



The Doomsday Genie

Frank P Ryan

Also by Frank P. Ryan

Taking Care of Harry

Goodbye Baby Blue

Sweet Summer

Tiger Tiger

The Doomsday Genie

Frank P Ryan

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May your names be inscribed on the black rocks that decorate the beach of bones.

For Barbara whose support was essential as always

Prologue

Index minus 2 months

03: 20/05h45

The three AH-64 Apaches stole in from the dawn horizon, like squat gray sharks invading a sleeping coastline. Emerging from the sea mists over a large desalination complex, they adopted a ground-hugging V-formation, the engines masked until they crossed over the security fence. The agricultural station was three miles ahead. From the air, the ripening fields of crops were laid out in radial slices so it looked like a gigantic target had been painted onto the desert. Cruising at 145 mph, the Apaches followed a raised embankment between two of the slices along which a solitary figure, wearing flapping Bermuda shorts, was jogging back to base after his pre-dawn exercise.

His hearing distracted by the earphones of his iPod, the man was oblivious to the dark shapes that were overtaking him out of the rising sun. A brief clatter of fire from a 30MM automatic caused his body to crash to the ground. The right earphone, detached from the shattered bridge over his head, fed a tinny whisper of Borodin's second string quartet into the disturbed air as the gunships swept onwards in what seemed an unhurried pace.

Soon visible, the central compound was a cluster of a dozen or so cinder-block buildings surrounding a massive glass and aluminum dome. The dome was the dead center of the radial plan. It was the bull's-eye in the target.

The Apaches went through a coordinated parabolic turn to line up facing the living quarters, out of which figures were emerging in various stages of undress. The attack was directed by a clean-shaven civilian located in the front cockpit position of the lead aircraft. He clicked on a

video camera to record the scene, capturing people wearing short-sleeved lab coats over otherwise naked bodies.

A single barefoot figure emerged from one of the buildings. He gazed about himself for a moment, as if in bewilderment, before running into the dubious shelter of the dome. Within moments an alarm screeched from the apex of the dome: a red beacon flashing inside the entrance. It merely heightened the panic. The air shrilled with desperate shouts and cries as the heavy M230 chain guns rattled into action, mowing the people down with implacable efficiency. The guns continued firing for about thirty seconds, after which the Apaches wheeled skyward, putting enough distance between themselves and the compound to allow the deployment of their Hydra 70 folding fin rockets. The oblong buildings disintegrated and a cascade of burning debris descended over the wrack of bloodied bodies.

In the lead Apache, the civilian spoke to the military pilot. 'I want to make a record of the anomaly.'

The lead peeled off from the others, rising a further two hundred feet before adopting a spiral route around the fields, the boundaries of which were highlighted with razor-cut sharpness in the low glare of the sun. From time to time the aircraft hovered, the civilian directing the camera to record specific features in the fields below. The variety of crops was staggering. There were several types of maize, irrigated paddy fields of ripening rice, cereals, root crops, endless rows of small fruit-bearing trees. The "anomaly" appeared to be everywhere. The examination and recording was conducted with the same implacable precision as the killing.

The helicopter continued on its spiral mission for five or six minutes and then it rejoined the other two that were still hovering over the now blazing compound. There was a pause lasting half a minute or so: information being exchanged.

All three Apaches rose to six hundred feet so the CPGs could position their Target Acquisition Designation Sights onto the dome. From what

was effectively point blank range, they each fired two Hellfire missiles into the building. Designed for the destruction of tanks and heavy armor in the field of battle, the combined effect was a massive overkill. An inferno mushroomed into the sky, against which the helicopters were reduced to gnats, tossing and pitching against the maw of red flames and black smoke.

These are the voices from a conference on genetic engineering. The scientists' voices were recorded on audio tape but subsequently suppressed from public awareness:

'A new technique of molecular biology appears to have allowed us to outdo the standard events of evolution.'

'It is not known what sort of risks this is going to create because we have no tests.'

'There may still be sound reasons why the Pandora's Box should not be opened.'

'We are already – probably – on the path of no return.'

1

Strange Deaths

Top Secret

Operation Globalnet

Surveillance Mode: E-mail

Retrograde analysis: Index minus 20/12

DELICATE SOURCE: RESTRICTION CODE: eyes alpha

L of E/ he→ee

Dear Lyse,

Such excitement!

I've enjoyed this week in London. We spent the evening in a small hotel by the Thames. My new employer has booked the whole place for the inaugural celebration – although relatively unknown in the international league, the company certainly knows how to spend money. There is a terrace leading from the restaurant, where we sat out and enjoyed the pyrotechnic display they laid on over the river. Of course El Supremo had a hand in planning this. I was secretly pleased that it didn't quite rise to his grandiose expectations. But all the same, as a climax to the week of planning, the fireworks were fabulous – a delight to cap a wonderful evening.

E.S. did his best to spoil it for all of us even before the midnight celebrations. He insisted on a toast, with champagne, that I considered inappropriate: "To rewriting history!" I had no option but to put a damper on his silly games. Then he had the arrogance to rebuke me, as we gathered at the balcony, for what he considered my lack of enterprise.

If I have a single worry, it is going to be his leadership. But the night was too stimulating to allow hubris to spoil it. I will admit that I didn't sleep too well, in part through genuine excitement at the challenges ahead, in part through worrying about his future antics.

If only you had been here!

Love,

H.

05: 17/ 08h45

Thirless, Arizona, is a small town an hour's drive west of Flagstaff. It has little in the way of distinguishing features, nothing that would set it out as different from the many such small Midwestern towns that bead the former Route 66. Drive along Main Street and you pass by fast food chains, shopping malls and wide glass fronts selling real estate, with the promise of the "affordable luxury lifestyle" provided by their individually designed haciendas-with-pools, all guaranteed close to golf courses. The I-40, Route 66's brash modern offspring, is two hundred yards away, with its never ending drone of traffic between Southern California and the Four Corners states: heavy trucks, RVs and campers, tourists off to the mountains for a week's hiking, others heading northwest for the gambling thrills of Vegas or the scenic wonders of the Grand Canyon.

It was here in the parking lot outside the West End Mall, that MayEllen Reickhardt waited in her pick-up for the arrival of her friend, Lucille. MayEllen had driven twenty-seven miles with air-conditioning that was temperamental and she was feeling somewhat temperamental herself. A blue and cloudless morning. The temperature high. She wound down the window so she could light up a Marlboro and the heat enveloped her like the exhaust from opening an oven door.

When Lucille pulled up alongside, with husband Paco Cordoba at the wheel of a battered blue Mazda, she looked surprised to find MayEllen alone. MayEllen's husband Bill usually did the driving. Now MayEllen eyed the petite, yet shapely, figure of her friend, as Lucille climbed out of the vehicle and opened up the trunk. With a groan of undisguised

jealousy, MayEllen kicked open the pick-up, sliding her not-so-shapely five feet nine inches onto the hot asphalt. Both women were similarly dressed in short-sleeved white cotton shirts and blue jeans. MayEllen had a thick tangle of bronze-colored curls, bleached tawny by the sun. Her eyes were blue – Bill called them her Molly Malone’s. Lucille’s eyes were Hispanic brown and her hair was straight and a glossy black. Both women wore high-heeled cowgirl boots. They chatted amiably as they ferried cacti from the trunk of the Mazda to join those already loaded into the back of the pick-up. The job complete, the two women called out belated goodbyes to Paco, who was already heading off.

Lucille just stood there, like she was waiting for MayEllen to explain Bill’s absence.

‘Bill ain’t feeling too good.’

‘I know a pretty good hangover cure – like this herbal tonic I got the recipe for that was handed down from my grandmother.’

‘I don’t think it’s a hangover. I don’t rightly know what it is – except I think it might be the flu.’

Lucille focused on just one of the billboards, the one that advertised a cream that made your skin twenty years younger.

‘Do folks get the flu when we’re almost in summer?’

‘Lucille – I don’t know.’

MayEllen and Lucille talked with a pleasant Western drawl. They moved slowly, people used to not hurrying. Thirless, where Lucille lived and worked as a waitress, was a town of twenty-eight thousand people. Everybody knew everybody. It made MayEllen glad that the farm where she lived – the B & M Cactus Farm – was further west and off the highway, a dead end along its own dirt road. It meant those nosy townsfolk, such as Lucille Cordoba, couldn’t get to know every last wrinkle of their business.

Lucille hopped nimbly into the passenger seat, while MayEllen hauled herself back into the driver’s seat. She plucked at the armpits of the shirt. Then she fired up the engine and set the pickup rolling down Main Street for a short distance, against the scenic backdrop of the distant

Black Mountains. She took a left onto a dirt track that was lined by desert sand and tufts of sage and rabbit weed, bumping over the irregular surface before joining the I-40 heading east, like a precise surgical scar through what city-born Bill called "the Nowhere Desert".

'You're smoking again.'

'I should give you A-plus for observation.'

'I thought you'd given that up.'

MayEllen took another drag and said nothing.

Lucille adopted a huffy look but she didn't engage in argument with MayEllen. Few people did that and won.

It was a long haul, from Thirless to Phoenix, where the two women planned to meet up with friends and rivals at the Saguaro Annual Convention, named for the giant cactus that gave Arizona its yellow state flower. It was Paco and not Lucille who had the interest in cacti. MayEllen liked and respected Paco for that. He was her kind of a nonsense guy, raising the plants as a dedicated amateur outside of his regular work as a telephone engineer. And thinking about cacti made her think about the desert so that, from time to time, as she drove along at a steady fifty, MayEllen glanced out there at the passing dunes and buttes, and the thinly spaced plants that people wrote off as scrub. She knew that it was a much more deceptive landscape than that, with a huge variety of wildlife that most people failed to see. There was nothing she and Bill liked better than to ride through it bright and early on a cool Sunday morning on their Harleys. Best of all was at the time of the spring rains when it became an Eden of glorious color with hundreds of different flowering plants all showing their faces at once.

She said, 'I'm worried about Bill.'

'He must be feeling bad, letting you come on your own.'

'I didn't want to go and leave him but you know how ornery Bill can be.' A flash of memory: Bill's face turned up to her from out of the chair: her kiss. 'Honey' – wisecracking – 'I just timed it nicely. I got the flu. You got the trip to Phoenix. Go have a real bad time without me.'

MayEllen stared at the highway running off ahead of them, straight as a ruler line into the flat distance. 'There's something I got to tell you – something I probably shouldn't be telling nobody. Could damage our business.'

'You know I'm not one for talking, MayEllen.'

'I wish! But I'm going to tell you anyway.' She sighed, blinking quickly, still staring fixedly ahead. 'You know about those things they talk about on those UFO shows you like so much? What they call those field circles?'

'You mean those crop circles.'

'Well that's what I'm talking about.'

'MayEllen, are you telling me you've seen a crop circle?'

'Well, you know I don't believe in that UFO business. But anyway, I'm telling you we have one of them circles in our cactus field.'

'Oh, my God! How'd it get there?'

'How would I know? All I'm saying is I have this bad feeling about it. So now you know why I'm smoking again.'

Lucille probably wouldn't have believed what she was hearing from anybody else other than MayEllen. She took several seconds even to digest it. It was so unlike MayEllen to volunteer such information – that and the way she kept staring into the distance, like she couldn't face Lucille while she was talking about it.

'Oh, my! I thought you were just frettin' about Bill.'

'Sure I'm frettin' about Bill. That's what I'm trying to tell you. It only happened yesterday. I was making breakfast when he came back in out of the field and told me about it. Oh, Lucille – he was looking real worried.'

'I never thought you got circles in cactus fields.'

'I never thought so, neither. But he took me out to look at it. I didn't want to get up close. There was a disgusting smell. You know – like something gone rotten.'

‘Yukkk!’ Lucille wrinkled her snub nose. ‘I never actually heard that crop circles smell bad.’

‘Will you stop winding me up and just listen? Bill decided that the only thing to do was to get rid of it. So he chopped down all the plants in the circle and he set fire to them and buried the whole goddam mess.’

‘Oh, my!’

For the first time in minutes MayEllen swiveled her gaze from the distance to her friend’s pretty-doll face, and not for the first time she wished that Lucille would get herself a brain transplant.

‘Don’t you see what I’m getting anxious about? That stinking circle – it was only yesterday. And now Bill’s sick.’

‘Aw, come on, MayEllen. That’s just plant stuff. Plants can’t harm people. He’s just coming down with a summer cold, or maybe the flu. You’re just frettin’ because he always comes with us to Phoenix, is all.’

‘Maybe I am at that.’

MayEllen wished she had a cell phone. She didn’t believe in cell phones. She believed they surely fried your brains. But now she just couldn’t stop fretting about Bill. When she got to a point about twenty miles south of Flagstaff, she pulled into the parking lot of a motel and went into the lobby to call home.

It took Bill a long time to pick up the phone.

‘Bill – is that you, honey?’

‘Hey – MayEllen!’ It didn’t sound like Bill’s voice at all, more a low wheezy growling. In the pause, she could hear grunting noises.

‘Bill – are you okay?’

‘Oh, sweet Jesus!’ That grunting sound again. She realized what it was. Bill was vomiting at the other end of the phone.

‘What’s happening, Bill? Have you gotten worse since I left?’

Bill started making coughing noises. They weren’t the normal noises of somebody coughing. Every time he coughed, it sounded like his lungs were being torn up by their roots.

‘Oh, Bill! You sound in really bad shape.’ The words were inadequate, hopelessly out of kilter with the hollow feeling that was invading her breast.

She waited for him to answer, her hand cramping with tension around the receiver. No answer came, only more of the same unpleasant noises. MayEllen was not the sort to panic. But those noises at the end of the phone made her panic. She knew Bill wouldn’t have called the doctor. Bill hated doctors.

‘I’m coming home,’ she said abruptly. ‘But first I’m calling Dr. Manning to go see you. You just hold on `til I get there.’

*

About four years ago, when the hospital had moved to its present site at the edge of town, it was hailed as a long overdue replacement for the old municipal hospital that had grown up around the defunct desert-air sanatorium. The new hospital, formally renamed “Thirless Memorial Hospital”, was an airy five-story building equipped to deal with the modern-day stress-and-affluence related ailments. MayEllen dropped Lucille off at her home before heading for the hospital parking lot. She wanted to see Bill on her own. Inside the lobby there were signs in English, Navajo and Spanish and a bewildering color-coded directory, which you were expected to follow through lines laid into the floor. Today, these reminded her of the panic lines in the aisles of aircraft. Dr. Manning was waiting for her at the reception desk.

‘Where’s Bill?’

‘Now, you take it easy, MayEllen. Bill’s been taken to the Intensive Care Unit.’

Dr. Manning did that thing with his mouth, a sucking in of his lips. He tried to lead her toward some armchairs on either side of a coffee table by the window. MayEllen refused to follow.

‘I want to see him.’

‘I need to explain things to you before I take you to him.’

‘What’s the matter with him?’

MayEllen looked suspiciously around her. She could see that the woman at the reception desk was ogling them, like she knew something MayEllen didn't.

'Bill's very sick. I have to prepare you for how he's going to look.'

MayEllen led the doctor towards the elevators. She punched the call button. 'Top floor, right?'

'That's where the ICU is, yes.'

While she waited, she continued her interrogation. 'He's very sick? What the hell's the matter with him?'

'Do you know about barrier nursing?'

'I don't know nothing, Dr. Manning. And it seems to me I'm not getting any wiser from this conversation.'

The doors opened and they stepped in. The Star Trek voice, disturbingly soft and female, told them to "Mind the Doors". The elevator suddenly felt overheated and claustrophobic and MayEllen wiped sweat from her brow with the back of her hand. She had never seen Dr. Manning look this worried.

'Bill's illness is unusual!'

'What do you mean, unusual?'

He lifted his face up, watching the floor levels floating slowly by. 'There are some people here who will explain about that.'

They stepped out onto the fifth floor. There were no plants in pots, or comfortable armchairs by the windows. Dr. Manning followed those maddening guidelines of dotted red and yellow inlay, which divided right and left. They took the red line, which went through twin doors, with the sign, NO ADMITTANCE – AUTHORISED MEDICAL PERSONNEL ONLY.

'Bill has some kind of a serious infection?'

'So they think, yes.'

'This barrier nursing business—?'

'A precaution, Mrs. Reickhardt. For your benefit and the benefit of the staff taking care of him.'

Dr. Manning never called her Mrs. Reickhardt.

'You're saying he might be contagious?'

'We have to assume so.'

'I still want to see him.'

'You'll have to dress up.'

'Then I'll dress up, whatever. But I want to see him now!'

'The nurses will show you what to do.'

Dr. Manning ushered her through a second pair of glazed doors into a u-shaped corridor with a dozen or so further doors opening off it. He didn't follow her. Three figures, one man and two women, were standing in the corridor. They were all gowned up like in the movies. She had the impression they had been waiting for her to arrive.

MayEllen scowled as one of the females introduced herself as Nurse Ritter, the "Infection Control Nurse." The nurse took her into an annexe with racks of gowns on the wall and overshoes, masks and gloves laid out in cardboard boxes on a low glass-top table. MayEllen's hands were shaking as she put on the protective gear. When she was gowned up, the nurse took her into a room off the corridor where a man was lying in a bed. He was connected through a battery of wires to an eight-channel video monitor. There were two separate drips running into him, through the skin on either side of his neck. A crash cart stood by the bedside.

'That ain't my Bill.'

'I'm afraid it is, Mrs. Reickhardt. I'm sorry.'

MayEllen stared at the figure in the bed and she almost fainted from dizziness. She just stared at what they were telling her was Bill. The dizziness worsened and she began to shake.

'What's wrong with his face?'

'It's swollen. A complication of his toxic state.'

Only Bill's hands and face were exposed and even his face was half hidden by an oxygen mask. All the skin she could see was blistered and peeling. His eyelids were so puffed up, he looked like some wino who had cooked all day under the July sun.

'I only left him at home this morning. He looked fine. Just a bit of a cough – a touch of the flu. He didn't seem all that sick.'

'That's something we want to talk to you about, Mrs. Reickhardt.' It was a man's voice, deep throated, sounding tired. 'I'm Dr. Valero. Your husband has been admitted under my care.'

Valero was a tall slim Hispanic, with a bony look to what she could see of him. He was wearing more complicated protective clothing, with mask that covered his mouth, cheekbones and his almost-black eyes. MayEllen turned her face away from the bed, an involuntary movement she had no control over. She thought: *It's just a nightmare. I'm going to wake up any moment.*

Just then Bill moaned, a strangulated sound, and his head turned towards her, his eyes struggling to peer out through the grotesquely ballooned eyelids. His lips, bloated like the eyelids, parted, and another terrible moaning sound came from behind the mask.

'He... he knows I'm here?'

'He's conscious to some extent.'

MayEllen put out her gloved hand and took the hand of the bloated figure in the bed. The fingers closed on hers, tried to squeeze.

Tears threatened, but she realized that she was too frightened to cry. 'It is Bill – it really is him!'

His hand was so hot she felt it burning right through the glove. MayEllen couldn't bear to see Bill in that terrible state. Impulsively she grabbed hold of his hand again and held onto it as the nurse took her shoulders, encouraging her to leave. There was a soft tearing sound and the skin of Bill's thumb came away from his hand, like a finger tearing from a rotting glove. MayEllen looked down at the shriveled skin of Bill's right thumb, now resting in her open palm. The nail was still attached to the skin.

She felt a hot wave rise up out of her chest and travel all the way to the roof of her skull. There was a roaring sound in her ears and a smell in her nostrils, like burning rubber.

05: 17/ 18h20

At the Ivan Wallin Field Reserve, an ecology station at the southern end of the Mojave Desert, Professor Ake Johansson carried a roll of computer printout back to his office from the mainframe computer down in the lab. The printout – covering the last few days' ICDITD measurements in Sector 5-32 – was frankly baffling. Clearing the surface of his desk of papers and journals and running the roll from floor to floor over the entire desk surface, he passed it through his hands a few feet at a time, stopping at intervals to draw thick red circles with a text liner around sudden jumps and dives in the charts drawn by one or more of the five different colored pens.

To the field ecologist it was apparent that something very strange was going on. Two days earlier he had spotted significant fluctuations in insect density measurements. He should have gone out and inspected the area today. But a committee meeting had taken up all of the afternoon. Now he continued to run the readouts through his hands, comparing fluctuations with baseline controls, to convince himself there was no computer glitch to explain it.

The electronic baselines were all normal.

Scratching at the gray twelve-hour stubble on his cheeks and his chin, he couldn't imagine a reasonable explanation.

Insect populations didn't go crazy for no reason. Johansson ought to know since he had been monitoring them in their desert ecologies for almost three decades. But suddenly those insect populations were undergoing bizarre fluctuations.

Ake Johansson had invented the technique of ICITD, or “insect counts in three dimensions”, which coupled nicely with standard techniques of plant foliage estimation. Put the two together and you had the baseline food web of the desert, mathematically predictable against the natural ecosystem variables, such as elevation, shade, temperature and rainfall. This inter-relationship of insects and plants was the key to survival of the local wildlife in an ecology where the temperature ranged from below freezing to close to boiling point and the rainfall was limited to a few inches per year. The balance was always precarious and any unexpected change was cause for concern. He stared at the readouts, with a restless anxiety.

It was an anxiety he would have to endure overnight since it was far too late in the day to investigate it. He would go take a look at first light after he had seen the latest Landsat data.

*

The telephone rang in the office of the Heimholz Professor of Evolutionary Botany in the Department of Integrative Biology at U.C. Berkeley. The recording machine prompted: “This is the voicemail of Kay McCann. I’m either busy with another call or out of the office right now. If it’s important, leave a message and I’ll get back to you.’

The caller identified himself as Ake Johansson, and he sounded irritated at having to leave a message.

‘There’s something of a problem, Kay. I’ve left the same message on your cell phone, which is currently switched off – I presume because you’ve already set out for Boston. I’m leaving this message on your office phone in case you check in while you’re away. We need to talk.’

*

At the time Johansson was attempting to get in touch with her, Professor Kay McCann was wrapping the hotel issue white bathrobe around her after stepping out of the shower at the Sheraton Boston. She had switched off her cell for the duration of the American Association for the Advancement of Science meeting. She was glad to be off duty. She

needed to focus down hard on her plenary speech in two days, the Friday morning. Three of her grad students were presenting posters on the Saturday half-day and she was also determined to give them her prime attention. Anybody, other than her son, Sean – who already knew how to get in touch via the hotel switchboard – could reasonably wait until she got back to Berkeley on Monday. Kay was also looking forward to tonight's welcome dinner, an opportunity for the course organizers and committee chairpersons to indulge in a little gossip before the busy program started.

While showering, she left the bathroom door wide open so she could wind down from the flight listening to some music from the TV sound program. And now, out of the shower, and just as she got halfway to the closet, a new track cut through her musing as abruptly as if somebody on the airwaves had called out her name. The band was U2 and the track was *I Still Haven't Found What I'm Looking For*.

She smiled.

Jesus, how something melted inside with that sacred memory – Billy Forrester, and the smoky crepuscular light of the woods at Big Sur, Plasket Creek! They had made love on the leather-smelling back seat of his 80s Mustang.

For Kay, then aged seventeen, it had been the initiation ceremony, as well as the first and last time with Billy. Looking back with the wisdom of maturity, he had been a little on the wild side, five years older than she and more versed in the art of seduction. She had never regretted it, not even for a moment. Seventeen now seemed like an age when you still believed in magic.

At the time the magic of a handsome man adoring you had seemed infinitely more attractive than her forthcoming exams and the world they heralded, the world she now inhabited, of career and responsibility.

She didn't want to let the memory go. When the song ended she missed it. She wished it would play just one more time over, so she could

lose herself for a few more minutes in the nostalgia of being seventeen again and still believing in magic.

05: 18/ 03h21

In Atlanta, Will Grant was attempting to rouse himself from sleep to answer an urgent telephone call. ‘Well, I’m telling you, Doctor, this is a very strange case. We’ve already sent you specimens. I certainly hope you’re going to be able to help me here.’

Will rolled over in bed, to slide out quietly. It was a habit he had acquired over the years to protect his wife during nights on call. Even now he was unable to suppress the instinct to look at the place in bed where Marje’s figure would normally have been sleeping.

‘Just give me a minute.’

A pathologist with a special interest in plague viruses, he was fielding emergency calls for his department, which was the Special Pathogens Branch at the Centers for Disease Control. He had experienced difficulty getting to sleep and had sat up in bed until 1:00 am, drinking two or three generous shots of whisky and listening to nighttime jazz on his iPod. The whisky was still in his system, slowing his thinking. Meanwhile the voice on his bedside phone sounded far too impatient to wait for him to wake up.

‘Look, Doctor – I’m chief of intensive care at the Memorial Hospital in Thirless. We have a worrying situation.’

Will rubbed at his right eye with the heel of his hand. ‘Remind me. Thirless – where’s that?’

‘Thirless, Arizona.’ An edge of irritation had joined the impatience in that voice. Will had only the vaguest of recollections of Thirless, Arizona – one of those desert stops along the highway – but big enough, it seemed, to have a hospital with an intensive care unit.

'I'm sorry to do this to you. But could you possibly give me your name again?'

The voice was angry now: 'My name is Ric Valero. I'm calling you about one of my patients. You awake now?'

'How can I help you, Dr. Valero?'

'I'm dealing with a man with a spreading gangrene of his skin. This is one hell of a toxic guy.'

Will pulled a soiled white T-shirt over his shoulders. 'Can you hold on for a few seconds. I'll go pick up the extension in my office.'

Padding through to the top-of-stairs landing, he checked on Janie, to make sure she was sleeping. Her bedroom door was half open and she was lying on her left side, her slender knees drawn up to her chest, her hands tugging a fan of sheet to her mouth. She also had the nightlight on. Janie had reverted to the nightlight after Marje's death nine months before. And now, in passing her bedroom by, Will felt guilty about the fact he wasn't spending enough time with her. The low light also illuminated the team picture of the Atlanta Hawks that filled almost the entire long wall by the side of her bed. He closed her bedroom door to nearly shut, making his way downstairs and into the office, where he flicked the light switch and picked up the extension, blinking in the sudden brightness.

Valero said, 'I don't mind telling you, this is the most toxic patient I have ever had to deal with.'

Will had pen and paper ready: 'Give me the patient's name.'

'Bill – William Reickhardt. Aged forty-seven.'

'Reickhardt, William, forty-seven.' Will switched on the coffee percolator he kept by his desk. 'Okay – fire away.'

'The development has been lightning fast. This guy was fit and well twenty-four hours ago. Far as I can tell, he gets some kind of a flu-like prodrome. His wife takes off on a trip to Phoenix, calls home just to check. Next thing he's coming in on a gurney with all lights flashing. He has a temperature we can't control. We're cooling him right now with two fans, aspirin and ice packs, and it's 105 and rising. And this rash —!'

‘Describe the rash.’

‘We watched the thing evolve. When he came in – *nada!* Then he gets a spot about an inch above the umbilicus. It becomes a branching root. Hell, we took pictures every five or ten minutes to capture the damn thing evolving. You just have to put a skin marker at the edge – any edge – and you can see it go past your marker in minutes.’

Stupefied by lack of sleep, Will took the first slug of coffee. ‘Can you describe the rash in more detail?’

‘Color – kind of blue-black, like classic gas gangrene. It smells like a kind of sickening sweet smell, which would also fit. But I never heard of any case of gangrene behaving like this.’

‘What about its distribution?’

‘It’s spreading very rapidly, in that same arborescent fashion. Out over the abdomen, then up onto the thorax. It moved from his chest to his neck, head, legs and arms – in that order – in just a matter of hours.’

‘The rash has become confluent?’

‘If that’s an appropriate term for something like this. Looks like every square inch of skin has become swollen and black. Dr. Grant – let me tell you how it really looks to me. It looks like this guy’s skin has, in the space of six hours or so, just died on him while he was still alive.’

‘Now you’re getting emotional.’

‘You’d get pretty damned emotional if you were here looking after this patient. The skin isn’t all.’

‘Go on.’

‘We’ve taken MRI scans. You wouldn’t believe the hassle, trying to get those done in somebody who could be contagious. But you should see the films. There are spreading lesions there too. Brain, liver, spleen.’

‘Spreading lesions?’

‘Spots that grow into roots and then they take up pretty much the entire organ.’

‘So it’s blood-stream spread?’

‘No doubt about it. The same thing happening in the internal organs as we’ve seen in the skin.’

Another stupefied swig of the coffee, burning his mouth again. ‘Did you say that you’ve sent specimens?’

Valero’s voice fell. ‘In two batches, liver biopsy, skin biopsy, bone marrow, throat and skin swabs, feces, urine – even cerebrospinal fluid. The CSF seemed curious to me in that the brain was so abnormal and yet the CSF was clear. I’d have put money on it being turbid. We didn’t just send tissue in formalin. We sent you fresh frozen too, so you can get cultures, including viruses. Especially viruses. If we’ve thought of it, you’ve got it, two batches, special air-freight.’

Will shook his head, puzzled he hadn’t heard of their arrival.

‘This first batch of samples – how long ago did you send them?’

‘Seven or eight hours ago. You should have gotten them three or four hours ago at the very latest.’

‘Okay. I’ll look into it.’

‘This is the first time I’ve had the chance to call about the clinical situation. The earlier contacts were through our microbiologist.’ Valero’s voice was rising again in pitch. ‘Look! You’ve got the picture now. Just tell me – do you have any idea what we’re dealing with here?’

‘You’ve considered the obvious possibilities?’

‘We’ve considered them all. Necrotizing fasciitis? We’ve been onto that from the time of admission. But our cultures are negative up to now and an antibiotic cocktail that would kill every flesh-eating bug in the state of Arizona has made no difference.’

‘You’ve considered plague?’

‘Of course we’ve considered plague.’ The voice became muted, as if Valero had put his hand over the mouthpiece to talk to someone. ‘Oh, for goodness sake – well, yeah! Just a minute! Okay – I’m coming!’ Valero’s voice returned to the telephone, more stressed than ever. ‘Plague is endemic here in the Southwest. We’ve done swabs, cultures and the

immunofluorescence tests are up and running. To be read first thing tomorrow – sorry, I mean later this morning.’

‘You mentioned viruses?’

‘You think it could be some virus?’

‘It’s possible. But your local microbiologists must have done a screen for viruses already?’

‘I checked with both the path lab here and the public health lab in Phoenix just before I called you. Nothing so far, but it’s too early to be certain of anything.’

Will was silent a moment, thinking furiously.

Valero interrupted: ‘Listen, something else has cropped up. I’ve really got to go.’ Will overheard the whisper of an urgent conversation at the other end of the telephone.

‘Dr. Valero – don’t hang up – not just yet. I don’t even have your contact number.’

Another distant whispered conversation. Will could make out anxiety-laden voices. He heard Valero’s exclamation, ‘Oh, for Christ’s sake!’ Then he came back on the line, sounding distracted. ‘Listen, I’ll give you one more minute. We’ve admitted another patient with a temperature of one hundred and four. A local doctor, called Manning. The man is Reickhardt’s family doctor.’

‘Has he got a rash?’

‘No rash – not yet.’

An obvious alarm had entered Valero’s voice. There were more disquieting sounds in the background. A woman’s voice was calling Valero’s name.

‘Okay, I’ll let you go in just a few moments. This man, Reickhardt, what about his systemic condition? His immune response?’

‘All systems failure. Kidneys, liver, bone marrow. There never was a bone marrow response. No leukocyte response, no lymphocyte or specific antibody response – not even IgM. All systems down in his boots,

from the time we first admitted him. This guy is already dead. He just hasn't gotten around to admitting it yet.'

'Give me your contact details. I'll get back to you.'

*

One of the things you learned from long experience with plagues is that panic, however understandable, is unhelpful – even dangerous. Will dialed the switchboard at CDC and spoke calmly to the desk clerk: 'It's Dr. Grant here. I want you to put a call out to the home of Mrs. Kristina Earle. It's urgent.'

'I believe she's already in the lab.'

Her reply surprised him. What were the chances that Kristina's presence there in the early hours of the morning was connected with the same emergency? 'Well, you'd better put me through to her.'

'I'll page her, Doctor.'

What did Kristina think she was doing, not calling him? After a pause of a minute or so, he heard Kristina's Atlanta accent, 'Hi!'

He couldn't hide his irritation: 'What's going on?'

'I'm in BSL-3 right now.'

'Processing samples, from the Thirless case?'

'That's right.' There was a hesitation in her voice. 'I'm aliquotting the second batch. Liver biopsy, second bloods and CSF.'

Will exhaled. 'Why didn't you call me?'

'There was nothing to suggest anything out of the ordinary. I didn't think—'

'You should have thought to call me, Kristina. I've just taken a call from a Dr. Valero and I didn't know a damn thing about the situation.'

'I'm sorry, Dr. Grant. But you got to get some sleep yourself. Or do you want me to wake you with every sample, any time of the night?'

She had called him "Dr. Grant". He sighed, realizing that she merely thought she was protecting him. His voice softened. 'Okay, Kristina – I'm coming in.'

*

In the atrium of Special Pathogens Will felt dwarfed in spite of his six foot two inches. The roof soared sixty feet overhead, capped by a church-like dome of frosted glass. In spite of the dimensions there was a feeling on entering of being hermetically sealed in. A stainless-steel cylinder about four feet in diameter ran from floor to ceiling, carrying ducts and cables. Over in the corner lay a mound of containers, respirator masks, rodent traps, plastic gloves, flasks and tubes for serum or blood – anything needed to fly out on some new investigation. Most intrusive, and contributing to the claustrophobia, was the sound, a continuous low rumble of heavy machinery positioned that came up through your feet, like from some Morlock factories deep underground. His office was off the ground floor, down a corridor. Opposite the office building, and across the green-carpeted floor, was the BSL-4 facility where he did most of his work.

Kristina was sitting at one of the small square tubular steel tables laid out over the green carpet.

‘You coming here to check up on me, Dr. Grant?’

‘You’re damned right.’

‘In case I let excitement get the better of me?’

Will flopped down in the chair next to her. He explained what Valero had told him over the telephone.

‘Confluent gangrene?’ Kristina showed surprise. ‘I never heard of anything like that before.’

‘Me neither.’ He tapped his index finger on the opened pages of the laboratory log she had slid to him across the table. ‘Okay – so what do we have?’

‘Two separate arrivals of Thirless specimens. Batch one, throat swab, skin swabs and biopsy, blood and serum. I Gammacelled the blood and serum, so we could get some serology aliquotted and under way.’ The Gammacel contained intensively radioactive cobalt-50 sealed off from the laboratory environment by ten tons of lead. It was used to kill potentially dangerous microbes before immunological screening could be carried out

on the serum. The lethal dose of irradiation for a human being was 600 or 800 rads, but plague viruses were a lot tougher and some needed five million. 'Ditto,' she added, 'for a piece of the skin biopsy. Swabs, blood, serum and biopsy through the BSL-4 and the usual tests also under way.'

'You injected animals?'

'Oh, no – I forgot the animals!' Her eyes lifted up to confront his, like she was reproaching him for even thinking such a thing. There was a greenish tint to her dark skin in the artificial light. And a look in her eyes beyond the tired challenge that suggested an appeal.

'I'm ready to begin on the second batch, which I'm still processing, mainly more blood and serum, CSF, liver and skin biopsies.'

'Do me a favor, Kristina. Go check the results right now? See if anything at all is showing up?'

'You know we're clutching at straws this early.'

'I still want you to look, okay!'

'You're the boss.'

'I'm thinking about what Valero said – about the rapidity of disease evolution.'

Kristina's eyes were still returning his gaze. She must have been working patiently through half the night. Irritation would have been a natural enough explanation of whatever feeling he saw in her eyes.

She intoned: 'Level-4?'

'Level-4 you can leave to me.'

*

The walls of the BSL-4 suite were massively thick, designed to withstand a neighboring nuclear blast. As he walked down the long and empty upper corridor leading to the entrance, an incongruous peace came over Will, as if he were stepping not into danger but into a cool and refreshing shower.

It was far from the normal reaction. Few virologists, even those with extensive experience of working with plague pathogens, could live with the ever-present dangers of working in BSL-4. He knew people talked about him. Some called him "the iceberg". He ignored the banter because

he knew they were wrong. He felt the fear as soon as he entered the building, every time. The day he stopped being afraid was the day he grew dangerously careless. And that would never happen. The difference between him and most other people was not that he was without fear but that he could work with it. In recent years, while Marje was sick, working with danger had become a useful distraction. But as her illness progressed, his wife's need for him, the increasing burden of supporting her, made his twelve hour working day a tougher ordeal. Marje had been a strong and resourceful woman. But the illness had been relentless. It had ground her down until she became so mentally fragile you didn't know what to expect coming home. In the end it had worn him down too. He had felt increasingly guilty with the distraction of work because he knew she missed him every minute that he wasn't at home.

'I feel a little better today!'

'That's nice, sweetheart!'

In his mind here tonight, walking the echoing corridor to BSL-4, he imagined he was still holding her. He felt the jitters that had invaded her body and soul so it felt like he was holding a frail and terrified animal.

At the door Will inspected the gauge that measured the differential pressure between the corridor outside and the suite of rooms inside. There had to be a pressure drop from outside to inside, the first step in an increasing vacuum with every room. He had passed through here thousands of times. But still he checked. The pressure was satisfactory. He put his pass card into the slot. Nothing happened. The pin light on the lock stayed red. This too was a safety precaution. If he lost his card or somebody stole it and tried to get in here, it would do them no good. Strange as it might seem, there were fanatics desperate enough to want to enter here. He dialed an additional special code. The light turned green. He took the card out of the door and passed through into the locker room. Here he stripped off his clothes and put on clean surgical scrubs, then surgical gloves. He passed on to another room, where some large and clumsy suits of a cerulean blue hung along a rack on the wall. The suits

were complete with whole face visors, originally space suits, designed for NASA. Will's name was stenciled on one of them.

He put on the heavy rubber suit, wriggling his gloved hands into the thicker outer gloves that were taped to the wrists and pushing his feet down into the bootees that formed an integral part of the suit. From now on all manual operations were necessarily clumsy. He attached to his suit a HEPA filter, which would act as an additional safety screen for the air he breathed in the hermetically sealed laboratory. He performed each step with a practiced care. Nothing could ever be downgraded to routine. The air regulator was a heavy metal coupling that would supply and filter his air supply when he was inside. He slung the heavy metal coupling over his shoulder and put on some ear protectors before he pulled up the Ziploc that, with an additional rubber seal, enclosed him within the suit and helmet. Finally he put on Wellington boots. His body weight had increased by 25 pounds.

Once through the airlock, he coupled his HEPA filter to the nearest airline, a red coiled hose that dangled from the ceiling. The air now came in at 60 pounds per square inch, inflating the suit and draining out through four one-way valves, so he didn't blow up like an over-inflated tire. The familiar roaring invaded his ears, drowning out all outside sounds even though it was muted by the hearing protection. Kristina had already fed the new samples through the entry hatch and Will spent a good ten minutes in the prep room, getting ready to inject a second batch of animals. Then he moved awkwardly across the floor, coupling and uncoupling from one ceiling hose to another in the thirty seconds it took the suit to deflate. It took him over a minute to cross the thirty yards of floor to reach the door to the animal room.

Most dangerous of all in the Level 4 lab was the animal room. Like every door in this facility, it carried warning signs in large capitals and the biohazard logo in blood red. There were animal rights people who decried the fact they used animals here. But it was exceedingly unlikely they

would attempt to break in – not unless they had some kind of a death wish.

The operative caution here was "sharps."

Animals were unpredictable. They voided secretions that were likely to be contagious. The animals – mice, rats and guinea pigs – were kept in their own cages, with their filtered air supply kept at a negative pressure to the surrounding room. But you had to cross those barriers when you needed to inject them. And that brought you into contact with sharps. Sharps were broken glass, the needles you used and the animals' claws and teeth. Sharps could penetrate gloves. They could even penetrate the heavy rubber of a Centurion suit. More often than not it was through carelessness with animals that scientists working in BSL-4 laboratories died.

Armed with his new samples of blood, tissue and cerebrospinal fluid from Bill Reickhardt, Will opened the final door and went in.

*

Kristina finished her tour of the culture and serology results five minutes or so after Will had entered the animal room. She returned to the table in the atrium, mopping her face with a paper towel while waiting for him to return. The seconds passed with excruciating slowness. She got to her feet and walked to the giant dispensing machine against the wall. Usually she made do with water. Tonight she hankered after a refreshing fizzy drink. A flashback: Will's voice cajoling her about her lack of appreciation for jazz:

'You're way too cool.'

She chuckled. Bought a Sprite and returned to the table, holding the cold can against her brow. She thought: You got Miles Davis tootling *Tutu*; I got Marvin Gaye. Give me the funky magic of *Sexual Healing*.

Will had upset her more than she had let on, giving her grief over the telephone. But then there had been that moment when their eyes had met. A thrill went through her, recalling that moment. His eyes were that glacial blue that seemed to frighten people. But they didn't frighten her,

not Kristina Earle. She appreciated what others just didn't notice, the immense courage demanded by his day-to-day job, the manly qualities that included courtesy, the struggle with loneliness after the death of his wife. Kristina was married to a husband who had lost what physical attraction she had felt during their courtship to become a boorish and predictable slob who took her for granted. A Masters degree, doing homework on her mother's kitchen table had led her to a doctorate in medical microbiology. She had sweated blood to gain this full-time job of twelve hour shifts working with BSL-4 viruses. Kristina was breathing hard now, almost hyperventilating. The fact was she was close to tears.

Sexual healing: she wished. She could die for it. But she wasn't going to get it – not in this life.

Blinking suddenly, she was startled into reality by a pain in her fingers.

She had automatically begun to open the can of Sprite and now there was a sharp, tingling pain in her fingers where she had pulled at the tab. Her fingertips felt like they were swollen and inflamed. She couldn't open the can. She tried again to yank the tab open but she was forced to abandon it because of the stabs of pain that were shooting up her hands and into her wrists from her fingers.

She walked over to the four-story office block behind her, a building that was free-standing, yet entirely enclosed under the same high-vaulted ceiling as the atrium, like a small island in the three-dimensional space of the massive laboratory complex. She sat in the secretary's chair in the ground floor squeeze, switched on the desk lamp and examined her hands. Her fingers and thumbs were throbbing. The throbbing pain was worsening fast. Already it was past her wrists and darting half way up her arms. She was beginning to hate that omnipresent roaring of the ventilation machines, which prevented her thinking clearly. The vibration was irritating her very bones. At that moment, her training kicked in and she began to investigate her actions.

Could I have made a mistake?

All of a sudden a wave of terror invaded her, viciously, hungrily. It tore right through her like a shark through water.

Blinking a little faster than usual, she went over the precautions she had taken. The samples had arrived here from Thirless, sealed with a thick brown tape in a plastic-covered padded envelope. She had picked them up from the loading bay and taken them directly into the BSL-2 facility. In her mind, she went back through the routine of entering the door. She read the familiar sign in capitals: CAUTION: GLOVES REQUIRED IN THIS AREA. BSL-2 – no big deal: the ordinary pathogens you met in any hospital bacteriology laboratory. She recalled taking all the right precautions, of putting on gloves, walking on through into BSL-3. Now, involuntarily, she touched both her hands to her face. Her fingertips felt hard as hazel nut shells, and red-hot. She tried sucking them and the pain only got worse. The telephone was ringing, right there beside her. She didn't want to be distracted. BSL-3 —! She struggled to recall her exact sequence of actions.

The sign on the door: the usual biohazard logo, in carmine red. GLOVES REQUIRED IN THIS AREA. DISPOSABLE GOWN REQUIRED IN THIS AREA. CAUTION: MASK REQUIRED IN THIS AREA. DANGER: EYE PROTECTION REQUIRED HERE. As if she needed reminding that this was a battle zone. She relived her movements, precisely, accurately. Opening the package in one of the hoods: normal glove port precautions. She had taken particular care with the blood. She had spun down the clots, removing the straw-colored serum that was left, dividing the serum into aliquots, with full precautions. She held there, on that memory. You had to be particularly careful with serum. Serum was where you found the viruses. She had taken some of the serum into the Gammacell before diluting and dividing it up for antibody testing. In her mind, she was scrupulous in going through her earlier actions, her care in putting aside the hot stuff to be ferried over to BSL-4 for animal testing. At every step...

I used every precaution!

Kristina let out the breath she didn't even realize she had been holding. With fingers that throbbed, she picked up the desk phone.

It was Will's voice.

She had difficulty telling what he was saying to her. He sounded like he was shouting down the noise of a wind tunnel. He was talking through the radio microphone fitted into his suit.

'Say it again!' she spoke into the telephone. 'I can't hear you.'

What he was really doing was shouting – it was an automatic compensation for his ear protection and the noise in his suit. She had to hold the telephone slightly away from her ear as she listened again.

'Can you hear me now?'

'Yes. I can hear you.'

'Some of the animals are dead.' He hesitated a moment: in that same moment her pulse began to race. Will – the Iceberg – was worried. 'All of those in cages A, B and D. Are those the ones you injected intravenously?'

'That's right.' She had injected mice, rats and guinea pigs.

'Those in C, E and F have marked induration in the skin over the abdomens. It could be the beginning of the rash. I presume these were intradermal injections?'

'Yes.' The terror had returned. She felt her eyelids spring wide open. It was completely automatic. Her voice was a croak:

'It seems awful fast.'

She imagined the frown of thought that must be creasing his face. She thought: *like goddamn lightning!*

A judder of panic was careening through her. Panic at the sudden realization of something she had overlooked. She mewed, like a cat, at the throb of agony that had invaded the bones of her hands. In her mind, she was back down there: the loading bay, signing for and then picking up the samples. She recalled her actions with a stupendous clarity. That was the only time she had handled anything without wearing gloves. She had picked up the padded envelope, sealed in plastic, with her bare hands.

'Oh, Jesus!'

'Kristina – I'm going to have to ask you to come up here and help me do some autopsies.'

Her voice had fallen to a whisper: 'Okay!'

She heard the telephone cut to dial tone before she dropped it. Her eyes turned to the opened door, lifting up to those small square windows, like goblin eyes in that sheer stretch of reinforced concrete across the atrium. She didn't even put her hands out to protect herself as the building became a vortex, crazily spinning, and the floor rose up to meet her.

05: 18/ 06h22

Ake Johansson unhitched the tailgate of his silver Mitsubishi Montero so he could load equipment into it from a four-wheeled cart. The most awkward item was the 1800-06 Microscope Receptor, which looked like a complicated telescope with a lengthy cable that attached it to a keyboard. This was an optical sensor device that would enable him to assess plant foliage densities through radiant energy reflected back from their canopies. He had included a specialized camera that would allow him to tell one type of vegetation from another, avoiding one of the most time-consuming problems in any field sampling exercise. Normally the grad students would have been here to help him but they had been given some days off to attend the tripleA-S meeting in Boston.

'Lucky old them!' Johansson grumbled to himself.

The truth was Johansson didn't really envy the students one bit, any more than he resented the absence of his colleague and co-director of the Field Reserve, Kay McCann. Botany, and evolutionary botany in particular, was Kay's field of expertise and it was her field ecology equipment Johansson was now borrowing to investigate the anomaly.

The anomaly: strange to think about it in such terms. But he couldn't deny those Landsat images he had seen first thing this morning.

Johansson slammed down the tailgate, walked round, opened the driver's door to switch on the engine, then closed it again so the heater would take the morning chill out of the interior while he rattled the cart back to the lab. He decided to leave a message for the departmental secretary, to let her know where he was going and how long he was likely to be out of his office. Michelle wouldn't arrive for almost two hours so he

put a blank tape into her Dictaphone and had fun talking to her *in absentia*, an actor with his soliloquy perching inelegantly on the edge of her desk.

'Michelle – I'm leaving this message for Kay. In the unlikely event that she calls in from Boston, let her know that I am investigating an anomaly.' Of course, Michelle wouldn't understand what he meant by that. If she had been sitting in her chair right now, she would have frowned up at him with bespectacled owliness.

He continued: 'Things appear to be going slightly crazy on the Landsats in Sector 5-32 so I'm going out there to do some counts.' Then, smiling impishly because he was unable to resist the urge to titillate Kay's imagination, he added: 'You can tell her that we could be witnessing a new paradigm.'

Johansson suppressed a sneeze by squeezing his nose between finger and thumb. But the sneeze just bided its time and came along a moment or two later, so he had to grab hold of the silver cigar-case that was poking out of the breast pocket of his shirt and was in danger of skidding right across the reception floor. Hah! If Michelle had been here, she would certainly have been tutting. Michelle was so goddamn evangelical about smoking. These days the only place where Johansson could smoke his beloved cigars was out in the desert. In a continuation of his theatrical mood, he drew a smoking cigar and placed it under the Dictaphone. Then he strolled out into the morning sun.

He hadn't traveled more than a quarter mile before he stopped the vehicle and flipped a Havana from the case, lighting it ceremoniously with the heavy-set silver lighter Agnietta had bought him when they were honeymooning all those years ago in Havana. He savored his first puff of the day. These days even Agnietta insisted he enjoyed his cigars outside of her company, so he had come to associate the pleasure of smoking with his passion for the desert. It was a long-term source of regret that Agnietta did not share his love of the desert. But she had suffered his passions for twenty-nine years. For that compromise, for the depth of

support he had enjoyed from his otherwise easygoing wife, Ake had made a sacrifice in turn, which was to let Agnietta spend all of her time in their home in LA while he was prepared to spend half his life in quasi bachelorhood here, whenever it was his turn on the roster to direct the field reserve.

After about forty minutes' driving, he parked on a butte that overlooked Sector 5-32. Stepping down from the vehicle, he lit his second cigar of the morning before striding the thirty yards or so to the edge, scanning the bowl of the valley below him with appreciative eyes. Solitude! It was as if the cool breath of an Olympian god had blown away all of the pollution and bustle of southern California and replenished its true soul, at once harshly primeval and yet exquisitely harmonious. Cigar clamped between his teeth, he returned to the vehicle and spent a few trips ferrying the 1800 equipment to a reasonably level spot on the summit. Over ten minutes or so, he connected the telescope to the spectroradiometer and the latter to the laptop computer that would enable him to do some quick foliage readouts over a range of wavelengths. As the first readout appeared on the screen, he squatted close to the ground so he could cross-reference the results with the printouts he had taken from the Landsat earlier that morning.

He spat the cigar from his mouth and ground it under his heel:

'Skit också!'

It had been a long time since Johansson had sworn in Swedish. Standing erect, he thought about what he had just witnessed.

It just made no sense.

Pacing up and down, he started muttering to himself. *Calm down!* It was no good panicking. He had to consider his logical options. There was so much to be done and he would have to do it all alone. He reprogrammed the equipment to go through a new range of spectra before returning to the vehicle, then reversed in cloud of dust and drove down into the valley.