

\*The Waste Land\* by Charles Sheffield

This final story from the wonderful Hugo- and Nebula-award winning author, Charles Sheffield, who died in November, is a science fiction mystery tale that takes a compelling look at a peculiar murder in ... The Waste Land.

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Jeff King groped at his belt and wondered what mad impulse had let him come here without his gun. Or without his partner, who should have been covering him from ten paces behind. Or without his sanity, which he must have left at home.

The alley was one he knew well. It led from Pennsylvania Avenue through to H Street. There were lights, but at midnight they were dimmed. Even so, it should still be easy to see anybody in the alley -- except that night cleaning staff for neighboring buildings used the narrow thoroughway as their private parking lot, and any of a dozen vans and pick-up trucks could hide a man -- or woman -- crouched behind it. All he had seen was a running black-clad outline.

Jeff moved forward, carefully and slowly. He could feel his heartbeat, the pulse fast and irregular. The alley was perfectly quiet.

Then suddenly it wasn't quiet at all. A telephone was ringing -- his own phone, whose presence made about as much sense as the absence of his gun.

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Jeff jerked upright. Instead of midnight in Washington, DC, he opened his eyes to the clear pale light of an Idaho dawn. The ringing phone was the one at his bedside. As he reached for it his heart felt ready to jump out of his chest.

"Security?" said a woman's nervous voice.

"Yes." Jeff shouldn't be getting a call at home, Johnny Talbott was on duty. What time was it, anyway? He squinted at the clock. Five forty. "This is Security. Jefferson King speaking."

"This is Lauren Begler with Remediation."

"Yes?" Meaning, I never heard of you, and why the hell are you calling me at this hour?

"I'm in charge of the Number Three Nuclear Waste Section. We have a survey operation going on in Site 62, as part of the Snake River aquifer tests. Two of my staff were out on a night run, checking reference points with a GPS terminal. When they were driving between two corner markers they saw something and went for a closer look. It was a body. A dead body. They called me."

"Sweet mother." Jeff was already looking around for his shoes. Eighteen years of habit made him say, without thinking, "Natural causes?"

"I don't know. I haven't seen the body -- I'm heading out there now. But my staff don't think so. They say there's something very peculiar about it. Should I call you when I see the -- the dead person? I thought you ought to know about this as soon as possible."

"Smart thinking. No need to call me, though -- I'll be there myself. Give me driving directions."

"Wonderful." The relief in her voice was enormous. "If you like, I could pick you up and drive you. The

area we're talking about is quite a way north."

"Give me ten minutes. You know the corner where the roads meet near Central Facilities, just past the gym? I'll be waiting."

Jeff used two of those ten minutes sitting on the bed, waiting for his heart to steady. A body. No wonder Johnny Talbott had passed Lauren Begler on to him. "Security" at the Idaho National Lab usually meant somebody failing to lock a safe at night, or maybe taking a document marked "Secret" home in their briefcase to read at night. Bodies, especially ones where natural causes could not be assumed, were nowhere in Johnny's universe. But Johnny was sure that Jeff, with his big-city long-time cop experience, thrived on them.

Jeff dressed quickly, buttoned up his long overcoat, and went outside. It was partly his own fault. When you sat for many hours in an office with someone, and the most exciting thing that came along in a week was a new set of security Regulations and Procedures, you tended to color your past a bit more lurid than it had been.

Jeff reached the corner and stood waiting, wishing that he had insisted on time enough for hot coffee. In mid-June the Idaho nights were still cold, and the sun was barely up.

Even without artificial coloration, his past had been exciting enough. Too much, in a way. The doctor who had examined him in Washington four years ago hadn't left room for doubt. "Hypertension, and heart arrhythmia. And you're overweight. Stay in this job, where it's greasy meals or missing meals, constant stress, and running on adrenaline at all hours, and you won't need to worry about what you'll be doing after your retirement."

So you took that retirement early, applied for a job at Bechtel, and with a little help from the fact that they had few blacks in security and fewer still out on the Idaho facility that the company managed for the Department of Energy, you found yourself a cushy job where the stress was minimal, the scenery was gorgeous, and the fishing was spectacular. Where you would never find yourself out at dawn, with your heart pumping a mile a minute, waiting to go off and view the body of a man who had died of possibly unnatural causes.

Had Lauren Begler said a man? Jeff felt sure that she hadn't. On the other hand, he felt just as sure that she definitely would have told him had it been a woman. When you had been in police work long enough, what people didn't say and didn't see was as informative as what they did.

Lauren Begler rolled up, two minutes late, in a beige Ford Explorer. She was a long, lanky woman, a pale redhead of about forty. She nodded to Jeff as he climbed in and handed him a sixteen-ounce cup.

"Coffee. I took an extra minute. Hope you like cream and sugar."

"You've saved my life." And forget the fact that he was supposed to strictly limit his caffeine intake. Even if you did everything the doctors told you, you still died someday.

The road north was deserted. She drove well, she drove very fast, and at first she didn't seem inclined to talk. That suited Jeff. He hunched in his seat, drank coffee, and watched the rising sun play on the landscape of southeast Idaho. He was learning to love this place. Everything was peaceful, everything looked harmless. You had to remind yourself that this area had contained the world's biggest concentration of nuclear reactors -- more than fifty of them -- and back in the 1940s and 1950s people hadn't been careful enough with radioactive waste products. The whole area, close to a thousand square miles of it, was dotted with nuclear hot spots. That's what Lauren Begler's remediation team was doing: locating every problem spot in an area almost the size of Rhode Island, removing and containing the

worst of the nuclear waste, and then -- cross your fingers when you said this -- finding a safe place to store it for a long time. A very long time. Some of the radioactive isotopes in the waste had half-lives of many thousands of years.

The car phone rang, making Jeff jump. Lauren Begler picked it up, listened, and said, "That's good. Who else?" And then, after listening for a few seconds, "Five more minutes, if I push it a little harder." She glanced at Jeff and said, "Don't touch anything?" And, at his vigorous nod, spoke into the phone again. "Yes, I know the body was touched already, but don't touch anything else."

She put the phone back in its cradle. "Walden and Bronsted, my staff people who found the body, say that they just had a call from RHR -- the Radiological Hazard Research group."

"How did they find out about it?"

"I called them. Right after I called you, Walden phoned me to say that the body had an ID tag and was wearing a radiation monitor. It's a man named Frank Lazenby. He worked for RHR." She glanced at the speedometer, which showed seventy-eight, and pressed the accelerator.

"Any other information about him -- Lazenby?"

"Not about him. But the film on his radiation monitor was black from end to end."

Jeff said, "The place we're going, the place where they found him -- "

"Not a problem. Walden's a careful man, and he's been around nuclear radiation sites for a while. Their van is equipped with counters. The first thing they did, even before they approached the body, was check radiation levels. Lazenby wasn't in a hot spot. Apparently the count is even below typical background levels."

Jeff, in spite of his three years in Idaho, was still a member of Scared Joe Public at heart. The world had changed a lot since the residents of a town just south of the test site had proudly named it "Atomic City." The words "radiation hazard" made Jeff very uncomfortable. Lauren Begler sensed that, and went on, "Mr. King, I know you must have seen maps of the lab site with 'hot spot' written all over them, but it's all relative. Even in the worst places, locations where illegal dumping of highly radioactive materials was performed thirty or forty years ago, short-term exposure would do nothing. Years of exposure produce awful results, because the effects are cumulative. But the dose a person might get in a few hours wouldn't hurt."

But something killed Frank Lazenby. And something turned the film of his radiation badge to solid black.

Jeff kept those thoughts to himself. He felt that most people at the facility had too casual an attitude toward nuclear radiation. Perhaps it was just that kind of attitude, thirty and forty years ago, that led to maps today with "hot spot" labels all over them.

The Explorer left the road and headed up a hill of eroded volcanic lava. Lauren Begler eased off the gas only a little, and Jeff bounced around in his seat as the car hit potholes and buffeted across narrow cracks. If a person didn't have a heart problem when they started out on a trip with Lauren Begler, they'd sure have one after it was over.

The car crested the hill, going briefly airborne, and plunged down the other side. Finally, the brakes went on and the last quarter of a mile was one long skid. A controlled skid, though, because the car finished parallel-parked next to a white van marked with hand-painted lightning bolts on the side like the front of Captain Marvel's shirt. Two men were leaning on the hood, smoking.

Lauren Begler was up and outside the Explorer while Jeff was still trying to unbuckle his seat belt. He took his time, and when he joined the other three one of them was pointing away toward another dip in the land.

"About four hundred meters thataway." He was short, with a dark ponytail and a Mexican bandit mustache. "We moved the van to here because we were in a radio dead spot. You probably heard the interference when we called you."

"Right. And you didn't touch him any more, after you found his ID?"

At the man's firm shake of the head, Lauren Begler turned. "This is Sergeant King. He's with security. Before that he was a cop in Washington."

The two men looked at Jeff with new and what he suspected was unjustified respect. He had noticed it since his first day in Idaho. Mention that you had been a cop in DC, and people assumed you dealt daily with muggings, murder, and mayhem. Sometimes that was true -- Jeff had the scar of a bullet wound in his left calf, if anyone wanted proof. But mostly the daily and nightly rounds were drugs, drunks, and driving tickets. The big frustration was the number of people protected by cars with DP plates and by diplomatic passports, which made them untouchable no matter what they did.

Jeff held out his hand, and the mouth beneath the bandit mustache spat out the last inch of a hand-rolled cigarette, grinned wide, and said, "Wally Bronsteed."

"And I'm Pete Walden." The taller man also favored a ponytail, had a scar on his chin, tattoos on each forearm, and wore a striped shirt with a bolo tie. His grip was as strong as Jeff's. "Ready to see the scene of the crime?"

Both men sounded as though they were enjoying themselves, but that didn't make them suspects. Jeff pegged both as retired Hell's Angels, settled into a life that allowed them to work almost all the time outside. Maybe "respect" was the wrong word for the way they had looked at him.

"May be no crime. But show me."

"Right." Walden picked up a counter and led the way to the little fold in the hills. Jeff decided that Lauren Begler was right, Walden and Bronsteed might look like a couple of live fast/die young buzzheads, but when it came to their work they were cautious. Jeff approved of that -- and of the fact that the radiation counter didn't give out a single click while they walked. No one had been dumping hot waste around here.

That changed as they walked farther down the slope. The clicks began, at first just an occasional one, then more frequent.

"Nothing to worry about." Lauren Begler had seen Jeff staring at the instrument. "You could camp here for months and be just fine. The radiation level back where we started happens to be unusually low."

Jeff nodded, but his attention was elsewhere. He had just caught sight of a splash of bright green at the bottom of the shallow valley ahead.

"I thought you didn't touch the body after you made an identification."

"We didn't. But we covered him with a ground-sheet." Wally Bronsteed made a circling motion with his finger. "Buzzards."

Jeff stared up. He saw no hovering birds, just blue sky and patches of broken clouds far off to the

northwest, where Saddle Mountain reared its head above ten thousand feet. But Wally and Pete had the right idea. Eyeless, flesh-ripped corpses were not a work hazard of the DC scene, but they might be here.

"Stand back while I take a look."

A look for what? Footprints? There was no way they would show on the dry, hard ground. In any case, in eighteen years of police work Jeff had never found footprints to be of the slightest use. He had the distinct feeling that he was out of his depth as he bent forward and carefully peeled back the covering sheet.

Frank Lazenby lay face down with his head toward the north. His back showed no signs of a wound. When Jeff leaned closer he felt sure there would be none anywhere. Lazenby's face and hands were a bright and unnatural purple. A man's face might turn that color in an apoplectic fit, but the skin of face and hands was also covered with swelling fluid-filled blisters.

He turned to Bronsteed and Walden, who were showing a lot more internal fortitude than Lauren Begler. She had turned away and looked as if she might throw up. On the other hand, the two men had seen the body before. "This is what you meant when you said he looked peculiar?"

"Yep." Wally was smoking again, a skinny hand-rolled cigarette made from strong tobacco that burned blue in the clear morning air. "Looked like that when we first got to him."

"How did you come to see him at all? It must have been dark."

"Could hardly miss him. We were checking marker points and coming right down the middle of this valley. I was driving, but me and Pete both spotted him at the same time."

"He was just like this?"

"Yep. We figured he had been walking north. There's a station with a field phone a mile away. When he couldn't walk no farther, he fell on his face and died."

"So whatever happened to him, it was back in the direction where you parked the van?"

"That's what we figured. That's why we drove that way. Didn't see a thing, though."

"What did you expect to see?"

"Wasn't sure. But you know what? We had an idea." Wally glanced to Pete Walden for support. "The way Lazenby looks, it's like them cases you see in training films, where they want you so shit-scared of radiation you won't take risks ever. They show you pictures of people who were in accidents and got huge doses of radiation. They got pictures from Chernobyl of the men who were right in the death zone when the reactor blew. They died quick, like, in just a few minutes or a few hours." Wally pointed.

"That's sort of how they looked."

"Yeah." Jeff had seen those same movies. They had made him feel sick, and he was no stranger to unpleasant forms of death. "You checked radiation levels all the way when you moved the van south?"

"You bet your ass we did. Wouldn't you, after you'd seen him? Clean as a whistle, not enough radiation to tickle the counter. And there's no radioactivity on the body, either, even though the film on his badge is solid black. What happened, Sergeant? How did he die?"

\_Means, motive, opportunity\_. Jeff had been a street man and a legwork man; homicide and detection

were far from his line of expertise. On the other hand, you couldn't watch a cop show on TV for more than ten minutes without knowing those basics.

Opportunity was easy -- out in the middle of the test site, at night and miles from the nearest people, anybody could have killed Frank Lazenby. But motive? And, above all, means? Somebody had to have popped Lazenby inside the pressure vessel of a nuclear reactor for a few minutes, long enough to provide a huge and rapidly lethal dose of radiation; then they had to fly him out to a deserted region of the Idaho test site, drop him down, and let him stagger forward for the time that the radiation took to cook his bones.

Jeff squatted back on his heels and looked all around him, at the rolling empty scrubland. Then he turned back to the other three, waiting expectantly for forensic wizardry. "We'll have to wait for an autopsy, and confirm cause of death. But I'll be honest with you. Even if it's radiation overdose -- which it sure looks like -- I don't have one idea in my head how it could have happened."

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Jeff had never been involved in a security issue anything like this in his three years in Idaho. He didn't even know who had jurisdiction. The Lab was federal property, the whole area forming a protected enclave from which the general public was excluded. Even inside, there were restricted buildings and areas, where entry required high security clearances. A few employees worked directly for the federal government, but most people were on the payroll of Bechtel, who had the facilities management contract.

Jeff was not the only one with questions. The head of security, Tom Markin, spent all morning on calls to DOE Headquarters in Washington, then called a midday meeting of his staff.

Markin was a tall, moon-faced man, over six-six, a longtime company employee who had lost the lower part of his left leg in some childhood accident. Jeff had sized him up during their first interview and decided to steer clear of Markin whenever possible. The head of security had a no women-and-children-first philosophy. Whoever went down with the ship, it would not be Tom Markin.

It might well be Jeff. No one would come out and say that Markin was a white supremacist, but they could certainly think it and hint to Jeff that he should watch his step.

He had, for three years, but today avoiding Markin was impossible. The meeting took place in one of Central Facilities' smaller lecture halls, big enough to hold all thirty attendees. Jeff, heading for the back row, had been stopped by Markin and placed right up at the front.

"The situation goes like this," Markin said. "It makes no difference if we are dealing with a suicide or a homicide, this death could involve issues of national security. Two days from now, we're going to be flooded with people from Washington. Not only DOE Headquarters, but FBI. It would be very nice if we could tell them, when they arrive or sooner, that we know exactly what happened, how, and why. I'm setting up a special task force to work on this, and a special charge number. Its members will be relieved of all other duties. Jeff King, who I think all of you know" -- he gave Jeff a big, friendly grin -- "will be in charge. Don't get in his way, and if he needs your help, cooperate in any way you can. Questions?"

There were many -- what do we know about Frank Lazenby, what did he do, why was he out on the test site at night?

Jeff hardly listened. For one thing, Tom Markin didn't have any answers, and took a long time saying nothing. For another, it was clear to Jeff that the "special task force" was going to be isolated from the rest of security for a reason. If they succeeded, which at the moment seemed remotely improbable, Tom Markin would re-absorb them into the rest of the operation and claim credit. If they got nowhere, they

were there to be pointed at as a team who had failed. It was no comfort to know that the other two people on the task force were marginal employees who had already received warnings for poor performance.

Jeff escaped from the meeting as soon as he could. Outside in the corridor he found that there was more bad news waiting for him. It took the shape of a pudgy woman in a white lab coat.

"Sergeant Jefferson King?" she said, as soon as he appeared.

"That's me."

"I'd like to talk with you about the death of Frank Lazenby."

He stared at her. She was black, with corn-row hair and rimless glasses. "You, too. I guess they hope to get rid of all of us at once, eh? No quotas under this administration."

It was an absolutely stupid thing to say, and Jeff regretted the words before they were out of his mouth.

The woman stared at him. "I don't know what you mean by that, and I think that I prefer not to ask. My name is Lassandra Kane, and I'm in charge of research for the lab -- including Radiological Hazard Research."

She held out a hand. Jeff took it, feeling like a total fool.

"Frank Lazenby worked for me," she went on. "And just so we won't be blinded by stereotypes, I'm going to do what I hate doing and usually refuse to do. I'm going to tell you my background. I majored in physics at Texas A&M, fully-funded merit scholarships all the way; then I did a Ph.D. at Berkeley doubling with a position at Lawrence Livermore. Then two years post-doc at SLAC, the Stanford Linear Accelerator, working on decay modes of the superheavy elements. I earned this position. All right, Mr. King?"

She was looking at him expectantly. Jeff decided there was only one way to handle this.

"More than all right, Dr. Kane. And now for me. I worked eighteen years for the police in Washington, DC. I saw as much corruption inside the force and in the city government as I did in the streets. I was a good street operator, and the best when it came to legwork. That makes me well-qualified to serve as a general security officer here. But I never worked for homicide, and I'm as unqualified to investigate a murder from unknown causes as that there goldfish."

He pointed to the little aquarium along the corridor wall, where a pale and solitary fish goggled out at them. The sign above the aquarium read: "Department of Energy Idaho National Engineering and Environmental Laboratory (INEEL): Making our country safe for all forms of life."

Lassandra Kane glared at the goldfish for a few moments, then to Jeff's relief she burst out laughing.

"I can live with that. Knowing what you can't do well is something a lot of people never learn. But you're in charge of looking into Lazenby's death, aren't you? That's the word my office got from Tom Markin."

"I am."

"Are you free to come and go where you like?"

"So Markin says."

"Then let's get out of here, and find somewhere quiet where we can talk."

The weather had warmed up a lot since Jeff's early morning ride. It was a shirt-sleeve day, and he had put on a suit for the meeting with Tom Markin. He was glad he had, though he would pay for it now.

Lassandra Kane led him to a small blue hybrid-electric convertible. She seemed to be one of the few people at the Lab who didn't favor giant SUVs and pick-up trucks. That showed admirable concern for energy conservation, but had other disadvantages. Jeff squeezed into the passenger seat with nothing to spare. The upholstery was burning hot under his broad behind.

"I'll take us over to the breeder reactor site," she said. "I have an office there, and chances are better that we won't be disturbed. Why don't we start with basics. How much do you know about Frank Lazenby?"

"I never heard of him before. I don't think I'd even seen him around, though it was hard to tell just from looking at his body this morning."

She grimaced. "It was horrible. I had to identify him. If the cause of death was radiation burns, it was far worse than anything I've seen or heard of."

"What else could it be?"

She turned to give him a quick grin, and the sun glinted off her rimless glasses. "Aren't you supposed to tell me?"

Jeff judged that as a rhetorical question. "No wife, no family?" He would ask for a full background from personnel, but there was no harm in getting a head start.

"He must have had family somewhere, everybody does. But he never talked about them."

"A bad personal history, do you think?"

"More like just a very private person. Which he was."

"No women friends?"

She hesitated. "Define friends."

"Sex."

"Yeah, that sounds like a man's definition. No, no 'friends.'"

"Could be either a woman or a man."

"Still no. Look, I wouldn't want you to take just my opinion on this, but I think Frank Lazenby was one of those people who are natural neuters. I don't think he had any sex drive at all. There are people like that."

"So they say. I'll tell you, from my time as a cop I'd never have known it. In DC, the whole world is sex-mad."

"Even Congress?"

"Especially Congress."

They had reached the experimental breeder reactor site, which Jeff had driven past a thousand times and never been inside. Lassandra Kane parked in a spot labeled DIRECTOR ONLY, right in front of the main building.



"He's in Washington," she said. "Or he was, first thing this morning. My bet is he's on a plane to Idaho Falls this minute, heading back."

The office she led Jeff to was not what he had expected, given her position, and most of the space was filled with what looked to him like junk.

She saw his skeptical expression. "If you want to know where the real work gets done in a lab, look for trailing wires and duct tape. My office in the other building is all coffee cups, conference table, and projection screens." She cleared a monitor off a chair and gestured to Jeff to sit down. "Ask."

"How sure are you about Lazenby's private life?"

"Pretty sure. Though if it was private private, I wouldn't know. Why do you keep asking?"

Jeff wasn't sure. He organized his own thoughts as he answered. "Assume that we're dealing here with a homicide, by unknown means. If you look at the statistics, the vast majority of homicides are family matters -- son shoots father, jealous woman stabs lover, husband kills wife during a messy divorce."

"Terrible."

"But true. Now, when I first asked about Frank Lazenby's family, I wasn't thinking too clear. It doesn't matter a hoot how well he got on with his relatives, because unless they worked here at the lab they'd have trouble getting anywhere near him. This place is pretty good when it comes to security. So we're looking for an insider. If it's not a lover, we're down to the next level of intimacy. Was Lazenby popular?"

"Too private and standoffish to be popular. But he wasn't unpopular."

"You liked him, didn't you?"

"Actually, I did. How could you tell? Never mind, every profession has its secrets. Does that make me a suspect?"

"No. Why did you like him?"

"Oh, that's a hard one." Lassandra Kane frowned at the monitor beside her desk. "Well, for starters he was smart. I mean, really smart, in a shy and quiet way. He didn't show it off at all, but in some ways he was maybe the brightest man I've ever met."

"Or woman?"

"That, too. The brightest person I ever met. But just being smart wouldn't do it. Some very intelligent people are absolute sons of bitches. The thing about Frank Lazenby, there was a sort of innocence to him. He believed in absolutes. The United States is the greatest country in the world. Our form of government is the best. Motherhood and apple pie and fireworks on July 4th, and people are fundamentally good and can be trusted. Simple things, and you might think they're old-fashioned. But I never knew Frank to do a mean thing, or say a mean word."

"Not ambitious?"

"That's a different and more complicated question. He didn't care about money, or titles. A couple of times he refused promotion, because he wanted to go on with his research and administration would get in the way. But in his work, he was as ambitious as you could get. Not for personal fame, you understand, but for worthwhile results. He always said that this country had been very good to him and given him a lot, and he wanted to give something back."

"Did he succeed?" Jeff was finding it harder and harder to visualize the sort of person who would kill Frank Lazenby.

"Oh, yes. He had over forty patents in the field of lasers and electronic detectors. They would have been enormously valuable in private industry, but of course here they all belong to the government. The only problem was getting him to talk about them."

"How can you possibly file a patent without talking about it?"

"Oh, he'd write everything up eventually -- when he was sure that there were no unresolved problems. You know, everyone is supposed to keep daily notebooks, recording the status of their work. You should have seen Frank's. They were utterly useless. They revealed nothing but platitudes and minor progress, until one day there would be a working model and a perfect paper on his desk. He couldn't publish in the open literature, of course, because of national security. But within the classified community he has a terrific reputation."

She stared shrewdly at Jeff. "You don't look too happy with any of this."

"I'm out of my depth. Show me a night club where two guys get drunk, argue, and one of them sticks the other in the street outside, I'll figure out who started it and who to charge. Here, there's no motive, no method, and no suspects. Hell, where Lazenby was killed there's not even a street to fight in."

"There's still a scene of the crime." Lassandra Kane turned to the computer on the desk. She hit a dozen keystrokes, and a color image popped up like magic on the monitor. "Want to see exactly where Frank Lazenby died?" A red cursor showed on the screen. "It was here."

Jeff stared at the picture. It didn't tell him one thing. "What is that?"

"A Landsat-7 image of the Idaho test area. Taken from space, seven hundred kilometers up, then ortho-rectified so we know exactly where each point on the picture is on the ground. What you're looking at covers about ten thousand square kilometers. Here's the test area boundary."

An irregular polygon traced itself on the screen. Jeff recognized the shape from maps he had seen. "How did you do that?"

"It's not hard. The Landsat image and the boundaries are layers in a GIS -- a Geographic Information System. You can enter different kinds of information into the computer as different data layers, registered to a common reference frame, and overlay them on each other. Like this, for instance." A series of closed curves appeared, black outlines on the monitor. "Altitude data. Important if you care about water run-off and land use."

"Does this have anything at all to do with Frank Lazenby's death?"

"Believe it or not, it does. The Landsat image is just a kind of background, to give the user a feel of where you are. The data that we care more about for our work are these." A grid, regular and close-spaced, jumped onto the image. "What you are seeing is the overall radiation level at each grid point."

"You can measure the radiation value from space?"

"I wish. No, this is the result of thousands and thousands of hours of ground measurements. And what you are seeing has been simplified for display purposes. The real data provide dose rates to one percent or better, but we only use eight colors on the image. Blue indicates low-dose, and red means a bad hot spot that we need to worry about in the remediation program for nuclear waste clean-up. So, for

instance..."

Her voice trailed off. Jeff had been following her technical explanation -- just. However, he found the puzzled tone in her final words far more significant.

"What is it? You've seen something, haven't you?"

"I don't know. But this is strange." She moved a cursor on the screen. "There's where Frank Lazenby's body was found. Didn't you say he was walking north?"

"It looked that way, from the orientation of the body."

"Well, look at the radiation data to the south. Every grid point is red for the next kilometer."

"So he would have been in danger, walking that way?"

"Oh, no. We've taken care of the very worst clean-up. You can walk through the hottest hot spot on the Idaho test range, and not be hurt. But Wally Bronsted and Pete Walden drove that path this morning, and they reported that the radiation levels were all below normal."

"They were. I was with them when we walked back from the van to Lazenby's body. The radiation counter didn't click at all. Is that telling you something important, Dr. Kane?"

"Perhaps -- but I'm afraid it's not something relevant to the death of Frank Lazenby. It just means that the grid mesh in the area is too coarse. You see, ground measurements were only recorded every two hundred meters. In the area south of where you found Frank's body, those grid point measurements indicate high radiation levels. But you walked along a path about halfway between grid lines, and you found low radiation. It means we need a finer grid, because we're missing local highs and lows. I'd better get onto that -- it could affect our whole remediation program."

She spoke as though what they had seen ended the discussion of radiation levels where Frank Lazenby had been found. It seemed to Jeff that he would have argued exactly the other way. Finding low values where a data base told you to expect high ones suggested something odd, something that needed to be looked into further.

Unfortunately, that sort of exploration was far beyond Jeff's powers. He pushed the discussion back toward the only area where he might have an edge over Lassandra Kane: people.

"The place where we found Frank Lazenby's body is twenty miles from the building he worked in. Assuming he didn't walk there, somebody must have given him a ride. You say he was a solitary and private person. So who?"

"I can't give you a definite answer, as you very well know. But the fact that Frank was a loner actually helps. He had his own office, but he shared a small laboratory with three other people. Dr. Willoughby, Dr. Watts, and Dr. Schaefer. He didn't mix much outside that."

Wall-to-wall Ph.D.s, but after three years Jeff was used to that. "Would those three know that he is dead?"

"Not from me. But that sort of news travels fast. I'd guess they do know, along with almost everyone else at INEEL."

"Then I'd like to interview them. All at once, if that's possible."

"Wouldn't it be better to talk to them one-on-one? You know, to check consistency."

"I'm more interested in observing how they relate to each other -- how they watch each other."

"I guess you know your business. Is it all right if I sit in?"

It was a difficult question. Since Lassandra Kane was the general head of research, they worked for her. But were there things they might be reluctant to say in her presence?

"I'd rather do it without you. I'll promise this, though: anything I learn, I will tell you. And my questioning will be informal."

She stood up. "As I said, you know your business."

Jeff wasn't at all sure that he did.

"They're over in the Radioactive Waste Management Complex," she went on. "I'll call and say who you are, and that we are on the way over. We could walk, but if it's all right with you, we'll drive. Since I won't be involved past the introductions, I want to head over to where they've got Frank's body."

"An autopsy?"

"There has to be, but it's on hold until we hear from Washington." She made a quick phone call, then led the way back out of the building and over to the blue convertible. Jeff squeezed in and found the seat hotter than ever. As she started the engine he felt sweat beginning on the back of his neck. Two-seventy was too much, even for somebody six-four. What happened to the resolution to take off forty pounds?

"Dr. Kane, I'm sure you know far more about the effects of radiation than I do. Even without the autopsy, what's your best guess as to how Frank Lazenby died?"

The little car was underpowered and had a stick shift. Lassandra Kane changed gears with swift, economical movements. She stared straight ahead as she answered. "Radiation overdose. \_Huge \_radiation overdose, something that killed in minutes rather than days or months. That's a bigger dose than I've ever heard of or believed possible -- and the Radiological Health Handbook has been like my Bible for ten years. Frank Lazenby wasn't just irradiated, he was \_cooked. \_And now I've said that, I'll tell you why I must be wrong. That much radiation should have induced secondary radioactivity in his body, things like potassium isotopes with half-lives of hours and longer. There was no sign of them."

Jeff realized that he was listening more than he was understanding. "This Bible you said you used."

"The Radiological Health Handbook?"

"That's it. Do you know where I could find a copy, to borrow for a while?"

She gave him a quick sideways glance, not quite a smile. "Reach under your seat, and you'll find my copy."

"Oh, I wouldn't want to take yours." But Jeff groped around beneath him and pulled out an oversized book with a pale blue cover. He opened it at random, stared, then flipped through the pages. "Whoever wrote this didn't have much use for words, did they?"

"It's basic radiological data. Tables and graphs of decay modes and half-lives and chemical properties for radionuclides. There's a tremendous amount of information packed into that one book."

"Maybe there is. My problem is \_unpacking \_it." Jeff kept the book on his knee open at one page. "I

guess I won't be borrowing your copy. Can you tell me what this here actually \_means?\_"

Lassandra pulled the car over to the side of the road and carefully turned off the engine. "Let me look."

She took the book. "Right. Do you know what plutonium is?"

"Something you use to make atomic bombs. It's poisonous as hell."

"It is -- chemically poisonous, and bad news if you inhale even a microgram. It's also a by-product of working nuclear reactors, so there's lots around the Idaho site. It's element number 94, and its symbol is Pu. What this page is all about is a particular isotope of plutonium, called plutonium-241. It's radioactive. This chart shows its complete decay chain. In an average of thirteen years the plutonium changes to another element, americium, but that's radioactive, too. So in four hundred and fifty-eight years -- on average -- it changes to neptunium. That's radioactive, but it takes two million years before it becomes protoactinium, which changes to uranium in twenty-seven days, which changes to thorium after a hundred and sixty thousand years, which changes to radium, then to actinium, then to -- "

"All right." Jeff held up his hands. "I surrender. I'm not going to borrow your book."

"I'm sorry if it sounds like gibberish, but we have to deal with sequences like this every day. The decay chain, and how long each piece of it takes, is the basis of the whole nuclear waste problem." She gave the book back to Jeff and started the car's engine. "If everything had a half-life of only a few minutes, we wouldn't \_need\_ a remediation program. Everything would tumble right down the nuclear decay ladder, giving off particles or radiation on the way, until it ended up at some stable element. Unfortunately, nature doesn't work that way."

"I don't know that it's all unfortunate. If it did work fast, I wouldn't have a job here."

"True. But do we want to pass on to our kids a problem that will still be around in ten thousand years?" She pulled the car up outside a building in the waste management complex. "I'm sorry, Sergeant. I wasn't trying to blind you with bullshit. It's my field, and I tend to get carried away."

"No apology needed. I'm interested in knowing what goes on in this place, but the briefings I got when I came on board didn't mean a thing to me. Maybe someday you could say it all again, slower."

The inside of the building was as cold as the car had been hot. They went through a deserted foyer and came to a cipher-locked door marked "Authorized Personnel Only."

"Laser research, this section," Lassandra Kane said in answer to Jeff's question. "\_Nuclear\_ laser research, in particular. You know how a laser works?"

"Not a clue. My sister had her eyes done."

"Not with one of these, she didn't. An ordinary laser, like the ones they use in CDs or in surgery, takes a whole lot of atoms whose electrons are above their lowest energy, and makes them give all that spare energy out at once. You get a beam of light as a result. All at the same wavelength."

"I've seen them used in light shows."

"Those are low-power versions." They were through the cipher-locked door and Lassandra Kane was leading the way along a windowless corridor. "A nuclear laser uses the same general principle, but it works on the protons and neutrons inside an atomic nucleus. The energies are orders of magnitude greater, and the radiation far shorter in wavelength."

"Could a nuclear laser have been used to kill Frank Lazenby?"

"Not a chance. Even the most powerful ones, like those over there, are thousands of times too weak."

They had entered a lab with optical benches set along three of the four walls. The devices on them seemed to Jeff to be surprisingly small.

"Might Lazenby have been working on a bigger and more powerful version?"

"He might. If so, he never mentioned it."

Or anything else he was doing, until it was perfected.

A test version, a prototype. Lazenby wanted to try it out, secretly, and took it at night onto the test range far from anybody. But something went wrong, it didn't work as planned....

Jeff decided that he was fantasizing. He had to believe Lassandra Kane, all the lasers were far too weak. Also, Wally Bronsteed and Pete Walden had later searched the area around the body, and found nothing.

"You sure you want to see everyone at once?" She interrupted his wandering thoughts. "If you do, you'd better sit out here. You won't all fit in any of the offices."

That sounded like a sly comment on Jeff's size, until she opened a door with a sign on it reading "Dr. Lazenby."

It was of medium size, but every square inch of floor space was covered with instruments and half-assembled equipment. Stacks of preprints overflowed the bookcases and sat all over the desk.

"I was told that Frank's office is off-limits until we have the representatives here from Washington," she said. "I don't know if that would apply to you."

Jeff thought of Tom Markin's devotion to proper procedure. "I think we ought to assume it's off-limits to me, too." He waved his arm at the mess of junk and papers. "Are the other offices anything like this?"

"Worse. So far as this lab is concerned, Frank was the neatness freak."

They had made no attempt to keep their voices down, and other doors were opening.

"This is Sergeant Jeff King," Lassandra Kane said to the three people who emerged. "As I mentioned to Dr. Willoughby on the phone, he is investigating the death of Frank Lazenby."

"Investigating' is a bit strong." Jeff shook hands with the two men and the woman, reading their names off their badges and committing them to memory: Dr. Stafford Willoughby, Dr. Jennifer Watts, and Dr. Glenn Schaefer; all, he would say, in their early thirties. "A group will be arriving from Washington in the next day or two. I'm just performing some of the groundwork for when they arrive."

He motioned to the only place in the long lab where they could sit, on the tall seats placed on either side of a work bench. They looked suspiciously like bar stools.

"Cooperate with the sergeant in any way you can," Lassandra Kane said. "I'm going to let you get on with it."

She left, but instead of going out of the lab she entered Frank Lazenby's office and closed the door. Jeff sat down cautiously -- the other three each looked to be no more than half his weight -- and wondered

where to begin.

With questions; they were staring at him expectantly, and no one seemed ready to speak.

"When did you last see Frank Lazenby?"

Glenn Schaefer was the first to answer. "He was at the lab late last night, and so was I. I didn't notice the time he actually left, because I was still working. But it had to be about nine."

Jeff decided that answer was consistent with Schaefer's appearance. He was a thin, white-faced man with dark-socketed eyes, who looked as though he worked eighteen-hour days and never saw the sun.

"And when did you leave?"

"I'm not sure, but probably around ten. That's when I usually leave. I logged out, and that will show the actual time if you want to be sure."

"I'll check." Jeff turned to the other two.

They glanced at each other before they answered. Jennifer Watts said, "Staff -- Dr. Willoughby -- and I, we left together about five. Frank must have been in his office, but he had the door closed. We didn't see him."

Stafford Willoughby was nodding agreement. "We left early because we had a dinner appointment. Off-base, over in Idaho Falls."

Jeff looked at the body language between the two, and decided that it might have been more than a dinner appointment. Idaho Falls was forty miles to the east, a long way to drive for dinner. It would be easy enough to check where they were, and with whom, but that was not a top priority.

"Did any of you ever work on the same projects as Dr. Lazenby?"

This time it was Jennifer Watts, plump and red-headed with pale blue eyes, who answered first. "We're all in the same section." She sounded perplexed. "Some projects are so big that we have to work on them as a team. So every one of us has worked projects with Frank -- and with each other."

"Were you working together recently? I mean, like within the past week or two."

She shook her head. "Not me."

Glenn Schaefer echoed, "Not me," but Stafford Willoughby, after a few moments of hesitation, said, "Frank and I were. Not an official project, but an idea for a research proposal."

He looked at the others, and especially at Jennifer Watts. "I'm sorry, but I didn't say anything to anyone else because Frank asked me not to. He wanted to keep it a secret until it happened." Willoughby turned to Jeff. "To be honest, I felt flattered. Frank normally liked to develop his ideas alone."

"So I've heard. Did your research proposal involve anything that might have taken Frank Lazenby out onto the test range at night?"

"No. Quite the opposite. We had an idea for a better way of producing biological tracers -- radioactive isotopes used in medicine. The work would involve the experimental breeder reactor, and everything would be done indoors at that facility."

"Do you know of any other secret projects that Lazenby might have been involved in?"

It was the sort of query that almost guaranteed a negative answer, and Jeff was not surprised at the shaking heads.

His next question made good sense in the seedier depths of Washington, but here in Idaho it sounded faintly ridiculous. "Do you know of anyone, anyone at all, who might have reason to kill Frank Lazenby, or to wish him dead?"

Again a trio of shaking heads, interrupted by the opening of Frank Lazenby's office door. Lassandra Kane appeared. She was holding in her hands a brown ledger about ten inches by fourteen.

"Excuse me, Sergeant King, but can you spare me a few minutes?"

Jeff stood up from the stool, slowly and carefully. It still felt as though it might collapse under his weight.

"Will you be needing us some more?" Jennifer Watts asked.

It was a first-rate question, but not one that Jeff was sure he could answer. He said, "Maybe. Just go back to your regular work, would you, but if you have to leave this building let me know where you're going."

He followed Lassandra Kane into Lazenby's office. She closed the door, motioned him to sit on the only available chair, and perched herself on the least-cluttered corner of the desk. She tapped the book she was holding.

"Frank Lazenby's daily notebook. I told you that everyone in the labs has to keep them."

"You did. But his were more or less useless, because what he wrote didn't bear much relation to what he was working on."

"You're a good listener."

"Lots of practice."

She held the book out to Jeff. "Take a look at the past three weeks."

He opened it. Frank Lazenby's writing was neat and legible, written remarks interspersed with line drawings of equipment and with graphs and tables of mysterious variables. Jeff leafed forward. Then he had to turn back. The last entry had been made twenty-five days earlier. Beyond that, the sheets were blank.

He lifted his head. Lassandra Kane was regarding him steadily, her brown eyes made huge by the rimless glasses she was wearing.

"What does it mean, Dr. Kane?"

"I'm not sure, but I'll make a guess. I always suspected Frank of fudging his notebooks. I don't mean he wrote things in them that were untrue, but he didn't keep them up every day, the way the research staff are supposed to. He'd become deeply involved in a project and obsessed by it, so he would forget about everything else. Then after a while he'd realize that his notebook was way behind, and fill it out all in one swoop. I could tell he was doing that, because there would be a week's worth of material all written with the same pen and in exactly the same size writing."

"But this time he never had the chance to play catch up."

"More than that. As I said, sometimes he'd do a week all at once. But this is \_twenty-five days\_."



Whatever he was doing, it had him so wrapped up in it that he neglected filling out his notebook for much longer than he ever had before. I think that Frank Lazenby was pursuing a major discovery when he died."

"Are you offering that as a motive?"

"I don't know. What kind of things usually provide motives?"

"For murder? Because that's what we're dealing with in this case." Jeff closed the book and let it sit on his lap. "If it's unpremeditated, then anger. Lust. Money, if the killing occurs during a hold-up. Stupidity, if it happens in a hijacking. But this was premeditated. We don't know how it was done, but it called for advance planning. So then the motives are different. Jealousy. Envy. Greed. Revenge."

"You sound like you're running through the list of the seven deadly sins."

"Why do you think they're called deadly?"

Lassandra retrieved the ledger. "Should I have touched this? What about fingerprints?"

"A bit late to worry about that. In any case, I doubt if the murderer was interested in Lazenby's non-existent notes."

"Which motive, then?"

"If I had to make a guess, greed."

"Greed! Frank Lazenby didn't carry a lot of money, he didn't wear jewelry, he wasn't from a rich family."

"I know. It's still the best of the alternatives. Revenge and jealousy don't make sense, because you assure me he had no close relationships. I can imagine envy, of his scientific reputation, but I can't see anyone killing him for that. After all, it would still be his reputation, and no one else's."

"So we're stuck. You didn't get anything out of talking to his three co-workers."

"Did I say that? I got quite a bit. In fact, if I were in my old working place, I'd bet you ten bucks that I know who killed Frank Lazenby. Not because I'm smart, but because it's the only sensible option."

Finally, Lassandra lost her cool and controlled look. "Who?"

"Dr. Schaefer."

"Glenn Schaefer? That's ridiculous. Do you have \_evidence\_?"

"Not that I'd like to give to a district attorney. But the pieces don't fit any other way. Lazenby was a loner, with no sexual or other close ties to anyone. That reduces the choice of possible killers almost to zero -- in fact, to the people he worked with. Two of them left early yesterday for Idaho Falls, and I bet when we check we'll find out they didn't come back last night. Jennifer Watts and Stafford Willoughby have an affair going, which they don't want people around here to know about. It makes them too aware of each other to notice much about anyone else. But Glenn Schaefer left late -- after Frank Lazenby, which he couldn't deny because he has to log out. Also, he said he usually leaves very late, around ten. He would be in a perfect position to keep an eye on what Lazenby was doing over the past weeks or months. It's hard to hide a project, I would imagine, in a small lab."

"Impossible, if it calls for the use of equipment. But -- Glenn Schaefer! You said that we would need a motive and a method, as well as a suspect. We have neither. Where do we go from here?"

"I don't know." She had posed the question that Jeff could have expected, and he didn't have an answer. What he had told Lassandra was true. He didn't have a smidgen of real evidence.

"So what are you going to do?" she asked.

"Well..." What Jeff was going to suggest next was an act of desperation, the action of a man whose main police experience was plodding legwork and little else. "I want to take another look at the place where we found Frank Lazenby's body. Maybe I can find evidence."

"Didn't you look this morning, with the people from Remediation?"

"We looked. I'd like to look again, all around the area." The oddity that Lassandra had dismissed, of high radiation levels on the display in her office while they had measured low levels near Frank Lazenby's body, was still nagging at Jeff. "I'd like to take a radiation counter. And could you hook it up with one of the gadgets that Wally Bronsteed had? The thing that tells you exactly where you are. A GP-something."

"GPS, stands for Global Positioning System. Sure, I can provide you with a terminal. We have them connected to radiation meters, so you can measure and record the dose level any place you go, automatically. When do you want to do it?"

Jeff considered. He had been up and active since before dawn, and already felt tired. On the other hand, he knew from experience that he wouldn't be able to relax until he had revisited the scene of Lazenby's death.

"I'd like to go as soon as possible."

"It's hot outside, and getting hotter." She was inspecting his tie, button-down shirt, and tight suit.

"I'll change clothes."

"The equipment you want weighs over ten kilos, maybe close to twenty."

"Are you trying to talk me out of going?"

"No." Her stare was steady and evaluative. "Unless I read you wrong, there's no way I could. But I have a friend in personnel, and I took a peek at your file. I know you left the Washington police for health reasons."

"I'm much better now."

"I'm glad to hear it. But I don't think you ought to go tramping up and down hill in ninety degrees carrying a heavy pack."

"So what's the alternative?"

"I could come with you."

"I appreciate the offer. But this is something I'd rather do alone."

"I understand. You want uninterrupted thinking time, the same as I would. But you should at least take one of the electric runabouts that they use in Remediation. You won't be able to walk along with your nose to the ground, but you can crawl the car as slow as you like and stop wherever you want to. You'll still be hot -- the cars have no air conditioning -- but you'll feel a lot more comfortable than if you walked."

It took Jeff no more than a second to make up his mind. He had no idea how far he might have to walk, but he knew from experience that once you were physically fatigued your ability to observe and analyze what you saw went way down.

"Thanks. Can you fix the radiation monitor into the runabout while I change clothes?"

"Take me ten minutes, max. I'll get somebody onto it."

She was heading for the door when Jeff said, "Dr. Kane?"

She turned. "Yes?"

"You are being extremely helpful. I just want you to know that my going out there is a real long shot. I don't expect to find anything. Ninety-nine percent of police work is looking, and not finding."

She smiled. "That makes it just like scientific research. I guess the two of us do have something in common, after all."

\* \* \*

Jeff had asked the doctor who first saw Frank Lazenby's body a direct question: "How far could a man in that condition walk?"

Obtaining a direct answer was not so easy. Dr. Kellogg had hemmed and hawed. "We are not sure of the cause of death -- although the appearance of the body is certainly suggestive. Also, there are few medical records of such cases."

"Doctor, I'm not asking you a question under oath in a court of law. I'm just asking for the best ballpark figure you can pull off the top of your head."

"We-e-e-ll. My guess is that damage to and rapid deterioration of the body's balance centers would induce acute vestibulitis, and that would limit mobility. In other words, he'd fall over and after that be too disoriented even to crawl."

"How far?"

"Mm. Maybe three hundred meters? But it could well be only a hundred meters, or as much as a kilometer or more...."

It was vague, but it was the best that Jeff was going to get. He towed the electric runabout behind one of the lab's jeeps until he was a kilometer south of where Lazenby's body had been discovered. If Kellogg were correct, and Lazenby had in fact staggered north as the body position suggested, then Jeff was still seven hundred meters away from ground zero, the place where something inexplicable and deadly had hit Frank Lazenby.

Jeff unhitched the runabout. The first thing he did was check the reading of the radiation monitor. It showed a value thirty times as high as Wally Bronsteed had reported, early in the morning. Nowhere near dangerous, but enough to make Jeff feel uncomfortable.

Lassandra had told him he might find rapid variations in recorded dose. "Most of the original sources of radioactivity register as point sources, meaning something specific happened, like an unauthorized drop-off of cooling liquids or spent fuel rods. Over the years, weather and wind and run-off diffuse the source over larger areas. But you can still expect hot spots."

Maybe Jeff was close to one of those hot spots now. He headed the runabout north. The instrument that Lassandra Kane had placed in the space behind the driver's seat measured total radiation dose and GPS location every thirty seconds. It showed the value on a remote display fixed on the dashboard. It also made a complete digital record that could be analyzed within the framework of a Geographic Information System like the one that Lassandra Kane had shown Jeff.

Jeff crept north, keeping the runabout to a slow walking speed. He examined the ground ahead, seeking any oddity or any sign of a manmade object. He saw neither, and there was so little vegetation that anything as big as a beer can would not be missed. The display of the radiation dose dropped steadily. After eight hundred meters it read a flat zero. Jeff halted the car to make sure that everything was still hooked up. It was. He kept driving. The measured dose gradually crept higher. When the car reached the place where Lazenby had been found, the value was exactly the same as that noted by Wally Bronsteed. Apparently the onboard device was working.

Jeff halted the car and walked all around the body's location. As he made a slow spiral outward, heat came up at him from the ground in waves and he could feel sweat trickling down his forehead.

There was nothing to be seen, nothing odd or even mildly interesting within forty meters of the marked point where the body had been discovered. Lazenby had died here, but the cause of his death was farther away -- maybe as much as a kilometer away. Suppose that he had turned as he fell, and had actually been staggering not from the south, but from some other direction?

Jeff climbed back into the runabout and drove a larger version of the pattern that he had already walked, a slow outward spiral. He saw nothing. He heard nothing but the whir of the car's electric motor and the regular click, every thirty seconds, that indicated a radiation measurement was being made and its position recorded.

The temperature inside the runabout mounted. Jeff doggedly went on, driving and looking, until a different factor became important. He had gone round and round, until he was almost a kilometer from where the body had been found. In doing so he had covered close to twenty kilometers and the electric power was depleted to a point where the car was moving more slowly. He had to get back to the jeep, or be forced to abandon the runabout and go home without it.

The power lasted -- just. The final two hundred meters to the jeep were at a stately two miles an hour. As Jeff bent over to connect the tow, he felt dizzy from heat, fatigue, and hunger. All he had eaten since breakfast was junk food grabbed from vending machines. On the other hand, he had drunk three times his daily allowance of coffee. His heart was jumping and skipping like a lamb in the springtime.

Just like the old days. Missing meals, or loading in empty calories.

When he climbed into the jeep for the trip back south, he glanced at the clock. Almost five-fifteen. On a normal day that was quitting time. He should be going home to a plain meal, his one-a-day permitted alcoholic drink, and a quiet evening watching television or a movie.

Jeff started the engine. There must be something seriously wrong with him. In spite of the heat, in spite of the exhaustion, in spite of the tension and the knowledge that he had just wasted two hours driving round and round in order to discover nothing, he had enjoyed today so much more than a "normal day" that the difference couldn't be measured.

\* \* \*

As Jeff parked the jeep outside the Waste Management Complex where Lassandra Kane should be waiting for him, he had a disturbing thought. His cell phone had not rung all day, while normally he had at

least a dozen calls. That had to be as a result of instructions to others from Tom Markin. The head of security was deliberately isolating Jeff, making sure that he could point to a single point of responsibility -- and blame -- in the investigation of Frank Lazenby's death.

Jeff unhooked the recording unit and hauled it inside. Lassandra Kane's estimate of its weight had been optimistic. It felt as if he was carrying an eighty-pound bag of concrete mix. There was no way he could have wandered the hills and valleys of the test site with that thing on his back. Not that its absence would have done any harm. It hadn't told him anything.

He banged on the door of Lassandra Kane's office with his elbow, pushed through without waiting, and staggered on to drop the recorder on the nearest available surface, which happened to be a conference table.

She was on the telephone, listening but not talking. She raised her eyebrows at him.

He shook his head. "Nothing useful. Not a thing."

She shrugged, pointed at a plate of cookies and a coffee pot, and waved him to a chair.

More caffeine and more sugar. Well, why not? He was going to be fully alert until the very moment he dropped dead.

Lassandra finally hung up the phone and came to stand next to Jeff. "Things are moving faster than I thought. That was word coming down that the Washington troop and the FBI roll in first thing in the morning, so we have to be ready for them. What happened with you?"

"I roamed the range. I covered a lot of empty real estate. I sweated a lot. That's about it."

"Did you receive information from anyone else in security? Maybe somebody else is making progress or having ideas."

"If they are, nobody is telling me. I think I'm being kept in a box deliberately." Jeff mentioned his suspicions of Tom Markin's actions and motive. "Or am I being paranoid?"

"I don't think so. I've heard bad things about Markin. He was here twenty-five years ago and in those days he was an open racist. Now he's just gone underground with his opinions." Lassandra went to the end of the conference table and stared down at the recorder that Jeff had dropped there. "This worked all right, did it?"

"So far as I could tell. There was a point early on when the radiation reading dropped to zero. It came back up later. But to be honest with you, I wasn't taking too much notice of the values. I was too busy looking for visual evidence. Which I didn't find."

"A zero radiation reading?" She had homed in on the one word.

"That's what it said. I guess that's the opposite of a hot spot."

"I think I'd better take a look." Lassandra lifted the recorder -- easily; Jeff decided that she was much stronger than she looked -- and carried it across to the computer on her desk.

She went on, "One of the ridiculous things about environmental nuts is that they try to require nuclear waste clean-up to the point of zero radioactivity." She was making connections between the recorder and the computer. "But there's natural radioactivity everywhere. Zero radioactivity isn't natural; it's positively unnatural."

She touched a key, and a "Hot Synch" message appeared on the computer screen. "There. We're doing a file transfer, and then I'll use your GPS readings to put all today's radiation measurements into a geographic format. Takes a minute or two."

She turned away from the computer. "By the way, are you still backing Glenn Schaefer as the person who killed Frank Lazenby?"

"I've seen nothing to make me change my mind."

"Maybe this will. After you left, he came to see me in my office. He told me that Frank's death had disturbed him profoundly, and confirmed the feeling he has had for a long time that he ought to be in a different kind of work. He is considering resigning from the lab, and going off to teach high-school physics. What do you make of that?"

"When murder is involved, you can run but you can't hide. But if you mean, is it evidence, then it isn't. It would make more sense as a motive if Schaefer \_stayed, \_because then you could argue that he was after Lazenby's job."

"They were equals, employed to do the same kind of work. Frank Lazenby was a lot more talented than Glenn Schaefer, but neither one worked for the other."

"So cross that idea off the list. As I said, even if Schaefer worked for Lazenby his decision to leave argues the wrong way so far as motive is concerned."

On the computer screen, isolated points of color were popping into view. Associated with each, just below it and to its right, was a number. Lassandra, watching the display, suddenly grunted and moved closer.

"You're quite right. There's a point with an actual zero recording for radiation dose. And there's another."

Jeff stood up to join her. He could discern on the screen the track of his own progress on the ground, a wobbly outward spiral of dose readings. He hadn't realized there had been so many; two and a half hours of driving produced close to three hundred data points.

At his side, Lassandra breathed, "Well, isn't that the damndest." He stared at the values, and saw nothing significant.

"What?"

"Just a minute, and you'll see." Lassandra was over at the computer. "I've got a routine here, takes a two-dimensional array of values, performs interpolations, and plots isograms -- in this case, the program plots curves where the measured radiation dose is a particular value. Take a look at this."

The scattered points of the readings Jeff had made during his excursion on the electric runabout were still there, but overlaid on them he now saw a number of closed curves. They nowhere intersected, and they formed an almost perfect set of concentric circles.

"Here's where Frank Lazenby's body was found." Lassandra used the mouse and a cursor moved to midway between the center and the top of the screen. "If he walked north, as you think, and as far as Dr. Kellogg thinks, then whatever happened to him would have happened just about \_here\_."

The cursor moved, until it was close to the center of the set of concentric circles.

"Now look at the measured radiation values. Zero at the center, zero everywhere until about here -- the

scale bar says that represents about two hundred meters on the ground. And then the numbers gradually increase. By the time we're a kilometer out -- as far as you went -- the values are typical of what I would expect in that region of the test site. And Frank Lazenby died of a massive radiation overdose, but his body showed no residual secondary radiation."

Jeff could follow the pattern on the screen. That was clear enough. But nothing else was clear. He said, "I see the lines. But what do they mean?"

"I think they mean -- I think they mean I have to think."

Lassandra sat down, placed her elbows on the conference table, and covered her eyes with her hands.

Jeff knew when to keep quiet. He waited, until at last she sighed, laid her hands on the table, and said, "I think I understand what killed Frank Lazenby. But I don't know why."

"You're ahead of me, Dr. Kane. Let's start with how."

"He was killed with his own invention. Remember how I told you that the problem with radioactive waste materials would be solved, if you could make every decay in the chain happen in seconds or minutes instead of some of them taking thousands of years? Frank solved the problem. The trick is to \_stimulate \_the decays to take place, using a nuclear laser. You force the nucleus to descend to a lower energy level, in just the same way as an ordinary laser makes electrons drop all at once to lower energies. The process has been understood since 1917, when Einstein published the basic paper on stimulated emission. Of course, the machine you need will be very complicated and have many different operating energies, because there are many different steps in the nuclear decay ladder."

Jeff thought that he understood. He said, very slowly, "So he had a way of solving the nuclear waste problem. But he didn't want to talk about it until he had proved it worked. I can understand that. I still don't see why he died. Wouldn't what he built \_get rid\_ of radioactivity, not make it worse?"

"What it would do -- what it did -- is make the stored particles and radiation that would normally be released naturally over a period of thousands of years come out \_all at once,\_ in one huge flood. Anyone close by would be hit with enough radiative energy and particles to be killed almost instantly. But after that happened, if the machine was still operating it would then get rid of all the \_induced \_radioactivity in the body. As it did in Frank Lazenby's case. And of course, there would be no radioactivity at all in the ground nearby -- as you found."

"Dr. Kane, Lazenby must have known that what he had could be dangerous. He wouldn't have tested his machine when he was standing next right to it."

"He didn't intend to. My guess is that he set the machine to operate with a timer. He planned to go out onto the test range at night, when no one was around, with the timer set so that he could observe what happened from a safe distance. Afterward, when he knew it was safe, he would come back and collect his machine and make his measurements. He thought he was doing all his work in secret; but somebody else had been following his progress."

"Glenn Schaefer."

"Maybe. Whoever it was tampered with the timer in the lab, so that the machine operated when Frank was standing right by it. The other person probably followed Frank out to the testing place in an electric runabout -- they are very silent. He watched to make sure that Frank would die, then loaded the runabout onto the van that Frank had been driving and came back with that and Frank's invention."

"What would he do with it?"

Lassandra shrugged. "Hide it. Study it. Then, once he was sure he knew how to build another, he would dismantle it. He would want to leave no evidence of what Frank Lazenby had been doing. But \_why \_would he have killed? Glenn Schaefer didn't have any reason to hate Frank Lazenby."

"He didn't hate him." Jeff was back on his own ground. "But he had a hell of a good reason to want him dead. Suppose you have a machine that can be driven across an area and get rid of excess radioactivity as it goes. How much would it be worth?"

"Priceless. The cost of nuclear remediation for all the sites in this country alone is estimated to be in the trillions of dollars."

"Of which Frank Lazenby would have received nothing. He would have given the secret away, gladly. In any case, you told me that the patent rights for work done here all belong to the government. But if somebody \_didn't \_work for the government -- say, somebody was teaching high school -- then after a period of time he would be free to patent the invention in his own name. He'd become a billionaire. We knew from the beginning that Glenn Schaefer had the \_opportunity \_to be the killer. Then you told me the \_means, \_the way that he was able to kill. Now we have the \_motive\_ -- and a damned good one."

Jeff had spent most of the day feeling like a half-wit. It was a treat to see Lassandra Kane's jaw hang and her eyes open wide. She said, "My Lord. So it \_was \_greed, the way you said. But are you sure?"

Jeff nodded, for a reason that went beyond rational argument. Since midday he had been running on adrenaline. Now he could sense the level dropping inside him, as it always did when the gut feel was right and a case was wrapped up as far as he could take it. He realized that he was tired, sleepy, and starving.

Lassandra was staring at him. "What do we do next?"

"Write up everything we know or think. I give it to Tom Markin. We'll have the people here from Washington tomorrow, and it will be out of our hands. Finding proof of what we say, or breaking Schaefer, will be up to them."

She was nodding, but also frowning as though she did not agree. She said abruptly, "Are you hungry?"

"I could eat a horse."

"I don't think it's on the menu, but you could ask. I want to take you off base to the Toledo Steak House, and buy you dinner and a drink." And, when Jeff simply stared, "I want to try to talk you into something."

She was already moving toward the door, taking his acceptance of the dinner invitation for granted. Jeff followed her, feeling slow, lumbering, and physically and mentally depleted. They were outside, and Jeff was blinking at the big red sun, low in the sky, before he asked, "Talk me into what?"

They climbed into her little blue car -- at least the seat was cool now -- and she drove toward the test site's southern exit. "Talk you into doing things a little differently. I know proper procedure. You're supposed to write up your daily report. It will go to Tom Markin. What do you suppose will happen then?"

"It will be his report. He'll shunt me to one side, and he'll deal with the Washington people himself."

"That's consistent with everything I've heard about the man. Suppose the report that you hand in for today says you got nowhere. What then?"



"I'm not sure. There's a good chance he'll trot me out in front of the Washington group, so he can point me out as the man in charge of the investigation who didn't do a damn thing."

"More than a good chance -- a flaming certainty. But suppose that when he does that, I'm there, too. I'll be asked to attend, because Frank Lazenby worked for me. And suppose that when Markin points you out as the ex-cop who couldn't do a thing right, you pipe up. You say that you and I just had a meeting, and we put things together. That wouldn't be a lie, because we did put things together. Without what we both did, we wouldn't have a means for committing murder. Without what we both did, we wouldn't have a motive. And then you tell them the whole story, with me there to back you up. What do you think?"

"I think Tom Markin will shit in his boots. He won't say anything at the time, but he'll do everything he can to have me fired."

"More than he's been doing already? But it will be harder for him, because you will have cracked the most important security problem the lab ever had. And you'll have someone -- me -- with friends in high places, to protect you if Markin tries something. Well?"

"I'm not too good at lying, Dr. Kane."

"Lassandra, please -- we're off base and we're off duty. It's not really lying, just a brief delay in reporting. We'll rehearse you tonight, over a twenty-ounce steak and a pitcher or two of beer. What do you say?" When there was no immediate reply, she dug him in the ribs with a sharp elbow. "Come on, Jeff. I know you hate that son of a bitch. Live dangerously for a change. Say you'll do it."

Jeff thought, A twenty-ounce steak and two pitchers of beer? That sounds wonderful, but it's more than my weekly ration of red meat and alcohol. How much more dangerously do you want me to live? But he could feel a glow of possible future satisfaction. To see the look on Tom Markin's face....

He leaned back in his seat. In spite of a day when he had done everything he had been told not to do, his heart felt fine. No speeding up, no missing beats.

He knew she was looking at him and waiting. At last he said, "Lassandra, I like my job here. I'd hate to be fired and have to go back east. So I won't say yes. But get a little food and drink inside me, and I just might be ready to be persuaded."