

Strata

Terry Pratchett

## **About the Book**

The Company builds planets.

Kin Arad is a high-ranking official of the Company. After twenty-one decades of living, and with the help of memory surgery, she is at the top of her profession. Discovering two of her employees have placed a fossilized plesiosaur in the wrong stratum, not to mention the fact it is holding a placard which reads 'End Nuclear Testing Now', doesn't dismay the woman who built a mountain range in the shape of her initials during her own high-spirited youth.

But then came a discovery of something which did intrigue Kin Arad. A flat earth was something new...

First published in 1981, *Strata* is an early exploration of the idea that was to become the best-selling *Discworld* series.

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## **STRATA**

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I met a mine foreman who has a piece of coal with a 1909 gold sovereign embedded in it. I saw an ammonite, apparently squashed in the fossil footprint of a sandal.

There is a room in the basement of the Natural History Museum which they keep locked. Among other oddities in there are the tyrannosaurus with a wristwatch and the Neanderthal skull with gold fillings in three teeth.

What are you going to do about it?

Dr Carl Untermond
The Overcrowded Eden

It was, of course, a beautiful day - a Company brochure day. At the moment Kin's office overlooked a palm-fringed lagoon. White water broke over the outer reef, and the beach was of crushed white coral and curious shells.

No brochure would have shown the nightmare bulk of the pontoon-mounted strata machine, the small model for islands and atolls under fifteen kilometres. As Kin watched, another metre of beach spilled out of the big back hopper.

She wondered about the pilot's name. There was genius in that line of beach. A man who could lay down a beach like that, with the shells just right, deserved better things. But then, perhaps he was a Thoreau type who just liked islands. You got them sometimes; shy silent types who preferred to drift across the ocean after the volcano teams, dreamily laying complicated archipelagos with indecent skill. She'd have to ask.

She leant over her desk and called up the area engineer. 'Joel? Who's on BCF3?'

The engineer's lined brown face appeared over the intercom.

'Guday, Kin. Let me see now. Aha! Good, is it? You like it?' 'It's good.'

'It's Hendry. The one who's the subject of all those nasty depositions you've got on your desk. You know, the one who put the fossil dino in—'

'I read it.'

Joel recognized the edge to her voice. He sighed.

'Nicol Plante, she's his mixer, she must have been in on it too. I put them on island duty because, well, with a coral island there is not the temptation—'

'I know.' Kin thought for a while. 'Send him over. And her. It's going to be a busy day, Joel. It's always like this at the end of a job, people start to play around.'

'It's youth. We've all done it. With me it was a pair of boots in a coal measure. Not so imaginative, I admit.'

'You mean I should excuse him?'

Of course he did. Everyone was allowed just one unscripted touch, weren't they? Checkers always spotted them, didn't they? And even if one went unnoticed, couldn't we rely on future paleontologists to hush it up? Huh?

Trouble was, they might not ...

'He's good, and later on he'll be great,' said Joel. 'Just gnaw one ball off, eh?'

A few minutes later Kin heard the machine's roar stutter and stop. Soon one of the outer office robots came in, leading—

—a squat fair-haired youth, tanned lobster pink, and a skinny bald girl hardly out of her teens. They stood staring at Kin with a mixture of fear and defiance, dripping coral dust onto the carpet.

'All right, sit down. Want a drink? You both look dehydrated. I thought they had air conditioning in those things.'

The pair exchanged glances. Then, the girl said, 'Frane likes to get the feel of his work.'

'Well, okay. The freezer's that round thing hovering right behind you. Help yourself.' They jerked away as the freezer bumped into their shoulders, then grinned nervously and sat down.

They were in awe of Kin, which she found slightly embarrassing. According to the files they were both from colony planets so new the bedrock had hardly dried, while she was manifestly from Earth. Not Whole, New, Old, Real or Best Earth. Just Earth, cradle of humanity, just like it said in their history books. And the double century mark on her forehead was probably something they'd only heard of before joining John Company. And she was their boss. And she could fire them.

The freezer drifted back to its alcove, describing a neat detour around a patch of empty air at the back of the room. Kin made a mental note to get a tech to look at it.

They sat gingerly on the float chairs. Colony worlds didn't have them, Kin recalled. She glanced at the file, gave them an introductory glare, and switched on the recorder.

You know why you're here,' she said. You've read the regulations, if you've got any sense. I'm bound to remind you that you can either choose to accept my judgement as senior executive of the sector, or go before a committee at Company HQ. If you elect for me to deal with it, there's no appeal. What do you say?'

'You,' said the girl.

'Can he speak?'

'We elect to be tried by you, Mizz,' said the boy in a thick Creed accent.

Kin shook her head. 'It's not a trial. If you don't like my decision you can always quit – unless of course I fire you.' She let that sink in. Behind every Company trainee was a parsec-long queue of disappointed applicants. *Nobody* quit.

'Right, it's on record. Just for the record, then, you two were on strata machine BVN67 on Julius 4th last, working a

line on Y-continent? You've got the detailed charge on the notice of censure you were given at the time.'

'Tis all correct,' said Hendry. Kin thumbed a switch.

One wall of the office became a screen. They got an aerial view of grey datum rock, broken off sharply by a kilometre-high wall of strata like God's own mad sandwich. The strata machine had been severed from its cliff and moved to one side. Unless a really skilled jockey lined it up next time, this world's geologists were going to find an unexplained fault.

The camera zoomed in to an area halfway up the cliff, where some rock had been melted out. There was a gantry and a few yellow-hatted workmen who shuffled out of camera field, except for one who stood holding a measuring rod against Exhibit A and grinning. Hi there, all you folks out there in Company Censure Tribunal Land.

'A plesiosaur,' said Kin. 'All wrong for this stratum, but what the hell.' The camera floated over the half-excavated skeleton, focusing now on the distorted rectangles by its side. Kin nodded. Now it was quite clear. The beast had been holding a placard. She could just make out the wording.

"End Nuclear Testing Now", she said levelly.

It must have taken a lot of work. Weeks, probably, and then a very complicated program to be fed into the machine's main brain.

'How did you find out?' asked the girl.

Because there was a telltale built into every machine, but that was an official secret. It was welded into the tenkilometre output slot to detect little unofficial personal touches, like pacifist dinosaurs and mammoths with hearing aids – and it *stayed* there until it found one. Because sooner or later everyone did it. Because every novice planetary designer with an ounce of talent felt like a king atop the dream-device that was a strata machine, and

sooner or later yielded to the delicious temptation to pop the skulls of future paleontologists. Sometimes the Company fired them, sometimes the Company promoted them.

'I'm a witch,' she said. 'Now, I take it you admit this?'

'Yarss,' said Hendry. 'But may I make, uh, a plea in mitigation?'

He reached into his tunic and brought out a book, its spine worn with use. He ran his thumb down it until the flickering pages stopped at his reference.

'Uh, this is one of the authorities on planetary engineering,' he said. 'May I go ahead?'

'Be my guest.'

'Well, uh. "Finally, a planet is not a world. Planet? A ball of rock. World? A four-dimensional wonder. On a world there must be mysterious mountains. Let there be bottomless lakes peopled with antique monsters. Let there be strange footprints in high snowfields, green ruins in endless jungles, bells beneath the sea; echo valleys and cities of gold. This is the yeast in the planetary crust, without which the imagination of men will not rise." '

There was a pause.

'Mr Hendry,' asked Kin, 'did I say anything there about nuclear-disarmament dinosaurs?'

'No, but—'

'We build worlds, we don't just terraform planets. Robots could do that. We build places where the imagination of human beings can find an anchor. We don't bugger about planting funny fossils. Remember the Spindles. Supposing the colonists here turn out like them? Your fossil would kill them, blow their minds. Docked three months' labour. You too, Miss Plante, and I don't even want to know for what reasons you were helping this nitwit. You may go.'

She switched off the recorder.

'Where are you going? Sit down. All that was for the benefit of the tape. Sit down, you look dreadful.'

He was no fool. She saw the embryo hope in his eyes. Best to scotch that now.

'I meant it about the sentence. Three months' enforced vacation. It's on the tape, so you won't talk me out of it. Not', she added, 'that you could.'

'But we'll have finished this job by then,' he said, genuinely hurt.

Kin shrugged. 'There'll be others. Don't look so worried. You wouldn't be human if you didn't yield to temptation. If you feel bad, ask Joel Chenge about the boots he tried to lay down in a coal seam. They didn't ruin his career.'

'And what did you do, Miss?'

'Hmm?' The boy was looking at her sidelong.

'You sort of give the impression I've done something everyone else has done. Did you do it too?'

Kin drummed her fingers on the desk. 'Built a mountain range in the shape of my initials,' she said.

'Whee!'

'They had to rerun almost half a strip. Nearly got fired.'

'And now you're Sec-exec and—'

'You might be too one day. Another few years they might let you loose on an asteroid of your very own. Some billionaire's pleasure park. Two words of advice; don't fumble it, and never, *never* try to quote people's words against them. I, of course, am marvellously charitable and understanding, but some other people might have made you eat the book a page at a time under threat of sacking. Right? Right. Now go, the pair of you. For real this time. It's going to be a busy day.'

They hurried out, leaving a coral trail. Kin watched the door slide across, staring into space for a few minutes. Then she smiled to herself, and went back to work.

Consider Kin Arad, now inspecting outline designs for the TY-archipelago:

Twenty-one decades lie on her shoulders like temporal dandruff. She carries them lightly. Why not? People were never meant to grow old. Memory surgery helped.

forehead. the golden disc her On that multiple centenarians often wore - it inspired respect, and often Not every embarrassment. woman relished attempted seduction by a man young enough to be her great-to-the-power-of-seven grandson. On the other hand, not every elderly woman wore a disc, on purpose ... Her skin was presently midnight-black, like her wig - for some reason hair seldom survived the first century - and the baggy black all-suit.

She was older than twenty-nine worlds, fourteen of which she had helped to build. Married seven times, in varying circumstances, once even under the influence of love. She met former husbands occasionally, for old times' sake.

She looked up when the carpet cleaner shuffled out of its nest in the wall and started to tidy up the sand trails. Her gaze travelled slowly round the room as though seeking for some particular thing. She paused, listening.

A man appeared. One moment there was air: the next, a tall figure leaning against a file cabinet. He met her shocked gaze, and bowed.

'Who the hell are you?' exclaimed Kin, and reached for the intercom. He was quicker, diving across the room and grabbing her wrist politely yet agonizingly. She smiled grimly and, from a sitting position, brought her left hand across and gave him a scientific fistful of rings. When he had wiped the blood out of his eyes she was looking down at him and holding a stunner.

'Don't do anything aggressive,' she said. 'Don't even breathe threateningly.'

'You are a most unorthodox woman,' he said, fingering his chin. The semi-sentient carpet cleaner bumped insistently around his ankles.

'Who are you?'

'Jago Jalo is my name. You are Kin Arad? But of course—' 'How did you get in?'

He turned round and vanished. Kin fired the stunner automatically. A circle of carpet went *wump*.

'Missed,' said a voice across the room.

Wump.

'It was tactless of me to intrude like this, but if you would put that weapon away—'

Wump.

'There could be mutual profit. Wouldn't you like to know how to be invisible?'

Kin hesitated, then lowered the stunner reluctantly.

He appeared again. He *wiped* himself solid. Head and torso appeared as though an arm had swept over them, the legs popped into view together.

'It's clever. I like it,' said Kin. 'If you disappear again I'll set this thing on wide focus and spray the room. Congratulations. You've managed to engage my interest. That's not easy, these days.'

He sat down. Kin judged him to be at least fifty, though he could have been a century older. The very old moved with a certain style. He didn't. He looked as though he'd been kept awake for a few years – pale, hairless, red-eyed. A face you could forget in an instant. Even his all-suit was a pale grey and, as he reached into a pocket, Kin's hand moved up with the stunner.

'Mind if I smoke?' he said.

'Smoke?' said Kin, puzzled. 'Go ahead. I don't mind if you burst into flame.'

Eyeing the stunner, he put a yellow cylinder into his mouth and lit it. Then he took it out and blew smoke.

This man, thought Kin, is a dangerous maniac.

'I can tell you about matter transmission,' he said.

'So can I. It's not possible,' said Kin wearily. So that was all he was - another goldbricker. Still, he could turn invisible.

'They said that it was impossible to run a rocket in space,' said Jalo. 'They laughed at Goddard. They said he was a fool.'

'They also said it about a lot of fools,' said Kin, dismissing for the moment the question of who Goddard was. 'Have you got a matter transmitter to show me?'

'Yes.'

'But not here.'

'No. There's this, however.' He made a pass and his left arm disappeared. 'You might call it a cloak of invisibility.'

'May I, uh, see it?'

He nodded, and held out an empty hand. Kin reached out and touched - something. It felt like coarse fibre. It might just be that the palm of her hand underneath it was slightly blurred, but she couldn't be sure.

'It bends light,' he said, tugging it gently out of her grip. 'Of course, you can't risk losing it in the closet, so there's a switch area – here. See?'

Kin saw a thin, twisting line of orange light outlining nothing.

'It's neat,' said Kin, 'but why me? Why all this?'

'Because you're Kin Arad. You wrote *Continuous Creation*. You know all about the Great Spindle Kings. I think they made this. I found it. Found a *lot* of other things, too. Interesting things.'

Kin gazed at him impassively. Finally she said, 'I'd like a little fresh air. Have you breakfasted, Jago Jalo?'

He shook his head. 'My rhythms are all shot to hell after the trip here, but I think I'm about due for supper.'

\* \* \*

Kin's flyer circled the low offices and headed northward to the big complex on W-continent. It skirted the bulk of what had been Hendry's machine, its new pilot now laying down a pattern of offshore reefs. The manoeuvre gave them an impressive view of the big collector bowl atop the machine, its interior velvety black.

'Why?' said Jalo, peering. Kin twirled the wheel.

'Beamed power from orbiting collectors, slaved to the machine. If we flew over the bowl we wouldn't even leave any ash.'

'What would happen if the pilot made a mistake and the beam missed the bowl?'

Kin considered this. 'I don't know,' she said. 'We'd certainly never find the pilot.'

The flyer skimmed over some more islands. Vatbred dolphins, still frisky after their journey in the megatanker, looped through the waves alongside its shadow. Blast *Continuous Creation*!

But at the time it had seemed a good idea. Besides, she had done just about everything else but write a book. The actual writing hadn't been difficult. The real problem had been learning how to make paper, then hiring a staff of

robots and setting them to building a printing press. It had been the first book printed in four hundred years. It had caused quite a stir.

So had the words inside the expensively-produced card covers. They said nothing new, but somehow she had managed to assemble current developments in geology in such a way that they had struck fire. According to reports the book had even been the basis for a couple of fringe religions.

She looked sideways at her passenger. She was unable to trace his accent – he spoke meticulously, like someone who had just taken a learning tape but hadn't had any practice. His clothes could have been bought out of a machine on a dozen worlds. He didn't look mad, but they never did.

'So you've read my book,' she said conversationally.

'Hasn't everyone?'

'Sometimes it seems so.'

He turned red-rimmed eyes to her.

'It was okay,' he said. 'I read it on the ship coming here. Don't expect any compliments. I've read better.'

To her disgust Kin felt herself reddening.

'No doubt you've read plenty,' she murmured.

'Several thousand,' said Jalo. Kin kicked the flyer on to automatic and spun round in her seat.

'I know there aren't even hundreds of books; all the old libraries are lost!'

He cringed. 'I did not mean to offend.'

'Who do—'

'It isn't necessary for an author to make the paper,' said Jalo. 'In the old days there were publishers. Like filmy factors. All the author did was write the words.'

'Old days? How old are you?'

The man shifted in his seat. 'I can't be precise,' he said. 'You've changed the calendar around a few times. But as near as I can make out, about eleven hundred years. Give or take ten.'

'They didn't have gene surgery in those days,' said Kin. 'No one is that old.'

'They had the Terminus probes,' said Jalo quietly.

The flyer passed over a volcanic island, the central cone fuming gently as a tech squad tested it out. Kin stared at it unseeing, her lips moving.

'Jalo,' she said. 'Jalo! I thought the name was familiar! Hey ... the big thing about the Terminus ships was that they would never come back ...'

He grinned at her, and there was no humour in it. 'Quite correct,' he said. 'I was a volunteer. We all were, of course. And quite mad. The ships were not equipped to return.'

'I know,' said Kin, 'I read a filmy. Ugh.'

'Well, you've got to see it against the background of the times. It made a kind of sense, then. And, of course, my ship didn't come back.'

He leaned forward.

'But I did.'

The Ritz was in the unofficial city that had grown up around what had been the first and was now the last Line. Now even the city was breaking up, being towed back up the wire to the big freighters in orbit. In another month the last Company employee would follow it. The last snowfield would have been laid. The last humming-birds would have been released.

Their conversation on the roof garden of the restaurant was punctuated by the slap and rattle of yellow tugs climbing the Line two kilometres away, towing strings of redundant warehouses like beads on a wire. They were soon lost in the cirrus, bound for Line Top.

Kin had ordered framush, saddleback of loom and breasens. Jalo had read the menu intently and had ordered, in frank disbelief, a dodo omelette. He looked now as though he regretted it.

Kin watched him pick at it, but her mind persisted in showing her pictures. She remembered the bell-shaped bulk of a Terminus probe, the pilot's life-system a tiny sphere at the tip. She remembered the frightening logic that had led to the building of the monsters. It went like this:

It was far better to send a man into space than a machine. In the complete unknown, a man could still evaluate and decide. Machines were fine for routine, but they flipped when presented with the unforeseen.

It was cheap to send a machine because it did not breathe and it sent its information back alone.

Whereas a man breathed, all the time. This was expensive.

But it was very cheap to send a man if you did not arrange to bring him back.

'Is that celery in the jug?' said Jalo.

'It's snaggleroot shoots,' said Kin. 'Don't eat the yellow bits, they're poisonous. Now, do I have to sit here waiting? Speak to me', she murmured, 'of the Great Spindle Kings.'

'I only know what I read,' said Jago. 'And most of what I read, you wrote. Can I eat these blue things?'

'You've found a Spindle site?' Only nine Spindle sites had been found. Ten, if you included the derelict ship. The prototype strata machine had been found on one. So had the details of gene surgery. No wonder more people studied paleontology than engineering.

'I found a Spindle world.'

'How do you know it's Spindle?'

Jalo reached over and took some snaggleroot.

'It's flat,' he said.

It was possible, Kin conceded.

The Spindles had not been gods, but they would do until gods showed up. They had evolved on some light world ... possibly. The surviving mummies certainly showed them to be three metres tall but weighing only ninety pounds. On Earth worlds as heavy as they wore marvellous themselves prevent collapsing exoskeletons to multiple fractures. They had long snouts, and hands with two thumbs, legs banded alternately in orange and purple and feet big enough for a circus clown. They had no brain or, to be more precise, their whole body could act like a brain. No one had ever been able to find a Spindle stomach, either.

They didn't look like gods.

They had cheap transmutation but not FTL travel. Possibly they had sexes, but exobiologists had never found out where little Spindles came from.

They sent messages by modulating a hydrogen line in the spectrum of the nearest star.

They were all telepaths and *acute* claustrophobes ... They didn't even build houses. Their spaceships were ... unbelievable.

They lived nearly for ever, and to while away the time they visited planets with a reducing atmosphere and played with them. They introduced mutated algae or oversized moons. They force-bred lifeforms. They took Venuses and made Earths, and the reason, once you accepted that Spindles were different, made sense at least to humans.

They were spurred by a pressing population problem - pressing, that was, to Spindles.

One day they had ripped up a planetary crust with a strata machine and found something dreadful – dreadful, that was, to Spindles. In the next two thousand years, as the news spread, they died of injured pride.

That was 400 million years ago.

A tug plunged down the Line, the braking roar leaking through its sonic screen. The Line marshals were cutting the loads adrift a few thousand miles up and sending them on their way by strap-on rocket, to keep Line weight down.

The tug swung through the switching system and hummed off towards the distant marshalling yards. Kin looked at Jalo with narrowed eyes.

'Flat,' she said, 'like an Alderson disc?'

'Maybe. What's an Alderson disc?'

'No one ever built one, but you hammer all the worlds in a system into a system-wide disc with a hole in the middle for the sun, and you plate the underside with neutronium for gravity, and—'

'Good grief! You can work neutronium now?'

Kin paused, then shook her head. 'Like I said, no one's ever built one. Or found one.'

'This one is not much more than thirteen thousand miles across.'

Their gazes met. She rolled out the word he was waiting for.

'Where?'

'You'll never find it without me.'

'And you think it's a Spindle artefact?'

'It's got things you'd never believe in a million years.'

'You intrigue me. What is your price?'

For an answer Jalo fumbled in a belt pouch and brought out a wad of 10,000 Day bills. Company scrip was harder than most world currencies. Any one of them represented almost twenty-eight years of extended life if cashed at a Company trading post. The Company's credit was the best. It paid in extended futures.

Without taking his gaze off Kin, Jalo summoned the nearest robot waiter and pushed a handful of bills into its disposal hopper. Every instinct cried out to Kin to leap up and grab them back, but even with science on your side one did not live past the first century by obeying instincts. The automatic incinerator would have burned her hand off.

'How ...' she croaked. She cleared her throat. 'How juvenile,' she said. 'Forgeries, of course.'

He handed her a methuselah bill, the highest denomination issued by the Company.

'Two hundred and seventy years,' he said. 'A gift.'

Kin took the gold and white plastic. Her hands emphatically did not tremble.

The design was simple, but then there were more than 200 other tests for the authenticity of Company scrip. *Nobody* forged it. It was widely advertised that any hypothetical forgers would spend all the years that had been fraudulently manufactured, in the Company vaults, passing them in novel and unpleasant ways.

'In my day,' said Jalo, 'I would have been called rich, rich, rich.'

'Or dead, dead, dead.'

'You forget I was a Terminus pilot. None of us really believed in the inevitability of our death. Few people do. I have been proved right so far. In any case, you are welcome to test the bill. It is genuine, I assure you.

'I have not come to buy. I want to hire *you*. In thirty days I'm returning to the ... flat world, for reasons that will become obvious. I intend to be away less than a year, and the pay I offer is the answers to questions. You may keep that bill, of course, even if you do not accept. Perhaps you would like to frame it, or maybe keep it for your old age.'

He vanished like a demon king. When Kin lunged across the table her hands met empty air.

Later she ordered a check on all shuttles going up the Line. Not even an invisible man could have got past the telltales secreted in the gangways. He'd hardly attempt to board a freight shuttle – most were not even pressurized.

He didn't. Kin realized later that he had bought a ticket under an assumed name and just walked past the security net, flaunting his visibility like a cloak.

The message came twenty-five days later, along with the first wave of colonists.

The main Line had long since gone, winched up into its synchronous-orbit satellite and loaded aboard a freighter. There were still a few cosmetic teams just finishing work at the antipodes.

Around Kin, as she stood on a knoll in the midst of the tangled jungle, the steaming, scent-encrusted land was bare of any obvious human mark. Eight thousand miles under her feet, she knew, men, robots and machines were converging on and boiling up the antipodal wire; soaring into the last of the freighters, a twelve-mile skeleton with one big fusion motor, and leaving the world to the newcomers.

Despite appearances, it would be a planned withdrawal. Last off would be the sweepers, carefully scuffling over the ruts. A Company publicity film had once shown the last man off being winched up a few feet on the Line, then bending back to brush out his footprints. Not true, of course - but it missed the truth by mere inches.

It was a good world. Better than Earth, but they said now that Earth was improving – population up to nearly three-quarters of a billion now, and that didn't include too many robots.

Better than her childhood. Kin had long ago dispensed with most of her early memories in a periodic editing, but she had kept one or two. She winced as she recalled the oldest.

A hill like this one, overlooking a darkening countryside wreathed in ragged mists, and the sun sinking. Her mother had taken her there, and they stood in the small crowd that was the total population of almost half of a country. Most of them were robots. One of them, a Class Eight, hide crisscrossed with repair welds, lifted her onto its shoulders for a better view.

The dancers were all robots, although the fiddler was human.

Thump, thump went the metal feet on the dark turf, while early bats hunted for insects overhead.

The steps were perfect. How could they be otherwise? There were no men to hesitate or stumble. The world was too full of things for the few humans to do that they should concern themselves with this. Yet they knew that such things must be continued against the day men could once again pick up the reins. Back and forth, crossing and leaping, the robots danced their caretaker Morris.

And young Kin Arad had decided then that people should not become extinct.

It had been a near thing. Without the robots, it would have been a certainty.

While the stamping figures rocked darkly against the red sunset sky, she made up her mind to join the Company ...