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COVER BY FREAS • SYMBOL: All that can be seen is not all.

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• NEXT ISSUE ON SALE MARCH 20, 1957 •

# WITH ALL THE TRAPPINGS

*There is one specific type of secret that no espionage force can ever penetrate—and, because of that fact, can never cease from seeking to penetrate!*

By **RANDALL GARRETT**

Illustrated by **Freas**

WHEN I first saw Eden Valley, Colorado, I was tremendously impressed by the neatness of the place. I saw it at a distance from the helicopter, and it looked like a little toy town, all scrubbed and shining in the summer sun. Then as the ship dropped, a low mountain cut off my view.

As the pilot eased the ship down, he said: "There'll be a car waiting to pick you up, sir, as soon as the airfield clearance goes through."

"Fine," I said. I didn't particularly care to drive five miles over a winding mountain road, but the air above Eden Valley was posted. Perhaps "posted"



doesn't convey the idea strongly enough; I'll put it another way. Any aircraft that came inside the five-mile limit was shot down as soon as it was spotted, without even asking for identification. That, of course, only applied to helicopters. Faster aircraft were fired at long before they got that close.

The helicopter jounced a little as the landing gear touched, and the pilot cut the ignition. "Here they come, sir."

Two armored cars pulled up, and I noticed the machine guns in the top turrets were trained directly on us. It's queer how a fifty caliber hole can look three inches in diameter when you know what's at the other end of it.

Two army captains climbed out of one of the cars.

"Mr. Derek Martin?" asked one of them. I noticed that he kept his hand on his pistol butt.

"I'm Martin," I said.

"Your identification, please, sir."

I took out my ID folder and handed it to him. The other officer held up a print plate, and I rolled my right thumb over it. The two captains compared the prints with the ones on my ID papers.

"All right, sir," said the first one, "get down and get in the back of the car, please."

The back of the armored car was a steel box just big enough for maybe four people to sit in, completely separated from the rest of the vehicle. Two barred doors were swung shut and locked behind me, and the second armored car drove up behind the one I was in. The machine gun was still trained on me. All I had to do was try to get out, and a hail of steel-jacketed lead would come at me through the bars. I began to wonder if I liked this assignment after all. It carried a big bonus, but money isn't everything.

The escort left the airfield and roared out over the smoothly paved, winding road that led toward the most cautiously guarded research area in America—Eden Valley.

After several minutes, the cars slowed to a halt, and one of the captains came back to unlock the doors. I got out, and the two officers escorted me to the first gate. There was a large gatehouse there, and two riflemen stood nearby, their weapons at the ready. We went inside, and the major in charge put through a direct-vision call to Washington. I was identified personally by the chief, and the major seemed to be about halfway satisfied.

"All right," he said to one of the guards, "let him through." He turned back to me. "You'll have to cross No Man's Land by yourself. The Outer Guard isn't allowed inside the compound."

No Man's Land was a space about a hundred yards wide between the Outer Wall and the Inner Wall. It was completely bare of rocks or vegetation and offered no cover whatsoever. Between the Outer and Inner gates ran a stretch of paved walk six feet wide.

"Don't step off the walk, sir," said the guard politely as he opened the gate. He said it in the same way that an explosives expert might say: "Don't drop the nitroglycerine." It wasn't a threat; it was simply an implied statement of consequences.

I walked the hundred yards quietly enough, but by the time I got to the other end of the walk, I had developed a subcutaneous itch in the middle of my back and another one just below my sternum. Steadily aimed gun muzzles have a peculiar effect on the human mind.

The Inner Gate swung open, and another officer led me to the second gatehouse. This time they checked my identity with Hamilton.

It was nice to see the smiling face of a friend instead of the calculating looks of armed men. Hamilton's heavy face looked like an oasis in a desert of scowls.

"Hello, Derek," he said. "How's your sister?"

"The same as yours," I said, grinning. Neither of us had a sister.

"Have you seen Eaglepuss lately?"

"Not since Fifty-seven."

Eaglepuss was what we had called one of the slickest counterfeiters that ever engraved a plate. He'd been shot to death in 1957.

"I guess you can come in if you're a good boy," Hamilton said. His eyes moved to the officer. "Tell him how to get to my office, major."

Getting to Hamilton's office was tiresome and tedious. Tiresome because I had to show my ID folder about every block, and tedious because Hamilton's office was nearly a mile away.

There were no automobiles allowed in Eden Valley in those days; it was too risky. A car is too much of a weapon to allow it in a restricted area. Eden Valley wasn't as big then, either, though the pattern and structure of the town hasn't changed much. There were rows of neat little houses surrounded by low shrubbery and green lawns, and wide, smooth, utterly useless streets.

Outside the Research Area was another gate in a high storm fence. The guard checked me against the main gate and against Hamilton. By the time I got to Hamilton's office, I was ready to throw knives at somebody—I wasn't quite sure just who, but somebody.

"What kind of a set-up is this?" I asked as soon as I walked in. "What are you building here? A gadget to turn the Russkis into pink caterpillars?"

Hamilton had already poured a couple of bourbon-and-waters. He leaned back in his chair, handed me one, and grinned. Somehow, the grin never made it to his eyes; they remained as cold and hard as a glacier.

"Sit down, Derek," he said, "and let me tell you Rule Number One around here. Rule Number One is: We do not talk about, ask questions about, get nosy about, or even admit the existence of anything going on around here. This is just a normal little American town populated by normal American scientists, normal American security agents, and nobody else. Real normal. There is nothing going on here, at all, understand?"

"I understand," I said. "I'm no scientist, anyway; I probably wouldn't get it if someone drew me a picture of it."

"A lot of people wouldn't understand it," said Hamilton. "But I want you to understand this, and understand it well." He leaned across his desk, and his grin was gone. "We're not at war yet. Maybe we never will be. But if our enemies ever find out what's going on here, we will lose one of the most potent weapons against them we've ever had. It's your job to protect that secret."

"All right," I said, "how do I do that?"

Hamilton relaxed again, his imperative mood gone. "It isn't easy. Despite the precautions, we still find men coming in who are not, shall we say, exactly in sympathy with the government of the United States. Your job

will be to keep your eyes open—nothing more. Any little thing that strikes you as being off color is reported and investigated—thoroughly. You remember how hard it was to get in here?"

I think I winced then. "I know," I said.

Hamilton nodded slowly. "Well, believe you me, it is harder to get out. You're in prison here, Derek; a prison that makes Alcatraz look like a boy's summer camp as far as being escape-proof is concerned."

I started to ask him what could be so important that it had to be guarded this way, but I remembered Rule Number One, so I said: "I'm supposed to watch for stuff that shouldn't be going on. A nice, routine job. With a set-up like this, I suppose you've got every house in town wired to the gills."

Hamilton shook his big head. "Not a bit of it, Derek. Oh, we've got TV pickups and microphones planted here and there just to keep everybody on his toes, but there's no need to overdo it."

I nodded. I could see the logic in that. No enemy agent with half an ounce of brain would discuss anything in a house, anyway. He'd automatically assume that the place was wired. He wouldn't dare go looking the place over for mikes and stuff, because that alone would be suspicious. He wouldn't even dare do it in the dark or with instruments, because the pickups might be rigged with infrared or TV. Therefore, why wire the houses? No smart agent would do anything worth watching, and if the stupid ones could be caught in other ways. Even if a smart agent suspected that the houses weren't wired, he wouldn't dare act on the assumption.

Hamilton said: "I may as well start showing you around now. You'll be second in command here; you'll take orders from no one but me."

I was a little surprised at that, and I admitted it.

"Why drag in an outsider? Don't you have men here who already know the ropes?"

"You were picked," said Hamilton brusquely. "Let it go at that."

He walked over to a wall cabinet and unlocked it. "You'll need a gun."

I certainly would. I'd been told that I couldn't bring my own weapon in with me, so I'd left it in my office in Washington.

Hamilton handed me a .357 Smith & Wesson Magnum revolver and a box of Magnum cartridges.

"Carry this fully loaded at all times. If anyone does anything out of the ordinary, shoot first—"

"Do I leave him in condition to answer questions later?"

"You do," said Hamilton. "Unless, of course, your own life is in danger or there is danger of someone getting away. Otherwise, don't shoot to kill; just knock them over."

"Fair enough." I holstered the weapon in my right hip pocket holster and jiggled it a little to make sure it would come out fast, just in case I ever needed it.

"Let's go," said Hamilton.

"Except for the gates," Hamilton said, "we are in charge of the inside of Eden Valley. The Army takes care of the outside."

We were standing on what Hamilton laughingly called Lookout Point. It was a rock prominence about twenty feet high situated roughly in the middle of Eden Valley. A small shack had been erected on the top of it,

and from it a man could survey the entire valley. There was an alarm phone which could call any point in the valley within seconds in case of an emergency.

Hamilton pointed at the walls. "The Outer and Inner walls are twenty feet high, and made of electrified steel storm fencing—special grade. The No Man's Land between them is mined, and the mines will explode on contact or they can be set off from the guardhouse if necessary."

"All mined except for the path between the gates," I said. I could still remember feeling those machine-gun muzzles as I walked that hundred yards.

"The paths are mined, too," Hamilton said. "But they take about five hundred pounds of pressure. They'll stop a car, but a man is perfectly safe. Unless they push the button in the guardhouse."

Suddenly, my feet itched, too.

"Over there," said Hamilton, pointing with a thick finger, "is Research Area, where we just came from. It's divided into sections, and no man working in any section is permitted to discuss his business with a man from another section unless the development of the Project calls for it."

I simply bobbed my head up and down to show that I understood.

"And there"—Hamilton shifted his finger—"is the Mountain. Geologically, it's supposed to be the solidest rock in the Rocky Mountains. I hope we never have to test the geologists' theory."

Against one side of the Valley loomed a great hunk of granite, a wall of stone that went up and up to a peak an eighth of a mile above the valley floor. In its sides, burrowing deep within it, were the tunnels and rooms where the most important part of the project was contained. Not even an H-bomb could do too much damage to that monstrous slab of living rock.

"Now that you've seen the general layout of the land," Hamilton said, "we can get a little more specific. We'll take a stroll around and look over the various sections. Come along."

The Research Area was cut up into several areas by high storm-fencing and the gates were heavily guarded. I was personally introduced to each guard. There were no special passes which would allow a man to circulate freely from one section to another; something like that could be forged. The only thing to do was make sure that every guard knew who I was and what my function was.

The nuclear physics section wasn't nearly as large as I had expected it to be. There seemed to be all sorts of equipment around, and one big building obviously held a reactor of some sort, but nothing was explained to me. There were signs here and there: "CLASS A PERSONNEL ONLY," "CLASS B AND ABOVE ONLY," "SECTION THREE ONLY"—things like that. Everyone wore colored badges with numbers and letters on them which indicated what their business was and where they could go. Anyone who was found outside his own sphere of action was immediately suspect.

The chemistry section was divided into hot labs and cold labs, depending on whether the material handled was radioactive or not. Again, nothing much was explained to me, although Hamilton pointed out a few things.

I distinctly remember wondering why anyone would want six gallons of radioactive ethyl alcohol. When I asked Hamilton, he shrugged. "How should I know?"

The pure mathematics section was the quietest of all. There were about a dozen men in a dozen offices and a big library. In one room was a series of feed-in boards for some big electronic calculators, but nobody was using them at the time. Most of the men seemed to be content with pencil and paper, and about half of them were leaning back in their chairs with their eyes closed—just thinking.

The head of the section was a tall, blond man with a spare frame and an easy smile that spilled over into his blue eyes. Hamilton introduced him as Dr. Edmond Gerton.

On his desk were ten or fifteen sheets of ordinary typing paper covered with esoteric inked symbols.

"We're working on a lot of things here," he explained. "Homology group theory, games theory, transfinite algebras, all sorts of things."

"Nobody seems to need those calculators," I said.

He grinned. "That was the government's idea, not ours. They thought that mathematicians needed them, so they were handed to us without our asking. We use them once in a while—just to play games with. But most theoretical math is pure pencil work."

"When we get over to Statistics, you'll see plenty of them in use," Hamilton put in.

"Oh, by the way, Ham," the mathematician said, "let me show you something."

He walked over to a low, broad desk that ran along one wall, and knelt down to an electronic control panel. He fiddled with knobs for a minute, and a loud-speaker in one corner began making a chirping noise. Irregular peeps of sound twittered in the air.

"Eight thousand cycles," Gerton said. "Now listen."

He turned another series of knobs and the chirping dropped in tone until they became a series of grunts.

"Twenty cycles."

"What's your signal?" Hamilton asked.

Gerton was positively beaming. He lifted up a section of the top of the desk and disclosed a turntable spinning a record around. "It's Des Pres' *De Profundis*. How do you like that for a selective filtering system?" He turned knobs again, and slowly the strains of Fifteenth Century music appeared. "Any bandwidth I want," said Gerton.

Hamilton shook his head in mock disapproval. "Sometimes, you hi-fi nuts go too far. The next step is a filter that takes out everything."

Gerton turned another knob, and the music stopped abruptly. "Got that, too. It's called an 'off' switch. It corresponds to the 'on' switch except for the orientation of rotation."

Hamilton turned to me. "Derek, stay away from mathematicians with a low sense of humor. They're bad enough when they're trying to be serious."

"If you're going over to Statistics," said the mathematician, "I'll walk along. I've got to pick up some figures and graphs."

Hamilton was right. Statistics had more computers than Math had, and everyone of them was working at top speed, absorbing and chewing over figures and spitting them out at a fantastic rate. What the figures meant, I didn't know, and I suspect some of the technicians didn't, either. No one was allowed to know more than he absolutely had to know in order to do his job.

Dr. Gerton vanished into the office of the head of the Statistics section, and Hamilton led me on to the next compound.

Psionics section was about the screwiest set-up imaginable. It was divided into subsections which worked on telepathy, psychokinesis, precognition, sympathetic magic, teleportation, and half a dozen other related phenomena. Some of the weirdest gadgetry imaginable was being seriously investigated, in spite of the fact that not one of them could logically work.

"This is the Department of Impossible Possibilities," said Hamilton.

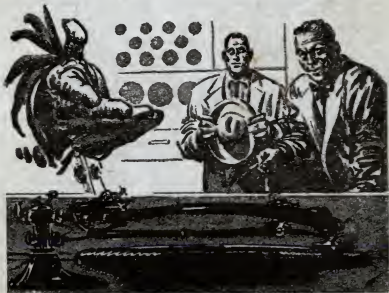
There were more sections. There were high and low temperature physics and chemistry labs, high and low pressure labs, radiation labs, biology labs—name it; Eden Valley had it.

We wound up back in Hamilton's office with a dizzying amount of information in my head in spite of the fact that I hadn't really learned anything concrete. I would have given my left arm to know what was going on, just for my own information.

The one place that Hamilton hadn't taken me was the big cavern under the Mountain. What went on under there was too secret even for my eyes. We did manage to get into one of the tunnels, but it was only a part of the big maze, and there were several doors, painted red and equipped with locks, which were guarded by armed riflemen. Only if a man had a key could he get into one of those places.

All the information and a great deal of equipment from every section was swallowed up in that cavern, but what happened inside there was anybody's guess.

"Now you've got the background," Hamilton said. "Your job will be a sort of patrolling watchman's job. You keep, as the saying goes, your eyes open and your mouth shut."





That was Hamilton—full of old maxims.

"Don't use that gun unless absolutely necessary," he went on. "If someone is obviously trying to get out of here or trying to sabotage something, drill him. But if he's merely a suspicious character, just let me know, and we'll keep an eye on him."

Frankly, I didn't quite see what good that would do. Nobody was going to do anything suspicious as long as I was around; I wouldn't catch any but the stupidest.

There's one other way, of course: the cumulative method. Take a really clever agent. No one thing he does is suspicious in itself. But, over a period of time, the effect can accumulate, and, suddenly, for no reason at all, you begin to suspect the guy. Just exactly when that point is reached depends on the intelligence of the spy and the intelligence of the observer.

I hoped I was bright enough to spot any spies—if there were any.

"All right," I said, "I'll prowlforth. How do I make my reports?"

"Orally," said Hamilton. "Direct to me. I want you out there watching, not writing reports up. Go to it."

So I went out into the crisp Colorado air.

It took time to get the feel of the place. That's the only way you can use the cumulative method, though. You've got to know what's normal before you can detect the abnormal. It was over a month before I felt sure that I knew Eden Valley well.

During that time, I went everywhere, which was something no other man except Hamilton could do. It was definitely not my job to speculate on what was going on in Eden Valley. I was supposed to be looking for enemy agents, not doing their job for them. But, Government Secret or no, a man can't help wondering.

Anything that was so ingeniously concealed, even from the security-cleared personnel who were actually working on it, must be something really big.

My first guess was spacecraft, but I discarded it pretty quickly and didn't get back to it until later. After all, with a satellite flying across the sky every night, in plain sight of everybody, why should space travel be so secret?

So I let my imagination run wild. I'd said something to Hamilton about a gadget to turn the Russkis into pink caterpillars. Could that be close? After all, we *did* have a psionics section, and neither I nor anyone else knew what the limitations of *that* were. Still, it didn't sound very probable.

Time machine, maybe? Hadn't someone once said that a position could be shown to be the mathematical equivalent of an electron traveling backwards in time? Maybe that's what the Math Section was working on.

Death ray? Could be, but somehow they didn't seem very practical.

It wasn't until close to the end of the month that it occurred to me that someone might have invented a space drive other than the conventional rocket. What if someone had actually invented an ion drive or a space warp or maybe some teleportation device? It sounded more possible than anything else, and the more I thought about it, the more convinced I became, until I finally decided it was spaceships or nothing.

I was right, of course, in a way, but I didn't know how until later.

I didn't let any of my guesses get in my way—at least I don't think I did. I paid strict attention to business. I became friendly with everyone, at least, as friendly as it was possible to get in a place like Eden Valley. Actually, any

conversation had a tendency to be stiff. What could you talk about? Your work? Not on your life! There were too many counterespionage agents around for that, and everyone knew it. And, even aside from the C-E men, there were plenty of technicians and scientists who would report any illegal talk. It was even suspicious-looking for a couple of men to talk in low tones together.

That eliminated any personal discussions, because it was necessary to speak well above a whisper.

Mostly, the talk ran to sports or politics or literature. They were mostly innocuous subjects. What do you think of the Dodgers' chances this year? Will the Senate pass that new tax bill? Have you read Asimov's latest detective novel? For five solid weeks I listened to stuff like that and kept my eyes open.

I'm not sure exactly when it was that I began to suspect Dr. Edmond Gerton. That's the trouble with the cumulative method. Little things build up, but there's really nothing you can put your finger on, and you can never be quite sure exactly at what point you become suspicious. But I slowly became convinced that there was something vaguely *wrong* about Dr. Gerton.

I found myself watching him, wondering just what it was that was wrong; I couldn't quite spot it, but I knew it was there. There wasn't even any evidence to take to Hamilton, so I didn't bother my superior until I had enough evidence to make a case.

He was a chess player, and a good one. I'd noticed that at the Recreation Center. So, one evening, I asked him for a game.

"Sure," he said, his blue eyes lighting up.

I watched him as he set up the men at one of the tables in the big Rec Room, trying not to look as though I were watching him.

As I've said, he was tall and blond. His wide shoulders were draped with a tweed coat that had seen better days and which sported large leather patches at the elbows. His trousers tended to be a bit baggy, and his white shirt was open at the throat. Except for the fact that he smoked cigarettes instead of a pipe, he might be taken for the very model of a modern-college-professor—the kind who loved his work and didn't give two whistles in a rain barrel what the Well Dressed Man should wear to tea.

There was certainly nothing directly suspicious in that.

"Go ahead, Derek; your move."

"Giving me white, Dr. Gerton?"

"If you'd rather play black—"

"No, no," I said. "I'll keep white." I moved my king's pawn to KP-4. He moved his king's pawn up to block me.

As I moved my queen's pawn up to QP-3 to protect, he said: "By the way, Derek, call me 'Ed,' will you? I've always felt that 'Doctor' should be reserved for M.D.'s."

"Sure, Ed." He had brought out his queen's pawn, so I put out my king's knight. He countered by bringing out his queen's knight.

As the game developed, I noticed that his tactics were cautious, but never cowardly. He spent a great deal of time thinking the situation over, but when he moved, it was with decision and without regret. He made sure of his ground and then went forward. He moved with mathematical military precision.

Eventually, I saw a chink in his defense. I studied it carefully. He was obviously laying a trap for me at an area near my queen's knight's file, but

I could see that the real trap lay closer, on my king's bishop's file. But did he see the chink? I thought not, but I wasn't sure.

Take a chance. I took a bishop with a knight.

"Check!" said Gerton.

I blocked with my bishop, lost it, and blocked with my remaining knight. In quick succession, I lost the knight, my other bishop, a rook, and my queen.

"Matel!" said Gerton.

And it was.

He leaned back in his chair lazily. "Very good! I don't think I've had quite such a game."

I lit myself a cigarette. "That was a good trap, Ed. A really beautiful job."

"Thanks, but I don't deserve the compliment. You didn't fall for either of the other traps; you took the tough one."

"There was no other way out. You'd have had me in three moves, otherwise," I explained.

"Would I really?" he looked genuinely surprised.

"Sure," I said. "Look."

I set them up again. Then I did a post-mortem on the game.

"I'll be damned," Gerton said. "I honestly hadn't seen that; I was too busy setting up my own defense."

"You did a good job," I said. "I learned a lot."

There was absolutely nothing concrete I could pin on Gerton, but I still had the feeling that he was a bad risk. I played several more games of chess with him, trying to feel him out, and my suspicions increased more and more. He had a way of playing that was different, to say the least. If he was playing defensive, he set beautifully elaborate traps, almost totally ignoring his offensive possibilities. Almost, but not completely. He never really lost sight of trying to win the game; he simply didn't pay any attention to what might have been the quickest and easiest way. It was as though he let his conscious mind direct the part he was interested in and let his subconscious take care of the rest. His offensive game worked the same way.

As chief of the Math section, he was allowed considerable freedom in the project—not as much as Hamilton and I had, but more than any other Section Chief. Gerton could go to Statistics, Cybernetics, and Communications Sections any time he wanted, while other Service Chiefs were allowed to go to no more than one other section. If Gerton were a spy, he certainly had plenty of opportunity to get information.

But the first time I got any concrete information was the day that I was walking through the Organic Chemistry Section and a chemist by the name of Brettmuller walked up to me and whispered: "Mr. Martin, I'd like to see Mr. Hamilton." Then, louder: "Could I mooch a cigarette, Mr. Martin?"

"Sure." I fished a cigarette out of the pack in my pocket and whispered. "What is it? You can tell me."

"No! I don't want anyone to know. I've got to see Mr. Hamilton."

He thanked me for the cigarette, and as I lit it, I whispered, "See me at the office during the lunch hour."

Then I went directly to Hamilton and told him about the incident.

His bushy eyebrows drew down over his eyes. "Brettmuller? Hm-m-m."

He went over to the files and looked at the chemist's card. Then he said: "I wonder what he wants. How did he sound?"

"He sounded as though he'd spotted something and didn't want anyone to know. Probably saw one of the other men in his lab do something fishy and wants to report it."

Hamilton nodded. "O.K. I'll tell the guard to let him in. There may be something to do. Meanwhile, have you found out anything?"

I debated then on whether or not to tell him of my suspicions of Gerton. I wish I had; it would have saved a lot of grief later. Instead, I said: "Nothing I can put my finger on."

Hamilton jerked his finger toward the door. "O.K., then go out and find something."

I walked over to the cafeteria for coffee, wondering just what it was that Hamilton thought I should find. In some ways Hamilton acted as though counterespionage was something like geology. A geologist says to a mining engineer: "Formations like this are normally oil-bearing. Go find oil."

Hamilton, in essence, was saying: "Projects like this are normally spy-bearing. Go find me a spy."

I drank coffee in the cafeteria and wandered around a little more, trying to put things together. It had already occurred to me that part of the project was a blind. There were more sections than actually necessary, put in there to confuse the enemy. The enemy probably knew that, too, but until they knew which ones were blinds, they had to investigate every individual section of the project.

At a little after twelve noon, I went back to Hamilton's office. I decided that if the chemist, Brettmuller, had anything to say I ought to know it.

I got there too late. Brettmuller was walking out of the office as I approached. He stopped at the guard post and said something. I was about fifty yards away at the time, and I don't think Brettmuller had seen me yet.

Suddenly, everything seemed to happen at once. There was a thunderous blast, and smoke billowed out of the shattered window of Hamilton's office. At the same time, Brettmuller's fist smashed against the guard's temple. As the guard fell, Brettmuller grabbed his rifle.

I already had my .357 out, but, like the guard, I had been taken by surprise, and was a little slow in my reflexes. The gun kicked in my hand, but the shot went wild. Brettmuller lifted the rifle in his hands and took aim. He'd seen me.

There was only one thing to do, so I did it. I fired more carefully the second time. The blast of the Magnum drowned out the sharp *crack!* of the military rifle.

The bullet from the rifle ripped past my ear with an odd sound like a sheet of canvas splitting.

Brettmuller tried to aim the rifle for a second shot, but he was already crumpling when I fired again.

By that time, the guard had lifted himself to a sitting position, and there were people coming from everywhere.

Fortunately, the Emergency Squad could take care of it. Every security agent who was off duty was a member of the Emergency Squad, and it wasn't long before the place was quiet again. None of the other agents

moved from their posts, which was good. Their orders were to hold their posts, no matter what happened.

Brettmuller was dead. I ordered two men to take him to the Infirmary, and went into Hamilton's office.

The office was a shattered ruin. The windows were gone, the plaster was cracked off the walls, and the room was filled with a drifting bluish haze which burned my eyes and throat.

It took me several seconds to recognize the figure huddled brokenly in one corner, and several more to realize that I would never talk to big, hard-headed, good-natured George Hamilton again.

I put in a call to Washington and gave them the picture.

"Take command," I was told. "We'll have General Cordley out there in less than two hours."

I went back to Hamilton's office to see what I could salvage. The Medics had taken Hamilton away after I'd taken all his personal effects. They were lying forlornly on the littered desk, all by themselves in a spot I'd brushed clear of debris. I picked them up, one at a time: Key ring; a silver dollar; loose change; four crumpled dollar bills; a mashed cigar; a small lighter; a broken fountain pen; and his billfold and ID folder.

I looked at the last one. Hamilton's face glowered out of a typical ID photo. I thought briefly of Brettmuller and wondered if he had had any friends.

The big steel file cabinet was dented a little, but it wasn't badly harmed. I used the key to open it and leafed through the cards. They hadn't been harmed at all.

Fromann, who was now acting as second in charge, stuck his head in the door. "We've rounded up a few queer-acting characters, Derek. This must have been done to create a diversion; I think they expected some of the guards to leave their posts when the bomb went off."

"Lock 'em up," I said. "Have you checked with Harry? How did Brettmuller get that bomb in here?" Harry was the guard at the Security Compound gate who had been slugged by Brettmuller.

"Harry doesn't know," Fromann said, "but we took a look at Brettmuller, and that gave us the answer. His right heel was hollow—did you notice those thich-soled shoes he was wearing? He evidently shoved the thing under Hamilton's desk. Funny how a little thing like that could have done so much damage."

"Yeah," I agreed. "We'll have to do some tightening up around here. Take those men you picked up and ask 'em every question you can think of. Make sure the Army doesn't let anyone out—not anyone."

"Right." He closed the door and was gone.

Then I noticed something in the shattered plaster just over the file cabinet. I pulled some more plaster away.

A microphone. There were wires running from Hamilton's office to somewhere else on the compound grounds! A secret microphone would have to be untappable, obviously. And there would be only one way to do that.

I walked over to the window and studied the crisscross of storm fencing that divided Eden Valley into its various sections. Those fences were carefully watched at all times, and were well lighted at night. Where would I put a wire that I didn't want tapped? Sure.

I followed the fence with my eyes. It led directly to the Math Section. I debated with myself for just a few seconds on whether or not I should wait for General Cordley to arrive before putting the bite on Gerton. I decided not to; I wanted to get to the bottom of this thing, and I wasn't too sure I'd get a chance after the general took over. I was pretty sure my reasoning was correct, but I'd have to wait for confirmation before I could be absolutely positive.

I gave orders that no one was to enter Hamilton's office, and headed for the Math Section.

Gerton wasn't in his office when I arrived. I walked through the corridor, and one or two of the mathematicians raised his head to look at me—rather apprehensively, I thought—and then went back to work. Dr. Gerton's door was the only one that was opaque; the others worked in glass cubicles. I rapped on the door and when no one answered, I twisted the knob and went in.

I went directly to the hi-fi apparatus along one wall and started opening panels. Just as I'd expected, there was a lot more than just a souped-up phonograph. As far as I could tell from a superficial investigation, Dr. Edmond Gerton was connected by some sort of communication line with every project section in Eden Valley!

There were at least ten tape recorders humming quietly in that big chassis, and several other types of apparatus that I didn't immediately recognize.



There were transistors galore, vacuum tubes, and a host of printed circuits. The thing looked as though it had been designed to get as much equipment into as small a space as possible.

There was a faint noise behind me, and a voice said: "Get your hands in the air and turn around slowly."

I did as I was told and turned to look down the black muzzle of a .357 Magnum held in the rock-steady hand of Dr. Edmond Gerton.

"Oh," he said softly, "it's you." His smile was gone, and without it he looked like another person entirely. His mouth was compressed, and his pale blond eyebrows shadowed the blue of his eyes.

"Yeah, Ed, it's me," I said, trying to keep my voice level. When someone is pointing a gun at you, it's sometimes a little difficult to talk.

"So now you know. Did you figure it all out by yourself?"

"I had to. Hamilton died before he could say anything."

He just stood there, looking a little dazed. "I should have seen it. I should have known. It was all there, but I wasn't looking for anything like that."

"Ed," I said gently, "Ed, you're still pointing that gun at me. Mind laying it down?"

"Oh." He looked at the revolver in his hand and then put it down on the desk. I left it there.

Suddenly, Gerton looked up sharply and grabbed for the gun again. "You say you know. *What* do you know?"

"I know that you're the head man around here. You're the boss. You gave orders to Hamilton. You're the fellow who runs Eden Valley."

He lowered the gun again. "I thought you might have taken me for a spy."

"No spy could have planted a thing like this in here without Hamilton's knowledge. And this communications system would have to be built right into the works when the place was constructed. No spy could have sneaked in anything like that.

"I found the communications set-up in Hamilton's office and figured that the fences must carry the lines. It's a neat way to hide lines and keep them from being tapped. No one dares to go near them, and they'd never think of the real reason the fences were there."

He nodded, and then said: "Do you want a drink? I think I need one."

"Later," I told him. "Not now."

He took a bottle of whiskey from a cabinet and poured himself a big shot in the bottom of a water glass. He drank it down and replaced the bottle.

"I slipped up," he said. "I didn't think of it."

"Hamilton must have known what the project is doing," I said. "If I'm going to know how to take care of this project in his place, I've got to know, too. General Cordley will be here in an hour and a half, and I want to be able to have this whole place in shape—if possible.

"Ed . . . what are we doing here at Eden Valley? Just what sort of project is it?"

"Essentially, the project can be represented as a multidimensional pseudo-manifold whose cohomology modules, taken as a direct sum over the dimensions, induce a canonical multi-homomorphic function whose integral over certain chains is zero," said Ed Gerton.

I blinked. "*What?*"

He looked up from staring at the top of his desk, and a little of the old

smile returned. "Sorry, Derek. I guess Ham's death has upset me a little. But, believe it or not, that's just what Eden Valley Project is—or almost so."

"I believe you," I said, "but just what is a multi-whatcydoodle?"

He sat down, and the light began to come back into his eyes. "How much math have you had, Derek?"

"Integral calculus," I said.

"No algebraic topology?"

I shook my head. I didn't even know what he meant.

"I'll try to explain it physically. Imagine two chemists. One synthesizes water by burning hydrogen in an atmosphere of oxygen; the other takes the water and analyzes it by electrolysis, breaking it down into hydrogen and oxygen, which he sends back to the first chemist. Do you follow me?"

"Sure," I said. "One guy does something, and the other guy undoes it."

Gerton grinned and gestured a little with one finger. "Not quite. They are both *doing something useful—something constructive*. You can't say which one is undoing the other's work. Look—I'll show you."

He pulled out his fountain pen and a piece of typing paper. He put two circles on it about two inches apart and labeled them "A" and "B." Then he drew two arrows; one from "A" to "B" and the other in the opposite direction.

"These are vector arrows," he said. "If one is positive, the other can be called negative, but deciding which is which is purely arbitrary. The point is that since, in this case, they are numerically equal, they cancel each other out."

"I see," I said. "If one company melts up scrap steel to make bars of forging stock and the other company forges stock into pieces which are shipped back to the first company as scrap, they cancel each other out."

"Exactly! Precisely!" It was the old Ed Gerton again. Getting him interested in his speciality had made him relax. I didn't quite see what he was driving at yet, but I wanted to keep him talking.

"So how does this apply to Eden Valley?" I asked.

"All right. By the application of algebraic topology, a network can be set up between a set of such groups so that each vector arrow going from place to place can be assigned a value which makes the whole vector sum come out to zero. They all cancel each other out."

I got it then, and my fists clenched. "Let me get this straight, Gerton. You mean there is no real project here? Eden Valley is doing nothing? *George Hamilton died for nothing?*"

"No! No, believe me, Derek, that's *not* what I mean!" He looked shocked.

"Let me finish."

"Go ahead," I told him, "let's hear the rest of it."

"All right. Here's what we did. All over the United States there are different projects going on. None of them is particularly secret. They're all doing research work, doing it as research teams. But in each team, there is one essential element missing!

"That essential element is here, in Eden Valley. They aren't doing nothing, they're doing vital research. Now, what happens if a spy gets into one of those other places? He can't quite see what they're doing because there's something missing.

"Carry it further. What happens when a spy gets into Eden Valley? He sees a vast network of obviously related groups, all working toward some common



goal. Material goes from one place to another; products are shipped all around. Some of them go into the tunnels under the mountain.

"Do you know what's under the mountain? It's a maze. Some of those secret doors won't unlock because they're welded shut. Others lead to a dead-end tunnel. Material goes in one place, gets shuttled around and comes out another, and from there it goes right back into the circuit.

"Now, no other man knows what's going on in any other section than his own—or at most a couple of others. He can't see the whole picture, and until he does, he can't see that the whole process cancels out. Each little group is not only doing useful research, but is actually *producing something useful*. That something is taken elsewhere and used as raw material to make something else.

"It's like the two chemists. If each saw that the other was undoing his work, they'd both give it up as silly. But if they *didn't* know—" He spread his hands.

"But *why?*" I asked. "Why such an elaborate set-up?"

He leaned back in his chair and lit a cigarette. "Derek, just as it stands, such a system would admittedly seem inefficient. But"—and here he smiled—"I pride myself on having devised the most fiendish spy trap that ever existed. The way it works—"

And that's where I interrupted him. "Let me tell you how it works!" I was actually excited. The whole thing had hit me like a sunstroke in the Sahara.

"You're just about the most vicious mantrapper I ever met," I said, and I was grinning when I said it. "I know how an espionage system works, and I know how its psychology works—how it *has* to work.

"Here's a system—a project—that is obviously doing something—making something. What? Well, we'll send in an agent and find out. The agent gets in. Fine. What does he find out? *Nothing!* Absolutely nothing! Why? Because there's nothing to find out! Before he finds out anything, he'll get caught. He's got to stay here until he finds out what the project is for. And before he finds *that*, he's been here long enough to slip up. It would take forever to find out a secret that doesn't exist!"

"Suppose he does find out that there is no secret—or suspects it?" Gerton prompted.

"The home office probably won't believe him," I said flatly. "And even if they do, *they can't take the chance!* They've got to send their best men against it. Their lower-class agents don't get anything, so they have to send in their best men. And *they* don't get anything, either."

Gerton nodded happily. "Exactly! But there's more to it than that. By checking the information flow and material flow from one section to another, and at every intermediate evaluation point, we are able to supply the computers in Statistics Section with the information necessary to calculate the perturbation coefficient of each of the homology groups—" He stopped. He'd evidently seen the look on my face. I was beginning to get lost.

"Put it this way," he said. "The perturbation coefficient is a measurement of the deviation from an arbitrary norm. If everybody in Eden Valley were perfect, the coefficient would be one point oh. The system would be one hundred per cent efficient. But nobody's perfect, so we have to accept a 'normal' curve rather than a perfect one. The normal curve averages out the average little slip-ups on the part of an individual. It will show up inefficiency like a sore toe.

"Now, by the very nature of his job, a spy *must* be inefficient. He's doing two jobs at once. But his efficiency will vary from day to day instead of remaining fairly constant as it does with the average man. When we detect such a fluctuation, we know we have our spy."

"So you pinch him and lock him up," I said.

Ed Gerton shook his head. "No such thing. You don't quite see how efficient this system is. We get out data on changes in the system within a tenth of a second and we can change the flow of the system to fit it. It's a feedback of information that compensates for the inefficiency of any given individual. Now, because of the efficiency of the system, we can afford to allow for the inefficiency of the individual. So we keep those spies right here—*working for us!*

"After all, in order to be a spy in a place like this, a man has to be a top-notch scientist. Why shouldn't we have them working for us at low efficiency instead of the enemy at high efficiency?"

"Of course, every now and then, the perturbation coefficient of one or another will get too high and we have to make an arrest before things go too far. That scares the rest of them and prunes off the spy ring before it gets too large. Actually, 'spy ring' is too strong a term. The contact between the individual is so slight that they can't pass enough information along to do much damage."

It made sense. Keep a check on every man, and if he looks fishy, make sure he's watched closely enough to keep his nose clean. According to Gerton's theory, a man would have to know almost everything about the project before he knew anything at all. And with the rigid set-up at Eden Valley, it would be almost impossible to get all the information together. Even I, with all my freedom, hadn't seen it.

And why lock up the spies? Weren't they essentially already in prison? How could they get out? Even Brettmuller must have known he couldn't get away; it was a sacrifice.

"Of course," Gerton went on, "I have to do all the checking myself. Statistics Section doesn't know what all those figures mean. I have to take them and run them through our computers here, and check all the curves personally.

"And I slipped up."

"How?"

"Don't you see? I should have *known* they'd get desperate! I should have *known* they'd try a direct assault! It's all there on the graphs! I should have seen it! But I didn't—I never even thought, really, how deadly something like this could be. It was . . . well, it was a game."

I nodded. I was remembering how he played chess.

Suddenly his eyes brightened. "Hey! I think I know how I can correct that! I think—" He grabbed his pen and a sheaf of typing paper and began to print rapidly, filling the paper with neat symbols. He was mumbling almost happily to himself.

I stood up. "O.K., Ed. I think I get the picture. I've got to go get your system running again. I'll let you know when General Cordley gets here."

He didn't answer, so I left without saying another word.

After all, why should I interrupt genius at work?

THE END