

ONE

After they'd burned their clothes, shaved their heads, and scrubbed themselves until they bled, Roberto Diaz and Trini Romano were allowed back into the country. Even then they hadn't felt entirely clean, only that they had done everything they could, and the rest was up to fate.

They were in a government-issue sedan now, rattling down I-73 just a few miles from the storage facility at the Atchison mines. They followed close behind the open-air cargo truck in front of them, tight enough that no civilian vehicle could get in between them. Trini was in the front passenger seat of the sedan, her feet up on the dashboard, a posture that always infuriated Roberto, who was behind the wheel.

"Because it leaves footprints," he told her, for the hundredth time.

"It's dust," Trini replied, also for the hundredth time. "I wipe it right off, look." She made a half-assed attempt to wipe her footprints off the dashboard.

"Yeah, but you don't, Trini. You don't wipe it off, you kind of smear it around with your hand and then I wipe it off when we return it to the pool. Or I forget and I leave it, and somebody else has to do it. I don't like making work for other people."

Trini looked at him with her heavy-lidded eyes, the ones that

didn't believe half of what they saw. Those eyes and what they could see were the reason she was a lieutenant colonel at forty, but her inability to refrain from *commenting* on what she saw was the reason she'd go no further. Trini had no filter and no interest in acquiring one.

She stared at him for a thoughtful moment, took a long drag off the Newport between her fingers, and blew a cloud of smoke out the side of her mouth.

"I accept, Roberto."

He looked at her. "Huh?"

"Your apology. For back there. That's why you're bitching at me. You bitch at me because you don't know how to say you're sorry. So I'll save you the trouble. I accept your apology."

Trini was right, because Trini was always right. Roberto said nothing for a long moment, just stared out at the road ahead.

Finally, when he could, he muttered, "Thank you."

Trini shrugged. "See? Not so bad."

"I behaved badly."

"Almost. But not quite. Seems like pretty small potatoes now."

They'd talked endlessly about what had happened in the four days since it had all started, but they were pretty much talked out now, having relived and re-examined every moment from every conceivable angle. Except for this one moment. This one had gone unspoken, but now they were speaking about it, and Roberto didn't want to leave it that way.

"I didn't mean with her. I meant the way I talked to you."

"I know." Trini put a hand on Roberto's shoulder. "Lighten up."

Roberto nodded and stared straight ahead. Lightening up did not come easily to Roberto Diaz. He was in his midthirties, but his personal and professional accomplishments had raced ahead of his chronological age because he never lightened up, he Got Shit Done. He ticked boxes. Head of class at the Air Force Academy? Tick. Major in the USAF by the age of thirty? Tick. Superb physical and

mental conditioning with no obvious flaws or weaknesses? Tick. Perfect wife? Tick. Perfect baby boy? Tick. None of this could be accomplished through patience or passivity.

Where am I headed?, where am I headed?, where am I headed?, Roberto would ask himself. The future was all he thought about, planned for, obsessed over. His life moved fast, it stayed on schedule, and he played things straight.

Well. Most things.

They both just stared at the truck ahead of them for a while. Through the canvas flap over the rear gate they could see the top of the metal crate they'd flown halfway across the planet. The truck hit a pothole, the crate slid back a foot or so, and they both sucked in their breath involuntarily. But it stayed settled in the back. Just a few more miles to the caves and this would be over. The crate would be safely stashed three hundred feet underground till the end of time.

The Atchison Caves were a limestone mine back in 1886, a massive quarry that went down 150 feet under the Missouri River bluffs. They started out producing riprap for the nearby railroads and dug as far down as God and physics would allow, until the pillars of unmined rock that held the place up reached the very outside limit of any sane engineer's willingness to sign off on their safety. During World War II the empty caverns, now a sweet eighty acres of naturally climate-controlled underground space, were used to house perishables by the War Food Administration, and eventually the mining company sold the whole space to the government for \$20,000. A couple million dollars in renovations later, it had become a highly secured government storage facility used for disaster and continuity of government planning, storing impeccably machined tools in a state of well-oiled readiness, set to ship them anywhere, any time, only please God let there be a nuclear war first so this was worth all the money.

It would be worth it today.

The call had been a weird one from the first ding. Technically,

Trini and Roberto were with DNA, the Defense Nuclear Agency. Later it would become part of DTRA, but that particular government mishmash wouldn't be cobbled together until the Defense Department's official reorganization in 1997. Ten years earlier they were still DNA, and their brief was simple and clear: stop everybody else from getting what we have. If you smell a nuclear program, find it and wreck it. If you get a lead on some nightmarish bioweapon, make it go away forever. Expense will not be spared; questions will not be asked. Two-person teams were preferred, to keep things compartmentalized, but there was always backup if you needed it. Trini and Roberto rarely needed it. They'd been to sixteen different hotspots in seven years and had sixteen liquid kills to their names. Kills were not literal; it was agency-speak for a weapons program that had been neutralized. But there had been casualties along the way. Questions were not asked.

Sixteen missions, but none remotely like this one.

THE USAF TRANSPORT HAD ALREADY BEEN WARMING UP AT THE BASE when they bounded up the stairs and came on board. There was only one other passenger, and Trini took the seat directly opposite her. Roberto sat across the aisle, in a backward seat also facing the bright-eyed young woman in well-worn safari gear.

Trini held a hand out to her and the young woman took it. "Lieutenant Colonel Trini Romano."

"Dr. Hero Martins."

Trini just looked at her, nodding and popping in a piece of Nicorette, taking Hero's measure, unafraid to hold silent eye contact while she sized her up. It was disconcerting. Roberto just gave Hero a half salute; he never enjoyed playing the whole I-see-right-through-you game.

"Major Roberto Diaz."

"Nice to meet you, Major," Hero said.

"What kind of doctor are you?" Roberto asked.

“Microbiologist. University of Chicago. I specialize in epidemiological surveillance.”

Trini was still looking at her. “That your real name? Hero?”

Hero hid her sigh. It was a question with which she was not unfamiliar after thirty-four years. “Yes, that’s my real name.”

“Hero like Superman or Hero like in Greek mythology?” Roberto asked.

She turned her gaze to Roberto. That was a question she didn’t hear nearly as much.

“The latter. My mother was a classics professor. You know the story?”

Roberto looked up, squinting his left eye and staring into the space just above and to the right of his head, the way he did when he was trying to pull an obscure fact out of his brain’s nether regions. He found the nugget of information and dragged it up out of the swamp.

“She lived in a tower on a river?”

Hero nodded. “The Hellespont.”

“Somebody was in love with her.”

“Leander. Every night he’d swim the river to the tower and make love to her. Hero would light a lamp in the tower so he could see his way to the shore.”

“But he drowned anyway, right?”

Trini turned and stared at Roberto, her displeasure plain. Roberto was good-looking to an irritating degree. The son of a Mexican father and a California blonde mother, he radiated good health and had a head of hair that would last forever. He also had a smart and funny wife named Annie, whom Trini actually found tolerable, which was saying something. Yet he’d been on this plane all of thirty seconds and was clearly trying to charm this woman. Trini had never picked her partner for a jerk before and hoped he wouldn’t turn out to be one now. She watched him, chewing her gum like she was mad at it.

But Hero was engaged. She kept on talking to Roberto, ignoring Trini.

“Aphrodite became jealous of their love. One night she blew out Hero’s light, and Leander was lost. When she saw he had drowned, Hero threw herself out of the tower to her death.”

Roberto took a moment and thought about that. “What exactly is the moral there? Try to meet somebody on your side of the river?”

Hero smiled and shrugged. “Don’t piss off the gods, I guess.”

Trini, weary of their banter, glanced back at the pilots and spun a finger in the air. The engines immediately whined, and the plane started to move down the runway with a jerk. Subject changed.

Hero looked around, concerned. “Wait, we’re going? Where is the rest of your team?”

“You’re looking at us,” Trini said.

“Are you—I mean, are you sure? This might not be something we can handle on our own.”

Roberto conveyed Trini’s confidence, but without the edge. “Why don’t you tell us what it is,” he said to Hero, “and we’ll let you know if we think we can handle it.”

“They told you nothing?” she asked.

“They told us we’re going to Australia,” Trini said, “and that you’d know the rest.”

Hero turned and looked out the window, watching as the plane left the earth. No turning back now. She shook her head. “I will never understand the army.”

“Me neither,” Roberto said. “We’re in the air force. Seconded to the Defense Nuclear Agency.”

“This isn’t nuclear.”

Trini frowned. “They sent you, so I assume they suspect a bio-weapon?”

“No.”

“Then what is it?”

Hero thought about that for a second. “Good question.” She opened the file on the table in front of her and started talking.

Six hours later, she stopped.

WHAT ROBERTO KNEW ABOUT WESTERN AUSTRALIA COULD FIT INTO A very small book. More of a flyer, really: one page and with large type. Hero told them they were going to a remote township called Kiwirrkurra Community, in the middle of the Gibson Desert, about 1,200 kilometers east of Port Hedland. It had been established a decade earlier as a Pintupi outstation, part of the Australian government’s ongoing attempts to allow and encourage Aboriginal groups to move back to their traditional ancestral lands. They’d been mistreated and cleared out of those same territories for decades, most recently in the 1960s as a result of the Blue Streak missile tests. You can’t very well be living on land that we want to blow up. It’s unhealthy.

But by the midseventies the tests were over, political sensitivities were on the rise, and so the last of the Pintupi had been trucked back to Kiwirrkurra, which wasn’t even the middle of nowhere, but more like a few hundred miles outside the very outer rim of nowhere. But there they lived, all twenty-six Pintupi, as peaceful and happy as human beings can be in a stifling desert without power, telephone lines, or any connection to modern society. They rather liked being cut off, in fact, and the elders in particular were pleased with their return to their ancestral lands.

And then the sky fell.

Not all of it, Hero explained. Just a chunk.

“What was it?” Roberto asked. He’d been holding eye contact with her throughout the brief history so far, and don’t think for a second Trini didn’t notice. In fact, she was glaring at Roberto, as if psychically willing him to stop.

“Skylab.”

Now Trini turned her head and looked at Hero. “This was in ’79?”

“Yes.”

“I thought that fell into the Indian Ocean.”

Hero nodded. “Most of it did. The few pieces that hit land fell just outside a town called Esperance, also in Western Australia.”

“Close to Kiwirrkurra?” Roberto asked.

“Nothing is close to Kiwirrkurra. Esperance is about two thousand kilometers away and has ten thousand residents. It’s a metropolis by comparison.”

“What happened to the pieces that fell in Esperance?”

Hero turned to the next section of her notes. The pieces that fell in Esperance had been, rather enterprisingly, scooped up by the locals and put in the town’s museum—formerly a dance hall, but quickly converted to the Esperance Municipal Museum & Skylab Observatory. Admission was four dollars, and for that you could see the largest oxygen tank from the orbiter, the space station’s storage freezer for food and other items, some nitrogen spheres used by its attitude control thrusters, and a piece of the hatch the astronauts would have crawled through during their visits. A number of other chunks of unrecognizable debris were also put on view, including a piece of sheet metal that rather suspiciously had the word SKYLAB neatly lettered in undamaged bright red paint across its middle.

“For years NASA assumed that was all that would ever be found, as the rest of it either burned up on re-entry or is at the bottom of the Indian Ocean,” Hero continued. “After five or six years, they figured anything else on land would have turned up by then or was somewhere uninhabitable.”

“Like Kiwirrkurra,” Roberto offered.

She nodded and turned another page.

“Three days ago, I got a call from the NASA Space Biosciences Research Branch. They’d gotten a message, relayed through about six

different government agencies, that someone was calling from Western Australia because ‘something had come out of the tank.’”

“What tank?”

“The extra oxygen tank. The one that fell on Kiwirrkurra.”

Trini sat forward. “Who called from Western Australia?”

Hero looked down at her notes. “He identified himself as Enos Namatjira. He said he lived in Kiwirrkurra and his uncle had found the tank in the dirt five or six years earlier. Uncle had heard about the spaceship that crashed, so he moved it in front of his house and kept it there as a souvenir. But now there was something wrong with it, and he was getting sick. Quickly.”

Roberto frowned, trying to piece it together. “How did this guy know what number to call?”

“He didn’t. He started with the White House.”

“And it got through to NASA?” Trini was incredulous. Such efficiency was unheard of.

“It took him seventeen calls, and he had to drive thirty miles to get to the phone every time, but yes, he finally got through to NASA.”

“He was determined,” Roberto said.

“He was, because by that time, people were dying. They finally put him in touch with me about a day and a half ago. I do work for NASA sometimes, inspecting their re-entry vehicles to make sure they’re clear of any foreign bioforms, which they always are.”

“But you think this time something came back?” Trini asked.

“Not quite. This is where it gets interesting.”

Roberto leaned forward. “I think it’s pretty interesting already.”

Hero smiled at him. Trini tried not to roll her eyes.

Hero continued. “The tank was sealed, and I highly doubt that it could bring anything back from space that it wasn’t sent up with. I went through all the Skylab files, and on the last resupply it seems this particular oxygen tank had been sent up not for O₂ circulation, but solely for attachment to one of the outer pod arms. There was a

fungal organism inside the tank, a sort of cousin of *Ophiocordyceps unilateralis*. It's a cool little parasitic fungus that can adapt from one species to another. Known to survive extreme conditions, a bit like *Clostridium difficile* spores. You know those?"

They looked at her blankly. Knowledge of *Clostridium difficile* was not a requirement in their line of work.

"Well, they're pernicious. They can survive anywhere—inside a volcano, bottom of the sea, outer space."

They just looked at her, taking her word for it. She went on. "Anyway. The sample in the tank was part of a research project. The fungus had some peculiar growth properties and they wanted to see how it was affected by conditions in space. Remember, it was the seventies, orbital space stations were going to be the next big thing, so they needed to develop effective antifungal medications for the millions of people who were going to go live up there. But they never got the chance."

"Because Skylab crashed."

"Right. So, after five or six years sitting outside in front of Enos Namatjira's uncle's house, the tank started to rust. Uncle wanted to spruce it up a little bit, make it shiny and new again, maybe people would pay to come see it. He tried to remove the rust, but it was resistant. According to Enos, his uncle tried a number of different cleaners, finally using a folkloric solution: cutting a potato in half, pouring dish soap on it, and rubbing it on the surface of the tank."

"Did it work?"

"Yep. The rust came off easily, and the thing shined up. A few days later, Uncle got sick. He started to behave erratically, not making a great deal of sense. He climbed onto the roof of his house and refused to come down, and then his body started to swell uncontrollably."

"What the hell happened?" Trini asked.

"From this point forward, everything I say is hypothesis."

She paused. They waited. Whether Dr. Martins was aware of it or not, she knew how to tell a story. They were transfixed.

“I believe the chemical combination that Uncle used dripped through microfissures in the tank’s exterior and landed inside, where the dormant *Cordyceps* fungus was rehydrated.”

“With the potato stuff?” Roberto wondered. Didn’t sound very hydrating.

She nodded. “The average potato is seventy-eight percent water. But the fungus wasn’t just rehydrated; it was given pectin, cellulose, protein, and fat. And a nice place to grow. The average temperature in the Western Australian desert at this time of year is well over a hundred degrees Fahrenheit. Inside the tank, it’s probably closer to a hundred thirty. Deadly for us, but perfect for a fungus.”

Trini wanted to get to the point. “So, you’re saying the thing came back to life?”

“Not exactly. Again, I’m speculating, but I think it’s possible the polysaccharide in the potato combined with the sodium palmitate in the dish soap to produce a pro-growth environment. Normally, they’re both large, boring, inert molecules, but you put them together, you might have some good unpredictable fun. Don’t blame Uncle; I mean, the guy was *trying* to produce a chemical reaction.”

She was getting warmed up now—her eyes shone with the intellectual exercise of it all—and Roberto couldn’t help it, he couldn’t tear his eyes away from hers.

“And he did?”

“He sure the fuck did!”

Lord, she swore too. Roberto smiled.

“But I don’t think either the polysaccharide or the sodium palmitate was the underlying change agent.”

She leaned forward, as if telling the punch line to a joke that everyone was absolutely going to love.

“It was the rust. $\text{Fe}_2\text{O}_3 \cdot n\text{H}_2\text{O}$.”

Trini spit her gum into a tissue and popped in a fresh piece. “Do you think, Dr. Martins, that somewhere inside you lurks the capacity to summarize?”

Hero turned to Trini, her demeanor matter-of-fact again.

“Sure. We sent up a hyperaggressive extremophile that is resistant to intense heat and the vacuum of space, but sensitive to cold. The environment sent the organism into a dormant state, but it remained hyper-receptive. At that point, it must have picked up a hitchhiker. Maybe it was exposed to solar radiation. Maybe a spore penetrated the microfissures in the tank on re-entry. Either way, when the fungus returned to Earth it was reawakened and found itself in a hot, safe, protein-rich, pro-growth environment. And *something* caused its higher-level genetic structure to change.”

“Into what?” Roberto asked.

She looked from one to the other of them, the way a teacher looks at a pair of slightly dim students who refuse to grasp the obvious. She spelled it out for them.

“I think we created a new species.”

There was silence for a moment. Since it was Hero’s theory, she claimed naming rights. “*Cordyceps novus*.”

Trini just looked at her. “What did you tell Mr. Namatjira?”

“That I needed to check some things and he should call me back in six hours. He never did.”

“What did you do then?”

“Called the Defense Department.”

“And what did they do?” Roberto asked.

She gestured. “Sent you guys.”