved, that Borromeo himself had leaked his secret to the Confederacy. At any rate, it was all for the best; the Empire came to its senses, proposed Papal arbitration and an agreement that neither of the two power blocs would ever interfere with history to the disadvantage of the other, and signed the Treaty of Prague. The Treaty was Borromeo’s last legacy; three weeks after it was signed, he died of a chill caught in the mists of Poland, for it was a bitter winter that year.

But now . . .

"It’s good steel," Don Miguel said, pointing to the object on the table. "It’s the bit of a rock-drill—cracked in half. We’ve never mined that valley, I’ve established the fact beyond doubt. And history shows us no one who knew how to make good steel and who passed through California prior to our discovery of the New World. In company with Two Dogs, the manager of the mine, I searched the locality for several miles around. We discovered the traces of other mine-galleries, all of them caved in; Two Dogs was able to estimate that they had been collapsed approximately a thousand years ago. Moreover, once or twice at least the miners have been puzzled to find that a vein of ore ended unexpectedly—usually a very thick, rich vein, which should have continued far further. Such evidence points to the ore having been worked some considerable time ago."

The Prince exchanged a glance with one of his aides, and then indicated that Don Miguel should continue.
"I read it like this." Don Miguel licked his lips. "It's been known for a long time that those hills are rich ones. I think that the intruders decided to mine them at a time when we had not yet started exploiting the area. They went back in time to do so. Later, our undertaking crept close to the area they had chosen; they broke off their work, collapsed the galleries, and abandoned the project. Or maybe they didn't even go to that much trouble—after all, California is earthquake country, and in a thousand years you'd expect the galleries to cave in of their own accord. It may have been pure chance that preserved the one where Two Dogs discovered this steel drill-bit."

"You say it's been lying there for a good thousand years," the Prince mused. "Yet it's barely marked with rust."

"The mouth of the gallery was closed by this balanced boulder that I spoke of. Earth and grass-roots had made an almost perfect seal around it, and the interior of the cave was dry. In any case, the climate is equable."

For some moments the Prince was silent. His dark eyes searched Don Miguel's face. Then he said heavily, "You've made a case, Navarro. We'll get time apparatus out there as quickly as we can, and see if we can secure objective evidence." He rose to his feet. "Meantime, we'll also notify Londres, and bring out our most highly trained investigators. I'm not questioning your judgment, but—to charge a breach of the Treaty of Prague would be disastrous if it were unfounded."

"Sir," Don Miguel said with feeling, "I pray that I'm wrong. For how much more disastrous it will be if the charge is true!"

Before the discovery of humane drugs to unlock the gates of truth in the mind, there had been a torture—used even by the Holy Office—consisting in the placing upon the subject of a large wooden board, and in turn upon the board a succession of stones of increasing weight, so that in the end a stubborn man would be crushed like an insect beneath a boot.

For Don Miguel the next several weeks were like a period of that torture. And he was not the only one to suffer.

The first stone was the lightest. It was rumoured and had been for some time that there was more gold and silver circulating in the Confederacy than their known resources would account for. But it was not unreasonable to assume that new and so far secret lodes had been located—until suspicion began to gnaw as a result of the affair in California.
The second stone was heavier. A metallurgical expert compared the mysterious drill-bit with samples of other steels, and reported unequivocally: made in Augsburg! It was a type commonly used in the mines of the Confederacy, but hardly ever encountered elsewhere—certainly not in California.

The third and heaviest was a report from the men whom Two Dogs—at Don Miguel’s urgent request—had set to searching the route between the site of the poachers’ mine and the coast. It was unthinkable that a time apparatus belonging to the Confederacy could have been smuggled into California recently, but of course in operating the apparatus a spatial component could be included in the temporal displacement; any place on Earth where the gravitational potential was nearly the same was accessible from a given starting-point. Nonetheless Don Miguel doubted if this technique had been used—at least, not on the first trip. Jumping into the dark was far too dangerous. He suspected that the poachers would have shifted back while on familiar ground, and then would have voyaged by more conventional means till they located their target.

And the men sent by Two Dogs, following the most obvious route to the sea, came across a ship’s timber buried in the sand, of a form not known to the aboriginal inhabitants of this land, and of an appearance that suggested it had been lying where they found it for some such period as a thousand years.

Weighed down by these facts, the members of the team hastened their preparations. The time apparatus was installed under the habitual conditions of secrecy—few people outside the Society ever saw an actual time apparatus, because it was so dangerously simple, composed only of bars of silver and magnetised iron in precisely determined relationships, and it might have entered somebody’s head to make a model of what he had seen ... with the disturbing consequence that the model might work.

Accordingly, a small town of canvas marquees bloomed in the California sun, and the labourers and their families went by incuriously for the most part, occasionally pausing and watching for a few minutes, but not often.

It was on the shoulder of the hill separating the valley where Two Dogs managed his mine from the valley where the time-travellers had established themselves that Don Miguel met his friend again for the first time after suspicion turned to certainty.
Don Miguel was plodding up the slope, head bowed, feeling as though the limping world were using him for a crutch, when he heard his name called and raised his eyes to find Two Dogs waiting ahead of him. The Mohawk’s face was inscrutable, prepared for any news.

“Well?” he said as Don Miguel came up.

“They found them,” Don Miguel said. “At 984. They worked through a summer here. They killed a Mohawk Licentiate who showed himself to them. With a gun.”

Two Dogs showed no reaction. He said merely, “So your millstones are going to grind again, and we shall be between them.”

“What do you mean?” Don Miguel said wearily.

“Is it what you suspected—poaching by the Confederacy?”

“Yes. No doubt of that. They’ve been seen, and heard talking.”

The Mohawk nodded. “Then this is a breach of the Treaty of Prague—and what are you going to do about it? Fight a war? With each side taking the other in the rear of time?”

“I don’t know,” Don Miguel said. The heat of the sun and the terrible news were conspiring to make his head spin.

“You can’t do the sensible thing, apparently,” Two Dogs said. “That would have been simply to wipe out the poachers at the end of their stay here, when they had made changes exactly corresponding to the traces we found, which led to their discovery.”

Don Miguel said sharply, “Why not?”

“Because—well, I was assuming that if you could, you would.” Two Dogs hesitated. “It isn’t that it hadn’t occurred to you, is it?” he ventured.

“So far nobody’s had time to decide on a course of action. But I don’t see why we shouldn’t do as you suggest—we’d risk creating a closed causal loop, but . . .” His voice trailed away, and he straightened his bowed shoulders. Clapping Two Dogs on the arm, he said, “My friend, do you have any of your fine Californian wine? I’m nearly dead of thirst, and I want to drink to your probably very practical suggestion. Don’t ask me to pass final judgment on it, though—we’ll leave that to Father Ramon, who’s due here in a couple of days’ time.”

Two Dogs gave a slow smile. “Of course I have wine,” he said. “But somehow I’ve lightened your depression already, I can see.”
Chapter Three

Don Arturo Cortes came, who still had the look of a man haunted by the ghost of himself, and who had not been a friend of Don Miguel's until he saw that ghost; Don Felipe Basso came and said that a certain Lady Kristina was sad at not having seen him again before she left Londres on her father being appointed Ambassador to the Confederacy; Father Ramon came, and unlike the other two showed no trace of the effects of the appalling journey, night and day from New Madrid in the huge cushion-wheeled transcontinental express-wagon which stopped only to change horses and pick up provisions. Don Miguel saw the last relay of horses as they were led away from the wagon on its arrival; they looked fit for the knacker.

These three, the very night of their arrival, gathered with Don Miguel, and the two experts who had had charge of the investigations here, of whom one was an Inquisitor. They met in one of the huge marquees set up by the Society over the hill from Two Dog's mine. There was a breeze, and their shadows cast by flaring lamps on the white canvas behind them moved in eerie fashion as they sat around their table.

Don Rodrigo Juarez had conducted the expedition to the past personally. Since what had happened to Don Arturo Cortes, men had begun to speak of Don Rodrigo rather than of Don Arturo as Red Bear's probable successor in the General Officer's post of Director of Fieldwork. Don Rodrigo knew this, and saw that Don Arturo knew it also; the fact made his voice seem unpleasant as he reviewed what had been done.

"We found them," he said. "We saw them at work, and we heard them talking among themselves. To avoid anachronism we were clothed — unclothed, rather — as Indians such as we know to have frequented California in those days. A Licentiate from New Castile, a Mohawk known as Roan Horse, volunteered to show himself at their encampment. They shot him dead on his mere appearance. I agree with Don Miguel Navarro; we have a clear violation of the Treaty of Prague."

He sat back, jutting out his jaw. He was a large man whose mother had been Scots, and his gingery hair and lantern jaw were from her family.

All eyes turned to Father Ramon, who had been listening with total concentration to Don Rodrigo's story. Keenest of
all to hear the Jesuit’s opinion was Don Miguel, whose mind ached for it.

“No,” said Father Ramon at length. “We have not.”

“What?” All of them said it, except Don Felipe, who was keeping himself to himself.

“I said no.” Father Ramon turned his bird’s head slowly to regard them one after the other. “For various reasons. Not the least compelling is that a breach of the Treaty would be a total disaster, and we must avoid that at all costs. Luckily one has not yet been committed.”

“But—!” Don Rodrigo began. Father Ramon’s thin hand went up to interrupt him.

“Don Rodrigo, before leaving Londres I checked your qualifications. They’re excellent. But they omit one important item. You’ve never attended the School of Casuistry at Rome; if you had, you’d have gone through a gruelling course of disputation on this very subject of a breach of the Treaty of Prague. Believe me, when the Vatican’s experts framed that Treaty, they did not do it in a hurry, or in such a way as to leave loopholes.”

“If there are no loopholes,” Don Rodrigo snapped, “then why has no breach been committed by this flagrant act of poaching?”

“You should know why,” the Jesuit said calmly. “In your position you should. Don Miguel’s misunderstanding is forgivable; in the ordinary course of his career he would not be due to attend the School of Casuistry for another five years or so. Your colleague, however, I’m also surprised at.” He shot a frown at the Inquisitor. “How say you, Brother Vasco?”

The Inquisitor shifted on his hard bench. He said, “I’ve reserved my judgment till I can consult a text I needn’t name. I confess my memory of it had worn thin.”

The Jesuit pursed his lips. After a moment he shrugged.

“On the other hand,” he said, “Don Arturo has attended the School in Rome. And should by now be bursting with the right solution.”

They looked at Don Arturo, their heads moving as if pulled by strings, and saw him pass his hand shakily across his face. “Solutions to the present problem I have none, Father,” he said. “But I know one thing almost beyond a doubt.”

“What is?” Father Ramon prompted.
"There hasn’t been a breach of the Treaty of Prague because such a thing is virtually inconceivable."

Don Miguel glanced at his friend Don Felipe, and received in return a look which said, "I’m out of my depth here." He turned back to Father Ramon.

"I—I must plead for myself, Father," he began, and got no further. The Jesuit smiled, as usual like a parchment-covered skull, and shook his head.

"Save your apologies, my son. They’re not justified. An intent to break the Treaty is perfectly conceivable, and it appears that that’s what you’ve chanced upon. Let me clarify the situation in terms which I think the judge of a Papal court would use." He raised one bony finger.

"Imprimis—the death of Roan Horse. He was an extemporaneous, was he not? His death had no consequence in the past; its effects began at a point in present time which is demonstrably later than the point from which he departed. It may also be later than the point from which the—the poachers, as you so conveniently name them, departed. This is not certain, but it’s probable."

A second finger went up. "Secundo, there is a particular clause in the Treaty under which I am sure Don Rodrigo has been champing to frame an indictment. It states that neither party to the Treaty will act in such a way in past time as to cause a disadvantage to the other party affecting present time. It cannot be said that the abstraction in past time of a limited quantity of ore from this valley has been disadvantageous to us in present time—indeed, we haven’t even extended our mining operations to that point yet."

Don Miguel was too full of an overwhelming relief to comment. Not so Don Rodrigo. He said aggressively, "But if they’d stolen the ore from the next valley, where we’re already mining, this would indisputably have set us at a disadvantage! In fact, the mine manager tells me that they’ve found veins of ore which ended unexpectedly—and we’ve correlated this with the activities of the poachers! Much as it disturbs me to contradict an expert of your calibre," he added with bad grace, "I feel you’re overlooking something."

"Nothing," the Jesuit replied. "Or rather, not I but all the experts in disputation who have threshed out possible interpretations of the Treaty." He lifted another finger. "I say
further that, *tertio*, at the time when the poachers took the ore there was no property right subsisting therein."

Even Don Felipe gaped at the appalling casuistry of that remark. As for Don Miguel, he could not restrain himself from an explosive—but fortunately wordless—reaction. Father Ramon turned to him.

"I know what you’re thinking, my son," he said. "You’re thinking that if this is so, what’s to stop us systematically rifling the prehistoric ages of the territory now occupied by the Confederacy, so that their lands will be poor and empty? I can answer that immediately. It wasn’t done. And why should it be done? If we do it to them, they do it to us—and each of us winds up with the other’s resources in any case, at the cost of infinitely greater effort."

He switched his penetrating gaze back to Don Rodrigo.

"What you’ve forgotten, my son," he said with some gentleness, "is that the signatories of the Treaty of Prague wanted very much to prevent it ever being broken. The power to alter past time is so pregnant with terrible possibilities that no sane man could overlook them."

There was silence between them for a while. During it, Don Rodrigo began to blush like a woman, and seeing him Don Arturo smiled for the first time that Don Miguel could remember since that terrible New Year’s Eve. It was embarrassing to Don Miguel. For the sake of breaking the silence, he said, "Something must surely be done, nonetheless!"

"Yes, that’s clear," the Jesuit agreed. "May we have your proposal to begin with?"

Don Miguel stumblenogued. He said, "Why—why, I have no plan. Only a suggestion by Two Dogs which seemed to me to make fair sense, which was that we should pick the moment during their expedition at which the poachers complete their work so as to leave the correct traces which Two Dogs later discovered, and then step in. The death of Roan Horse suggests that we might teach a lesson which would not be soon forgotten."

"Agreed," Don Rodrigo said. Don Felipe looked cheerful and rubbed his hands together; this was his kind of game.

"No," Father Ramon said. "At least, not insofar as we are to copy what they did to Roan Horse. But we should certainly step in, and we should certainly learn who they are, and why they’re there, and speak with them."
"Speak with them?" Don Rodrigo was scornful. "They shot down Roan Horse in cold blood!"

"I doubt if they will fire on an obvious extemporate," Father Ramon said. "Especially if he wears the cloth."

That took a moment to sink in. Brother Vasco was the first to speak. "Father, you're not thinking of going alone!" he exclaimed.

"No... By way of imprinting a small lesson on a certain party who has—not for the first time—overreached himself, I shall go in the company of... Don Miguel Navarro."

He did not switch his gaze until he had finished speaking. Don Miguel shrugged and smiled. He said, "As you say, Father. I confess, I'd not have started this wildcat rumour if I'd been better schooled in the legalities of the matter."

"Good," Father Ramon said, and glanced at his watch before standing up. "It's late. Tomorrow morning, then, I'll require the use of your time apparatus for us, and we'll settle the problem—God willing—once for all."

"What's been decided?" came the soft question from Two Dogs. He was sitting out late on his verandah, awaiting Don Miguel's return from the meeting. On the floor at his feet Conchita, his serving-maid and mistress, sat picking ethereal chords from her cuatro, a small four-stringed guitar. He had offered her to Don Miguel a couple of times when first he came to stay at the house, but this was so far from the customs of home that Don Miguel had refused automatically, and the offer had never been repeated. Subsequently he had looked again at Conchita, who was slim, berry-brown and graceful as a dancer, and regretted the fact. He could have welcomed the mere physical relief of her company as a key to the sleep which worry had so often denied him these past few weeks.

He sat down in the guest-chair wearily, and waited while Two Dogs dismissed Conchita with a gesture; she went like a shadow, silently. Then he said, "There's been no breach of the Treaty."

For a long moment Two Dogs didn't comment. Then he said, in a tight, controlled voice, "How's that possible?"

"You're too practical a man to follow the casuistry." Don Miguel shut his eyes. "I barely accept it. I'll just say that instead of what you proposed, we're going to pay them a sort of social call—Father Ramon and myself. What will come of it, lord knows."
Two Dogs laughed harshly. He said, "Indeed, indeed, as I said to you before—you’re a strange people, and we’ll never understand you. It seemed to me that you regarded your mines your gold, as we regarded our hunting-grounds in the old days. If outsiders came, and stole our game, we made war on them, and they didn’t come back. Now here’s this case where your beloved ore is filched, and you’ll do nothing to restore it."

"We can’t." Don Miguel felt suddenly extremely tired. "We found the traces of the poachers’ work; we can’t cancel it out, for then we’d never have found the traces. I didn’t see it before, but Father Ramon made it clear; both parties to the Treaty of Prague wanted to make it impossible for a violation of that Treaty to lead to a war fought in time. So we shall settle it by calm discussion."

Again there was silence. Finally Two Dogs stood up. He said, "Well, I suppose it’s a small consolation that your millstones won’t be grinding us. I’ll bid you good night, Don Miguel. And I’ll wish you sharp wits in your discussion with the poachers—if I’m any judge, you’ll need them."

He left the verandah, and it was not until he had gone to his sleeping-room that Don Miguel realised how peculiarly phrased his final comment had been. He got out of his chair, intending to pursue the matter, but Conchita had gone in with her master, which made the idea impossible, and anyway he was far too tired.

Chapter Four

As Don Miguel had expected, the valley had changed so little in a thousand years that it was not incongruous to see a mining encampment in the valley when they walked over the brow of the hill behind which they had arrived, choosing a moment when they were unlikely to be observed at once. There had been earthquakes, certainly; there were subtle differences in the outline of some of the nearby slopes. But you could recognise the identity of the valley at the two time-points.

He felt a stir of admiration for the magnificently simple stage-management of Father Ramon’s plan. When they paused on the crest of the hill and let the poachers see them, the effect was instantaneous. Indians such as were to be expected at this moment of time would have called forth violent reactions but to see Father Ramon in his sombre habit, and Don Miguel wearing—at the Jesuit’s insistence—the jewelled collar and star of the Order of the Scythe and Hourglass conspicuously
glittering on his plain shirt: this was something to inform the poachers without words that their presence and their plans were known.

They waited, a light breeze touching their faces, while the impact of their arrival sank in. Don Miguel had his first chance to study the tented settlement, the mouths of the galleries, the sluices, and the rest of the equipment, all so like the mine which Two Dogs managed that he had to keep forcibly reminding himself that this was a thousand years away.

Work stopped. Harsh barking orders brought men out of the galleries to blink in the sunlight. Overseers—not a few of whom wore the uniform of the organisation which was the counterpart in the Confederacy of the Society of Time in the Empire—snapped at each other and their men.

Still the newcomers waited, for fully five long minutes in the baking sun of late summer, until at last a man detached himself from the ant-milling crowd and came up the slope to meet them, accompanied by two of the uniformed overseers.

"Good day, sirs," he said in heavily accented Spanish. "I do not have to ask the reason for your presence. Permit me to present myself: the Margrave Friedrich von Feuerstein, Deputy Master of the Wenceslas Brigade, High Brother of the Temporal College. I recognise your honour as Father Ramon of the Society of Time."

The Jesuit inclined his head. "We've met before," he acknowledged. "Though possibly you may not recall our meeting. In Rome—twenty-seven years ago, as students in the School of Casuistry. My class was departing as yours arrived."

"Why—that's so!" the Margrave said, and extended his hand. "Strange that our acquaintance should be renewed here and now!"

Father Ramon ignored the offered hand. He said, "No, it's far from strange. Are you in charge of this—venture?"

The Margrave hesitated a moment. Then he withdrew his hand, folded his arms across his chest, and said challengingly, "I am!"

Father Ramon reached inside his habit and produced a rolled parchment. With his bird-claw fingers he undid the fastening and shook it out; a heavy red seal swung on a ribbon from the bottom of it. He seemed suddenly to speak in a voice other than his own, holding the parchment up as though to read from it, but looking all the time at the Margrave.
“This,” he said, “is a copy of a Papal bull. Do I have to tell you that it is the bull *De tenebris temporalibus*?”

The Margrave smiled. He was a large-jowled man with grey hair; the smile made plump hummocks of his cheeks, on the crest of each of which showed a red network of broken veins. He said, “I defy you to show cause for invoking that bull.”

“We are not required to show cause.” Father Ramon stared unblinkingingly. “But in a Vatican court we’re prepared to. You have twelve hours, present time, in which to remove your men, your equipment, and all traces of your presence up to that point which we decree, on pain of summary excommunication by the powers vested in us under the aforesaid bull. I read it!” He snapped the nail of a forefinger against the stiff parchment so that it sounded like a beaten drum, and still without looking away from the Margrave began to recite.

*De tenebris temporalibus et de itineribus per tempus leges instituendae sunt. In nomine Deo Patri Filio et Spiritu Sancto dicimus et affirmamus*—

The whole world seemed to hesitate to hear the rolling Latin syllables ring out through the hot still air. *Regarding the shades of time past and regarding journeys through time laws are to be instituted. In the name of God the Father, Son and Holy Ghost we say and affirm* . . . Don Miguel felt his lips move on the familiar words which he had never before heard invoked.

“We say and affirm that the means of travelling in time is a gift bestowed by divine ordinance and therefore to be used only in accordance with divine law, subject to regulation, to conditions now or in the future to be laid down by Papal decree, and to the expedient judgment of those agents now or in the future appointed by us for the enforcement of those conditions. Let there be agreements between nations and before God for the employment of the means of travelling in time for the benefit of humanity and the increase of human knowledge, and let there be penalties imposed upon those who are tempted for evil ends to pervert and misuse the means of travelling in time.”

The Margrave waited patiently until Father Ramon re-rolled the parchment with a crisp rustle, and then he said merely, “On what grounds do you base your orders? Can you show proof of evil?”

“Yes,” Father Ramon said delicately. “But not evil of your doing.”

The Margrave blinked. He said, “What then?”
Don Miguel could hardly believe his ears. He stared at his companion, who took notice and gave a faint smile. "Be easy in your mind, my son," the Jesuit said. "You'll see it all in a little while." And to the Margrave he added, "Is there somewhere we can speak together in confidence?"

"Yes! Yes, in my tent below. I'll see we're not disturbed there." The Margrave made to turn, but lingered for a long moment trying to read the expression on Father Ramon's face.

He failed, and led the way down the slope towards the mining settlement. Several of his overseers came up to him, demanding instructions. He told them to halt their work, and to wait for further orders. It was clear that they were puzzled by this, but glad enough of a rest, for the sun was scorching.

"Now explain yourself!" the Margrave said, when they had taken their places in his tent and were alone.

"I'd rather you began by explaining yourself," Father Ramon countered.

The Margrave shook his head sharply.

"Well, then, I'll explain you." Father Ramon put his sharp elbows on the table separating them. "I don't care, by the way, about the ore you've taken on territory which is to be Imperial ground by treaty with the Mohawk Nation a thousand years from now—doubtless, you've made some profit, or you expected to make some profit. That's totally beside the point. I want to show you the probable course of going ahead as you had in mind.

"It's no secret to anyone that the Mohawks are the Empire's uneasiest allies. But this doesn't make them friends of yours—a point you overlooked. Legally, there may be a claim to be made for freebooters' right in the ore you've taken. I doubt if there's one for Mohawk rights—they were nowhere near this part of the world... I correct myself: they are nowhere near, and indeed I'm not certain that they could be found to exist as a precedent tribal unit.

"Forget all that. Think of the predictable consequences of what you intended to do. You're perilously close to a breach of the Treaty of Prague—and if it weren't deliberately framed to be unbreakable in all reasonable circumstances, you'd have broken it already. Without prejudice, we're prepared to overlook the fact. We want to keep the treaty intact."

"Doubletalk," the Margrave said curtly, and Don Miguel found himself inclined to agree. What had the Empire-Mohawk alliance to do with this act of poaching?
"Are you prepared to act in breach of the Treaty of Prague?" snapped Father Ramon.

"Of course not!" The Margrave looked astonished. "As you yourself said, it's framed so as to be virtually unbreakable."

"But you think that the Empire-Mohawk alliance is not," Father Ramon said.

There was a long, cold silence. Finally the Margrave got to his feet. His voice had changed completely when he spoke again. It was heavier and somehow rang false, like a counterfeit coin.

"Very well. I'll clear the site and call the operation off."

Whatever had happened, it was effective. Don Miguel had still not figured it out when he found himself charged by Father Ramon to supervise the removal from this day and age of all the equipment used by the poachers, an order grudgingly acceded to by the Margrave, who told his clerks to provide fair copies of the equipment manifests so that Don Miguel could check that everything which had been brought was going back. His head swimming with the itemised lists of picks, drills, sieves, flotation and separation equipment, chisels, crowbars, saws, hatchets, axes, guns, powder, shot, he spent the rest of the day on the task.

It was not until he and Father Ramon had watched the entire process through its conclusion, with the vanishing of the poachers back to the twentieth century, that he had a chance to utter his burning questions. In the gathering dusk, he turned to the Jesuit.

"Father, I simply do not understand anything about this—neither what the Margrave was up to, nor what was meant by your references to the alliance with the Mohawks, nor why the Margrave so tamely packed up and went home—!"

"I'm hardly surprised," Father Ramon said wryly. "I confess I hadn't expected to be shown so right. I didn't know, I only speculated, as to the reason for this ridiculous expedition by the Confederacy."

The last of the poachers vanished into the gloom; there was the inevitable wash of heat, like the opening of a furnace door, which accompanied temporal displacements. Father Ramon waited like a statue for long seconds. Then he said, "Have you the means of making a light?"

"Yes."

"Come with me, then."
THE FULLNESS OF TIME

He started across the now empty valley towards the mouth of the gallery which Two Dogs was to discover a thousand years from now and bring to Don Miguel’s attention. It was closed by the counterpoised boulder, of course, but now it was freshly placed, and the shifting of the earth which later was to make it require the strength of two men to roll it aside had not yet occurred. Father Ramon set his shoulder to it, and gave a gentle heave; before Don Miguel could come to his aid, it had rolled and settled in the open position.

“Now—your light,” the Jesuit said briskly.

Don Miguel struck it and offered it, but Father Ramon waved the offer aside. “No, take it into the gallery,” he said. “Search carefully, along the walls and floor, right to the end.”

Much puzzled, Don Miguel did so. He found nothing, except some traces left by the workmen—and as he was coming back, he saw what Father Ramon was implying.

“Well?” the dry voice said as he emerged. Don Miguel had a struggle to make his own voice equally calm and level.

“It’s not there,” he said.

“You mean this?” Father Ramon felt in a pouch at his waist and produced the cracked drill-bit which Two Dogs had originally given as the key to the whole affair. “I thought it wouldn’t be there. Before my departure from Londres I made some inquiries of—well, of certain trusted agents. I’m prepared to state that this drill-bit was purchased in Augsburg the winter before last; I mean naturally in our present. And it was purchased by a Mohawk.”

He tossed it up and caught it again; the light gleamed on the shiny broken edge of it. “Put the stone back, my son. I think we should return—and when we do, we’ll make some inquiries of your affable acquaintance the mine manager. Two Dogs, isn’t that his name? I think we’ll discover that he’s by no means a mere miner, but someone of a very much higher calibre, and infinitely more dangerous.”

Bending to replace the boulder, Don Miguel turned the words over in his mind. He was about to speak, when another thought came to him. He said explosively, “But I knew it already! I had the equipment manifests in my hands, and I checked that the total of drill-bits returned to their time of origin was the same as the total brought here!”

“I know,” Father Ramon said. “I watched that phase of the operation with some attention. Come, let’s get away from here. We’ve had a long day, and we’re going back to the middle of another one.”
Chapter Five

It was always the strangest quirk of time-travel that a man might go back a thousand years to a later time of day, and feel below the conscious level of his mind that he had travelled forward, while by returning from a late hour to an earlier one he would feel he had travelled back. It was dizzying, as usual, to emerge from the dusk of the year 948 to the high noon glare of the day they had set out from.

Several Society officers were present to see them come back, headed by Don Rodrigo, who—possibly to atone for his ill-mannered speech to Father Ramon the night before—did not put his important questions immediately, but saw that they moved tiredly, and called for shade, wine and food for them.

That was very welcome. Don Miguel wiped his lips with the back of his hand and thanked Don Rodrigo with a nod, before turning, with everyone else, to listen to Father Ramon’s report. Among those who had assembled for the news he saw several—indeed, as far as he could see, all—of the Mohawk Licentiates present at the site. Doubtless they wanted to know the fate of the poachers who had killed their colleague Roan Horse.

Don Miguel started as he realised that that episode had not even been mentioned to the Margrave.

“We got rid of them,” Father Ramon said. “Almost more easily than I’d expected. The affair is closed.”

So short a report was not what anyone was waiting for. Don Miguel saw an exchange of startled glances. One of the Mohawk Licentiates on the fringe of the group whispered to a friend nearby, and then turned away. For a moment Don Miguel let his gaze follow; then a surprised comment from the Inquisitor, Brother Vasco, called his attention back.

“Father Ramon! It’s good to hear that they took their departure, but surely it can’t simply be left at that.”

“No, of course not.” The Jesuit was irritable. “As far as people here are concerned, though, it’s over.”

“What about Roan Horse?” snapped one of the Mohawks, the same one that a friend had whispered to a moment back.

“We shall require recompense—but that must be obtained properly, from the government of the Confederacy.”

A buzz of comment was going around now, like the droning of flies in the hot sunlight. The Mohawk spoke up again.

“That’s scarcely good enough! What compensation can we accept for the life of a good Licentiate and a brave man?”
There was a chorus of agreement, and someone else said, “And what about the ore they poached, too? It can’t be as simple as you say!”

It was then that the facts clicked together in Don Miguel’s mind. The only reason he could think of for having overlooked the obvious twice in one day was that he was confused and tired.

“Felipe!” he snapped, bounding to his feet, and Don Felipe Basso whirled to face him. “Sword—quickly! And over the hill with me!”

He shoved his way unceremoniously between the watchers and Felipe, not knowing why but impressed by his friend’s urgency, came after him.

“Wait, you!” the Mohawk snapped, and came towards them. “Where are you going?”

Almost Don Miguel unsheathed his sword, but as yet he had only suspicion to go on. Instead, he placed one palm flat on the Mohawk’s chest and hooked a toe behind his ankle, sending him sprawling. The sudden commotion had drawn everyone’s attention. Don Miguel saw Don Arturo starting forward, and barked at him.

“Hold this man! Hold his companions! Keep ’em here till we’ve gone over the hill—but one of them has left already, and we may be too late.”

He gestured to Don Felipe and began to run up the hillside track. Behind him the noise of confused argument grew louder, but he dared not turn back.

He breasted the rise, and saw that indeed he was already too late.

Alongside the mud-plastered house where he had spent so many nights as the guest of Two Dogs, Tomas stood inscrutable in his gay serape. He was shading his eyes to look towards a cloud of dust on the road towards the sea—and in that cloud of dust could be seen two horses, not the stumbling burros of the locality, but horses of the finest racing stock, being ridden as though to outpace the devil himself.

“Miguel!” panted Don Felipe, coming up beside his friend. “What’s this all about?”

“The birds have flown—and there’s the whole continent and ocean for them to hide themselves.” Don Miguel pointed. “Felipe, find Don Rodrigo—get men with good horses after those two! One of them is Two Dogs, who’s been posing as
the mine manager here, and he's probably the most dangerous man in the world!"

Don Felipe threw up his hands in a hopeless gesture, and turned back. His exclamation made Don Miguel turn also, and with sinking heart he saw that down in the valley there was flashing of steel, and some of it was coloured red in the sun. Red, too, was spreading across the dark habit of the bird-like figure seated in the chair in shade of the awning at the focus of the group.

"Father Ramon!" Don Miguel cried, drawing his sword. Together with Don Felipe, he launched himself down the slope.

"What we forgot," Don Miguel said uncertainly as he set aside the leathern water-bottle, "was that when we say Mohawk that's like saying Imperial. In the Empire there are people of Spanish extraction—English—Netherlanders—French . . ."

The others—all those who were in a condition to stand up and pay attention—nodded as though his words were pearls of perfect wisdom. If they knew how little he had actually learned, how much he was simply guessing, they would be less willing to lean on him as they had leaned on Father Ramon. But Father Ramon was dead. And he was not the only one.

"So too," Don Miguel continued, trying to make everything crystal-clear, "Mohawk is a general term, convenient because it was our alliance with the Mohawk Nation that enabled that people to become the dominant power of this continent and subjugate the Crees and the Cherokees and the Choctaws and all the rest. Scores of them—scores of tribes! Some of them very resentful of the ascendancy which the Mohawks had achieved—others less so, and willing in the event to be regarded as members of a single super-tribe as we were willing to become Imperial citizens."

Don Rodrigo, his left arm in a sling, grunted. He said, "Are we to take it that it's the resentment you describe which accounts for this fantastic day's happenings?"

"Partly," Don Miguel said, and was going to explain further when he saw the bowed, weary figure of Brother Vasco approaching through the wavery heat of the afternoon. "In a moment, though, we may be able to hear truth rather than my guesses, if Brother Vasco has been successful in his labours."

The Inquisitor came closer. In answer to an unspoken question from Don Miguel, he nodded.
“He’s alive—the one who challenged you,” he said. “They told me he was called Red Cloud, but—I gave him some of my relaxing draught and asked how he was named, as is customary.”

“And he said what?” Don Miguel started to his feet.

Brother Vasco gave him a strange look. “He said his name was Bloody Axe,” he replied.

“Let’s go to him and get at the truth behind this,” Don Miguel said, and strode towards the place where the injured man was laid.

The techniques of the Holy Office were refined more than they had been, as Don Miguel well knew; they were also more effective. It was eerie to see this man who consciously would prefer to die rather than utter the secrets he kept, yielding answers to every interrogation under the influence of Brother Vasco’s draught.

Two Dogs? His real name, the injured man said without being able to stop himself, was Hundred Scalps, but he was commonly known as Broken Tree. At that, one of the non-Mohawk Licentiates drew breath sharply and said that he knew the name as that of a brilliant student at the Mexicological Institute some years before.

That fitted.

The information Bloody Axe gave them pieced together in Don Miguel’s mind with the clues dropped by Father Ramon before he was killed to make a terrifying unity. Its roots were in envy, as usual in human affairs.

The Confederacy’s expansion was barred—partly by the contrary expansion of Cathay, partly by the hostile winters which locked up so much of its potential northern territory. By contrast, the Empire’s alliance with the Mohawk Nation gave access to a continent over much of which the climate was equable, and whose resources were mostly still uncharted, let alone tapped.

Some Indians, jealous of Mohawk supremacy, planned to make a breach between the uneasy allies, using the Confederacy as a wedge. They made an approach in simple terms to the government of the Confederacy. They stated their feelings about the Mohawk-Empire alliance frankly, letting it be assumed that they would ultimately transfer their allegiance to the Confederacy. They asked for help. The Confederacy might have given it anyway; a promise of payment was made
which clinched the deal. The Indians offered to pay by giving the Confederacy access to resources which they knew about, but had not yet begun to mine for the Empire. Clearly the Confederacy would have to take their profit at a time when nobody was there to argue with them, and the Indians promised to conceal the traces for them.

After much pondering, the Confederacy agreed. In law, it could be argued that at the time when they proposed to take the ore, it belonged to nobody, or if it did, it belonged to the ancestors of the present-day Indians. It might not be possible, as they were promised, to conceal the traces—but what did that matter? If the facts came to light, they would drag with them for all the world to see the truth about the Mohawk-Empire alliance. It would splinter, and it was to be hoped that at least some of the splinters could be picked up by the Confederacy.

But it would be easier for all parties, of course, if the secret could be kept.

The proposers of the plan, once it was accepted, took steps to ensure not only that the loss of the ore was discovered, but to pin the deed squarely on the perpetrators. Part of it was luck—the fact that Don Miguel stopped off in New Madrid to present his compliments to the Prince, and let it be mentioned that he was bound for a vacation in California, suggested an opportunity too good to miss.

And but for the fact that Father Ramon’s agent knew of a Mohawk—or rather, a Mohawk subject—who had lately purchased some drill-bits in Augsburg, the result would have been as Two Dogs expected, especially when Roan Horse was killed. For this was only the first step. All over the continent there were other sites, waiting to be discovered. This one was genuine; the others were manufactured. The plan was that the Imperials should complain officially; the Confederacy would issue denials and promises that the same would not be done again... and then, time after time, evidence would be produced that it had been done. The same procedure would be adopted to fake these sites as had been used by corrupt Licentiates in Europe to take wealthy patrons on illegal sightseeing trips—one and the same journey would be used for a legal and a covert purpose. Since there was a sharp limit—four thousand four hundred and sixty years and a few weeks—on the operating range of time apparatus, by establishing the faked sites at maximum distance in the past it could be rendered
impossible for anyone from a later point of departure to visit them and see that they were being prepared by Indians, not by miners from the Confederacy. And more than one drill-bit had been bought in Augsburg, and could be left if evidence had to be supplied.

In face of the Confederacy’s denials, more and more indications of wholesale plundering would be found. Suspicion would mount—how much of our resources have been taken? Accusation would pile on accusation—there would be Papal adjudication, probably going against the Confederacy, so that the injured innocence of the Confederacy would turn to a cynical determination to be hanged for a sheep. So . . . violence.

Oh yes. The millstones across the sea were to be set grinding again, and from between them—so it went in the grandiose vision to which Two Dogs had dedicated himself—the unwilling subjects of the Mohawk Nation and the Empire its ally would escape into the freedom they desired.

Stunned by the subtlety of the plan and the narrowness of their escape, Don Miguel brought himself to put one last question to Bloody Axe. Suppose the plan was discovered and thwarted—as indeed it had been?

The answer struck cold and hurtful as that same axe-blade for which he had been named. “In that event . . . rather than endure the Empire’s vengeance . . . we have sworn to bring it down around your ears, and all of history with it!”

Chapter Six

“We have to deal with a madman!” the Prince said.

Don Miguel nodded. “There’s little doubt of it. I’ve not wasted a moment of the time since we discovered the truth—thanks to Brother Vasco’s inquisitorial skill.” He nodded at the Dominican beside him. “We have set on foot inquiries into the background of this man—Two Dogs was an alias he adopted on the old Indian custom whereby a child is named for the first ominous thing the father sees on leaving the birth-tent. He has been known variously as Broken Tree, Hundred Scalars, Storm of Rain, and several other aliases. As for Bloody Axe, who passed as Red Cloud when he became a Licentiate of the Society, his career is nearly as chequered. Almost sixty of the
Licentiates granted their time licences in New Castile have proved to be associated with one or other of these two.”

“We have to deal not only with one madman,” Red Bear said. His long face was shiny with sweat, and his braided hair hung dull beside his head, as though tarnished with strain and worry. No one could question Red Bear’s allegiance to the Empire and the Mohawk Nation—he was Mohawk for ten generations back. “We have to deal with madmen in the Confederacy! As you know, we’ve risked creating local causal loops a hundred times in the past few days, by operating time apparatus at maximum spatial angular displacement and minimal temporal displacement, so as to negate the time required to traverse distances. Already we have exceeded the safety margins laid down by Borromeo—but that’s beside the point. What matters is that we got the news of the danger to diplomatic contacts in the Confederacy as soon as it was humanly possible—and some fools over there are hindering the co-operation of their Temporal College with us, thinking that for the Empire to fall about our ears as was threatened will be no bad thing for the Confederacy!” He spat with vicious accuracy between his feet. “Are they all out of their minds?”

“It seems like it,” the Prince said. His face was grey—the first time Don Miguel had ever seen a man’s face go that colour, through sheer unmitigated terror. One day, Don Miguel knew, he would probably look in the glass on rising from one of his sleepless nights and see that same greyness on his own tanned skin.

He half-turned to look down the long table at which the officers were congregated. This was no mere private meeting in the Prince’s chamber of audience—this was the first full meeting of the General Officers of the Society to be held in New Madrid since the one called to establish the New Castile Chapter of the Society, better than sixty years ago. As Red Bear had mentioned, the limits of safety had been strained to bring the officers here—some of these people, indeed, might even now be where they had been, having returned from tomorrow. It was that much of an emergency. There had never been one like it. There might never be another such—never, until the Last Judgment.

“Father Terence!” the Prince said. “I’m not slighting you if I say that I turn to you as I’d have turned to Father Ramon your late colleague—may he rest in peace.”
The man next to Red Bear shifted on his chair. He was most of the things that Father Ramon had not been—tall, heavily built, with a thatch of fair hair. He spoke with a strong Irish accent.

"Since Father Ramon went from us," he said, "of course no one has been able to match precisely the plans he doubtless had laid. I feel inadequate to take his place though I've worked with him for some years more or less closely. What's agreed is this: any attempt to create a closed loop by eliminating this Indian—Two Dogs, I'll say for convenience—by temporal intervention from this point will have incalculable consequences. I can only recommend it as a last resort. Moreover, his apprehension and execution at a point in past time will be unprecedented and a violation of all the canons of the Society. We must accordingly select—so long as we have the chance—a less dangerous alternative."

"Is there one?"

For a long moment Don Miguel thought he had gone too far in voicing his cynical thought. Father Terence flushed and bridled, where Father Ramon would have inclined his head and spoken with gentle reproof. He said, "My son, you've had greatness imposed on you by chance. Don't exceed the freedom it bestows on you!"

The story of that New Year's Eve when Father Ramon had condemned himself knowingly to an intellectual torture whose refinement passed imagining, as well as—incidentally—Don Arturo Cortes to being haunted by his own ghost and Don Miguel to being burdened by unique and impossible knowledge, came to the tip of Don Miguel's tongue. But now was not the time to speak of such matters. He held his peace and swallowed his pride.

After a pause and a glare at his interrupter, Father Terence resumed. "We analysed the studies which Two Dogs, under the name of Broken Tree, pursued while at the Mexicological Institute and previously at the University of New Castile. We took into consideration also the facts which Don Miguel Navarro laid before us regarding the secret society which he and Bloody Axe belonged to, and we've been able to make educated guesses concerning the point at which he would wish to attack the Empire's history."

"Guesses only?" stabbed the Prince.
“Bloody Axe was lucky to know even that this reserve plan existed. Its actual nature was privy to the members of an ingroup of the secret society—Two Dogs was one of them, but we can’t identify any of the others.” Father Terence broke off and coughed behind his hand.

“We are fairly sure that they would attack at the most crucial known point of our history—the conquest of England. It isn’t known what the course of events would have been if the Armada had failed to secure the seas for the transit of the forces from the Netherlands, but it can be argued logically that the Empire would have been swallowed up when Spain was conquered, having no prosperous alternative homeland to retreat to. As every schoolboy is aware, we barely survived the seventeenth century as it was.”

“So what are your proposals?” the Prince prompted.

“Have all the obvious precautions been taken?” Father Terence countered.

Red Bear gave a snort. He said, “Oh, we’ve placed loyal men in charge of every time apparatus we have, but what’s the use? Doubtless there are men associated with Two Dogs who can build him time apparatus good enough to serve his needs—or if not, then he can wheedle those idiots of the Confederacy into granting him passage!”

Father Terence hesitated. He said, “Well, then—our recommendations. We propose that every available Licentiate and Probationer whose loyalty is unquestioned shall forthwith be set to patrolling the causal paths leading to the sailing of the Armada and the conquest of England. If we fail to locate Two Dogs there, we’ll have to resort to direct interference. But the consequences are unpredictable.”

There was a dull, unpleasant silence. Finally the Prince said, “And that’s all?”

Father Terence shrugged. He said, “Yes. That’s all.”

The Prince turned to Don Miguel. “You had something to say, Navarro?”

Don Miguel put the same question to himself. Yes, he did—but it was compounded of his personal acquaintance with Two Dogs, of all the indefinable impressions acquired while he was staying under the same roof. It didn’t fall into words.

At last he shook his head, and the Prince slapped the table with his open palm. “Red Bear!” he said. “See to it—and in the name of God, man, find this lunatic before he ends us all!”
And it could happen . . . They knew it in theory. Don Miguel had spoken with Two Dogs, thought of him as an acquaintance ripening to the status of a friend, and knew that this was the sort of man who could bring history tumbling—the fanatic, the dedicated maniac of great intelligence and perverted idealism capable of committing the ultimate blasphemy of believing that he was uniquely right.

His own moment of notoriety was fading. The spotlight had turned on him because he chanced to have been on the scene when the crisis took fire. Now was the time for the organisers, the General Officers, the Don Arturos and Don Rodrigos, while he could once more resume his position as a mere Licentiate of the Society, with some experience and more credit than most of his age, but that only.

It would take a little while to arrange for this concentrated onslaught of the Society on this single perilous period of history and since even the simple presence of so many extemporates was itself dangerous many calculations had to be worked out, many special techniques tested, before they could depart. He himself, along with Don Felipe, would be among the first to be sent, to the very closest arrival point: the time of the Armada’s sailing. Possibly they would find all well. Possibly not. The second alternative didn’t bear thinking about.

Which was why, that evening, he met with Don Felipe in the drinking-shop which was currently popular with the younger members of the Society in New Madrid, and showed him a letter he had written.

"To Kristina?" Don Felipe said, his dark eyes darting back and forth between the folded paper and Don Miguel’s face. His friend nodded.

"I’ve written also." Don Felipe felt in the pouch at his waist. He showed a letter that might have been the twin of Don Miguel’s, except that the superscription was to the Lady Ingeborg. "But what’s the point?"

"The point?" Don Miguel shrugged. "In the writing itself, I suppose. How do you imagine it will happen if it does? A fading, or an instant obliteration?"

"We’ll never know." Don Felipe’s face darkened for an instant. "There’s one thing, though," he added after a moment in a more cheerful tone.

"What?"
"According to the experts, a potential soul is not subject to retribution, but is classed as Limbo-fodder. Which means that if Two Dogs succeeds, we can kick ourselves for not having taken advantage of our potential state."

"Do you find that funny?" Don Miguel said.

"No. No, honestly I don’t. But I think after a few drinks I might—and what better medicine for the ending of a world is there than laughter?"

So they called for liquor, and spent this final evening reminiscing.

Don Miguel had never before been to the Iberian peninsula, either in present or in past time. But this was by far the best-researched area of Earth, and for various reasons the time prior to the departure of the Armada was thoroughly explored. So his briefing had been excellent—condensed, precise, comprehensive.

And when he walked out into the month of June, the year of 1588, he could say to himself, "Now the Armada is assembling; despite the efforts of the English who have raided its ports and tried to burn its ships, work proceeds apace. The Duke of Parma will have a force of more than a hundred ships; he'll muster six thousand sailors and twenty thousand soldiers, and waiting in the Netherlands are as many more to conquer England."

Put into such concrete terms, and knowing that down in the harbour here such vast preparations were going ahead, made it all unreal. How—after all—could one man change the course of this single historical event? Short of commanding the weather, so that the English and not the Spanish fleet was favoured, surely nothing could be done!

And yet... pestilence aboard the ships? Poison in the water-barrels? Something like that might have the right effect.

He tested his command of the archaic language by inquiring the way to the waterfront, which he knew; he passed without question, and shortly found himself among all the last-minute bustle of preparation. The last detachments of soldiers were going aboard; the last hogsheads of pickled meat and barrels of water and biscuit, the last wagonloads of shot. Unnoticed, he wandered along the quays until he saw a wineshop, and there turned in. Gossip would take root here if anywhere.
There were few clients. Five minutes' conversation with the landlord told him why—now that the fleet was due to sail, of course, his custom was aboard.

"Here's to their good fortune!" Don Miguel said, raising his mug. "What say you?"

"I'll drink to it," the landlord answered. "But—though the true faith will triumph—I'm not sanguine of this venture."

Don Miguel halted the mug en route to his lips. He said, "Why so, then?" And heard his voice shake.

"Why so?" The landlord gave a coarse laugh. "With a commander who's sick at the least lurching of his ship?"

Don Miguel said faintly, "His Grace the Duke of Parma..."

"Parma?" The landlord eyed him strangely. "Parma's in the Netherlands, man! Medina Sidonia's commanding this fleet, and a worse sea-commander could hardly be picked in all of Spain!"

Chapter Seven

It was at that moment that Don Miguel Navarro became the first man to know that a universe was crumbling about him, except always for Two Dogs, and Two Dogs desired that it should be so.

The Duke of Parma... in the Netherlands. This was not history. The Duke of Parma, Spain's finest commander of the century, took the Armada to sea! Medina Sidonia—who was he? A nonentity, an entry in the footnotes of history books! And the Netherlands were secured permanently for Spain and its inheritor the Empire by that brilliant, unorthodox master of strategy, the Scottish Catholic Earl of Barton, who when the Armada broke the English resistance at sea was prepared with his hundreds of flat-bottomed barges to break the resistance on land as well.

Don Miguel said after such a pause that he thought he had heard the grinding of Earth on its axis, "And the Earl of Barton? Does he serve with Parma in the Netherlands?"

"The Earl of Barton?" The landlord shrugged. "Perhaps—I've never heard the name." He gave Don Miguel a curious glance. "Where've you come from, that you ask such questions?"

"Ah—I've been travelling." Don Miguel emptied his mug and got to his feet carefully. "My score—how much is it?"
The landlord rubbed his chin and mused for a long moment. All at once Don Miguel could not bear it any more. He snatched a piece of gold from his purse and flung it to the floor, then spun on his heel and took his departure at a headlong run, although reason told him that running could do nothing to speed his purpose.

He headed back away from the shore, making for the house which was the location for his return, his mind pounding faster than his feet. Yes, this was what he had wanted to say to the General Officers—that Two Dogs was subtle, that he would do nothing so open as poison the Armada’s provisions! The Earl of Barton: what was known about him? He claimed to be related on the wrong side of the blanket to the Scottish royal family—but so did scores of others. He appeared from nowhere in the Netherlands when Elizabeth ascended the English throne; from then on he made his name by sheer military brilliance, and when Parma was recalled to command the Armada he finished the Duke’s work in sixteen weeks of whirlwind campaigning, making sure for ever of the Netherlands.

That was the point at which Two Dogs had struck. Not here.

Now what was the Society to do? Lord Barton had come from nowhere, and to track him back to his origins would be impossible! Already it was impossible, for the man they were tracing could not exist.

For a second that fact stopped Don Miguel in his tracks, like a physical blow. He grew briefly aware that the townsfolk were staring at him, wondering what made a finely dressed gentleman race through their streets as though chased by devils, and at once ignored them again.

Was the Society to watch over the birth and childhood of a thousand royal byblows in Scotland, to find out which life Two Dogs had cut off? He could think of no alternative, and groaned because it all seemed so hopeless.

Then it occurred to him that he was still here and aware, and that therefore at this moment (he tried to bring back the laboriously-learned technique of five-dimensional thinking in which he had been schooled) the actual future existed and the potential future was unrealised. Accordingly there was hope even yet. The killing of the Earl of Barton—he didn’t doubt that Two Dogs would have made his work definitive—had created a period of suspension, and it was in this period that he now existed. If he could get back to the twentieth century
armed with his knowledge—if he could make the Society find the Earl of Barton—they could still thwart Two Dogs and restore history to its true form.

He began to run again, like a madman, and within ten minutes found himself before the house where the Society kept its temporal watch. The watchman on the gate leading up to it had passed him out shortly before, and was a Probationer he knew; he read Don Miguel’s anguished expression and let him by at once.

The empty house was eerie, and the great dusty room where he waited for the pickup was looming and dark after the bright summer day outside. He fumed with impatience while the sense of blazing heat grew around him, indicating the onset of temporal displacement, seeing the melting of his surroundings as time was rotated to become a direction through which he could travel, seeing the distorted shape of the cage of iron and silver take on relative actuality as it contained his body and drew it forward into time.

A terrible relief weakened him. So at least he hadn’t been forestalled in the carrying of his knowledge! The trip was going to take some “time,” because of the considerable angular displacement involved in the return to his starting point in New Madrid which inside the cage affected him as though it were ordinary time. He had a chance to calm himself and order his thoughts.

It must work this way. Two Dogs had gone back and killed the Earl of Barton. Owing to the tangential relationship between elapsed-past time and elapsed-present time, the results of this deed had not echoed down to Don Miguel’s own present before his departure for the year 1588. But in 1588 the effects were already established, and it was conceivable that they might have durated through to the twentieth century “while” Don Miguel was absent from it. If they had, though, it was to be assumed that this temporal pickup would not have taken place. With luck, Two Dogs had not departed until after Don Miguel; in this case, there was quite a considerable margin of actual time in the twentieth century in the course of which the work of tracing the Earl of Barton and ensuring his survival might be carried out.

If, on the other hand, Two Dogs had departed very soon after he was last seen, there was so little time for such a gigantic task that success was unlikely.
Don Miguel sat down on his haunches on the floor of the cage, and realised to his astonishment that he had become quite calm now he had had a chance to think things over. It seemed so unnatural for a single man to be able to wipe out the real course of history! Besides, hadn’t Two Dogs spoken of his people being ground between the millstones of the rival European invaders if the Empire hadn’t won its greatest victory? Would he desire that fate for his people?

Don Miguel shuddered. Yes, he thought. A man like Two Dogs might think it better that the Indians should go down provided only that the Empire went with them, and that the Europeans who came to his homeland should be torn indefinitely by their quarrels and never achieve the greatness of the united Empire.

Had he not, though, been too pessimistic in thinking that the task of tracking down Two Dogs would be impossible? A major figure of European history like Lord Barton must have been the subject of some research by the Society—they would not be hunting in the dark, but would have clues to guide them, and in a little while the natural order would be restored. The fools in the Confederacy who felt that the collapse in past time of the Empire would bring them advantages in the present would see reason; the members of the Temporal College would work together with the Society of Time to ensure . . .

Abruptly the growing cheerfulness in his mind was cut off. He stared at the frame of iron and silver which surrounded him, misty and deformed as always while in transit, and thought: it should be growing clearer as I come closer to the present. Instead, it’s growing fainter. Or is it a trick of the eyes?

He dared not touch the semi-solid bars to confirm what his eyes reported—that way, he would die quickly. There were vast energies trapped in the configuration surrounding him.

He stared, wondering what lay beyond the bars: reality, or some unimagined nightmare, and while he stared, he found out.

There was a wrenching. It acted on his bare consciousness, so that he perceived it as pain, and as blinding light, and as a sound which shook his brain in his head; as a burning fire, and as a headlong falling into illimitable abysses, one beyond the other without number or end.

That was the most terrible thing of all: that they were endless, and yet after an eternity, they ended.
THE FULLNESS OF TIME

He had sight and hearing, touch and the awareness of his body. He looked, listened, felt air and warm sunlight, knew he was physically present, knew he had weight and substance. And while his mind still echoed with the dying reverberations of the crash of a universe, he was not ashamed to scream.

But that, said a small voice far distant in his mind, is a foolish thing to do. It can be understood what has happened. Think! Think that in less than one short century after Borromeo, the world you thought of as being real spawned not only Two Dogs, but others beside. Think of the New Year’s Eve when a king was killed because men played with the power to master time. Think of the greed that made men steal from the riches of the past, and what had to be done to set right the consequences. Think why in your world that you imagined to be real no one had come back from the future to intervene in the future’s past...

True. Oh, God’s name! True as daylight, and never understood! If a span of a century less some years had brought about so many abortive interferences with the past, why had not the future, with its incalculable toll of years in which time travel would be possible?

Because there was no future. Not rooted in that past. Don Miguel Navarro drew a deep breath into a throat made sore by his foolish screaming and said the words to himself.

A picture was coming to him now. He could visualise the path of history in each of those innumerable potential worlds where men had gained the power of time travel as a series of loops. Every loop was like a knife; it severed the chain of causation and created a new reality. (Was there indeed any reality more real than any other?) At last the temptation to put the past to rights would lure one man at least to make the entire path of history unstable. The very events that led to the discovery of time travel would be wiped out, and a new universe would form.

Perhaps this was what had happened to him. He could almost grasp the concept, but not quite. If he had crossed the margin of the spreading ripples from the Earl of Barton’s death on his way to the past—as he clearly had, for when he came to 1588 the effects were established—then they would probably have durated to his starting-point as he was returning to it. In fact, he had been trapped between actual and potential “during” his journey...and here he was.
Where, then, were all the people he had known? Felipe, who had drunk with him last night, as it seemed; Kristina, who had made him the unwitting instrument of just such a loop in time as he was considering now—and who might have been more than a charming companion; the King, the Princes, the General Officers, the Margrave, even Two Dogs himself? Were they abolished from the total scheme of things, while he by a freak was left in possession of his knowledge and his life?

Only such a man as Father Ramon could answer that question—and even in the universe which Two Dogs had brought crashing down about their ears, Father Ramon was dead.

Passive, he began to study his surroundings. He was in a sort of park, apparently; people were coming towards him, drawn by his screaming, no doubt, for they hesitated while they were yet some distance away. They were dressed in extraordinary clothes; he saw young women as well as men among them, their legs bare to the knee, hatless, clinging shamelessly to the bare arms of their male companions. But behind them he saw a city: towers of a tallness he had never dreamed of, and there were sounds he could not identify, but which seemed to have their source in the sky overhead.

He looked up. Something far vaster than a bird was passing, stiff-winged. A mystery.

Now the people were getting bolder. A young man of about his own age came striding forward, and addressed what was presumably a question, in words completely beyond Don Miguel’s comprehension. He countered with a question of his own.

"Donde estoy?"

The man frowned. He said, "Espanol! Ah—you are in New York!" He spoke slowly and clearly, as to an idiot, and Don Miguel suddenly understood. Nueva Torque: New York. A derivative of English, the language which only peasants spoke in his universe—here, the tongue of this fantastic city. He hunted through his limited recollection of the parent dialect and formed his second question.

"When? Please—which year?"

The man blinked in astonishment. Either he didn’t see the point of the question, or he hadn’t understood Don Miguel’s accent. But on reflection, of course, he could see that it didn’t matter. It must be this universe’s year 1988 or 1989, assuming
that he'd come to a New York which corresponded to the New Madrid he had known before, because if he had fallen short of his year of destination he would have fallen short in space too, and drowned in the Atlantic.

Only time would tell whether that fate would be preferable to the one which had actually overtaken him.

Now, seeing he was not dangerous, the other curious onlookers were approaching to study him and pass startled comments. Their surprise suggested that in this world time travel was unknown; if it were known, it would supply a ready-made explanation for the arrival of a stranger out of thin air. The thought brought with it a sense of peace—a security which he could never remember having felt since he first learned how dangerous Borromeo's legacy had become.

Let them explain his presence how they would, then. He would never explain it. He could describe the operation of time apparatus; he could build one in a week, given the iron and the silver. He would not. He swore that silently to himself. Whatever this world was like, it was not for men to usurp the divine prerogative and alter the established order of what had gone before.

The young man facing him was beckoning to him, inviting him to accompany him somewhere. Don Miguel gave a slow smile. For better or worse, without chance of change, this was his reality now.

Don Miguel Navarro, formerly Licentiate in Ordinary of the Society of Time, now the most isolated of all the outcasts the human race had ever known, walked forward, into the real world.

John Brunner
There could be more than one type of alien capable of invading Earth—in a most peculiar and subtle manner, too.

TAKEOVER BID

by STEVE HALL

Prologue

In an infinite or almost infinite Universe, anything that could happen, almost certainly will happen. Even the unlikely-seeming event of terrene and contra-terrene atoms occurring within the same mass is not impossible, if all of Nature’s conditions are fulfilled.

Somewhere in the Cosmos—perhaps it was inside the tortured heart of a super-nova, or maybe it was in the original crucible of Creation—we do not know, but matter and antimatter were mingled to form Duomatter. The rare molecule incorporating the two types of particles within its complex structure, is perpetually in a state of straining at its shackles. Given the correct catalyst, the bonds can be overcome and a terrible annihilation of atoms occurs.

A fragment of Duomatter wandered, apparently aimlessly, in the intergalactic void for millenia uncounted; a piece of flotsam adrift in a sea of gravitic currents. The tide of solar gravity drew it imperceptibly nearer, and as it fell towards the Sun, the Earth circled to intersect its path. A black speck approached the tenuous fringe of atmosphere and drove unresistingly into it, towards its destiny. The meteorite’s temperature climbed, until its surface glowed first red, then
white, then blue-white. It sacrificed mass to achieve its moment of glory, the glowing trail across the sky fading almost as soon as it had began. It bulleted into the ground, and it was no larger than a hen's egg.

The epidermis of the planet, buckled and wrinkled and stretched; the morsel from space was pulverised, and its particles spread thinly, but still they waited patiently for the catalyst which would release them from their strange bondage.

The bauxite field was eventually discovered and exploited. Its metal was extracted and processed. Lurking as a minute impurity among some of the natural atoms were the complex, unnatural molecules of Duomatter.

Chapter One

Anthony Renton, electrical sales engineer for Frequency Furnaces Incorporated, arrived at his office early for once. He was thirty, a bachelor, about five-ten in height, more attractive to the opposite sex than he suspected, and after the early, lean years, was now possessed of a four figure salary.

Today, he was slated for exhibition duty on the stand displaying his firm's products. The day would probably bring, as it wore on, boredom, an aching back, and fallen arches. Interspersed with these delights, would be breaks dedicated to the absorption of tepid, tasteless tea and stodgy, steakless steak-pies. The first day of a show was always the worst, with chaotic canteens, visiting firemen from all points of the compass and hordes of technical representatives from every phase of industry—usually armed with abstruse, difficult questions.

"Well at least," he philosophised aloud, "I'm lucky to the extent that I only get roped in once a year for this kind of jamboree. There are some poor devils on permanent exhibition duties." The thought cheered him quite a bit, and he whistled a little as he rummaged through the drawers of his desk seeking some technical leaflets that he wished to take along with him.

The inter-office phone tinkled discreetly.

Scooping it from its cradle, Tony said briefly: "Good morning, Renton speaking."

"Morning Tony," said the voice of his chief, Leonard Fisher. "All set for Purgatory?"
“Purgatory is the right word for it. I’m just putting a few odds and ends together, then I’ll be off.”

“Then I’ve caught you in time. I’d like you to drop into my place on your way out and pick up our newest trainee. The name is Pat Monroe—you two will be working together for a while, and you can make a start this morning.”

“I’ll be right there chief.”

Renton stuffed his bundle of literature and notes into a brief case and strode off to Fisher’s office.

The Sales Manager hoisted his tall, spare figure erect when Tony knocked at the door and entered at his call.

“Come in my boy. This is Pat Monroe—Tony Renton.”

Turning to the third person in the room, Renton experienced a minor shock for two reasons: in the first place, Pat Monroe was a female, and the firm had never before employed women on the technical sales section, and in the second place, she was an attractive female. When she stood up and shook hands with him, he saw that the top of her head was just about level with the tip of his nose—a height which he thought was perfect for a woman. She had ash-blonde hair, smoothly waved on each side of a centre parting. Her face had the usual number of components, but somehow, their overall effect was much more pleasing than with other girls he had known. She was definitely proof that the whole was something more than just the sum of the parts.

Fisher looked at them both after the introduction.

“I hope you two will get on together. Now I’d better not delay you, it’s nine o’clock and the exhibition opens at ten-thirty, so you’d better get along. See that Miss Monroe is familiar with all our stuff, won’t you, Tony?”

Pat was as intelligent as she was good looking.

Tony discovered during the fifteen minute journey to the hall which housed the Trade Fair, that she was twenty-four, unattached, and had two engineering degrees.

She made a few mental notes about him too.

Within the exhibition hall, order was beginning to emerge from the chaos. Workmen were clearing away packing cases for storage until the end of the week; stand managers were viewing their exhibits from various angles, and instructing their already harassed staffs regarding final improvements; everywhere, there was the bustle of last minute titivation.
Renton took his fledgeling trainee by one elbow and guided her expertly through the maze of avenues leading to the products of Frequency Furnaces Incorporated.

The other three members of the staff were only too eager to meet Pat Monroe, who was decidedly more interesting to them than the apparatus they had to show. But Tony was stand manager for the day, and chased them back to their work.

"I'd better take you around everything we have here, so that you're not caught with your pa—I mean so that you're not taken by surprise at anything the public may ask." He flushed a little, and hoped she hadn't noticed the faux pas he had almost made, making a resolution to watch his slang from now on.

She nodded agreeably and walked around with him, listening closely as he explained the finer points of the various gadgets on display.

Eventually, they paused in front of a small, beautifully made, high-frequency induction furnace.

"This is a favourite of mine," he said. "It takes a trick with boys from seven to seventy. Like a demonstration?"

"Yes, please," replied Pat. "I'll feel a lot less nervous if there's something I can show them instead of just delivering a lecture."

Tony took a half-inch cube of metal from a container of samples at the side of the furnace.

"The principle of the thing is quite simple. High-frequency current passes through this coil," pointing to a few turns of thick wire. "If a metallic object is dropped into the coil, it doesn't fall straight through into the ceramic basin underneath, but is held here in the high-frequency magnetic field. Currents are induced in the sample itself and these, in turn, cause rapid heating—watch and I'll show you."

He switched on the machine and made a few adjustments, watching a graduated dial closely.

"That's about right—in she goes."

Tony held the aluminium cube above the centre of the coil for a second, and then separated his finger and thumb. The sample of light metal dropped the few inches to the coil normally, then stopped abruptly as the powerful field grasped it firmly with intangible fingers of force. The little cube bobbed about in mid-air, clearly visible between the widely-spaced turns of the coil. It eddied and spun a little as if caught in a
vagrant air movement, one corner dipping slightly downwards. In a matter of seconds, the square outlines of the cube began to soften and blurr. Heat radiated from it as it finally collapsed into an amorphous, pulsating blob of molten metal.

"Pretty good, eh?" said Tony reaching towards the controls to switch off.

The few molecules of Duomatter in the molten metal vibrated, the bonds holding its component atoms captive, disrupting under the catalytic influences of the temperature and the high-frequency field. The alien atoms leapt forward on collision courses at colossal velocities, hell-bent on mutual destruction.

Tony's hand had actually touched the switch and flicked it off as the Duomatter went critical. Pale-blue light blazed forth together with a split-second burst of unknown, high-energy radiation. Tony staggered backwards, covering his eyes with both hands before unconsciousness claimed him.

Some of the original Duomatter fragment at least, had achieved its destiny.

Chapter Two

Renton opened his eyes, and felt the clammy clutch of fear. He couldn't see. He was lying in a bed, that much was obvious. His hands roved experimentally over the covers and up to his face—his eyes were bandaged, and he became aware of a viciously throbbing head.

"How do you feel, Mr. Renton?" asked a female voice.

"Not too bad," he lied trying to control the quaver in his voice. "Which hospital am I in?"

"The City General," said the nurse.

Memory trickled slowly back, like glue through an hourglass.

"How is Miss Monroe—was she injured at all?"

"No. Fortunately for her, she wasn't facing in quite the same direction as you were, and didn't get her eyes exposed to that intense light source as you did. It was powerful enough to overload your optic nerves and cause you to black out."

"Thank heavens she's okay," he muttered. Then more loudly, "Can I speak to a doctor please?"

"I was just going to suggest that. I know he wanted to speak to you as soon as you came round."
The doctor sounded like a pretty cheerful type.
“Now, Mr. Renton, the nurse said that you were feeling well—you don’t have to lie to me you know—you should have a foul headache.”
“As a matter of fact, I have,” Tony admitted.
“Right,” said the doctor. “We’ll soon do something about that, hold still a moment.”
A firm hand took hold of his arm. The tiny bite of a hypodermic needle followed.
“We’ll give that a few moments to get to work before we talk any more,” continued the cheerful voice.

The drug circulated rapidly, quelling the energetic trip-hammers in Renton’s head after only a few moments.
“That’s a wonderful improvement, Doc,” said the engineer.
“Now will you please tell me how bad my eyes are?”
“I don’t think you need to worry. We won’t be able to take the bandages off for a couple of days, and after that, you’ll have to wear dark glasses for a week or so, but there’s no permanent harm done. The eyes are a lot more rugged than most people believe. Although, if that burst of light had been maintained a little longer, your optic nerves would have been burned out instead of just being strained. You’re a very fortunate man, Mr. Renton.”
“How soon will I be able to leave?”
“In a couple of days—if your eyes check out all right. Meantime, no visitors but lots of peace and quiet.”
Curiosity stirred again in Renton.
“There were no other effects?” he queried. “Burns or anything?”
“Nothing that we could find,” answered the doctor.
But unknown and unknowably to both men, an infinitely subtle change was beginning to gather momentum.
Tony began to feel dozy, the secondary effect of the pain-killing drug was starting.
“I think I’ll sleep a bit,” he said.
The doctor nodded, satisfied with his patient.
“That’s the best thing you can do. It’s the finest healer of the lot.”

Two days later, in a room only faintly illuminated by the watery daylight filtering through a closed, translucent blind, the bandages were removed.
Tony sat for a moment with closed eyelids as the last one dropped away. The blackout of total blindness lightened to a reddish-grey. He opened his eyes and saw blurrily the carroty hair of the doctor. He blinked several times. Gradually the focus improved until he could see reasonably clearly.

The Doctor held up his hand.

"How many fingers?"

"Three," said the engineer, "and a beautiful sight they are."

The testing and examination of his eyes continued on a more scientific footing, until finally the doctor was satisfied.

"Here's your passport to the outside," he said, holding out a pair of blue-tinted goggles with opaque side pieces. "Keep these on for the next week, then come and see me for another check."

An hour afterwards, Tony walked down the steps of the hospital into warm June sunshine. He strolled peaceably along, debating with himself whether to drift home to his flat or call in at the office. He decided on a cup of coffee before all else and stepped off the kerb into the road.

Brakes screeched as the driver of the five-ton truck heading his way desperately tried to avoid running him down.

Renton saw the truck when it was five yards away, and looked into the grinning, bony face of death. The still-developing Multiman inside of him reacted dynamically, assisting in the production of a prodigious, standing jump that carried Renton safely clear of the hurtling juggernaut.

A pair of amazed eyes stared unbelievingly from the cab of the vehicle at the kangaroo-like leap. There was no-one else in the quiet street to witness the fantastic burst of speed and power displayed so suddenly.

Its safety no longer threatened, the Multiman receded into the background for the time being. Renton stood for a moment quivering with reaction at his narrow escape, then he ducked, on impulse, into a side-street in case the truck driver decided to come back and start asking awkward questions. He strode rapidly through the street and out at the other end into a more crowded thoroughfare.

There was a modern shrine nearby, dedicated to the gods Espresso and Juke. From the partly open door drifted a moody mixture of Pop and coffee.
Renton wandered in, looking vaguely over his shoulder. There was no sign of the truck-driver. Perhaps he had driven on after all. The slightly dazed man hoped so.

“What’ll it be, Dad?”

Renton looked up at the big Jamaican standing over him. The man displayed a double row of shining teeth the size of small dominoes, fringed by a blue-black moustache and beard.

“Black coffee, strong and sweet,” he mumbled, as the music box ground to a halt with a twanging, steel-stringed chord.

“Be right with it, man,” said the Jamaican swaying away towards the bar on rubber-like legs.

While the coffee was cooling before him, Renton sucked shakily at a cigarette, and busily started rationalising away his miraculous escape. By the time he had finished the drink, he had convinced himself that the apparent close proximity of the truck had been an optical illusion fostered by his weakened eyes. The incredulous stare of the driver had been converted into anger directed at the idiot who had stepped into the road without first looking to see if it was safe to do so. The matter of his jump to safety, he now accepted as the instinctive reaction one could expect when threatened by danger. His confidence returned to such an extent that when the Jamaican had asked:

“How was the Java, man?” he had replied idiomatically: “Crazy man, crazy,” and shouldered his way happily out through the eleven a.m. stream of devotees pouring in. Once outside, he decided against taking a bus to the office: “After all,” he had argued mentally, “it’s a pleasant day; in fifteen minutes, I can walk there.” He was a lot more circumspect, however, when crossing streets; the next time he might not be so lucky.

Pat Monroe was seated at a spare table in his office when Renton entered. She was browsing through some of the firm’s semi-technical, highly-coloured, advertising brochures, and was obviously not finding them the thrill of a lifetime.

“And how’s my favourite trainee today,” asked Renton.

Pat turned to face him, and brightened visibly.

“At the moment I’m just treading water until you return to duty—I’ve not been assigned to anything else so far except this bunch of glorious Technicolour,” she waved at the multicoloured leaflets. “But that’s not important; how are you, Tony? I wanted to come along and visit you at the hospital
but they preferred that you be kept quiet without visitors so that you would have a better chance of getting fit again quickly."

"Well," said Tony, "the treatment seems to have worked, I'm out bang on schedule. The only trouble now is that with my eyes being a bit rocky, plus the effect of these glasses and the blinkers, I'm liable to land back in dock pretty smartly, if I'm not careful. I nearly bought it this morning when I stepped in front of a truck." He looked at Pat hopefully.

She was instantly sympathetic.

"If I can be of any help?"

"That's very nice of you—are you sure you'd like to help?"

"I'd be glad to do anything."

"Well now," said Tony, doing his best to conceal his satisfaction at her ready response, "I should think that plenty of fresh air, good food and congenial company would be the order of the day, so how about lunch, then a stroll in the Park? You can be my eyes for today."

"Will it be all right with Mr. Fisher? After all, I'm on the payroll and supposed to be working for my living."

"Yes, it's okay. I've had a chat with him and told him I'd continue to fill you in on everything we sell as quickly as I could. So you'll be looking after me and yourself at one and the same time." He changed the subject abruptly. "Tell me Pat, have you found out what caused the flash from that sample of metal we were using?"

"I've tried, but no go so far. We've run a whole series of tests on the remnants and found nothing abnormal. The only explanation that I can give, is that there must have been some unstable trace impurity in it which was disrupted by the conditions in the furnace, although what compound it could have been is anybody's guess. Have you ever known anything like this to happen before?"

Tony shook his head definitely. "No, never. Still, I suppose there's always got to be a first time. Now what about that lunch?" He took her arm and led the way out.

The rest of the day passed pleasantly for Tony and Pat. As far as they were both concerned, things had gone according to plan.
Chapter Three

Tony strolled happily home in the evening after leaving Pat, spent an hour unwisely watching televised amateur boxing until his eyes ached, then decided to get a good night’s rest started. He slid blissfully between the sheets, and while mulling over the proposition that no bed was quite as comfortable as his own, drifted off to sleep.

Renton looked around the room. Without being able to put a finger on any one detail, he could sense a quality of strangeness about its every contour. A feeling of worry about Pat crept into his mind. He went out into the street. It was broad daylight, but he couldn’t see a living soul. There were no noises either—nothing moved—the world seemed suddenly to have run down. Over everything hung the impalpable feeling of emptiness that is found on a deserted film set. He started walking, his steps becoming faster as mounting panic fastened clammy claws on his heart. Occasionally he called Pat’s name aloud. The sound of his staccato paces echoed ringingly through the empty street.

Ahead of him a familiar building loomed up, an Underground Station. Renton plunged into it, trotting eagerly towards the ticket vending machines; the entrances beyond had no waiting inspectors; the distracted man ran on through, heading for the escalators. The mechanical staircases were working. He stumbled on to a downward-moving one, lurching awkwardly from side to side of the steps as he still ran on, driven by an increasing compulsion to descend to the platform level. After what seemed eons, he sprinted off the black, flowing blurr and along the tiled corridors to his destination.

There was still no person in sight.

Renton looked about him despairingly, first at one yawning black tunnel mouth, then the other. The air started flowing past him. He swung hopefully to face into the hot breeze, waiting for the well-known carriages to emerge from the dark circle to his right. A rushing noise grew in intensity, and the velocity of the moving air increased. Brilliant, red vapour gushed from the tunnel, and rolled smoothly along the track in his direction. It slid past, roiling and pulsing, then came to a halt in front of his unbelieving eyes, still flexing regularly. Gaps appeared in the undulating surface and streams of amoeboid
creatures poured forth. A minority were large and whitish with a convoluted outline which divided their surface into a two, three or four-lobed structure. Others, the vast majority, were smaller, disc-shaped, and of a nondescript colour. They converged from all directions on the platform and surrounded the paralysed man in a bobbing, heaving mass.

A soundless pressure wave of attempted communication washed incoherently over Renton. He held up both his hands and made futile, pushing motions at the crowded creatures. Still they persisted with their mauderings. Renton’s nerve cracked and split asunder, a roaring as of great waters rushed through his head, he opened his mouth to scream imprecations at the pulsating, kaleidoscopic mass of creatures, but no sound emerged; his mind strained maniacally to express itself—and he awoke from the strange dream. The still immature Multi-man had abandoned the attempt to communicate through Renton’s subconscious.

Renton pulled at the light cord and gazed at the shambles that he had made of the bed. Blankets, sheets, and pillows had been flung indiscriminately to the floor. He was sweating profusely and was beginning to get chilled by the middle of the night temperature. Sliding off the bed, he picked his way carefully over the mounds of bedclothes, and shrugged on a thick dressing gown. For the moment, he was in no mood to try going back to sleep. Automatically, he reached for a cigarette, then looked at the clock, it was two a.m., he had been sleeping for about four hours.

The bars of the radiant wall-fire reddened rapidly, beaming a comforting warmth into the room. Renton sat before it, his mind becoming calmer under the triple solaces of light, heat and my lady nicotine.

The dream had been weird and apparently senseless in the extreme. Could it have been a product of his still-jangled optic nerves, a sort of unusually persistent version of the after-images that one sees behind closed eyelids after staring at a bright light? It either had to be a latent effect of the accident, he concluded, or a plain, old-fashioned nightmare.

Slowly he began to re-assemble the disordered components of his bed. Before climbing back into it, he decided on an old-fashioned remedy to help lure back a feeling of sleepiness. The tot of whiskey diffused a pleasant, numbing warmth hypnotically through his body, and gradually, he relaxed and slept dreamlessly for another six hours.
Renton ate a hearty breakfast; physically he was none the worse for his interrupted night and felt clear-headed and chipper. After breakfast, he picked up a newspaper, adjusted his dark goggles, and decided to sit in the bright sunshine pouring through the window. He was in no rush, he reflected, there was still a couple of hours to go before he needed to set out for his lunch date with Pat.

His tranquil state of mind was just right for the Multiman’s second attempt at communication.

“Anthony Renton,” it said, “can you hear/perceive me/us?” Some of the words had composite connotations.

Renton stood up and gazed around the empty room, the newspaper tumbled unheeded to the floor.

“Who said that?” he asked.

“I/we did,” came the reply. “At last you are aware of me/us.”

He did not reply this time, but strode rapidly from room to room of the flat. There was no-one else in the place, and his half-formed suspicion that the ‘daily’ who ‘did’ for him was playing some kind of a joke, died still-born.

Again the Multiman expressed itself. “I/we am/are not using sound to speak to you. You are perceiving my/our thoughts within your brain. Do not look for me/us without—I/we am/are within and am/are part of your body.”

Renton’s mind reeled at the implications of the statement. He thought confusedly: “I’m beginning to hear ‘voices’ in my head, I must be going out of my mind.”

The Multiman answered calmly, “You are not losing your mind—you are gaining the help of many others.”

“How many others, and who are they?” questioned the bemused engineer.

The Multiman considered for a moment: “There are about sixty thousand million component units to me/us.”

Renton’s mind rocked on its foundations.

The dispassionate ‘voice’ in his head continued: “I/we have for a long time had no sense of self awareness, but I/we have developed it recently. From an examination of the information stored in the memory cells of your brain, it is evident that the accident of a few days ago has mutated me/us to my/our present form. I/we am/are a corporate intelligence living,” it searched for the word and plucked it from Renton’s brain, “living in symbiosis with you.”
It was silent for a moment.
“But who or what are you?”
“Close your eyes and I/we will ‘show’ you where and what I/we am/are.”

Renton was beginning to get used to the formerly confusing, single and multiple person concept constantly expressed. He closed his eyes obediently. Jumbled thoughts and pictures tumbled through his mind and slowly faded. He ‘saw’ the pulsing outline of a cylindrical tunnel; the walls became almost transparent, revealing a fluid moving through the tube in jerky pulses. Rolling in the liquid were uncountable numbers of red, disc-shaped objects crowded into clumps and strings. Interspersed with them were smaller plate-like bodies. Occasionally, he caught a glimpse of other, rarer shapes drifting along. They were white in colour and mostly lobed in appearance.

The soundless ‘voice’ in his head took up the conversation again. “I/we am/are the white ones—the others have their purposes and are under my/our control, but they are not intelligent. You are seeing your blood as it is and always has been. The changes which have awakened my/our intelligence has not changed my/our units externally.”

The engineer’s mind retreated to a corner of his brain; sanity guttered fitfully like a candle-flame in a draft, madness gibbered and leered at him. Again, a great roaring in his head mounted in intensity, and then gradually diminished. As it subsided, his tottering mind steadied and cautiously came out of hiding.

The Multimand remained quiescent, content with having achieved conscious contact with its host, and at the same time, wisely deciding not to push the boat out too far.

Renton shook his head like a dog coming out of water, and decided to get out into the sunshine and fresh air in an attempt to clear his head of phantoms and fantasies.

Strolling along absently, the striking similarities between his dream of the night before and his apparent hallucinations of that morning became more and more evident. Abruptly, he came to a decision. There was a way to check on his hallucination, in detail, if not in truth. He didn’t know anything about the composition of the blood—but he knew of someone who should.
Chapter Four

Doctor Halliday waved Renton to a chair. "I'm surprised to see you so soon, Mr. Renton. How are you feeling? Is anything wrong?"

The engineer spread his hands noncommittally. "I can't rightly say that I know. Physically, I think I'm okay but I've had some rather disturbing experiences. D'you think that my optic nerves could still be affected by the flash?"

"Of course they're still affected," said the doctor heartily. "That's why I've got you wearing dark glasses and coming back for an examination next week. Now, what sort of experiences have you had exactly?"

Renton changed his mind about coming clean. "I suppose it's not really worth bothering you with it," he lied. "However now that I'm here, I'd like a little information from you, if you can spare me a few moments."

"What is it you want to know," asked Halliday, wondering what was going through his patient's mind and deciding to string along if possible.

"Well, you may think this is queer, but I'd like to know something about the blood."

"The blood?" repeated the doctor blankly.

"Yes. Tell me all you can about its constituent parts—without getting too technical," Renton added hastily. He pulled out a small notebook and pencil. "I'd like to take a few facts and figures down if you don't mind."

"Well," said Halliday, "I can do some of this from memory but I'll have to look the rest of it up to give you more exact figures." He moved across the room towards a book-case. "An adult human being has between ten and twelve pints of blood in his body." He took a book from the shelf and turned pages rapidly. "Taking a cubic millimetre of blood as a unit, it has the following makeup: Red Blood Corpuscles, about six million; White Corpuscles, a lot fewer, only about ten thousand; then of course, there are about a quarter of a million smaller bodies called Platelets."

"What do the Red Corpuscles actually do?" queried Renton. "I suppose they could be called beasts of burden, since their function is to carry oxygen to all parts of the body."

"And the Whites; what about them?"

"They're a more complex lot and are larger than the Reds. There are three main types and one of these can be subdivided
again into three groups. This last type is characterised by having a nucleus and several lobes. Among their functions is the recognising and destroying of anything inimical to the body."

Renton pondered for a few seconds. "Could it be said that the Whites have to exercise a sort of intelligence to do their work?"

It was the doctor’s turn to ponder. "I’ve never thought of it that way before, but I suppose you could call it that."

The engineer looked at his watch and stood up, closing his notebook with a little snap.

"Thanks for all the gen, Doctor. I’ll have to go now, I’ve got a lunch date."

"Don’t forget your appointment next week," reminded Halliday.

"Don’t worry, I won’t," said Renton. "See you then." He strode out, his head spinning with figures and calculations. Finally he gave up the attempt to do the sum in his head, and turned his attention to thoughts of Pat Monroe, resolving to deal with the figures later.

"How’s my favourite sales partner?" asked Renton with a jocularity he didn’t feel.

Pat smiled wanly, "Not so bad, how are you getting along?"

He noted with some concern that she looked pale and somehow withdrawn.

"You’re not working too hard are you, while I’m still loafing around?"

She looked away from him. "As a matter of fact, I am feeling a bit tired, but it’s nothing to do with work."

Renton was more than a bit mystified by her reply although he shouldn’t have been. However, he said sympathetically, "If you don’t feel like coming out to lunch, we can scrub around it."

"Suppose we compromise," she replied with a flash of her normal good humour. "I could manage a cup of coffee and a chicken sandwich."

"Fair enough," he smiled, "that won’t break the bank. Let’s go, shall we?"

They dawdled through the meal. Renton was hungry enough, but throttled back his appetite in sympathy with Pat’s half-hearted dalliance with her sandwich.
The conversation was desultory in the extreme; Pat was pleasant, but obviously preoccupied with some private thoughts of her own. They eventually parted company at two p.m. with Pat deciding to do a bit more desk work, while Renton made up his mind to get out into the country for a few hours, and maybe spend a little time walking along the riverbank. He advised her solicitously, to have a good night’s rest, and arranged to meet her the next day after work for an evening out together.

Tony relaxed lazily in the warm sunshine, and idly plucked a long strand of grass to chew at. The quiet lapping of the river flowing along and the busy drone of summer insects induced a pleasant mood of lassitude. It had been worth the train journey to get away from the City’s hustle for a while.

The splashing of oars made him open his eyes. A boat rowed by two small boys was making its way erratically upstream against the slow pressure of the clear water.

Tony felt the obscure sense of pleasure that comes of watching others work while everyone else is taking it easy.

The boat zig-zagged a little farther on its way as the two rowers pulled unequally on their single oars, then drifted to a stop. Evidently, they had decided that they had gone far enough.

A small anchor splashed over the side, and the boat slid back a little until the tension in the rope just balanced the force of the current.

The two boys shipped the oars and started unlimbering their fishing tackle. Unwittingly, they both stepped to one side of the boat at the same time. The vessel’s side dipped dangerously. Both the boys stepped back hurriedly, and inevitably over-compensated. One of the lads lost his balance and fell sideways in a welter of flailing arms, legs, rods and oars; the other staggered helplessly backwards in the rocking craft, was stopped abruptly by the gunwhale against the back of his calves, and cartwheeled over the side.

Renton’s first feeling of amusement vanished in a flash, he sat up dragging off his jacket, and then froze, his limbs quivering impotently. He darted a glance at the river; the boy who had fallen overboard was moving slowly away from the boat, thrashing about in the panicky fashion of a non-swimmer. The engineer redoubled his efforts to move—unless he could do
something quickly the river looked as if it was going to change from being a source of pleasure into a deathtrap. His efforts were useless; mentally he strove to go to the lad’s rescue, but his body would not respond to his brain’s instructions.

The boy left in the boat had risen to his knees.

“Cut your anchor line and get after him,” shouted Renton.

The lad jumped to obey the rasp of authority in the engineer’s voice, grateful for some adult direction. He scooped up a wicked looking jack-knife from somewhere in the bottom of the boat and hacked frantically at the rope. It parted reluctantly, and the boat started to drift after the other boy, now ten yards away, but still managing miraculously to keep his head above water. Seeing the boat coming towards him, he instinctively began to reach for it. His churning legs and arms were thus lined up diametrically against the direction of the current. The boat began to close the gap, but the boy was tiring, his furiously, over-energetic exertions sapping his strength.

“Reach out with an oar,” screamed Renton again, in an agony of helpless frustration.

Again the boy in the boat hastened to follow his instructions.

The floating boy’s desperately clutching fingers eventually made contact with the oar. Tired out, he could do no more than hang on as he was drawn closer to the boat.

“What shall we do now?” shouted the boy in the boat, looking over his shoulder at Renton.

“Get him to transfer his grip to the gunwhale. Right; now move over to the other side of the boat to balance up while he climbs in.”

Renton watched anxiously while the boat drifted farther away, swinging in erratic arcs as the boy in the river struggled to get over the side to safety. From time to time he shouted words of caution or encouragement. At last, he was rewarded by the sight of a pair of dripping shoes tumbling out of the water and into the boat.

He breathed a shaky sigh of relief and found that he could move once more.

“Now what the blazes,” he said aloud, “caused my paralysis just now?”

“I/we did,” replied the suddenly active Multiman.

Renton flinched. He was in the grip of his morning hallucin-ation again. Deciding to play it craftily, he made up his mind
to fight fire with water, unreason with reason. Maybe he could 
defeat the delusion with logic. He looked around warily before 
replying aloud. "And would you condescend to tell me first of 
all how you did it, and then why you did it?" The sarcasm 
thickened his voice into a sneering note of derision. 

"I/we thought that the reason would have been obvious to 
you." The 'voice' continued with rigid logic, "My/our 
reason was simply that of self-preservation—if you die, I/we die 
I/we could not allow you to undertake anything dangerous. As 
for how it was accomplished, that is equally simple. I/we 
control the supplies of fuel oxygen to your muscles etc., 
without it you are helpless."

Renton's feelings were mixed as he examined the devastating 
answers to his questions. He felt dismay at the control of his 
body exercised by his delusion, amusement at the torpedo-like 
way in which his questions had been sunk, and lastly, a sense of 
relief at the relatively calm way in which he was behaving in the 
face of such a convincing set of hallucinations. It seemed that 
if he hadn't yet mastered his delusion, he was at least learning 
to live with it.

Multiman however, had the last word. 
"You had better learn that you are not living with a 
delusion," it said with calm finality, "but an accomplished 
fact."

Renton ignored the comment and picked up his jacket 
preparatory to returning home.

Multiman withdrew also, again satisfied at its contact with 
the host mind, and its control over the host body.

Chapter Five

Alone in his flat, Renton wrestled with the problem of sorting 
out fact from fancy. He could always go to see a 'trick 
cyclist,' but somehow the idea of having his innermost thoughts 
laid bare and pawed over like a collection of butterflies didn't 
hold much appeal for him. Thinking over everything that had 
happened since the blowup brought out several salient points: 
Item. Accepting for a moment, that a change had occurred, it 
seemed that the mutated white corpuscles had become intelli-
gent.
Item. Understandably, they were concerned over his and their 
mutual welfare—it was a case of one for all and all for one—
although their attitude of self-preservation was to the total exclusion of everyone else's interest.

Item. They could apparently immobilise him or accelerate him, depending on what was required to provide maximum safety.

Renton wrote down his conclusions on a sheet of paper and considered them. Now that the enigma had been formulated, it ought to be possible to prove or disprove it point by point.

Characteristically, he came to a decision and determined to act upon it without further ado. Feeling a little foolish, he looked around the room and spoke aloud: "Are you there—can you hear me—I want to discuss something with you?"

The Multiman stirred and answered.

"I/we am/are aware of your wishes. You do not need to speak aloud unless it helps you to express your ideas more precisely."

The engineer nodded. "For the time being I'll continue to verbalise my thoughts." He paused for a moment, marshalling his points. "This morning when I asked you how many of you there were, did you calculate the number then, or did you know it?"

"I/we counted how many of me/us there was/were in a given volume when you asked, and multiplied by the necessary factor to arrive at an approximate total—I/we could, of course, give you the exact figure if required."

"And the figure you mentioned was sixty thousand million, wasn't it?"

"Correct," said the inner voice succinctly.

"Right," stated the engineer, "I'm going to do the calculation the same way from the information Halliday gave me, and see if I get the same result and how long it takes me."

He scribbled busily converting pints to cubic feet and then to cubic inches. The next step was to convert the volume of blood in cubic inches to cubic millimetres. The answer came out at about six million. From there, it was a short step to showing that at ten thousand white corpuscles per cubic millimetre, there would be approximately sixty thousand million of them in an adult human.

The calculation had taken him at least a minute, compared with the second or so after which the Multiman had given its original answer.

Renton flung down his pencil.
"And now for Stage Two," he said.

It was getting rather dark in the room, so he switched on the light before searching through a drawer for a stop-watch. He hadn’t used it for some time and it was all-important that it still worked accurately. For a moment he was stumped to devise a way of testing it, then he thought of the obvious one—his wrist watch was a good model, keeping time to within half a minute in twenty-four hours—that figured out to an accuracy of about one part in three thousand, or to put it another way, about one fiftieth of a second in each minute.

He held the stop-watch and his wrist model together, waited until the sweep second-hand pointed straight at the twelve, then activated the stop-watch mechanism. The hands rotated sedately around their respective dials until one revolution was completed. Renton again clicked down the control knob. There was no detectable difference in the time recorded. Satisfied with his impromptu test, he place the stop-watch carefully in his pocket, switched off the light, and walked out into the lowering dusk of a still-sultry, summer evening.

The local school had held its annual sports that afternoon—Renton remembered seeing the kids carrying the hurdles and other athletic paraphernalia into the field that morning when he had been setting out to visit Dr. Halliday.

The engineer sidled guiltily through the post and wire fence separating the sports field from the quiet road running along one of its sides. He looked about him with the air of one about to snatch the Crown Jewels right from under the watchful eyes of the warders. There was no one about, so he strolled across to the starting line for the sprint events with an attempt at nonchalance that didn’t look at all convincing.

Pacing up the track, he counted carefully to himself until he spotted first one white line, then another a little farther on. The first one was eighty yards from the start, and laid out for the girls’ short dash, while the second one was at one hundred yards and denoted the finishing point for the boys’ sprint. Renton had another look around. As far as he could see, he was still unobserved. He stood carefully on the hundred yard mark, turned to face in the direction of the starting line and braced himself.

"Ready?" he intoned in a low voice.
"Quite ready," confirmed the Multiman.
The engineer took a deep breath, clicked at his stop-watch and pounded over the turf, stopping the watch again as he crossed the transverse white line. Placing the timepiece gently on the ground, he fumbled in his pocket for a box of matches. Striking one between cupped hands, he bent down and peered incredulously at the circular face with its mute pointer. It showed that the elapsed time between activating and stopping was 7.1 seconds. *Apparently, he had covered the distance in two clear seconds under the world record time.* There was only one thing to do, and, turning on his heel, he did it—this time he was a trifle slower at 7.2 seconds. Even if the watch and his control of it was a little off, the double performance was still fantastic.

Shaking his head slightly, the new, unofficial, and unknown holder of a world record made his way back to the flat. Once there, he settled on one more test to dispel all doubts.

"I want you to try immobilising me again," he said to the empty room. "Only this time, when I'm ready for you."

"Agreed," replied the Multiman. "Signify when you are ready."

Renton sat himself down in a comfortable chair and tensed his muscles. "Now," he said, and tried to rise. He almost made it to his feet, but the muscles relaxed irresistibly, and he sank back again. Still he struggled for control, but the effort was mental only.

The Multiman decided to underline its mastery, and withheld the life-giving oxygen from the whole body. Imperceptibly, Renton's consciousness dimmed to a black-specked red-out, then a complete blackout. As soon as he was completely insensible, it restored supplies to all points, accelerating the engineer back to full possession of his senses in under three seconds.

"Okay," he said wearily, "so you exist; 'cogito ergo sum.' Now we've got to learn to live together."

"I/we am/are glad that you recognise that fact at last," replied the imperturbable Multiman.
Chapter Six

In spite of his vivid memories of the night before and the stop-watch still recording 7.2 seconds with its single, slender finger, Renton still felt a little doubtful about everything late in the next afternoon.

"Are you awake, Inner Man?" he queried, with a feeble attempt at a joke.

"Some of my/our units are always awake," was the instant reply.

"D’you feel like thinking over something?"

"The exercising of my/our newfound intelligence still has a novelty that I/we find fascinating," said the Multiman gravely.

"What is your problem?"

"Well," said the engineer, "you think that the flash from the test metal cube produced some sort of radiation which caused you to mutate into your present form."

"Agreed," hummed his symbiotic partner.

"In which case, do you think that Pat Monroe has been affected in a similar way? After all, she was the same distance away from it as I was."

The Multiman was silent for so long in considering the proposition, that Renton became impatient.

"Well what about it?" he demanded.

For the first time, a hint of excitement seemed apparent in its manner as it replied: "There seems to be no doubt that your hypothesis is valid."

A sudden thought crossed Renton’s mind.

"My God," he mumbled, "I wonder what strange thoughts she’s had—she probably thinks that she’s losing her senses, if they were anything like mine."

Both he and Multiman became anxious together.

"Renton," it said, "you had better go to her, she might say something unwise to someone and be thought mad. If she has changed, you are the only one who will understand her feelings."

Concern for Pat’s well-being flooded over Renton. He hurried into a coat and tie, and decided to take his car out so as to get to her with the minimum of delay.

The fine spell had kept up, the late afternoon air was oven-hot, disturbed only by the wavering convection currents rising from the torrid road surface.
Tony drove with a controlled carefulness. He was at one and the same time possessed by an emotional desire to drive hell for leather, while reason and the Multiman counselled caution, or he wouldn’t get to Pat at all.

His dark-blue saloon finally drew up alongside the garden gate of her digs. Renton was about to leap out and dash up the path, when he saw Pat wave to him from an upstairs window.

"You’re early, give me five minutes and I’ll be with you," she called.

Renton waved back and cranked up the window. A man and woman were walking towards his car and he wanted to talk to Multiman without being overheard.

"She seems normal," he observed in a low voice, turning to face away from the couple moving along the pavement.

"What if we’ve jumped to an unwarranted conclusion?"

"Patience," said his unseen companion silently. "Did you expect her to display any abnormality in as public a place as this?"

"No, I suppose not," replied the chastened engineer.

Pat was as good as her word. Miraculously, she appeared in the promised five minutes, wearing a rustling, nylon, summer dress. She looked cool and delectable to the perspiring Renton, still seated in the baking heat of the almost airtight car.

He leaned over and released the door-catch. She stepped daintily in, pulling a face at the temperature.

"Is you-all cold, Massa Renton?" she queried with brittle humour.

"What? Oh, yes, I forgot about the window," answered the flustered engineer, filled with relief at her apparent well-being.

"And what," she asked with mock severity, "are you doing driving a car in your condition?"

Renton engaged the gears and moved off smoothly, his composure returning.

"Well," he said, "if you’re in a car there’s always the chance of running out of petrol somewhere; with any other means of transportation, you are not so much in control of the situation."

"In that case," she returned sweetly, "I’d better watch your step, then I’ll be in control of the situation." She leaned towards him. "By the way, unless you’re planning on driving a couple of hundred miles, or the car only does one mile per
gallon, you’re not likely to run out of gas, your tank is nearly full.

Renton grinned. “I must remember never to take out a lady engineer again—they’re too well-informed.”

During the remainder of the drive to the quiet country inn where they had dinner, Pat kept up the flow of wisecracks; she seemed determined not to be serious for a moment. When, after the meal, she disappeared for a few minutes into the powder room, Renton took the opportunity of communicating with Multiman: “What do you think—has she changed?”

“It is difficult to say—I/we suggest that you broach the subject with her. If she seems surprised by what you tell her, you can always pretend that you are joking.”

When they got into the car and drove away, Pat was silent. Renton was still debating with himself about the best way to approach a difficult subject so they continued for a while without conversation. After a few miles of aimless cruising, a quiet lane caught his eye. Pulling the car into it, he switched off, pointed to the fuel gauge needle resting on its stop and said: “I told you we’d run out of petrol sooner or later.”

She looked at him, her eyes suddenly glistening with unshed tears.

“It’s no good Tony. I’m not the girl you think I am—I wish to God I was.” The note of desperation in her voice obviously came from the heart.

“Steady on,” he said, putting an arm around her shoulders.

“Nothing is ever that bad, and besides, I’ll decide what kind of a girl I think you are.”

“You don’t understand,” she said bitterly.

“Then why,” he retorted reasonably, “don’t you try telling me about it?”

“And have you think I’ve gone mad?” she parried.

“Look, either you’re mad or you are not; let me be the judge.”

She looked directly at his goggled eyes. “All right, I’ll tell you. Ever since that accident at the Exhibition, I’ve been having peculiar dreams and hallucinations both visual and auditory . . .”

“And you think that your blood has developed an intelligence of its own,” finished Tony.

“How on Earth did you know?” she demanded.
“I was there also; what makes you think you’re so unique?” He drew her towards him and kissed her firmly. “We’re two of a kind.”

Multiman broke excitedly into his mind. “Renton, I/we have established rapport with my/our brothers within Miss Monroe.” The formal use of Pat’s name seemed strangely incongruous to the engineer. “We have decided that you two must marry so that our species may be perpetuated.”

“Did you get that Pat?” asked the engineer.

She nodded wordlessly.

The cool nerve of the Multimen’s ultimatum seemed to have momentarily numbed her.

“How about it, Pat? This may not be the most romantic of proposals, but I’m sure I want you.”

She drew away from his encircling arm. “Are you sure Tony? How do you know that your symbiote isn’t directing your thoughts? I thought that I wanted you too, but now I don’t know which thoughts are my own, and which belong to It.” Her emphasising of the final word showed that she at last thought of her Multiman as a person in its own right.

The confusion that this speculation brought to both their minds was not dispelled by the Multimen’s heated refutation. “I/we cannot influence your thoughts but only your actions. Your feelings are your own, believe me/us.”

It was useless; the poison of doubt had entered their thoughts and would not easily be neutralised.

Wordlessly Tony twisted the key in its socket to start the car. As he turned out into the road, the rumble of thunder and the flicker of lightning increased the feeling of depression which had settled over them like a dark cloud.

The rain which followed shortly afterwards, drummed a senseless tattoo on the car’s body, and the wipers were hard put to maintain the windscreen in a state of reasonable transparency.

Tony ripped off his dark glasses in an effort to see more clearly as the amount of water cascading down the glass increased.

The lightning kicked downwards with evermore frequent flashes. Ahead of the car, a tall tree suddenly erupted in a shower of sparks. An explosion at its base severed the trunk from the stabilising roots as the high voltage arc sought the
shortest path to earth. With a terrible solemnity, it heeled over and fell directly across the road in front of them.

Tony braked viciously, there was no time for half measures—hitting the tree trunk could spell a dangerous somersaulting of the car. The results of his efforts to avoid the collision were almost as bad. The car spun on the streaming road surface and veered to the left. It hit the kerb and rolled over several times, jerking the door open and flinging the engineer clear. He hit the wet ground and slid along on his back. The pouring rain on his face roused him from the bemused state into which he had relapsed. He sat up; fifteen yards away, the car lay on its side, its wheels still spinning slowly. There was no sign of Pat—the horrifying realisation hit him like a physical blow that she must still be inside, and that the petrol tank might explode at any minute. He staggered to his feet—and froze, rocking like a Kelly doll.

"You cannot go to the car," hummed the 'voice' of his Multiman. "You would be risking death for us all."

Savagely Renton screamed back at it with the full force of his lungs and his mind.

"You blasted coward, don't you realise that she may be unconscious or dead inside that wreck. Unless you let me do something, she hasn't got a chance."

"You might die yourself," droned the passionless 'voice' in his head. "I/we cannot allow it."

"In that case, I'll stand here and take my chance with Pat if there is an explosion," raged the embittered man. "And even if I survive, I'll never marry, and I'll find some way of disposing of you, you yellow cur. You're not fit to inhabit the body of a man; do you think that we got to where we are by just playing everything dead safe?"

The acid of his invective caused even the Multiman to cringe and yield.

"All right," it said, releasing him suddenly from his shackles, "let us do our best to save them."

The fully Integrated Man leapt forward and mounted the battered car, peering eagerly inside.

Pat stirred and rapidly regained consciousness.

"Get away, Tony, this thing will go off like a bomb any minute," she warned weakly as the stench of petrol increased.

"No time for arguments," he answered, grasping the battered door and wrenching at it with suddenly super-powered
muscles. It jerked open with a screech of buckled metal. Tony leaned forward, took hold of Pat under the armpits, and plucked her from the wreck like a flower from a broken vase. Flinging her over his shoulder, he raced away on feet that were fleeter, even, than when he had timed himself the night before. Behind them, the car blew up with a coughing roar; jagged pieces of metal whined viciously around them and mercifully missed making contact. Abruptly, the Integrated Man's colossal expenditure of energy drained even his reserves, his legs collapsed beneath him and he sank to the ground; there is a limit to what even flesh and intelligent blood can do.

The blackness receded from Tony's mind. He opened his eyes. Pat was holding him in a sitting position on the wet ground; the rain had stopped, and the setting sun was breaking through the clouds. He looked dully at his mangled hands, suddenly aware of the pain in them. Somewhere, a bird was singing. He turned to the girl kneeling beside him; her dress was torn and her face was bloodied, and she looked beautiful.

"We did quite a bit there of our own free will didn't we?" he asked pensively.

"You're right, darling, we did," she answered.

They got to their feet and walked towards the road, and the sun went down on the last day of separateness for the four personalities.

—Steve Hall

‘Gone Away—No known address’

Subscribers are reminded to keep us informed of any change of address to ensure the safe delivery of their copies as far too many issues are returned by the Post Office marked as above. Overseas subscribers are particularly requested to let us know in good time.
Push-button warfare became so effective that the robots finally took over from the humans. The problem then became one of finding an effective peace.

WAR WITH THE ROBOTS

by HARRY HARRISON

Only the slightest vibration could be felt through the floor of the hurtling monorail car. There was no sensation of motion since the rushing tunnel walls could not be seen through the windowless sides. The riders, all of them in neatly pressed uniforms with buttons and decorations shining, swayed slightly in their seats on the turns, wrapped in their own thoughts and mumbled conversations. Above them, thousands of feet of solid rock sealed them off from the war. At an effortless one-hundred and fifty miles an hour the car rushed General Pere and his staff to their battle stations.

When the alarm screamed the driver clamped the brakes full on and reversed his motors. There was not enough time. At full speed the metal bullet tore into the barrier of rocks and dirt that blocked the tunnel. Steel plates crushed and crumpled as the car slammed to a halt. All the lights went out and in the empty silence that followed the earshattering clamour of the crash only a faint moaning could be heard.

General Pere pushed himself up from the chair, shaking his head in an effort to clear it, and snapped on his flash.
The beam nervously danced the length of the car, gleaming
on settling dust motes and lighting up the frightened white
faces of his staff.

"Casualty report, verbal," he told his adjutant, his voice
pitched low so that no quaver might be heard. It is not easy
to be a general when you are only nineteen years old. Pere
forced himself to stand still while the metal back of the
adjutant robot moved swiftly up the aisle.

The seats were well anchored and faced to the rear, so it
was hopeful that there would not be too many casualties.
Behind the backs of the last chairs was a rubble of dirt that
had burst in through the destroyed nose. The driver was
undoubtedly dead under it, which was all for the best. It
saved the trouble of a court martial.

"One killed, one missing in action, one wounded, total
active strength of unit now seventeen." The adjutant
dropped the salute and stood to attention, waiting further
orders. General Pere nervously chewed his lip.

Missing-in-action meant the driver. Presumed dead, damn
well dead. The casualty was the new captain from Interceptor
Control, who had had the bad luck to be leaning out of his
chair at the time of the accident. His neck had been cracked
on the edge of the chair and his head now hung down at a
sickening angle. The moaning must be the casualty, he had
better check on that first. He stamped down the aisle and
shined his light on the sallow, sweatbeaded face of Colonel
Zen.

"My arm, sir," the Colonel gasped. "I was reaching out
when we crashed, my arm whipped back and hit the metal
edge. Broken I think. The pain . . ."

"That's enough, Colonel," Pere said. A little too loudly,
because the man's fear was beginning to touch him too.
There were footsteps in the aisle and his second-in-command,
General Natia, joined him.

"You've had the standard first aid course, General," Pere
said. "Bandage this man and then report to me."

"Yes, sir," General Natia said, her voice echoing that same
note of fear.

Damn all, Pere thought, she should know that's no way for
a general to act. We can't let the troops know we're afraid—
even if we are. He made no allowance for the fact that General
Natia was a woman, and just eighteen.
Once his staff had been attended to he turned his mind to the problems at hand. Some of the tension eased as he sorted out all the factors. Problem solving was his speciality, and he had been selected for it before birth. Gene analysis had chosen the best DNA chain from his parents sperm and ovum bank. This, and subsequent training, had fitted him perfectly for command. With the instantaneous reflexes of youth he was a formidable opponent on the battlefield and looked forward to a successful career of at least four or five years before retirement.

For a man who would soon be directing a global conflict this problem was childishy simple.

"Communications?" he snapped, and pointed his finger at the Signal Corps Major. There was an automatic authority in his voice now, in marked contrast to his boyish crewcut and freckles.

"None, Sir," the officer said, saluting. "Whatever blocked the tunnel knocked out the land lines as well. I've tried with the field phone but the wires are dead."

"Does anyone know how far we are from HQ?" he asked, raising his voice so that all the officers in the car could hear him.

"I'll have it . . . in a second, sir," one of them said, a grey haired colonel from Computer Corps. He was moving the scale of his pocket slide rule, blinking intently in the light of his flash. "Don't know how long this tunnel is—or the exact location of HQ. But I have made the run before, and the total elapsed time is usually a few minutes over three hours. Figuring the time to the accident, our speed, allowing for deceleration . . ." His voice trailed off into a mumble and Pere waited impatiently, but unmoving. He needed this information before he could make his next move.

"Between forty and sixty miles to HQ, sir. And those are the outside figures, I'd say it's very close to fifty . . ."

"That's good enough. I want two volunteers, you and you. Get up in the nose there and see if you can't dig a hole through that rubble. We're going to try to get through and continue on foot. We'll be needed at HQ if the Enemy is able to hit this close."

This last was added for the sake of his staff's morale; the training courses had recommended the human touch whenever
possible. Particularly in unusual situations. And this was an unusual, though not very promising way for his first command to begin. He scowled unhappily into the darkness. It took an effort to keep his feelings from his voice as he issued orders to assemble the food stores and water. When this was done he sent his adjutant to relieve the two men who were digging into the dirt barricade. One robot was worth ten men—not to say two—at this kind of labour.

It took almost twelve hours to penetrate the barrier, and they were all completely exhausted before it was through. The adjutant did all the digging, and they rotated shifts in carrying away the rubble that he cleared. There had been some minor falls of dirt and rock that in their haste they ignored, until a major fall at the work face had completely buried the robot. They dug until they reached its feet and Pere had lengths of the now useless tunnel signal wire tied around the robot’s ankles. It wasn’t until they had added loops of wire so that they could all pull together that the adjutant had been dragged from his near grave. After that work slowed, since they had to unbolt the chairs from the car and use them to shore up the roof. All things considered, twelve hours was good time for penetration of the barrier.

Once they were through General Pere allowed them a half hour break. They sipped at their water bottles and collapsed wearily on both sides of the central track. Pride and position would not allow Pere to rest; he paced ahead to see if the tunnel was clear, his adjutant beside him.

“How many hours left in your battery?” Pere asked. “At maximum output.”

“Over three hundred.”

“Then start running. If you come to any other falls begin clearing them away and we’ll catch up with you. If you get through without any trouble have them send a car for us. It will save some time.”

The robot saluted and was gone, his running steps thudding away in the distance. Pere looked at the glowing dial of his watch and announced the end of the break.

Walking, with the single light twinkling ahead, soon took on a dream-like quality that numbed their responses. They went on this way, with short breaks every hour, for almost eight hours. When they began to drop out, asleep on their feet, Pere reluctantly ordered a stop. He forced them to eat
first, then allowed them only four hours sleep before he
forcefully shook them to their feet. The March continued—
at a far slower pace now—and another five hours of constant
darkness passed before they saw the light of the car ahead.

"Point your lights at it—everyone," Pere said. "We don’t
want to be run down."

The driver, a robot, had been driving at half speed, watching
for them. They climbed wearily aboard and most of them
fell asleep during the short run back to HQ. The adjutant
made a report to Pere.

"The break has been reported, and there have been two
more blockages discovered in the other tunnel."

"What caused them?"

"Intelligence is not sure, but is expecting to report soon."

Pere swallowed his opinion of Intelligence’s intelligence,
since even robots should not hear morale-lowering comment.
He pulled at his sticky shirt and was suddenly aware of the
rising heat inside the car. "What’s wrong with the air
conditioning?" he asked petulantly.

"Nothing, sir. It is the air temperature in the tunnel, it is
much hotter than usual."

"Why?"

"That fact is not known yet."

The heat rose steadily as they approached HQ, and Pere
issued orders that collars could be opened. The car slowed to
a halt in the immense bay at the tunnel’s end. When the door
was opened the hot air that boiled in was almost unbreathable.

"Double-time to the lock . . ." Pere gasped out, choking
over the words as the heat seared his throat. They stumbled
and ran towards the large sealed valve at the end of the plat-
form, robot guns tracking them from the turrets that studded
the face of the metal wall. Identification was made and
before they reached the lock the immense outer door rotated
ponderously. Someone screamed as he fell and bare flesh
touched the burning metal of the platform. Pere forced
himself to wait until they were all inside, entering last. There
was some relief when the outer door had closed, but no real
drop in the temperature until they had passed through all five
seals of the four-barrelled lock. Even then the air inside the
fortress was far warmer than normal.

"Perhaps this heat has something to do with the reason
we were sent out a week early," General Natia said. "This
and the tunnel blockage might be caused by an enemy pen-
etration in force.”

Pere had reached the same conclusion himself, though he
wouldn’t admit it aloud, even to his second-in-command. In
addition only he knew that a real emergency at HQ had
changed their shipping orders, though Command had not
been specific about the nature of the emergency. As fast as
he could, without running, Pere led his staff towards HQ
control.

Nothing was right. No one answered him when he formally
requested permission to enter. There were maintenance robots
stolidly going about their work, but no officers in view. For
a single heart-stopping instant he thought that all four battle
stations were vacant. Then he saw a finger come out and
touch a button at Command Prime: the occupant of the
chair was slumped so low that he could hardly be seen. Pere
stalked quickly towards the post and began a salute, but his
hand stopped before it reached his forehead and forgotten,
dropped slowly back. He stared with horror.

In the chair the operator gradually became aware that
someone was standing over him. It was an effort for the man
to draw the attention of his deep-socketed and reddened eyes
from the board. When he did it was just for an instant and
Pere had only a glimpse of the pain in their depths, of eyes
peeping out of their black-rimmed pits like frightened animals.
Then their attention wavered back to the board and the thin
arm lifted tremulously to touch a control.

“Thank God you’ve come . . . you’ve come at last . . .
thank . . .” The words, scarcely a whisper to begin with,
died away to a wheeze.

The officer’s arms were pocked and scarred with needle
holes: streaked with hardened rivulets of blood. The jumbled
cartons and vials on the table told a wordless story of a man
forcing himself to stay awake and active long past human
limits: there were stimulants, sleep-surrogate, glucose, anaes-
thetics, vitamin complexes. He had obviously been days alone
in this chair, manning all four battle stations hooked into his
own board. Alone—for some unknown and terrible reason
alone—he had fought the war, waiting for help. With an
uncontrollable feeling of revulsion Pere saw that the man
had soiled himself as he sat there.
"General Natia, man that free board," he ordered.
She slipped efficiently into the chair and set up a repeater from the others. Quickly taking in the factors of the conflict she called out, "Ready, sir."
Pere threw the command switch and the red bulb winked out on the board before him, and the one in front of Natia flashed on.
It was as though the light had been the spark of life holding the man at the controls. When the red bulb snuffed out he dropped his face into his hands and collapsed sideways into the cushioning chair. Pere took him by the shoulder and shook him until the hands dropped away and the last traces of consciousness stiffened the lolling head. With painful effort the man opened his eyes.
"What happened?" Pere asked. "Where is everyone else?"
"Dead," the feeble voice whispered, near to death itself.
"I was the only one didn't die—in bed at the time. Just chance I wasn't touching any metal. Just sheets, mattress. Robots say it was a vibration source—subsonic—supersonic—something new. Curdled everyone, killed them,—coagulated the protein. Like eggs . . . cooked eggs . . . all dead . . . ."

When the man sank into unconsciousness again Pere signalled to the medical officer who was standing by. Pere looked down at the solid steel floor beneath his feet and shuddered; the vibration weapon might be used again at any time. Or could it? The robots must have taken some preventative measures. He turned to the command robot, standing with steady metallic patience by the computer bank. Shaped like a normal motile, this robot's unique function was apparent only by the large vision screen on its chest and the thick cable, a metallic umbilical cord, that ran back from it to the computers behind. It was simply an extension of the giant computers and logic and memory units that were the heart of HQ.
"Have you found out what generated the killing vibration?" Pere asked the command robot.
"A machine that assembled and attached itself to the outer wall of HQ. It was detected as soon as it began operating and the frequencies were analyzed and neutralized in three minutes and seventeen seconds. No equipment or robots were injured since the frequencies used only caused resonance in animal protein. All of the staff, with the exception of
Colonel Frey, were killed instantly. Large quantities of food in the lockers . . .”

“We’ll concern ourselves with the food later. Where is the machine?”

“There,” the robot said, pointing towards the far wall. It led the way, its cable trailing smoothly behind it, and pulled a cover from the yard high object resting there. It resembled no machine Pere had ever seen, rather it looked like a tangled mass of tiny gleaming roots: the red earth still packed between them heightened the illusion.

“How does it work?”

The robot reached out—leaning very close to focus its microscope eyepieces—and carefully pulled one of the strands free. It lay on the robot’s outstretched metallic palm, eight inches long, an eighth of an inch in diameter. Seen close it was not completely flexible, but made instead of pivoted and smoothly finished segments. The robot pointed out the parts of interest.

“The vibration generator is made up of a large number of these machines, all of similar construction. At the front end is a hard edged orifice that drills a hole in the ground. Debris is carried back through the body of the machine and eliminated here: in operation it is not unlike the common earthworm. Directional apparatus here guides it, orientated by a gravi-meter to locate our base. Here a power unit and here a frequency generator. Singly the machines are harmless, their radiation of no importance. But when grouped together and activated at the same time they produce the deadly frequency.”

“Why weren’t they detected before going into operation?”

“Their individual mass is too small and they have no metallic components. In addition they move very slowly, it took them a long time to reach HQ and mass for the attack.”

“How long?”

“By measuring the sensitivity of their gravimeters in response to the bulk of HQ and timing their speed of movement, it has been estimated that they entered the ground four years ago.”

“Four years!” General Pere was aghast at the thought. The miles of dirt and rock that surrounded HQ on all sides, formally so comforting, changed suddenly to the hiding place of countless crawling, remorseless machines, closing in with mechanical patience.
"Can they be stopped from constructing another group-machine?"
"That is no problem now that it is known what we must guard against. Defensive screens and detectors have been installed."

Anxiety seeped slowly away and Pere wiped the trickling sweat from his face as he looked around at his staff. All of the battle stations were manned now and the collapsed form of Colonel Frey had been taken out. Everything was functioning perfectly—except for the damn heat.
"And what's causing that?" Pere snapped. "Why the rise in temperature? You must have found the cause."
"The increased temperature is caused by heat areas of intense heat in the soil around this station. The cause of this localized heat increase is unknown."

Pere found himself worrying his thumb nail with his front teeth and angrily jerked it from his mouth. "Cause unknown! I should think it was obvious. If the Enemy can build complex wave generators into something as small as this piece of plastic spaghetti, they can certainly build more of them with some kind of compact heat generator. These things could be coming in in a second wave after the coagulator generators."
"This theory was considered, as well as other high probability explanations, but we have no evidence..."
"Then get evidence!" Pere was angry at the persistent logicality of all robots, no matter how theoretically brilliant they might be. This obvious explanation of the mysterious heat seemed to him to be more than a hunch or guess, it was almost a certainty. He thumbed the button labelled IMPLEMENT ORDER on the robot's chest and issued a command. "Search will be made at once beyond the heat zone to uncover any more of these specialized boring machines."

With his defence taken care of he turned his attention to the war. Operations were proceeding so smoothly that the knot of tension in his midriff softened a bit. Lights flickered across the control boards, coded symbols for logistics and intelligence. The operators collated and questioned, feeding their results to Command Prime where General Natia sat relaxed yet completely alert. The electronic war of course moved at too great a pace for the human mind to follow. All of the missiles, anti-missile missiles, interceptors, bombers and
tank squadrons were robot controlled and operated. Computers of varying degrees of intelligence and responsibility did the actual battle ordering. The same was true of logistics. But men had started this war and guided it towards its finish. The human operators made sense of the shifting factors in the global battle and chose the best course from among those fed to them by the strategy machines. The war had been going well. Analysis of the results showed a small increment of victory during the past nine months. If this increment could be kept steady—or even increased—another generation or two might see complete victory. It was a pleasant, though slightly disconcerting, thought for Pere.

Five shifts later the first of the thermal-wrigglers was found and neutralized. Pere examined it with distaste; so small to be causing so much trouble. They were all wearing tropical kit now, and constantly uncomfortable in the overheated air. The only external difference between this wriggler and the wave generators was in the colour of its plastic body; the new one was an appropriately fiery red.

"How does it generate the heat?" Pere asked the comamnd robot.

"The machine contains a suicide circuit. The power supply is short circuited through a contractile field. The circuits burn out in microseconds, but there is enough time to compress a small quantity of hydrogen . . ."

"It implodes! A small hydrogen bomb?"

"In a sense, yes. There is very little radiation, most of the energy is released as heat. A molten pocket of lava is the result. The heat dissipates slowly into our base here. New implosions add constantly to the molten area outside."

"Can’t you detect and destroy these things before they detonate?"

"This is difficult because of the large number of them involved and the volume of earth that must be inspected. Special machines and detectors are being constructed. An extrapolation has been made of all the factors, and it is estimated with a ninety-nine percent certainty that the heat will not rise to the point where it interferes with the operation of the base."

This was one load of worry that Pere could cheerfully throw aside; the constant heat was a continual source of
discomfort to them all. He wondered idly just how hot it would get before the temperature started back down.

“What is your estimate of this maximum temperature?” he asked.

“Five hundred degrees,” the robot said with mechanical imperturbility.

Pere stared into the blank eye cells of the machine and had the sensation of being suddenly hammered down and gasping for air. “Why—that’s five times higher than the boiling temperature of water!”

“That is correct. Water boils at one hundred degrees.”

Pere could only choke with disbelief. “Do you realize what you are saying? What do you think people are . . . How can we live?”

The robot did not answer since this problem was not the responsibility of the HQ robots. Pere chewed his lip and rephrased it.

“This temperature is unsatisfactory for the personnel—even if the machines can survive it. You must find some way to lower the temperature.”

“This problem has already been considered, since a number of the more delicate components will be near their critical range at that temperature. The air conditioning units are now operating at maximum overload and no new units can be added, therefore drilling operations have begun and are tapping nearby deposits of water, which will be substituted for air within the base. This water will enter at a lower temperature and will have a greater heat transfer capacity.”

A compromise, not a perfect answer, but it might work for a while. One room would have to be sealed off for living quarters and the watch officers could wear pressure suits. Uncomfortable but not impossible.

“What will be the maximum temperature of this water?” he asked.

“One hundred and forty degrees. There is adequate water to bring the temperature lower, but this base was not designed for easy circulation of anything other than air. All machine units are of battle standard and waterproof . . .”

“People aren’t!” Pere shouted, forgetting himself. “And if they were they would cook in this boiling soup of yours. How are we to survive, tell me that?”
Once more the oracle was silent. In the distance there was the sudden gush and spatter of water.

"What's that?" he gasped.

"Flooding. The lower levels," the robot said.

Everyone in the room was watching him, Pere realized, listening to the final judgment of the robot's words. "Anyone have any ideas?" he asked, unaware of the pleading in his voice. There were no answers.

There had to be an answer; he forced his numbed mind to check over the possibilities. Remote control of HQ from National Central? No, too dangerous, control circuits could be interrupted, cut off or even taken over. Someone had to be here, at least one person to man the Command Prime station. Unless this station could be robot controlled too.

"A discretion circuit," he shouted with sudden relief. "Can a robot with discretion circuitry be built to operate the Command station?" he asked the robot extension of HQ.

"Yes."

"Well do it. Do it at once. We may have to evacuate, and in case we do I want the robot ready to take over."

It wouldn't be for long, they would just be gone until the temperature dropped and human habitation became possible again. All of the decisions to be made at Command Prime were simple either-or choices, and an occasional multiple choice. A robot with the correct evaluation and discretion circuits would do well enough for awhile. It wouldn't be perfect and the victory increment would surely drop a few points, but it wouldn't be disaster. He would have to check with National Central before putting the plan into operation, but he was sure they wouldn't come up with a better answer.

They didn't. The aging commanders couldn't even do as well and were grateful with General Pere for the suggestion. He even received a promotion and was authorized to wear another star on his shoulder. As soon as the command robot could begin satisfactory operation he was ordered to evacuate.

On the lower levels the hot oily water reached to their knees. The tension among the staff ebbed away only when the new robot was carried in. Pere watched and frowned when the machine was bolted into place in his chair. The job had been a quick one and no special care had been taken with unessentials; the body of the robot consisted simply of a square black
box; ugly with beaded weld marks. Two eye cells sat on a stubby column above it and a single, articulated arm projected from the front. The eyes focused on the unlit command light and the arm hung down limply. Pere had all the other boards tied into the logistics board, took one last look at the war, then decisively threw the command switch.

The red light came on in front of the robot and it instantly began operation. With lightning speed the metallic index finger pressed three buttons and threw a switch, then drooped again. Pere looked at the decisions and could find no fault. Perhaps he might have brought in the reserve tanks in the eastern bulge and tried to hold. Though it was just as tactically sound to withdraw and straighten the line and save on the estimated losses. Both choices had the same probability rating on the scale, which was why they had appeared on the board. The robot would work.

He hated it though. For some reason it seemed a colossal personal affront to him to be replaced by this arm-waving black box. Was this all that a man was to a machine? The metal fingers ran across the controls, then dropped again.

"Prepare to move out," he shouted in a harsh voice. This evacuation was wrong, very wrong. But what else could he do?

"We'll rig a stretcher for Colonel Frey," he told the medical officer. "How is he progressing?"

"He's dead," the doctor said with his toneless professional manner. "The heat was too much for him in his weakened condition. Too much of a strain on his heart."

"All right," Pere said, keeping his emotions under control. "That leaves Zen as the only casualty and he can walk well enough with his arm in a cast."

When the officers had all assembled General Natia stepped up to Pere and saluted. "All present, sir. Everyone is carrying extra rations and water in case there is trouble in the return tunnel."

"Yes, of course." Pere said, mentally berating himself for not thinking of these simple precautions. There had been so much on his mind. It was time to leave.

"Has the mono tunnel been kept open?" he asked the adjutant.

"Two additional minor blockages have occurred, but have been cleared."
"Very good. Fall in with the others. Attention... right face... forward MARCH." As his small company tramped out of the room General Pere turned back, goaded by some anachronistic impulse, and saluted the command post. None of the machines paid the slightest attention to him. The robot in his chair jabbed a quick finger at some buttons and ignored him. Feeling slightly foolish he turned quickly and followed the others out.

They were cycling through the multiple sealed doors of the fortress when they met the robot. It was waiting in the outer compartment and pushed past them as soon as the door was open. It was a worker, a mechanical of some kind, scratched and covered with mud: because it had no speech facilities Pere had to question it through the adjutant.

"Find out what has happened," he snapped.

The two robots held a voiceless communion, their radio waves in a direct brain-to-brain hookup carried thoughts far faster than could any speech.

"The exit tunnel has been blocked," the adjutant said. "The roof is down in many places and it is beginning to fill with water. The decision has been reached that it cannot be opened. New falls are occurring all the time."

"Challenge the decision. It is not possible," Pere said. There was a note of desperation in his voice.

They were through the last door now and in the exit bay. The heat was overpowering and made intelligent thought almost impossible. Through a red haze Pere saw bulky digging robots streaming out of the mouth of the exit tunnel, going towards the entrance valve behind them.

"No change is possible," the adjutant said, a metallic voice of doom. "The tunnel cannot be opened now. It has been found that small machines, very like the heat units, have penetrated the earth and are collapsing the tunnel. It will be opened after they..."

"Another way! There must be another way out!" Pere's voice was as heat strained as his thoughts, yet the robot understood and took it for a command.

"There are emergency exits here that once led to higher levels. My information is incomplete. I do not know if they have been sealed."

"Show us—we can't stay here..."
They were all wearing gloves, so the metal bars of the ladder didn’t char their hands, just burned them. The robot adjutant went first and only his mechanical strength could have turned the time-sealed wheel that locked the entrance to the older levels. The humans groped their way behind the adjutant, some falling and failing to rise again. Colonel Zen must have been the first to be left behind because he only had the use of one arm. The heat in the stifling darkness was so great that even the doctor didn’t notice when his patient dropped out. The doctor himself must have gone soon after because he was no longer a young man.

General Pere tried to issue orders, and when they were not obeyed he made an attempt to help the laggards himself. He could not do this and keep up with the others. When he saw the lights winking out of sight in the dust-filled passage ahead, he made the only decision possible under the circumstances. Not that he was aware of making it, he was barely conscious at the time and only the will to survive drove him forward. Passing the straggling survivors he shouldered General Natia aside and took his place behind the guiding robot.

Pain fought a battle with fatigue and kept them going until they were out of the zone of terrible heat. Pere had strength enough only to utter the one-word command to stop, drink from his canteen, then fall unconscious to the floor. The others dropped in huddled lumps of pain about him. The adjutant stood with untiring machine-patience, waiting for them to rise.

Moans of agony roused Pere at last and he forced his charred fingers to fumble out the first aid packs. Burn ointment brought some relief to the five survivors and stimulants gave them the illusion of strength needed to carry on. General Natia had somehow managed to stay close behind him through the ordeal, as well as three others. They were all young and strong, though one was not strong enough. He simply vanished during the next climb.

Above HQ was a maze of tunnels and rooms, occupied by the base at various times before the unremitting pressures of the war had driven the controllers even deeper into the ground. Most of it was collapsed and choked with rubble and no progress was possible. If the robot had not been with them they would have died. Every detail of the various layers was
impressed in his electronical cortex, since his brain contained the memory of every other adjutant back to the beginning of the war. They retraced their steps whenever their way was blocked and found a different direction. Bit by bit they progressed towards the surface. There was no way to measure time in the darkness; they slept when exhaustion was too great, then woke up to stumble on. Their food was gone and the water almost exhausted. They kept going only because of the robot’s firm insistence that they were now in the upper levels.

“We are just under the surface of the ground,” the adjutant said. “This tunnel led to a gun position, but it is now blocked.”

Pere sat and blinked at the circular tunnel and forced his fatigued brain to consider the problem. The top of the tunnel was not much higher than their heads and made of ferro-concrete. Jagged chunks of the same material choked the end.

“Clear away the opening,” Pere ordered.

“I cannot,” the robot said. “My battery is almost discharged, I would not be able to finish.”

This was the end. They could not go on.

“Perhaps we could . . . blow it out of the way,” Natia said apologetically. Pere turned his light on her and she shook a handful of cartridges from the clip at her waist. “These contain powerful explosive. Perhaps the adjutant could arrange them to all explode together.”

“I can,” the adjutant said.

Surprisingly, all four of them still had their sidearms and spare clips; they had not been discarded with the rest of the equipment. The adjutant took the spare clips and buried them in the rubble while they moved back down the tunnel. A minute later the robot came running back to join them and they pressed themselves to the floor. The ground jumped and the roar of concussion smote their ears. They forced themselves to wait long minutes for the stifling cloud of dust settled, before Pere let them go forward.

The barrier was still there, but the ceiling had fallen and high up in the gap a ray of light shone on the dust motes.

“We’re through,” Pere said hoarsely. “Help me up there.”

Steadied by the robot he reached up into the hole and crumbled away the soft dirt at the lip until it was big enough
for his shoulders. A lump came away with a tuft of grass, green and damp. He groped up through the hole, reaching for a hold.

"Let me help you," a voice said, and brown calloused hands clutched his and pulled.

It was so unexpected that Pere gasped with shock. Yet he could not let go and the hand pulled him steadily out of the hole in the ground. He fell face first on to the grass and groped for his gun, while the light burned into his eyes. Through tears of pain he saw a circle of legs surrounding him, and took his hand from the pistol butt.

The others were out of the hole now and as his eyes adjusted Pere could look around him. The sky was cloudy and it must have been raining because the grass on which he sat was damp. Before him stretched a freshly ploughed field. He felt a sudden spurt of pleasure at identifying these things that he had only seen before on the screen. This was the first time in his life that he had ever been above ground.

Of course all of the recordings he had seen were historicals, from the time before the war when people still lived on the surface, instead of in the numerous sub-cities. He had always assumed that the surface was sterile and bare of life. Then who were these people? Something whistled and screamed away into the distance over his head, and he was aware for the first time of a constant rumbling that seemed to come from all sides.

"Who are you?" a voice asked, and Pere struggled up to face the man who had helped him from the hole.

"I am General Pere, this is my staff." The man had a very dark skin and was wearing a weird costume that seemed to consist completely of cast-off mechanical items. His tunic was plexicloth from a machine cover: his shoes wedges of metal with webbing straps to hold them in place. He wore a metal helmet on his head as did all the others.

"A general," the man grunted and the smile vanished from his face. He turned and whistled shrilly. In the field there were some more people pulling at a strange device, one of them waved and they started in Pere's direction.

"Boruk is coming," the tan skinned man said gruffly.
"Talk to him. Maybe it'll do some good. Though I doubt it." He spat on the ground and kicked dirt into the spittle with one toe.
Overhead in the clouds there was a muffled and gigantic explosion. Pere looked up and saw the clouds briefly stained a rosy pink. A black speck appeared below the clouds and before his horrified eyes grew instantly to the shape of a giant wheel. It plunged down, apparently at him, but hit instead on the far side of the field. The huge tyre recoiled and it bounced into the air directly over their heads. Only Pere and his officers looked up as it sailed over. The wheel must have been a hundred feet in diameter and he could see clearly the treads on the tyre, and the metal hub with its sheered supports, a stream of liquid still leaking from some severed pipe. It bounced again, shaking the ground, and vanished from sight over the hill.

“What was that?” Pere asked, but no one answered him.

The group in the field were closer now, and he could see they were pulling a plough assembled of odd pieces of junk. The two handles of the plough were the only identifiable parts: the arms of a robot welded into place, the hands extended and acting as handles. One of the men who had been tugging in a harness dropped it and walked over. He was naked to the waist, but wore a pair of grey uniform pants and high boots.

“The military!” he shouted when he saw their uniforms. “Wonderful! Wonderful!” He turned and ran away. A fine rain of metallic particles hit in the grass around them. Pere had the feeling he was going mad.

The man had only gone to the side of the field to get the rest of his clothes. He struggled into a jacket and in place of his steel helmet pulled on a peaked cap of hauntingly familiar design. Only when he had buttoned it and knocked the dust from his trousers did he turn and come towards Pere.

“The Enemy!” Pere shouted and scratched for his gun. This was the uniform he had seen so many times in orientation films. He hauled the gun out but someone knocked it from his fingers. Then he could only stand paralysed as the man stamped up to him, clicked his heels together and saluted.

“General Boruk,” he said. “On a mission of peace. May I ask whom I have the pleasure of addressing?” He dropped the salute and pulled a white flag from one pocket with a collapsible rod attached to it. After snapping open the rod he held the flag up proudly. His face was as sunburned as the others, with a black moustache and pointed beard.
"I am General Pere," Pere forced himself to say. "Who are you? What are you doing here?"

"At your service, general," Boruk said, and stabbed the pole into the ground. He groped in another pocket and fished out a large wallet. "I bring you greetings from my proud country, and the joyous news that we wish to sue for peace. All of the papers are here—including my credentials—and you have only to forward them to the proper authorities. You will notice that there is mention of a peace commission, but I am forced to admit that they are all dead or have returned. In fact, to be truthful, you will see my name entered on the roles of the commission as Captain Boruk, but this was only in the beginning. Through determination and the fact I am young and strong as a bull, I was promoted to dizzying heights. In fact General Granziaz, who himself conferred my commission upon me, even gave me his own coat with his general's insignia. In that his was a wise choice, for I ask you only to notice that I am here and the others are not. We want peace, any terms you care to name. Do you agree?"

"Sit down," Pere said, feeling the need to do so himself. "Why are you asking for peace now—saying for the moment that your credentials are not forged—you are not losing the war?"

"To be truthful again, general, we are not even fighting the war." Boruk sprawled on the ground and chewed a stem of grass. "You will discover the reasons for our request sooner or later, so it might as well be sooner. In fact the sooner the better since the situation is so far out of hand. It seems we have been forced to abandon our battle headquarters and turn it over to robot operation. Are you all right—?" he asked, seeing Pere jump.

"Yes," Pere told him. "Yes, go on." This was too familiar to permit him to listen easily.

"I must say your scientists are tricky ones, I believe they managed to invest our HQ with a mutated virus that was impossible to eradicate. The base had to be evacuated, radiated and sterilized. To do this the robots had to be left in complete control of the war operations. When we tried to get back in, it was most difficult. All entrances had been sealed and we couldn't get the robots to understand what we wanted. They were doing very well without us, very well indeed." He spat the grass out and scowled.
“But there are ways. You could have countermanded—”
“It is not that easy, general. I assure you we tried. To be brief, the more we tried the better the robot defences against our interferences became. In the end they fought us off—having identified us with the Enemy—and we had to retire.”
“We’ll get back in,” Pere said, then snapped his mouth shut guiltily.
“I had assumed something of the sort,” Boruk smiled, his seemingly lazy attention had missed nothing. “When a general and his staff climb out of the ground above the area of their HQ, I am afraid I leaped to a conclusion due to my own previous knowledge. Is it true? You have been forced to leave as well—?”
“I’ll tell you nothing.”
“You don’t have to. It is a cosmic jest indeed.” Boruk laughed humourlessly and tore the surrender papers across and threw them into the dirt. Something keened through the air and exploded in an immense cloud of dust on the horizon.
“You have been pushed out the way our officers were pushed out, and you shall not get back. It was due to come, since every other part of the battle in this war is done by robots. Since we have both been concentrating our weapons upon the opposite headquarters, it was fated that some of the weapons should have at least a partial success. Robots are much stronger than humans, much more able to stand lethal climates. I have had plenty of time to think about this, since I have waited here many months.”
“Why—why didn’t you surrender? Why didn’t you come to us?”
“Believe me, my young companion general, that is the one wish of my country. But how is this done in this day of total war? We tried radio and all other forms of communication, but all were blocked by robot mechanisms designed for that job. Then we sent the mission in person—not carrying weapons so of course the robots ignored us. Our casualties were due simply to the deadliness of the battlefields we had to cross on the way here. The robots were completely indifferent to us, a forewarning of the future—or of the present I might say. Battle is going on everywhere, and only a few peaceful areas exist, such as this one, above a strongly defended base. But even when I reached here I found no surface installations and no way of reaching you below.”
"This is monstrous! Monstrous!" Pere bellowed.

"It is indeed, but we must be philosophical about it. Accept it as these good people have done who live here under a canopy of death. The robots will continue their war just as efficiently without us, and probably make it last much longer since they are so evenly matched. Find yourself a woman, settle down and enjoy the life."

Pere found himself glancing inadvertently at Natia, who looked away and blushed. Even if she was a general she had a fine figure.

"No!" he shouted. "I will not submit. This is terrible. This is no way for mankind to live. Just to sit by and watch these senseless machines destroy each other."

"It does not matter, friend general, whether we like it or not. We have been bypassed. Displaced. We have played too long at the destructive game of war and made our machines too efficient. They enjoy the game too much themselves to relinquish it, and we must find some place where we can try and live to the best of our abilities. Some place where they will not step on us while they play."

"No, I can’t accept it!" Pere shouted again and tears of frustration and anger burned in his eyes. He threw off Natia’s hand when she put it on his arm. The horizon grumbled and flared red, hot metal rattled into the ground nearby.

"I just hope you’re having a good time," he cried and shook his fist up at the unheeding sky. "I just hope you’re having a good time!"

Harry Harrison
It was a new type of submarine—a sub-terrene ship, in fact—and it went into the earth instead of the sea.

THE RADIUS RIDERS

by P. F. WOODS

The last dive of the subterrene vessel Interstice began as a test mission to prove her worth. She had but recently been launched: half her galleries were empty shells, waiting to be fitted with munitions and crew quarters. Nevertheless, we carried a good load, a crew of two hundred, and our technical plant, including armaments, was complete. Two magazines, one fore, one aft, were stacked with torpedoes; and the whole mass lay sedately in the grip of the polarisor fields, by means of which our newly-built ship travelled through solid matter.

The development of subterrene ships had only just begun, and the Interstice was the fifth of the species, the others being prototypes. We had built her large, and we had built her powerful, for she was a warship. As yet, our nation was not at war, but we had enemies, and underground travel was an advantage to be quickly grasped.

And so, with Captain Joule in command, and I, Ross, as Technical Officer, we undertook to journey across the American continent from East to West, at a depth of ten miles. We passed beneath mountain ranges, beneath deserts and lakes, and slipped through every kind of geological formation. We tested for speed, steering—a complicated process where atom-polarisors are concerned—and depth control. Throughout,
the equipment did not falter. The polarisor fields stayed solidly in balance, even when we turned the Interstice first hard to port, then hard to starboard. The first fully operational subterrene ship was a success.

We were jubilant. We had no suspicion, as we approached the West Coast, that a grave misfortune was soon to befall us, provoking us into reckless folly, and causing us to be caught helpless in the grip of the mighty terrestrial planet.
I was with Captain Joule in the Control Cabin when he gave the order to surface at our prearranged location. On an even keel, the ship rose steadily.
At seven miles, a high-pitched hum sounded in the metal of the ship, rising rapidly to an unnerving screech as we ascended. At the same time, an urgent call came from Polarisor Section.
The white-faced image of the Chief Engineer stared from the communicator screen. "Captain! An outside force is distorting the field! We can't hold it!"
"Dive!" ordered Captain Joule.
Down we plunged, and immediately the terrifying sound ceased. As the Interstice shuddered to a stop, Joule question the engineer.
"What sort of a force?" he demanded.
"It was magnetic, very powerful. The noise we heard was due to every metallic atom on board vibrating on its polarised alignment. Another half minute and the whole ship would have been unpolarised!"
"Just how powerful is it?" Joules asked, puzzled.
The engineer shrugged. "The meters went haywire. I don't understand it! We never guessed there were such intense energies at only five miles."
Joule paused. "Weapons Section! Fire a torpedo straight up; but don't set the fuse."

Moments later, the Interstice made the first use of her armament. The torpedo lanced upwards, traced by polarised-field detectors. Shortly after it passed the five-mile limit, the missile vanished from the screen, and we received a series of strong shock-waves.
The torpedo's polarisors had failed.
Still Joule was not satisfied. He ordered us up once more. Cautiously, we approached the danger level, and the shrieking
of vibrating atoms hummed through the ship. Following on the pleas of Polarisor Section, we sank back to a safe depth.

Now our confidence was gone. Retracing our route, we tried again with the same result. Then we made periodic attempts all the way back to the East Coast, and for two weeks wandered over the continent, probing. The unbelievably strong phenomenon lay like a blanket under the land.

Myself, I doubted that it was magnetic in origin. Most likely, I thought, it was a magnetic effect produced by a freak stream of particles which had begun to flow while we were submerged.

Captain Joule was gloomy when I expressed this idea to him. "In that case," he commented, "it might be artificial. It certainly is an effective weapon against a subterrene ship."

But whatever the origin, the practical fact remained: we were unable to break surface.

The mood of the Interstice changed as we realised this. The excitement of our successful new enterprise vanished. I noticed for the first time how hollow the inside of the ship was, how every sound produced echoes in its cavities, and how dully its arched walls reflected the yellow lighting. It was easy to imagine how far within the Earth we were. I looked at Captain Joule, and knew that he had the same feelings.

Suddenly, I roared with laughter. "Well, we are trapped," I said lightly, "what of it? All the better. This is our chance to defy those faint-hearts of the Navy Department with impunity."

"What do you mean?" Joule asked.

"They forbade us, in the interests of caution, to take any of our ships deeper than ten miles at this stage. But since we cannot ascend, we will return to the surface the long way—through the diameter of the planet."

He smiled, considering the proposal with characteristic brevity. I remembered the previous conversations we had held over the years, when the polarsor fields were undergoing their slow, painful development in the Navy laboratories. Many daring schemes such as this had suggested themselves to us, and we were only biding our time in order to carry them out.

"Let us put it to the others," he said at length, and spoke into the communicator, calling an officers' conference.

The Control Cabin was claustrophobic by the time six officers had crowded into it. The air inductors weren't designed
to accommodate this many, and after ten minutes I was
gasping for breath.

In the pause before Joule spoke, I heard the steady hum of the
now resting ship. “You will all know by now,” he began,
“that we are unable to break surface. Ross has a proposal,
which he will outline to you.” He gave me a nod.

“Ever since the subterrene ship became a possibility,” I
said, “I have conceived the idea of journeying into the interior
of the Earth, perhaps to the centre itself. During the building
of the Interstice I took advantage of the polarisor propulsor’s
ability to move very large masses, and made tentative plans for
such an expedition. The Interstice is considerably larger than
her first design called for: she has a heavier power plant, more
instrumentation, and food and air re-cyclers to keep a full crew
supplied for several years. I also installed a workshop, and
refrigerating equipment to guard against overheating.”

There were some surprised expressions among the Navy men
when I revealed this, but others, those officers from my own
civilian team, already knew of it. I feared no recriminations.
The civilised man never entirely ignores the pursuit of
knowledge.

“The interstice is still not fully fitted for the voyage I
envisage,” I told them, “but in my opinion she will suffice.
Since we are cut off from America, I propose to emerge on
another quadrant of the planet.”

Joule interrupted here. “One point to bear in mind,
gentlemen. It is possible that the barrier we encountered is an
artificial device. If this is so, then our nation is at war, and the
enemy already knows about subterrene ships. In this case it is
our duty to return as soon as possible, not to go wandering off
following our own interests.”

“I confess,” I said, “that I am delighted to have this
opportunity to fulfil my ambitions. But in any case, there is
no other way to make the Interstice useful in battle, since the
shortest route to any other land mass now lies in an approach
to the world’s core.”

“May I ask a technical question?” an officer asked.
“Already we are close to the level where the Earth’s crust gives
way to the hotter mantle. Beyond that, the liquid core is even
hotter. Can we stand up to these conditions?”

“The polarisor field makes us impervious in theory to any
degree of heat or density,” I answered, “but it gives no protec-
tion from gravity and magnetism. Gravity will first aid, then hinder us. But magnetism will also grow intense towards the centre, and we have already seen what that can do to the polarisors."

There were shudders as I said this.

"To be honest," I continued, "if we run into a phenomenon like the one we have just escaped, I don’t know what we shall do. But there is an ingenious device called a gauss shunt, which can control gradual increments of magnetism by means of meson currents. This will not take too long to build, and should be able to handle the steady rise of energy we may naturally expect."

The officers thought about it in silence. Already the Interstice had gone deeper than any before, slipping through high-density rock by virtue of the fact that the respective atoms of ship, men and air were individually aligned in different directions in space. At that very moment the cabin, the walls, our very bodies, were filled with a solid mass of hot rock, made impalpable by a delicate balance.

It was nightmarish to the imagination. But these were sturdy men, the cream of our nation, and they were inspired by my enthusiasm and by Joule’s leadership. "Come on!" I urged. "Man has never been this way before. Let us make the adventure!"

"I favour Ross’ proposal," Joule said. "Any further questions?"

There were none. And once Joule had announced his decision, there were no objections.

"Ross will instruct you concerning the preparations for the deep dive," he continued briefly. "That is all."

For three days the Interstice poised her giant bulk ten miles down, while we worked on the gauss shunt. With our resources it did not prove difficult. We constructed a meson charger next to the ship’s power plant, and laid a skeleton of iron-silver channels over the inner hull, converging on a bank at the stern where the external magnetic fields could be passed back to ground. But for this, the polarisor would be twisted out of alignment, and every scrap of metal would be melted by induction.

I used a rheostat control to test the shunt’s power to vary the magnetic field strength within the ship; then we were ready to
reactivate the propulsors and turn our sluggish gravitational settling into a true power-dive.

The interior of the Interstice looked a devil’s workshop. An image came to my mind of the old days before the world’s surface was fully mapped, and windships might spread sail before new oceans, and new lands. For us, there were no free winds, no light, no rolling waters. We had passed outside the bounds of ordinary existence, and must force our way into darkness, pressure, heat.

Obediently, the motors pushed us deeper into the Earth. In the harsh yellow light which was our only illumination, the technicians watched the changing rock formations as they showed on the screens, noting down readings from the external instruments. The information for which geologists had longed for centuries was now being collected with ease.

Down we sank, with the ever-present thought of the world’s solidity and the audacity of the human intellect which had conceived the subterrene ship. There was a quiet murmur of activity in the large hall-like enclosure of the Interstice, when I next walked her length to inspect the various equipments. We had just clocked three hundred miles.

Then, without warning, there was a blamn, followed by a heavy grating noise, and a shivering in the air. I recognised it, with utter amazement. I had heard it before, in the Navy’s laboratories. It was nothing to do with the magnetic barrier we had encountered earlier.

It was the noise created by the collision of two polarisor fields.

I ran through the long passageways to Command Section. In the ante-room to the Control Cabin, the detector crew was scanning the vicinity, and the obstruction was taking shape on the screens.

But there was more than just one field. I saw a whole panorama of them, an extended complex, full of shadowy delineations to North, South, East and West, piling up, forming groups and spacious areas. For a while, it was more than I could believe.

We had blundered into a subsurface city.

Though it sounds incredible, Nature also has learned how to make two material objects occupy the same space, and she has riddled the Earth with beings in this manner. The conurbation into which we had plunged was huge, stretching beyond
detector range. The scanners tended to indicate a rather weak polarisation, and I would guess that the inhabitants, if their experience can be described in human terms, dwell in a medium like thick treacle. The Interstice must have fallen on them as a super-bright, super-solid monster of almost indestructible qualities.

I went into the Control Cabin, where Captain Joule was gaping at the same scene on his own monitor screens, and sat down. Joule did not bother to acknowledge me.

He flicked a communicator switch. "Power Section! Listen for my orders. And give me steerage."

I heard the snick as the steerage of the Interstice was transferred from the propulsor room to the control console before Joule's bucket seat. The Interstice had become lodged between the walls of a group of buildings, and his magnificent broad shoulders hunched in an attitude of fury over the steering wheel, sweat staring out from his skin, as he tried to extricate her and batter a way into deeper territory.

"Look!" I said. "Do you see?"

He paused, and gazed at the screen. Ships were approaching, a whole fleet of them, riding forward as if on a cumbersome breeze. They were odd-looking affairs, composed of long curved beams, and through the wide gaps these afforded we could vaguely distinguish crews and crude apparatus. There were also signs of flurried activity in the vicinity of the nearby buildings.

The inhabitants were clearly prepared to defend their city. I noticed that some of the ships, larger than the others, had something mounted on their prows which looked strangely familiar, and as I watched, the foremost vessel swung into action.

"It's a catapult!" Joule shouted.

Clang! The Interstice's galleries rang with the impact of the missile against her hull. Joule laughed. "Let them shoot away!" And he bent himself once again to the control console.

But it proved impossible to dislodge our ship, and eventually, with the subbearthers' missiles raining down on us, we resorted to our weapons. Though we used them sparingly, our torpedoes and seismo-beams caused terrible havoc before we had blown a pathway and could continue our journey. For fifty miles the fleet harried us, pounding the walls of the ship in an attempt at revenge.
"And this is at three hundred miles!" Captain Joule exclaimed. "What will we find further on?"

The possibilities were frightening. The Earth's interior is much more spacious than its surface, and has room for a vaster variety of creatures. Here, we had come up against primitives. In the depths, might we find imposing civilisations of super-science, to whom the Interstice was a toy? Or there might be monsters in the Earth . . .

But discovery had become the prime object of the dive as far as I was concerned, and no danger could be allowed to stand in the way of scientific endeavour.

And the possibility of meeting enemies was not the only danger. By now, I knew that some thing else was seriously wrong.

I had been checking over the readings which the external instruments had given. By the laws of physics, it seemed inevitable that the figures for density and heat should have risen steadily as we descended. Inexplicably, they had remained the same since we began the dive at ten miles.

Captain Joule showed an engineer's interest, but was unperturbed. "What about magnetism?" he asked.

"No change either," I told him, "but then there wouldn't be much at this depth: the gauss shunt is needed for later."

Just the same, we both went along to inspect the shunt, starting at the meson charger in Power Section, and tracing one of the iron-silver channels along a narrow-hull corridor to the stern. I studied the meters mounted on the insulated chamber which contained the bank. The needles should have moved slightly as a small increment of magnetic force was bled away to maintain surface normal. Instead, they were dead against the stops.

I picked up a phone and called Power Section. "Move the bleed bar two inches," I ordered.

As the rheostat was manipulated, one dial stirred to show force being passed to ground, and another told of decreasing field strength in the ship.

Joule grunted. "Could anything be wrong with it?"

I ordered the rheostat to be returned to its original position. "No," I said, "It's in perfect order. Perhaps we just have to accept the fact that the interior of the Earth is different to what we have always assumed. Either that, or else we are in a pocket of low density. Anyway, our progress is good."
But as the days passed, I kept constant check on the density, heat and magnetism readings, and always to find the same result. No change. I grew seriously worried.

I reminded myself that apart from the Interstice’s intrinsic instruments we had no way of checking her actual velocity. To rectify this I designed a mass-meter, which, I reasoned, could tell our rate of progress by measuring first the mass of the Earth ahead of us, and then that part of the Earth we had put behind us.

The result startled me. The two readings taken together disagreed with the known mass of the Earth.

“That’s ridiculous!” I told Joule. “The Earth would have to weigh more than it did when we set out. And we’ve put five hundred miles behind us, but the distance ahead is still the same.”

Were we moving, or weren’t we?

It was an enigma. Pointed one way, the mass-meter indicated that we were. Pointed the other way, it indicated that we were at a standstill.

I waited a further week, during which the puzzle enlarged itself. By this time we should have reached a depth of one thousand miles, and be learning the extent of our ability to survive under extreme pressure. In fact, we had clocked a thousand vertical miles; but our approach to the core had still not advanced. We seemed to be advancing along the line of a paradox, where no matter how fast we run, the finishing line never comes nearer.

The knowledge of it was both frustrating and depressing. It was now no longer possible to treat it as an intellectual puzzle.

We had found no more cities, and no further attacks had been made on us, but we took care not to repeat our previous mistake. The scanners operated continuously, and showed various dim flickers of polarisation in the distance. I spent hours gazing at the screens. Occasionally, a vast shape drifted by on the edge of scanner range, and transient forms whose nature we could not guess appeared.

After thirteen days of travel, Captain Joule called the officers to his cabin.

Impassively, he faced them in his bucket seat, and allowed them to fall quiet, cramped and sweating, before speaking.

“Gentlemen,” he said, “I wish to review our position. Ross will tell you the situation.”
Briefly, I explained about the mass-meter readings, and the uniformity of pressure we had found at all depths of the mantle. We were driving the ship into a discrepancy between instrument readings. The further we went, the greater the discrepancy became.

"Apart from common sense," I finished, "there is nothing to indicate that we have gone one inch towards fulfilling our aim of reaching the Earth's core."

"Then are we at a standstill?"

"From one angle, it looks like it," I conceded, "but I don't think so. We are still expending energy. The propulsors are working perfectly, and this can only result in motion. We must be going somewhere, and in fact you only have to look at the detector screens to see that we are actually in motion."

"And getting nowhere," Joule put in. "As far as the Navy is concerned, the purpose of this dive is to get back to base, which we do not seem to be achieving."

"Are you suggesting that we turn back?"

"It has been in my mind. There may be no obstacle in our way now."

My heart sank at the words. Our discoveries had intrigued me enough to want desperately to continue, and the danger, and the strangeness we had encountered, only gave me an overpowering urge to journey further.

I knew Captain Joule secretly agreed with my attitude, for he is one of the best men, the finest of officers. There are some who find blame with our generation, saying that it has become ultra-conservative and rigid; but I claim that this is no fault, only an inevitable era of civilisation. The spirit of our nation was never stronger than it is now. We are producing great men, fabulous engineers. Captain Joule knew the tacit dictum of our engineers—never to know fear, never to draw back—but he had a duty to his command, which I, though it saddens me now to confess it, did not feel.

"Why turn back?" I asked intensely. "We must carry on! The puzzle will resolve itself—and anything we encounter in the Earth, we will deal with!"

We had no opportunity to argue further, for the decision was taken out of our hands. As the communicator bleeped the alarm call, all monitor screens came to life.
The detector crews had found a second species of intra-Earth intelligence from a distance of some miles, and we had several minutes in which to prepare.

Their fleet came up from below and arrayed itself about us, while we took to our battle stations. They were long, portly craft which swayed slightly due to some invisible phenomenon of the depths, and they slowly gathered, as if getting our measure, closing in with a menacing air.

Then, either on general principle, or because they considered us enemies, they attacked.

I was exultant. Now the Interstice, previously untried in full-scale combat, would use her full capacity, and the temper of our expedition would crystallise, one way or the other. For these adversaries of ours were not the primitives of the higher levels. Their ships moved under their own power, and their weapons could do us damage.

Yet still they were not our technological equals. They fired flashing arrow-like projectiles which could penetrate our armour, and they skilfully deployed their large numbers in an attempt to compensate for our superior armament. But the Interstice bulked huge above them, bristling with torpedo tubes and seismo-beam turrets; we were a match for them.

It was a running fight. Power Section strained the propulsors to their utmost, and we pressed down like a whale surrounded by a cloud of sharks. Captain Joule gave up trying to evade the enemy missiles, and left our defence to the wicked power of Weapons Section.

When I entered the main body of the ship to keep a watch on the performance of our equipment, the galleries were booming like bells from enemy strikes, and shuddering from the explosions of our own torpedoes as they flashed out of polarisation and caused titanic convulsions in the Earth—I'll warrant the subearthers never heard of that trick! I could hear the surging rush of their launching, and from the alcoves set high in the walls came the buzzing of seismo-beams.

Just ahead of me, a twenty-foot lance lunged through the side of the wall and hurtled aslant the spacious central well. A gunner fell from the wall, his head cleft open. The seismo-beamer he had been operating was a ruined mess.

Thirty times their projectiles broke our hull, and we lost eight men. But what of it? We were an invincible dreadnought. The Interstice was truly a battleship.
Eventually they withdrew, with heavy losses. Perhaps we had passed outside their domain.

There was a drumming of power tools as the crewmen applied themselves to repairs amid the fumes of our own weapons. I returned to the Control Cabin, where Captain Joule was checking Polarisor, Weapons and Power Sections. He turned to me as I entered.

"Steering's gone," he said gloomily. "There's no choice about what we do now. I wouldn't like to try to turn the ship on the main drive; the polarisors would blow, no doubt about that."

I made no answer. The Interstice, unable to turn aside without the elaborate gear necessary to change the direction of a polarised field, could do nothing but journey on, and on.

We had gained a victory, but lost control over our destiny. It was in this helpless mood that the officers of the Interstice directed her even deeper into the solid Earth.

For a month we sank down under the force of the motors. Every day I anxiously studied the instrument readings. In all that time, the nature of the external rock showed no change.

Everything, with the exception of the second mass-meter reading and the plain fact that we were moving downwards, indicated that we were still at rest ten miles below the surface.

Joule and I gave all our thought to the problem. Sometimes, he shuddered. Was this the bottomless gulf of which poets speak in terror?

"It's impossible!" he said in exasperation. "Rock is flowing past us! Living creatures appear from ahead, and drop behind. Yet we are unable to approach the centre!"

We drew a circle to represent the Earth, and resolved the mystery to the fact that the mass-meter gave two conflicting positions for the Interstice within that circle. Or was it some radically new geometry, where two quantities no longer add up to their sum? What do we know of the universe? We only have experience of the surface of our planet—perhaps, elsewhere, laws are different.

Experimentally, we drew in a quadrant of the circle, and contemplated the figure. Joule drew in concentric rings, and we noticed that in the quadrant, the arc shortened in proportion to the radius.

It was a subtle thought.
Apart from the philosophical considerations, I also wondered whether the gauss shunt, by draining surplus energy back to ground, was somehow the source of an illusion affecting all the external instruments and the mass-meter. I could think of only one way to find out.

Captain Joule regarded me with horror when I requested permission to turn off the shunt.

"If the conjecture is correct," he said in a hushed tone, "we'll be blown to kingdom come."

"What of it?" I cried, gesturing wildly. "We can't carry on like this. We could as well be journeying in Limbo. We might get away with it if the shunt is out of action for only a few millisecons."

We did the thing secretly. With my own hands I assembled the timing mechanism and connected it to the bank. For twenty millisecons the shunt was inoperative.

The meters did not even flicker.

"Try again!" Joule ordered.

Three times I repeated the experiment. Then I turned off the shunt permanently. Never having encountered the conditions for which it was designed, it need never have been built at all.

"That leaves the other explanation," Joule said, "The philosophical one. But it entails a relativity more staggering than any our physicists have thought of—"

I should have known that his calm, inexorable mind would have produced the answer eventually. But as he was about to explain, the third subsurface attack began.

They were a small, swift raiding force which swooped down on us from the North. We never knew where they came from: there were no signs of the habitations we had seen on higher levels. Most likely they were pirates, or warrior nomads, for they were professional, ferocious—and more deadly than anything we had yet encountered.

What was more, they had learned how to crack a polarised field.

Perhaps our own equipment was too strong for them, or perhaps they simply wished to frighten us into surrendering, but for only two brief intervals did we hear the ear-splitting shriek of their appliance, the groan of the polarisors, and experience the suffocating heat of a wavering field. Then again, the depleted resources of Weapons Section were brought to bear.
This was the fight that broke us.

The raiders' main aim was to board us. We had expended what remained of our torpedoes, and were resorting to the less effective seismo-beams, when they expertly blew a hole in the hull. In Command Section, Joule and myself heard alarmed cries and strange clattering sounds. A few minutes later came the explosion, deafening in the confined space. A crewman had heroically blasted the section through which the subearthers were pouring.

Thereafter, the fight inside the ship was brief; yet it lost us our leader.

Three raiders who had escaped the explosion came swimming along the central well, hurling destruction in every direction from powerful hand weapons, and within minutes they had arrived at Command Section. Never will I forget the look on Captain Joule's face as he reached for his hand-gun. Nor can I describe it, for I saw every emotion there, each distinct, yet none dominant.

Our adversaries were short, shadowy figures in bulky armour; humanoid, but with an odd serpentine slant to their bodies. Without pause, they fired, and Joule fell with a ruined right side, bringing down the foremost raider as he did so.

From the corner of the cabin, I disposed of the other two.

That was the last we saw of the sub-surface raiders. We never knew why they discontinued the attack, for our detectors were a mass of ruined equipment, and from that time we have never seen outside.

As the other officers came into the Control Cabin I moved Joule to a couch. His breathing was quick and shallow, and his face was hardened against pain.

"I'm done," he whispered.

I put an arm beneath his shoulders and propped him up gently. He was weak, but his eyes were full of intelligence. "Joule," I pleaded, "what's happening to us down here?"

"This is my theory," he said, speaking with difficulty. "Matter is a distortion of space. As matter becomes more concentrated... so the space it occupies becomes more concentrated."

He stopped, and for a moment I thought he had spoken his last. Then he seemed to revive somewhat, and continued.

"Within the Earth, space itself is compressed in proportion to density. What from the surface looks like an inch, migh
really be a thousand miles. The Earth’s radius is the same at all levels—we shrink as we enter denser matter, so it always looks the same. There’s always the same distance to go.”

His eyes grew dull, then glazed. As he died, I laid him down.

And I am in command of the Interstice. I lost no time in taking what little action was necessary. The hull is sealed, all internal hatches have been closed, and the lights dimmed to conserve power. The propulsors are set for greatest economy and speed: our prime concern is to maintain the polarisor field for a long, steady drop towards the centre. Our power plant is theoretically inexhaustible—but the space within the Earth may be as great as the entire solar system for all we know.

I do not think, now, that there is any mode of travel more sinister than that of a ship moving through solid matter. The deeper we sink, the greater is my awareness of the thousands of miles of rock over our heads, the more intense is the feeling of oppression. My conscience burdens me. It was I who persuaded Captain Joule to embark on the dive, and as I sit in the semi-darkness of this steel hull, I cannot help but think that I have persuaded my companions into Hell itself.

The ship is a shambles. Men lie in utter silence throughout her length, the seismo-beams no longer manned. We have all accepted the idea that we will not survive this voyage.

This is the story. Now I sit down to write it, so that those who find our ship when she finally emerges on the other side of the world—the polarisors will automatically be inactivated at that moment—may know of the nature of the Earth’s interior . . .

According to the shepherd who claimed to have witnessed the event, the ship had come out of the hillside, then slithered twenty feet before coming to rest against an outcropping of rock.

Bain could readily see the truth of the latter part of the story from the broken saplings which marked the vessel’s path, but the first part strained his imagination, specially as there was no sign of a break in the turf. He was a specialist in ancient civilisations, and since he could find not one familiar detail in the vessel whose five-hundred foot bulk loomed over him, he inclined to the view that it came from a different direction altogether.

“It must be a spaceship,” he said to the metallurgist who had come with the team from Sidney. “It couldn’t be anything else. That shepherd was lying, or mistaken.”
The metallurgist nodded. "I would think so too," he replied "but I can't imagine why it should be so old. Look at the way it bends all over the place! Know what that is? Metal fatigue. Yet some of the alloys I don't recognise!"

Bain flicked through the metal-leaved book they had taken from the control room. For him, it provided almost irrefutable proof that the ship was from the stars: it appeared to be some sort of log, but its weird script bore absolutely no resemblance to any Earthly language, ancient or modern.

"We'll never find a Rosetta Stone for this," he thought. It saddened him to think that the account would never be translated.

At that moment Professor Wilson levered himself out of a hatch from inside the vessel and came over to them excitedly. "It's a spaceship all right," he said. "There's an instrument in there that measures distance in terms of electromagnetic frequencies. Any physicist could read it from here to Andromeda.

"Do you know what distance that meter clocked before it ran out? Nearly eleven light-years!"

—P. F. Woods

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Recovering a badly landed spaceship from the mud of Venus could be a tricky task—it usually required a technician skilled in salvage operations.

CONFIDENCE TRICK

by DAVID ROME

We both knew that the T-men were unstable, were unsure of themselves, and were touchy to handle—but when a malfunctioned gyro rammed the nose of our Scout into the surface of Venus, we called them for help. *Give them the opportunity to prove themselves,* the Army had said. So we did.

But instead of a T-man, we got Heebson.

We hadn’t asked for him, or his ship; but here he was. He cut his generators, let his R-ship drop into the steaming mud—a perfect three-point—and climbed out.

“Well, well,” he said nastily.

The Commander and I were squatting outside the airlock, and I got to my feet now—all six-two of me. There was no love lost between me and Heebson.

“Well, we called for a T-man, Heebson,” I said.

He rolled toward us across the mud, his little eyes gleaming in a melon face. “I heard your call, lieutenant.”

The Commander got to his feet now. He’s a small man with clear, grey eyes and a lot of space hours behind him.
"Her nose is twenty feet down," he said quietly. "You're wasting your time here."

I saw Heebson's eyes flicker over the Commander's chevrons. Then he said, with a too-heavy tone of respect. "Recovery is my job, Commander. I can get her out."

"This job is reserved for a T-man," I said.

"Reserved?" Heebson said. "Come, come, lieutenant. You know better than that." Then he curled his lips and swung away, his big behind flip-flopping him back to his ship.

He had listened in on our call to Earthbase, and now he was planning to recover our Scout before the T-man could arrive. Heebson, and those like him, had made plenty in the old days—a quarter-million credits was standard recovery rate—but now the Army was stepping in, training T-men to do their recovery work. Civilian parasites, like Heebson, were on their way out.

On their way out—but not gone. The law hadn't yet been changed. An R-ship's skipper could still claim his cut if he got to the scene fast enough.

So Heebson got into his ship, pushed her skyward, and hovered. He let down his grapples and seized the belly of the Scout in their giant-hand grip. Then he gunned the R-ship and blackened our hull with his blast. For a full minute he kept up the struggle; but the Scout didn't shift. Then he cut his generators again, and dropped the big R-ship almost at our feet.

I grinned at him as he poked his head out of the open air-lock. "Say goodbye to it, Heebson. You haven't got the power."

His air tanks caught the steamy sunlight as he stalked toward the Scout again. He stamped his boot into the mud a couple of times, close to the point where the nose of the ship had vanished into the surface.

"Listen," he said. "You ever see a T-man do a job? You ever actually see one carry out a recovery?"

I saw the Commander flatten his lips. I knew he had a kid in Fort Howard, training for the T-men, and I waited for the outburst. But it didn't come. Heebson went on shooting his line.
“I’ll tell you one thing, lieutenant. If that T-man shows his nose out here, I’ll flatten it for him. They never did a good job yet!”

Now he was climbing into the R-ship again, fat legs quivering. The Commander was looking narrowly into the steam overhead, and I knew what he was thinking. When would our T-man get here?

Heebson came out again, grinning behind his helmet glass. He had a four-foot long, pistol-gripped piece of equipment in his hands. Part of a Recovery man’s gear. He positioned the muzzle of the device a foot from the hull of the Scout; then he activated the energy beam inside the tube. The beam swallowed the mud, and the barrel of the device went downward, its telescope sections unscooping now, giving it length.

It reached twenty feet, and Heebson retroed the beam; the tubular barrel came up again. A dozen drillings like this and the mud round the Scout’s nose would be loosened sufficiently for his grapples to lift us clear.

Where was our T-man?

Heebson was grinning again as he started the tube down on its second run. The vibration was shaking his big shoulders under his suit.

“Hey, lieutenant!” he said. “I hear those T-guys are feeble-minded, anyhow. You ever hear that, huh?”

I looked quickly at the Commander. His mouth was a thin, hard line. Then I took a pace toward Heebson. “The law gives you recovery rights,” I said softly. “They don’t hand you a permit to shoot off your mouth.”

Heebson curled his lips faintly. “So what’s it to you, lieutenant?”

I tightened my gloved hand, making a fist. I might have gone for Heebson then—I don’t know. But there was a distraction. A ship poured fire down through the steam, and Heebson swung his eyes upward.

The T-man came down fast. His probes tried the mud; then the soup-plates opened up, and the shock absorbers took the jolt. The ship settled, and was still. The airlock opened—and here he was.

I could have cried when I saw him.

He was straight out of his wrappings—a suckling. His suit was stiff and new, his helmet shone. Just a boy; tall and bony.

Continued on Page 110
MEMO TO EXTRA-TERRESTRIALS

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He saluted the Commander. "TRC Janssen, sir!"
Thé Commander returned the salute without expression. Heebson shut off the energy beam and spread his legs.
"Well, I'll be damned," he said.
I swung round on him. "All right, Heebson. Pack up your gear, and lift off."
Heebson grinned. "You surprise me, lieutenant."
"You heard what I said."
"Yeah, I heard you. But I'm sticking around. When wonder boy here pops his valves, I'll make the recovery."
The Commander said quietly, "I'm ordering you to lift off, Heebson."
Heebson's eyes changed direction. "Ordering?" he said softly. "No, I don't think so, Commander. Civilians don't order easy."
Janssen looked at us helplessly. Already, the first flush was reaching his cheeks.
"What kind of game are you playing?" I said to Heebson.
"No game at all," Heebson said.
"All right, then. Lift off!"

Grinning, Heebson carried the energy device back to his ship. He tossed it down close to the airlock, and squatted, smiling across at us. Janssen's eyes followed him nervously, his thin fingers curling and uncurling inside his gloves.
"Treat him nice," Heebson mocked. "T-men can be touchy, Commander."
I tried not to look at Janssen. This stuff was straight out of our manual, and he knew it. T-men need faith in themselves—they need mothering. And Janssen was quaking.
"Just take your time," the Commander said quietly. "Try the lift when you're ready."
"Sure," Heebson said. "Try the lift." His laughter rumbled through our phones.
Janssen turned his back quickly, his neck flushing crimson. I knew he was going to make the attempt—and I tensed in anticipation. He stood a dozen yards from the Scout and drew in breath. I saw his bony shoulders bunch suddenly under his suit. His neck turned purple, his body shook...
And the Scout didn't lift. Not an inch.
Mockingly, Heebson cut in. "Shall I take over now—sir?"
The Commander turned very slowly, and now I knew that his patience had snapped at last. "You realise that you're obstructing a military operation?" he said, very softly.

"So?" Heebson's voice was smoothly insolent.

"So, we've got the power to button you up," I said tightly. And as the Commander raised his arm, I brushed it aside. Heebson and I faced each other across the steaming mud. He was up on the balls of his feet, arms swung away from his sides.

"Lieutenant," he said softly. "You're my kind of meat."

Then we clashed.

We struck each other simultaneously; but Heebson was the heavier man. I stumbled backward, with his hands at my throat. I fell and rolled, and he got a knee up high. He caught me in the throat, just under the curve of my helmet and I spun away in pain. He kicked for my belly, but I rolled away from him, and got back to my feet. I was balanced now. Ready for him. I caught him solidly as he rushed me. Our helmets cracked together, and he jackknifed.

I flicked a glance at Janssen—glimpsed his pale face. Then Heebson rushed me again, and locked his bear-arms around me. His breath whooshed through his demand valves.

I twisted—used a knee—and broke free. We faced each other, open ground between us. Heebson's huge body was quivering now as he fought for breath. I was leaner, and fitter. I closed in suddenly, punched hard to the midriff again. He stumbled forward, head down. Then he straightened, fastened his arms round me again desperately; but I had one fist free, and I used it. I struck him twice, then twisted away from him. I caught him again in the body, and again—and this time, he fell. He lay a yard from the airlock of his ship, limp and quivering.

He was finished, and I knew it.

He didn't get up. Didn't move. I was turning my back on him when a sixth sense seemed to flash a warning into my mind. As I whirled, Heebson snatched up the energy tube he had left by the airlock. And I couldn't stop him. Couldn't reach him in time.

Deliberately he aimed at my chest . . .

And was catapulted violently into the air!
The weapon flew out of his hands. He shrieked as he shot up to twenty feet, eyes bulging, mouth wide open. He hung there like a ball on a whistle of wind.

Janssen—Telekinetic Recovery Corps—stood like a pencil-slim god, thin arms akimbo. His eyes were steady now, fixed on Heebson, and his upturned face was beginning to split into a grin.

"Sir," he said, "I’m afraid this is rather unmilitary . . ."

And grinning at him then across the Venus mud, I knew for certain that we had one fine T-man in our camp. He’d acted fast, and maybe saved my life. Heebson might have killed me; and now it was our turn.

That was a twenty-foot drop. Enough to rattle his teeth.

"You’re right, Janssen," I said soberly. "It is unmilitary."

And I caught the Commander’s eye. "He’s right, isn’t he, sir?"

The Commander nodded thoughtfully. Then, as a good Commander should, he gave the order:

"TRC Janssen!"

"Sir!"

"Drop that man . . ."
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