

– PROLOGUE –

Yariko Miyakara was a crack young physicist, but at the moment she had a very annoyed expression on her face as she stuck her head out of a small round doorway in the back wall of the lab.

“There’s another one!” she cried.

“You’re kidding.” Yariko’s graduate student, Mark Reng, was sitting at a computer in the main lab. Mark was only twenty-five, a new student for Yariko, but he was quick to learn and full of odd ideas, and he loved the lab. His unruly mop of brown curls could be seen bobbing about the rooms at all hours of the day and night as he puttered with small experiments and computer programs. Now he came over to the vault and looked in past Yariko. “The same kind?”

“Who knows. Get me another jar.” When Yariko climbed out of the vault she held the glass jar in one hand. The other hand was tugging on her long braid, a habit she had when something didn’t make sense.

Mark took the jar from her. “I don’t understand,” he said. “I cleaned the vault. First thing today. There wasn’t a speck of dust. And certainly no . . . bugs.” His face showed disgust as he glared at the thing inside the glass.

A rather large, red-and-gold beetle calmly waved its antennae at him, and began an exploratory climb up the side of the jar. “How

does a beetle get into a lead-lined, sealed graviton vault in the middle of a physics building?"

"Not by itself, that I know." Yariko took the jar back. "I'll put it on the shelf with the other two. I find this. . . ." She stared at the insect as if it might explain its own mysterious appearance in the graviton vault. "Provoking," she finished.

Provoking indeed. Annoying, perplexing, and perhaps . . . exciting? Certainly, beetles were not created inside a sealed vault. And so, they had come from outside. They had been brought in as a by-product of the experiment. There was a word for this: translocation. But Yariko did not even say the word in her mind, not yet, not until she was sure.

Mark shook his head and turned back to the computer. "Provoking is right. Someone's playing a bad joke on us. Do you think they bite?"

"Who knows." Yariko turned away and unlocked a door, revealing a small chemical storeroom, where she carefully placed the jar on a high, dusty shelf. Two jars already stood there, old condiment jars with holes poked in the lids. A similar-looking beetle scurried around inside one; in the other, a small brown insect lay still. "It's not much of a joke," she said quietly to herself.

"I'm off," Mark called from the outer room. "Homework session. Tensor equations today—try explaining that to a bunch of undergrads."

Yariko waved in acknowledgment. "I'm off too. Faculty meeting. We'll see what happens when we start this afternoon's run."

"Just don't make any more beetles," Mark said with a grin.

Yariko was thoughtful that morning, abstracted, hardly paying attention to the meeting's discussion. She didn't miss much: faculty meetings were notoriously boring, cluttered with petty gripes about bulletin board space and graduate students blasting music in the labs. It was much more interesting to think about beetles.

When she returned to the lab two hours later, she made an entry in the notebook and then checked some lines of program on the computer. She tapped her pen absently on the keyboard as equations rolled by in her mind. What should the next experimental run look like? Was it worth fiddling with the parameters?

The beetles were exasperating. Impossible. There were no beetles in the vault before the run started. There was no way they

CRETACEOUS DAWN

could have gotten in. In effect, her analytical thought said, they could not exist.

Yariko suddenly threw down her pen and strode to the supply room. It had automatically locked behind her, earlier; a required safety feature that annoyed her each time. She found the small key on her chain and opened the door.

The three little jars stood on their high shelf in the gloom of a badly lit corner. She lifted the newest one down.

It was empty. They were all empty.



Part I

Cypress Island



The coleoptera, the humble beetles, are by some measures the most successful type of animal on the planet, comprising about 300,000 known species. They were just as abundant in the Cretaceous. If you could magically reach back to that era, pick one animal at random, and bring it to the present, odds are that you would retrieve some kind of beetle.

—Julian Whitney, Lectures on Cretaceous Ecology

— ONE —

Julian Whitney leaned back to enjoy his last quiet hour that Monday morning, propped his feet up on the desk, and spread the latest *Paleontological Progress* on his lap. Autumn had just arrived at the tiny university of Creekbend, South Dakota. Classes had begun, and that afternoon he was scheduled to give the first of his lectures on Cretaceous Ecology.

As a paleontologist, especially a young one active in field work, Julian was comfortably relaxed in regards to dress: his worn jeans were dusted with fine soil from the lab, the once-white sneakers showed glimpses of black socks through small acid holes in the toes, and his brown hair, untrimmed for too long, flopped over his forehead. As he flipped through the articles in the *Progress* he unconsciously felt for the small compass bulge in his watch pocket.

The phone shattered his little moment of peace, and he let it ring a few times before giving in and answering it.

“Julian,” came the voice at the other end, without preamble, “are you free? Can you come over here and look at something?”

He recognized the voice of Yariko, a striking-looking physicist with a formidable reputation. He’d met her several times at faculty gatherings, and had found her friendly but somehow unapproachable at the same time. Now here she was sounding strangely excited, asking him to come to her lab; and before he could answer, she

asked a very strange question for a physicist. “What do you know about insects? Beetles?”

He took his feet off the desk and sat up. “Beetles? I only know about beetles that are really, really old. I’m hardly an expert on living ones. If you talk to Bob Heckwood. . . .” Even while speaking Julian cursed himself for the habit of self-effacement that made him put forward someone else.

“Never mind Bob Heckwood. Just get over here.”

Another voice could be heard in the background, and Yariko answered cryptically, “Startup dot sixty-three. It’s the newest version of the program. He’ll come. Julian,” she said into the phone again, “be quick. It’s a small one, so it won’t last long.” She hung up.

Julian sat still for a moment, puzzling over her strange statement. Beetles? Why was Yariko interested in beetles? And why the hurry? It would still be there even if it died, or didn’t “last long” as she put it. He hesitated, unsure how he could help, wondering if he should call Bob Heckwood and send him over. But it wasn’t a serious thought.

He stood in sudden decision and scanned the bookcase for a ratty old Audubon Guide to North American Insects, which he knew was there. He cursed it for evading him, then found it turned wrong-way on the shelf. He threw it into his “briefcase,” really a paper grocery bag, threw in a notepad and a pen, and hurried out.

The campus was busy with students moving between classes, chattering students in groups with bulging backpacks slung on their shoulders. A few greeted Julian as he hurried past, and one tried to stop him with a question, but he hardly noticed.

Julian had to admit he was flattered by the strange phone call. It was not only her reputation; it was that she had noticed him after all. He thought back to their first meeting at last year’s Christmas party, shortly after she’d been hired. He was immediately drawn to her: her long black hair was draped over one shoulder, she wore no makeup or jewelry, and the elegant simplicity of her slender form was stunning. He’d watched her covertly for some time, wondering who she was, watching her smile and converse with a seeming ease that he never felt in such gatherings.

Unfortunately, their own introduction did nothing to put him at ease. When she said “particle physics” in response to his question,

CRETACEOUS DAWN

Julian was intimidated and a bit at a loss for conversation. Even now, walking across campus on her invitation, he tried not to remember how he'd babbled about fossilized pollen while the humor grew in her eyes, until, mercifully, a colleague had whisked her away for more introductions.

True, she had always been friendly since then, and once they'd even spent an hour talking quite comfortably together, after she'd given an informal performance, at the campus coffeehouse, on a strange five-stringed Japanese instrument. There were a few times like that when she was less aloof; other times when they crossed paths she was abstracted, distant, and Julian imagined physics equations tumbling around in her head unceasing while her eyes looked at him.

As he reached the physics building the morning began to play itself out in his head: he would give Yariko and her colleagues critical information that would result in a publication, and they'd work together in the future on some strange experiment. . . .

Who ever heard of a physicist interested in beetles?

The physics department was full of dark corridors, gritty, windowless, lit by a few feeble bulbs hanging from the ceiling. Following the signs saying "Graviton Lab," Julian clattered down the old rusty fire stairs to the basement and hurried past a few turns of the cinderblock passageway. The door was closed, and he was surprised to see a sign taped up that said:

GRAVITON LABORATORY
PROJECT 354S
DO NOT ENTER
AUTHORIZED PERSONNEL ONLY

He'd never been in this part of the building before, and was surprised to see anything so forbidding. Just as shocking was the keypad mounted on the wall beside the door, apparently an alarm system, but it looked to be unarmed since none of the warning lights were illuminated.

Yariko's voice drifted back when he knocked on the door. "Come in, Jules!"

He opened the door a crack and peered inside. The front room of the lab was a mess of papers, Xeroxed articles, strange rune-like printouts from various experiments, books and journals scattered

all over a work table and mixed up with a few grimy coffee cups. Yariko was not in sight; she must have been in the main room tending to an experiment.

Julian hesitated. "Am I authorized?" he called out.

"Just come in." Yariko's voice, still impatient, came from a doorway to the right. "What took you so long?"

"I was looking for a book," he said, following her voice through an inner door and into the gloom of Experimental Setup A. The lighting was poor because most of the fluorescent tubes in the ceiling had burnt out. Typical of any science, he thought: in the midst of cutting-edge technology you could always find something very basic that didn't work.

"Why are you standing in the doorway?" Yariko said, and Julian realized he was curling and uncurling the top of his paper-bag briefcase as he stared around the lab.

Yariko gave him one of her brilliant smiles. "It's all right. We don't eat paleontologists here."

He gave her a sheepish smile in return, and entered the room, still gazing around in curiosity.

There was a long counter against the wall, five squat IBMs arranged along it. They seemed to be rigged as control devices; cables sprouted out of their back panels, ran up the wall and along the ceiling, stuck up with duct tape in a messy, homemade fashion, and then disappeared into a small hole that had been drilled through the concrete high up on the opposite wall. Beneath was a circular metal door, about a yard in diameter, exactly like a safe-deposit vault. Clearly the cables fed some device inside the vault.

Yariko was sitting on a stool at one of the consoles, and as Julian approached she turned back to typing in strings of numbers with incredible speed. The other monitors displayed a typical screen saver, fanciful pictures of marine life, fish swimming slowly back and forth past green and red corals, glowing in the dim light of the room.

"*Carassius auratus*," Julian said.

"Excuse me?" Yariko said, continuing to input numbers. They apparently came out of her head.

"The common goldfish."

Yariko propped her elbow on the counter with her chin on her fist and gave him a long look that twinkled with humor. "You're too late."

CRETACEOUS DAWN

“I was looking for a book,” Julian repeated. “On North American insects. Why am I late? What did I miss?”

She lifted a glass specimen jar from the counter top. It looked like a mayonnaise jar with the label washed off. “This,” she said, giving it a shake. The jar was empty.

“A bug escaped from you?” Julian tried to match Yariko’s light humor.

“Yes, in a manner of speaking.” She closed the notebook and swiveled her stool to face him. “Have a seat.”

He sat down with the paper bag in his lap and asked, “What’s the little round door? A Hobbit hole?”

As he spoke the door was pushed open slightly, and from behind it a man’s voice could be heard, swearing quietly.

Julian stiffened. Perhaps this was *the* man, the mysterious special friend of Yariko’s, who some even called a fiancé; the datted man whose existence, discovered last spring, had caused Julian to retreat with a sigh to his familiar fossils. The fiancé lived elsewhere, apparently far away. Long-distance relationships were all too common in academia. But perhaps the fiancé was visiting now. Perhaps they were collaborating on some strange beetle-related project.

“What’s the matter? It’s only Dr. Shanker.” Yariko waved toward the little door. “He’s recalibrating the instruments for the next run.”

Julian relaxed, feeling slightly foolish. He’d heard of Dr. Shanker, another Creekbend physicist and far too old to be Yariko’s boyfriend. He indicated the round door and asked, “Why all the heavy armor? I’ve never heard of a lab with a steel safety vault.”

“Explosion proof,” Yariko said, as if it should have been obvious. “A safety requirement.”

“And the burglar alarm?”

“ONR.”

Julian looked at her blankly.

“Office of Naval Research,” she said. “They want to keep our work safe and secret. The security guards are at lunch right now, or they probably wouldn’t have let you in.”

“Security guards?” Julian was shocked.

Yariko laughed her wonderful rich laugh. “Don’t worry. They won’t break your knees.”

“Then tell me about these secret experiments,” he said, hitching his chair a little closer and lowering his voice.

“I’ll give you the short version, and skip the incriminating details. What do you know about quantum gravity?”

“Nothing.”

“Don’t grimace,” Yariko said. “It’s not that bad. The general ideas are simple enough. Two planets attract each other because they exchange gravitons, quantum particles. In theory. But the theory’s a mess, and the correct mathematical form of it has never been worked out. A great sticking point is that nobody has detected gravitons. Naturally, people would like to measure these particles before believing in them; or, better yet, we’d like to produce them in the lab.”

“Is that what you’re working on here? Gravitons?”

“Never mind that. I didn’t call you to look at gravitons. I called you because for a few weeks now we’ve been producing some, ah, unexpected particles.” She scratched her nose with the end of a pen.

“Yes?”

“Yes. Particles like pebbles. Twigs. And beetles.”

Julian laughed. “You’ve got beetles in the lab? Are you sure they aren’t cockroaches?”

“I didn’t call you here to insult us,” Yariko said, and they both grinned. “The graviton vault is sealed—airtight, in fact, during the runs. Nothing gets in or out.”

“But you can’t create beetles out of thin air,” Julian said. “There must be a nest—”

“Of course we can’t just create them,” Yariko interrupted. “They already exist; somehow, we’re pulling them into our vault when we do these runs. What we’ve stumbled on,” and she sat up straight and looked right at Julian, “is spatial translocation of mass.”

“Spatial . . . you mean you’re transporting things from somewhere else? But that’s incredible!” Julian didn’t know whether to laugh again or not.

Yariko nodded. “An apt word. What we’d like to know is where the things are coming from. Right under the building? Or several miles away? Or even more? We have one indication so far; but I’m hoping you can tell us more.”

She turned back to the computer and opened an image file. A beetle appeared on the screen, digitally photographed in several orientations. It was garishly colored, red and gold with a hint of green in the carapace, and it had extremely long antennae.

Julian’s mouth fell open. “Where did you get these pictures?” he

CRETACEOUS DAWN

said, leaning closer to the screen to study them better.

“I took them,” Yariko said. “It was only just alive, so I was able to lay it on its back here, and get the details of the underside. Here’s a close-up of its leg, and here’s its little face,” she added, tapping the screen with her pen.

“You took. . . .” Julian sat back and stared at her. “But, but that’s impossible. This beetle doesn’t exist any more.”

“What do you mean it doesn’t exist?”

“I mean it doesn’t exist. It’s extinct.”

“It died out?”

“It disappeared about—”

Yariko interrupted. “But it’s not. We’ve found several of this kind, in fact. Some arrive quite alive, I promise you.”

“I tell you, this is an extinct insect,” Julian insisted. “One of the archostemata, probably the *Parasabatinca* genus. The details on the antennae, the unique joints on the legs, the shape of the carapace . . . but how could anyone know the color? Color isn’t fossilized.” He looked up again from the images in the screen. “Show me this beetle.”

“I can’t,” Yariko said. “It’s gone. Disappeared. I told you, they don’t persist.”

Julian stood up and began to pace, suppressing a rising impatience. “Are you telling me you actually discovered a living representative of a beetle thought to be long extinct, and you let it go?”

“I didn’t know it was ‘long extinct,’” Yariko said, and she sounded exasperated. “I only know that it came from somewhere and was translocated through space into our vault during an experimental run to measure gravitons. I thought you might be able to tell us where it came from, and where some of the other samples came from. I want to know how far these objects are being moved.”

Julian sat down again. “I’m finding this very hard to believe,” he said. “And what does it have to do with your gravitons?” Somehow it was easier to believe in the spontaneous creation of gravitons, which were effectually meaningless to him, than the spontaneous creation of beetles.

“I can’t tell you that,” Yariko said. “It’s classified.”

A deep voice suddenly boomed out of the explosion-proof vault. “Classified, my ass. Tell him about it. Who are you talking to anyway? Is that your paleontologist?”

The heavy round door of the vault swung wide, and Julian blinked in surprise as a huge German shepherd leaped out of the portal.

Yariko laughed. "Hilda," she explained. "She's part of the staff. Against university policy and illegal of course, but nobody minds." The dog trotted over to Julian and thrust her nose into his lap.

Next an enormous man with a grizzled beard climbed out, carefully squeezing himself through the small opening. He came forward with his hand extended.

"Whitney, is it?" His voice filled the whole room, and his handshake was equally vigorous and overpowering. "I'm Shanker. Yoriko's colleague. We've been working on this project together. Pleased to meet you. Yoriko's been telling me about you, and you're just exactly the man for us. What's that? Doughnuts?" He was looking at Julian's grocery-bag briefcase, and his whole face seemed to light up at the prospect of eating something.

"A book on insects," Julian said, apologetically.

"Well, no time for doughnuts anyway. Yoriko and I were just setting up for another experimental run."

Julian was startled by the name, but Dr. Shanker didn't seem to realize what he'd said. Yoriko was his nickname for Yariko, as Julian soon realized; or maybe he was incapable of pronouncing it correctly.

Julian had heard the stories about Dr. Shanker, both from Yariko and from his own students who took physics classes. The man was known to teach with great flair and enthusiasm and was beloved by his students. He exercised at the gym every day and had a tremendous physique, even though he was sixty-five. The other faculty thought he was loud and coarse, and he had been married and divorced three times before finally choosing to live alone with his dog. Despite such gossip there was something hearty and straightforward about him that Julian immediately liked.

He shook Julian's hand and clapped him on the shoulder, and then he turned to Yariko and said, "What have you told him? Anything?"

"Only the by-product," she said. "The beetles and such. He's not a physicist."

"Good. You just missed the morning run, Whitney, but we're about to start up again right now. It's hard to predict how long they'll persist. A few days, some of them. Or a few minutes. Then

CRETACEOUS DAWN

they fizz out, or ‘revert’ as we hypothesize. The greater the mass, the longer they’ll persist—linear function—but there’s a lot of statistical fluctuation.”

“He has no idea what you’re talking about,” Yariko said.

“Good, good,” Dr. Shanker said, unperturbed. “He’ll see.” He turned to Julian again. “It’s the triumph of the little guy,” he said. “Low energy physics, on a shoestring budget. No cyclotron, no particle accelerator, no nothing, no big bucks. What do you think, Whitney, how much is the lab worth? Take a guess—what’s the dollar worth of all our equipment?”

Julian had no idea. “How much?”

“Ten million,” he said. “Tops.”

To Julian it sounded like a staggering amount, but Shanker seemed to take it as near poverty.

“With brains,” Dr. Shanker said, tapping his forehead with no sense of modesty, “with brains, there’s no limit to what you can do.”

Julian looked at Yariko, ready to raise his eyebrows. But she didn’t return the look, and Dr. Shanker continued.

“For a while now we’ve been producing these by-products on almost every run of the experiment. That’s where the beetles come in. We’ve been hesitant to make an official report, because that pack of ONR regulators would descend on us and take the experiment out of our hands. We don’t want that to happen. That’s why we’ve snuck you in here in such an unofficial fashion. Yoriko says you’re a good ecologist, with a sharp eye for detail, and that’s what we’re looking for right now. What do you think of this?”

He opened another jar and held out a small black stone.

Julian turned to the light and studied it. “This was formed at a high temperature,” he said instantly. “You see the crystals? Slow cooling, especially in the middle here. I take it this is a cross section?”

Yariko nodded. “We split it and sent half to Geology for analysis. It’s the only stone that didn’t revert. But they all looked similar.”

“What’s ‘revert?’” Julian asked.

“They disappear, after being moved to specific places in the lab. We think they’re going back to their original location.”

Julian handed the pebble back. “So that’s what happened to the beetles? How come none of them stayed here?”

“Well, we don’t know yet. . . .” Yariko began, but Julian interrupted.

“I need you to get another one right away,” he said. “One of those beetles. If you’ve found a living specimen of *Parasabatinca*, if I can identify the species, why it’ll be the biggest find in. . .” he stood and began pacing again, rubbing his hands. What a coup it would be! “Can you do another run, or whatever you call it? Can I watch?”

Yariko and Dr. Shanker looked at each other. Julian stopped and pointed to the pictures still up on the computer screen. “Don’t you see? This is huge. If you’ve actually found living specimens, if these things still exist somewhere, well it’s like discovering a living dinosaur. Can’t you see how exciting that would be?”

Dr. Shanker grinned and clapped Julian on the back, rather too hard. “So you’re interested in our beetles. Good, good. We’ll try to get one for you. Now: no more talk. You can see for yourself. Yoriko, battle stations!”

Yariko took off the tattered lab coat she wore over her jeans and T-shirt and manned the computer. Dr. Shanker climbed back into the vault. “Just to check the alignment,” he said. Hilda leaped through the portal after him.

Julian stood outside and peered into the vault. It was a small chamber, perfectly cubical, maybe ten feet to a side, and the walls were entirely metal. Lead lined, he was told later, as well as lined with a faraday cage to keep out radio signals and other static. It was lit by floodlights that were set into circular pits in the ceiling and screened off by the faraday cage.

There was a low shock-proof table in the center of the vault, and bolted to the table top were various instruments and canisters, a little bit of copper tubing connecting mysterious pressure chambers, a thicket of gauges and dials, and electrical wires, green, red, blue, and white, that had been meticulously soldered in place by hand.

A great twisting blue and red cable came down from a hole in the ceiling and fed the equipment. Yariko had once told him how she’d set it all up over the past few months: one of the reasons she worked at night as well as by day, since the delicate adjustments necessary were easily disturbed by noise and vibrations. Dr. Shanker was now kneeling beside the table holding a jeweler’s screwdriver in his massive hand, adjusting a calibration screw and watching one of the dials with the intensity of a true and dedicated scientist.

Julian felt a strange excitement. If true, this would be the oddest

CRETACEOUS DAWN

discovery he'd ever made. He imagined the headlines: "Paleontologist discovers living fossil of long-extinct coleoptera in a physics lab." He grinned.

Finally Dr. Shanker stood up. He turned, with his finger to his lips, and leaned out of the portal. "No talking," he whispered. "The vibrations will throw it off again. We don't want to produce the graviton bomb here—although ONR might be intrigued if we were all killed in an explosion." He leaned farther out and whispered to Yariko, "Have you run the start-up routine?"

"Yes," she whispered. "Get out of there. I'm about to execute."

"Try a level six perturbation."

"Level six?" Yariko paused, her fingers on the keyboard.

"Too high, you think? It should increase the probability of a good result. And Whitney's come all the way over here just to witness the impossible."

She grinned. "All right. Get out, close the door."

"Don't be ridiculous," Shanker said. "Nobody will know. I want to watch and monitor the result."

"No," Yariko said. "Get out of there. Never mind that it's illegal—it's dangerous, at such a high energy level."

It sounded like a long-standing argument between them. Julian wondered why it was dangerous, but he didn't dare interrupt to ask.

"If you insist," Dr. Shanker said, "I'll close the door." He retreated inside the vault, and coolly reached out and pulled the door shut on himself

Yariko looked up at Julian and shook her head. "He's going to get hurt someday, but it won't be my fault. I've warned him plenty of times. Do you want to step out?"

"Step out?"

"The risk is small, but not zero. Graviton vaults have been known to explode, and this one is wound up tight with these settings."

"If you're staying, I'm staying," Julian said. "I'm not missing this. I want to see that beetle." He might have to scramble to prepare for his one o'clock class, but he wasn't going to miss this for anything.

"OK then." Yariko turned back to her console, typed a few commands, and then paused with her finger hovering over the return key. "Here goes," she said, and pressed it.

A string of numbers began to scroll up the screen, too fast to read.

The other five computers on the counter top were slave machines, running routines, displaying numbers and status messages, none of which Julian understood. There was a clicking sound through the door of the vault, which was still open a crack. Julian looked at his watch and counted off a minute—a tense one.

The clicking began to speed up, like a mechanical toy running too fast; and then suddenly it stopped.

There was a moment of silence, and the door of the vault swung open. Hilda poked her head over the lip of the portal, and then Dr. Shanker looked out. He was grinning; he stuck out his big hairy fist with his thumb jutting up.

“So far so good,” he whispered. “Keep it quiet still. We don’t want anything vibrating while it powers down.” His head disappeared again into the vault.

“Did it work?” Yariko whispered eagerly, getting out of her chair and stepping forward on tiptoe. “What are the readings?”

But at that moment a door slammed in the next room, and it sounded like a cannon shot bursting into the silence. The security guards had returned early from lunch, and could be heard talking and laughing in the front room of the lab.

Yariko’s expression changed to alarm at the noise. The door of the vault should have been closed, sealing out sound and other vibrations; but as in any lab, exact protocols were followed only during inspection visits. With the guards off, and students still in class, safety measures were more relaxed.

A few seconds passed. Yariko’s scowl relaxed into a wry smile. She shook her head and whispered something before returning to the computer. The guards could be heard leaving the front room again. Julian opened his mouth to ask what exactly the experiment was, and if it had created another beetle.

But Yariko was staring at the computer screen with a frightened expression on her face. She hit a few keys, apparently without effect, and then she got up and ran toward the vault.

Julian started to ask what was wrong but he never got the words out. Nor did he make it to class that afternoon.

Science is by definition an iterative process, and scientists, those observers of the natural world, are drawn to the philosophy by their innate curiosity. The world view of science is changeable, constantly re-viewable, with never-ending caveats, complexities, and surprises: it is, in fact, a coarse reflection of the natural world. And therein lies the fascination.

—Julian Whitney, Lectures on Cretaceous Ecology

– TWO –

The explosion was deafening in the confined, concrete-walled room: a sharp crack like a massive electrical discharge. Julian instinctively pulled into a crouch with his arms over his head. There was a flash of blue light, and the circular door of the vault blew wide open and slammed against the wall. Smoke poured from the aperture, and the room filled up with the acrid smell of burnt electrical circuits.

Yariko was the first to recover from the shock; she darted to the opening and leaned in, fanning aside the smoke with her hand. “Dr. Shanker,” she hissed. “Are you all right? Can you hear me?” To Julian’s horror, she climbed inside.

Even in the first instant of fear, Julian noted that Yariko did not yell; if anything she was almost whispering. His ears, recovering from the explosion, barely registered her voice. For several more seconds he didn’t move, not knowing what would happen next. There might be another explosion. The vault might be on fire. He wished Yariko would get out.

He didn’t want to think about Dr. Shanker, in the center of the explosion. He felt slightly sick.

“Julian.” It was Yariko’s voice, barely reaching him. She was looking out of the vault, her eyes already red from the smoke. “Come here. I need your help.”