

The First Commandment

by Gregory Benford

"I just don't get the point," Weiss said. He had a thousand problems on his desk and didn't need another.

The biologist—Locke, was it?—let her exasperation flicker across her face. Then her patient face returned. "This is the last area to be inventoried. Every other habitat is done."

Weiss steepled his fingers and decided to give this gal at least one more minute, out of courtesy. "You count species, Dr. Locke? Enter them into a database?"

Locke leaned forward and her khaki jacket pressed against Weiss's large desk. "Not just count—catalog. That means we have to decide if an insect is, say, a beetle, and if so, which kind."

"And your funding ...?"

"The U.N. Global Inventory. With so many areas threatened, the U.N. set up the Inventory office over two decades ago. We've gone into every area—shrinking forests, dying deserts, swamps drying out, the lot."

With that last phrase he spotted the accent—classic Brit, probably English. He answered in his boisterous Aussie, heavy on the accent, "But this is a vital area!"

She smiled. "That's why we left it for last."

"Show me what you want to inventory, then." Weiss pushed his chair back and led her to the outer door. They stepped out into the dry still air of sunset. Weiss waved to the west. "Beautiful, eh?"

But she turned pointedly and looked east toward the blue-green ramparts. The mountains began to the east, in the Flinders range north of Adelaide. As they marched west they slumped down toward the great plain that stretched a thousand miles to the west. The absence of jutting peaks meant that dark-bellied clouds sweeping up from the Great Southern Ocean did not rise, and so did not rain. "Yes, very."

"You did those mountains?" He walked through a thin grove of eucalyptus, and she followed.

"Our inventory there was finished a month ago," she said flatly. "All the rest of the continent is done, in fact." The sharp late afternoon light slanted through the branches and speckled them.

"You move fast."

"We have thousands of workers. And habitat is vanishing faster than ever."

"So your team has been cooling its heels."

Stiffly: "Yes indeedy."

"Sorry." He spoke as he continued through the crackling eucalyptus bark underfoot. "Sorry, yeah, but we had plenty of work. Just getting the last shelves up and in place, y'know."

"Oh, I know. I know quite well."

Her voice still carried its edge, and he was glad he had turned and walked west, so she had to walk behind him and he didn't have to see her face. He could hear her keeping up with him, quicker steps than his. "I guess you environmentalists don't approve, then?"

She came up abreast of him. "It's far too late to approve or disapprove. It's done. I'm here to get a record of what was here before your, your—"

"Stewardship. That's the word I like." He gave her a slanted smile.

"All right, before your *stewardship* destroys any more species."

He pressed his lips together until they turned white. "With more water, I'd kinda expect them to prosper."

She shook her head vehemently. "Increased rainfall will help some species and hinder others. Many Australian species are not built to take constant damp conditions."

"They sure are up in Queensland."

"But not here. That's the point. Not every life form will adapt to the change you're imposing. We want to take samples, whole organisms, and preserve them for the day when some will be gone."

They walked clear of the eucalyptus and his maneuver made his point for him. To the west stretched a long, dark gray mount. It was over a kilometer high and its slope was like a series of steps, evenly spaced, a back-jut coming with every hundred meters of altitude. This gave the great mass the appearance of foothills. From here below the eye could not see the flat land implied by the sudden end of each thirty-degree slope. In fact, there was no flat there at all. The gray mass simply broke off, leaving an opening to the sky.

He kept his tone affable. "Damn pretty, wouldn't you say?"

To his surprise, she snorted. "Let's say it's not to my taste."

The lowering sun cast a glow over the inclines. The eye could clearly make out that the nearest ramparts were curiously smooth. No trees or even shrubs graced the gray gradients; they were dead grids of carbon fiber. As the eye adjusted, details emerged. Sunlight cast slanting rays through the great sheets of billowing fiber. Pale blades of luminosity played among the thick cross-struts.

Weiss's practiced eye could make out the vertical pillars beneath the gray slopes. Designing those to take wind and torques had been an exacting job, and he remembered well the years of sweat and calculation. But it had all paid off. The nearest section had been up nearly five years and had withstood dozens of storms slamming into it from the south. Structural engineers found no damage to the carbon-foam stanchions. There had been rips in the carbon fiber sheets they held aloft, to be sure, but nothing a crew could not mend.

"I think you'll find it is definitely to the taste of the farmers starting to till their fields down there," he said firmly, turning to point to the south. For several dozens of kilometers between them and the coast, great rectangular fields glistened with the colors of fresh crops. Before, these lands had been dry, barren scrub.

"I'm sure." She was obviously holding herself in.

"Um. You don't agree."

"The other ideas that were tried, how'd they work out? Seeding clouds offshore—"

"Not enough yield."

"—and that wild one, about putting coal-burning power plants offshore, so their dust plumes would make clouds—"

"Too pricey. Enviros blocked it, of course. Plus no way to move the power ashore easily."

She exhaled in exasperation, blowing her auburn hair out of her eyes. "So it had to be . . . fake mountains."

"They work. It's not as if we just started tinkering with the world yesterday."

"Regrettably."

"Do you really think that? The Aswan Dam, those gates that protect Venice, that sea-level Panama Canal II—only it's in Nicaragua. Fair dinkum stuff, right? Then there's the biggest, the Three Gorges Dam, the cap on Kilimanjaro to save the snow, that tropical cloud reflection campaign to cool the oceans and offset the greenhouse effect—"

"How about those reversed rivers in Siberia—big disaster, right?"

"But the Siberian drained swamp valleys shut down the mosquitoes—"

"And they'll change the local species around. Which is why we're here to take a snapshot before it changes."

Her color was high and her eyes flashed. Nobody changed their minds in the heat of argument, he reminded himself. He let three heartbeats pass before saying mildly, "This site's the last one, isn't it?"

She took a deep breath and focused on the distant, real mountains to the east. Her face relaxed. "Yes, with all the endangered sites, the Global Inventory decided to leave this for last." She smiled wanly. "Your changes are mild compared with cross-cutting whole valleys."

He gave her an appraising gaze. "So you've come for your permission, is it?"

"I'm not optimistic. You're going to tell me about another delay, aren't you?"

"Now, you've become cynical." He could not resist taking a mild little shot. Her stiff lip curled a bit in response, which gratified him.

She said stiffly, "Cynical? I've learned from experience. Every step of the way, there has been local opposition. At least in Africa we could just pay off the right officials and get the paperwork done."

He had to chuckle. "Sorry it's harder here. Maybe we *should* take bribes—it would be faster."

"Don't think we didn't consider it."

His mouth twisted slightly but he took the jibe with a thin smile that still creased his leathery face. With some relish he one-upped her, flourishing a single folded piece of paper he had carried in his hip pocket. "Surprise."

She blinked, gratifyingly startled.

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Cindy Locke's hip phone rang, a punchy few notes of Bach in the hovering stillness of the blue gum forest.

She was crouched over an open meter-deep hole, carefully taking microbial samples on a tape device. Finishing up, she stood and answered, her legs creaking with gratitude at the break.

"I hope this is about something," she said.

"That religious bunch is back." Brenda's tone was concerned.

"Throw them out."

"There are a lot more this time. And they don't look like they'll leave."

"What do the cops say?"

"It's peaceful, so—"

"Damn. I'm about a klick away. Be there soonest."

She breathed in the dry, flavored air and took a moment to prepare for another bruising brush with reality. No, this grove of towering sleek eucalyptus, *this* was reality. People were the passing phenomenon. Maybe.

A wedge tail hawk came flapping slowly up on the thermals. It wheeled elegantly and soared, riding the soft, moist breeze that lifted some heat from the day. She envied the hawk even as her professional eye pondered it as a gliding bag of genes, ancient beyond knowing, a muscular heritage still moving powerfully through its diminished world. *Sail on.*

She indexed her finds, taking the time to do it right, letting her professional self do the work and suppressing her tightening gut. She always hoped the fieldwork would go smoothly but it never did.

She closed up, hoisted her pack onto her back, and took long strides downhill. Above her the gray, gridded expanses billowed, like the sails of a great ship forever anchored. She passed one of the vertical pillars, its carbon foam skin glistening with gaudy lichen. Life found new niches, even in high tech pores.

Her boots sank silently into the thick brown mat and vines tapped big teardrops on her hat brim. She stepped over a convoy of green ants and on impulse knelt, let a few run onto her forefinger, and crunched them with her molars. A lemon tang flooded her mouth. It felt good to eat of this forest, a rare sacrament. A conservation biologist, she listened keenly to the myriad rustlings that escorted her through dappled shadows.

The artificial mountain looming above bestowed its bounty here. Grass tufts clustered around the tree roots and subtly scented the air. High above a pearly mist gathered. The steady, moisture-rich breeze that wafted in from the Great Southern Ocean did not stir the branches, for the carbon fiber blanket above shaped the air to flow up the slopes. Australia was the oldest continent, its mountain ranges ground down to red dust in vast plains. For millennia a moist bounty had skated over it from the south, to finally be

captured by the young, jutting mountains of New Guinea.

Not now. Rising up the gray slopes, the steady flow cooled, and fine fogs formed against the web of light carbon. Occasionally there was outright rainfall, hammering down through the open spaces in the blanket. She passed under a shaft open to the pale blue sky, a sunshine island a hundred meters wide. Sharp sun warmed her shoulders as she leaped over a murmuring stream.

The manmade mountain range now captured a vast rainfall all along the southern Australian coast. It fed the plains below a generous, steady plentitude and drove the burgeoning farmlands. In a world of ten billion souls, this new breadbasket was a crucial addition.

And there lay the eternal problem. Yet again, forest yielded to farm.

Just below her, insecticidal fog bombs burst in gray clouds, high up in the trees. She skirted left and watched the teams moving in. A rain of insect bodies sprinkled down through branches and spattered among the eucalyptus leaves underfoot.

Crude but effective, she thought as workers duck-walked across the defined area, carefully plucking the small bodies and dropping them into sample pouches. Some of the team specialized in plants and fronds, others in mammals and birds, but most of the dozen workers in jeans and boots took insects. These sweeps took anything and everything, a thorough though random sampling of the entire habitat. The volunteers were offered a nominal sum and most refused even that. They wanted to be in on the finish of something sad and grand.

A big man in an outback leather hat, for example, she remembered had come from Queensland at his own expense. He wanted to be in on the last big sampling of the biosphere, and his broad big-toothed smile permanently creased a ruddy face that had seen dozens of the earlier jobs.

Behind them trooped men carrying the freezers. These were big picnic coolers that steamed with dry ice vapor when the teams opened them to drop in the sample pouches.

Stapled to the cooler side was a green bar-code tag giving GPS position, time, and site description. She had run them off herself this morning and it looked as though they were enough for the day. Not many more to do, either. They were making rapid progress now as more volunteers came in. The job might be done in a few more days, and then all that was left was the laborious task of taxonomy.

Each grub and beetle and flower was fitted into an elaborate, computerized scheme, assigned a species classification and name. When done—and an army of taxonomists was processing thousands a day back at their base camp—this would be the end. *Finis* to over two decades of hard slogging in Africa, South America, Polynesia—all drawing to a close here.

The usual questions dogged her. How many had they missed? Particularly the savvy mammals that knew when to run. And what of those already extinct, never counted, never named?

The Aborigines they had worked with in the mountains above Adelaide had looked for their legendary rainbow beetles. They never found any. Gone.

Puddles from a recent shower mirrored the crossbars of the supporting struts, high in the shaded sky. She paused a moment, peering at the reflection, which at just the right angle looked like the holy cross. For the first time in quite a while she recalled her Catholic girlhood, the sense of mission that had come out of that, had led her here.

After this, though, what would she do? The great task of sampling all the world's bounty and sorting it

into categories would be over. Ideally, no species would be unknown. The job would be done as well as mere humans could do it.

And as the incursions of more noisy humans forced species into extinction, the record she had contributed to would be all that remained to mark them. But what of her, then?

Children? Getting a bit late in the game for that, and no man interested in fathering. The world did not need more mouths, either.

A light rain spattered down from the canopy, which was nearer now as she angled along the hill toward their central nexus. As she came down through the last grove, her pulse quickened. *Back to the world of people. And soon, there would be no other.*

To the sad, long list—the dodo, passenger pigeon, moa, Tasmanian wolf, dusky sparrow, Florida panther, so many more—new names would be added. The only hope of knowing what those creatures were now lay in the sample cabinets of musty museums. But the inventory she was doing held out hope that in some brighter future, the genomic information in their sample bags would enable the resurrection of species. If biology marched on, perhaps the past was not truly lost.

She made herself put aside her musings. A babble of excited talk came from the clearing ahead.

Their trailers had moved. They were circled like wagons against the oddly silent crowd. Brenda must have done that when she saw their numbers—at least five hundred of them, most in pants and collared shirts, a few even in dark suits. Missionaries?

There was Brenda, gesturing to a tall, swarthy man. She was making pushing motions, *get back*, but the crowd pressed in around her. Trouble.

Cindy hailed Brenda, a short, muscular no-nonsense woman in jeans who turned with relief. As Cindy approached, hand-lettered signs lofted from the crowd.

HEED THE HOLY WORD
REPENT THE SIN

read one in garish lettering, and a banner unfurled between two women:

ARROGANCE WILL BRING THE LAST DAYS

A sullen mutter rose up from them. Eyes glowered above gritted teeth.

Cindy could not imagine what this was about. Usually they faced only the press. Those were well represented today, scenting controversy: three shoulder-held cameras zoomed in on her as she strode into the crowd. In the cloying heat she could smell them, rank and excited.

"Who's in charge here?" she demanded loudly.

A tall man with russet beard stepped from the line. "I am."

From long experience she turned and faced him straight-on, chin up. "We've had some religious types demonstrate, but this is different, isn't it? Lots more of you."

"I come bearing a message you should heed," he said slowly, soberly. His face was all planes, and he had

the cast of a man who was uncertain of very little. "I wish to deliver it away from this circus, if you please."

The *please* was a pleasant touch. She eyed the rest of them and found the usual types; people with too much past and too little future, washed up upon the shore of faith.

"Why?" she challenged him, hands on hips. The crowd was milling and muttering, but she ignored it. Brenda started talking to the rest of them in a reasonable tone, projecting her big voice out over their heads. The TV crews, thank God, followed her, sniffing at a possible confrontation.

"We are here for many different missions, we faithful."

He waved a hand at the others, but his burning eyes told the truth—this was his mission, and the others did not matter. He carried the air of a man bedeviled by something, a past that had carved lines in his long face. His severe black suit seemed wrapped around him more than fitted. He had a look she had seen once in a woman's forlorn face, a sense of some past moral transgression for which everyone forgives them except themselves. And so they powerfully needed to redeem themselves.

She gave him a big arm-sweeping gesture and smiled, light as a bird in flight. "Come into my spacious office." Her levity got the fierce, brooding look off his face. Enough social lubrication and she might get him off the site. But today it didn't seem to work. His eyes bored into her for a long moments, his mouth working, and then he nodded twice in quick jerks.

She led him into the trailer where the automatic species-readers were working. It was cooler there, from the air-conditioning the computers needed. They labored silently, and the clacking of the auto-readers was muffled. She pointed out one to him. The machine took the samples from the day before—insects, mostly—and in a single bright flash took a three-dimensional photo, analyzing its features in an instant. By comparing it with the immense Global Inventory database, and using rules of thumb worked out by the best taxonomists, this single trailer could index and place the samples a billion times faster than clunky humans.

It was the key to making an inventory of so many species, and she rattled on about it for a full minute before she realized that none of it was sinking in. And that her well-learned talents at dealing with opponents—smile, make little jokes, offer information, make them see you as human, too—was getting nowhere.

"All right," she said, shifting gears to her official voice, "let's get down to business, Mister ...?"

"Abrahams," he said curtly.

"Ummm. And—"

"You are all in great danger."

His deep-set eyes glared, the mouth twisted. "Uh, oh?"

"You are a rational, scientific-type person. You do not heed an older wisdom."

"Depends on the wisdom, I'd say."

"Consider this, then—" He stood and recited:

"Genesis, 19. And out of the ground the Lord God formed every beast of the field, and every fowl of the air; and brought them unto Adam to see what he would call them: and whatsoever Adam called every

living creature, that was the name thereof."

"Which means ...?"

"Your Global Inventory. You are naming the beasts."

"And the plants. So?"

He wrung his hands together, squeezing his eyes shut, and then the words exploded from him. "Genesis, 20. And Adam gave names to all cattle, and to the fowl of the air, and to every beast of the field; but for Adam there was not found a help meet for him."

"This is where Eve comes in?"

He stared off into the distance, as if listening to someone. Then he shook his head and turned to her slowly. "You are of Eve. But no, the scripture means something more. We cannot know what will attend once we have completed the Lord's task."

She wanted to say to him, *Yes, the naming of the beasts is holy work. Science is holy. Your own book says it! So how about leaving us alone to do our jobs?*

But she didn't. This one was not going to tolerate a lot of argument.

"So Genesis is, what, wrong?" It usually helped if you took their point of view at first, and could politely differ with the following portions of the argument. But something told her this was not going to work with the intense, scowling man, still rubbing and massaging his hands as he stared at her. For the first time she wondered about her own safety here, alone with him, with only the buzzing machines as witness.

"Not wrong, no. It becomes a tale of origins. Later scholars ignored the flat fact that the naming of the beasts was God's first commandment. All that comes after is irrelevant to the deeper truth."

"Which is ..."

"That mankind—including the Eves—never finished the first work they were given. God-given!"

"You mean our inventory will do that, at last."

"Yes." His hands hung at his side, their wringing finished.

"Then we are doing holy work, yes?"

"Of a kind, yes. Complying, as is our duty, with the First Commandment."

"I thought Moses did those."

It was meant to be a small joke, but he gravely shook his head. "Genesis comes before Moses."

"I think I knew that."

But hear this." He stiffened and the hands came together again and he recited: "Genesis, 21: And the Lord God caused a deep sleep to fall upon Adam and he slept."

"Before he got his job done, the naming of the beasts?"

He gazed at her with an expression suddenly mournful. "I do not believe we can know what that passage means."

"A sleep? I know I'll be needing one after this project is done."

"I think you must not complete your inventory. Not until we have a further sign of what the Lord intends to do, after we have done his holy work at last—but so late. Millennia late!"

"And maybe too late," she said sourly. Where was this going?

He nodded, as if he shared her sadness at all that had been lost. "Since we were in the Garden, we have destroyed much."

"Without naming them at all." She felt a strange sympathy with this sad man.

"Think of all that we have lost. God may be displeased."

"This is a scientific study—"

"I gave you a world of wonders. You give me a measly list."

She was about to say calmly, carefully, that the Global Inventory estimated that at best they would miss twenty percent of the species that had been alive at the turn of the millennium—but then realized that he was not about numbers.

"Surely," he said, "the Lord will consider the completion of your project to be of importance. Perhaps He"—she could hear the capital letter—"has been waiting all this time for us to be done."

Thy will be done, she remembered from the Apostle's Creed, learned in girlhood. She had not thought of it for at least three decades. The words took her back ...

But rough sounds intruded. Angry shouts came from outside.

A thump. Something crashing over.

Brenda burst into the room, eyes wide.

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The ceremony to mark completion of the Global Inventory was held near the same blue gum grove where Weiss had given her the final permission papers. The day was sharp and clear, and at least five hundred people milled around the broad field in front of the platform.

The U.N. dignitaries had all the attention, of course, and she was so far down the pecking order she found herself sitting next to Weiss himself: at the back, true, but at least on the platform. A small seat in history, she consoled herself.

From the podium came the usual.

"Glad you got it all done in time," he whispered. "Heard there was a dustup."

She nodded. "A religious gang. Their leader got me off to talk, and the rest of them started going for our equipment. When somebody came to tell me, we barely managed to restrain the leader."

"Really? You weren't—"

"No. He went for the taxonomy systems, not for us."

"There's always nutters about."

"Especially these days. The last days, some religious ones say."

She sat back and enjoyed the view. From here the artificial mountains loomed like great gray clouds. A distant squall was mounting up their ramparts. The cloud's blue belly ripened as it rose. She turned and could see to the east the last slopes of the true mountains, where they petered out and the flat dry lands had begun.

There the gray carbon slopes began. Below each range the land lay fallow, but the fields were greener downslope of the artificial peaks. The works of man were doing better than the tired, eroded flanks that had been thrust up young by the waltz of continents.

"So this ceremony is premature?" Weiss was asking her. She thought she had seen some movement in the distance.

"What? Oh, not exactly. We got everything running right again. Just lost a little time, is all. I promised the execs that we would have the processing done by today all right."

"That's the end of the whole job, then?"

"Oh no, we have to understand it next. After all, it's just a list of all the species on Earth, with a proper tag attached, a working name."

"That's a lot."

"All we've done is name the ... the beasts."

Suddenly she saw in her mind's eyes the hot-eyed man, Abrahams. He had feared that God would be displeased. Maybe not with the time it took to name the beasts—they were bumbling, slow-witted humans, after all—but with the missing numbers, the endless bugs and rodents and worms and on down to microbes, all the small squirming creatures who nonetheless made up His fine sacrament, His province. A bounty all gone now because of human numbers, creatures lost before they had been counted, while the humans squandered their eons and fought their wars and ignored the generous world around them—

She caught herself. "The inventory, yes ... Now we have to—"

But something had drawn her eye.

Far to the east, where the world was still wholly natural, the peaks had changed. Lightning crackled and a dark funnel descended from so far up in the firmament she could not see its beginning. Wind whipped by her ears. A dank, musty odor came, and the crowd murmured in fear, like a chorus. Voices lifted toward peaks that were subsiding, lapsing. Great spokes of stone broke through the leafy slopes. The ground shook like a beast rousing from a long slumber. Fear tasted like copper in her mouth.

Silently, the great old mountains were melting, as if shrugging off a burden they had carried far too long.

The End