

# Chicxulub

Philip Armstrong

Thirty-two feet from nostril to tail-tip, ten feet tall at the hip.

Davy's lying in front of the fire, propped on his elbows, imagining a Stegosaurus. He's got his favourite book, the *Encyclopaedia of Prehistoric Life*, open in front of him, but he doesn't need it, he knows it by heart. A tail armed with four spikes, each one three feet long. A short neck and a birdlike skull carried close to the ground. A brain so tiny in relation to that huge body that Stegosaurus needed a second brain in its pelvic region, bigger than the one in its head.

Davy rolls over and stares at the ceiling and imagines what it would be like to have two brains. He can't manage this very well, so instead he imagines the artist's rendition of Stegosaurus swelling into three dimensions and becoming life-sized. A beast as big as this room, the front room of Davy's house, with legs like jetty piles. Along its back a double row of spade-shaped plates. Narrow head, thick body, narrow tail. Brains at either end. Maybe they should have called it 'reversible lizard' rather than 'roofed lizard'.

Which reminds him. His calculations haven't included the back-plates. They're meant to stand upright along the spine, not lie flat like roof-tiles, and the biggest of them is two feet high. So Stegosaurus wouldn't fit in this room after all.

At night Davy gets to sleep by turning the pages of dinosaur books in his head, revising the facts about each species. Who discovered it and where, how many million years ago it flourished, how long, how high, how heavy. Habitat, diet, main predators or prey. What the scientific name means.

He likes the big herbivores best. Iguanodon, who had a spike on each hand for self-defence, a kind of lethal thumbs-up. Ankylosaurus, covered in bony armour, harder to budge than a limpet. The square-billed Hadrosaurs, like ten-ton ducks plashing around at the lake edge among the horsetails. Biggest of all: Brachiosaurus, the tallest of the sauropods, so massive that its bones and muscles couldn't hold it up unless it stayed immersed in water. Davy imagines a warm Jurassic lake and Brachiosaurus' little head on the surface, chewing the bulbs of water hyacinths. Meanwhile, six fathoms down, at the end of its long neck and long front legs, the giant feet walk the lake bed in slow motion, raising clouds of silt.



On winter mornings the corridor smells of damp socks and unwashed scalps. Davy has science first thing on Monday and the first of his regular ordeals straight after. From the science lab he has to make it down the main stairs, along the lower corridor, past the lockers and into room G9 for maths with Mr McLennan. Which would be his favourite subject except that the corner of A-J locker bay, right outside G9, is the preferred hangout of Ritchie Flanagan and his mates. They also have maths this period.

Sometimes Davy can wait in H-P locker bay till Flanagan goes in. Then he can sidle in behind him and choose a desk on the other side of the room. But today the corridor is crowded and the teachers are at their doors, enforcing the one-way system, so he has to keep moving.

As Davy approaches A-J he can hear Ritchie Flanagan's voice. And Matt Gallagher's and Greg Dowd's and a couple of the others. They're practising their latest war-cry, a sort of huff-huff like a stag in rut. They're seeing who can go lowest, showing off their new bass pitch. Of the two brains, the one in the pelvis is bigger.

Things could still work out okay. Davy's perfected a kind of camouflage; he can make his body cryptic so he fades into the background. He hunches his shoulders, lets his frame fall inwards, keeps his face oblique. A diversion would help. Maybe Mr McLennan will come out of his room and shout at the noisemakers and Davy can slip past unnoticed.

Mr McLennan doesn't. As soon as Davy reaches the A-J locker bay, Flanagan's onto him. He's just won the barking contest and he's ready for something else, and Davy's arrived in time to supply it.

*Davy!* he calls out, *Daaaavyyyyyy!!*

Davy doesn't look up but his heart lurches. He hurries past and into G9, chooses a desk near the front. Keeps his head down. Maybe Flanagan will go further back.

Flanagan doesn't. Davy's ear is flicked painfully as Flanagan takes the desk right behind him.

Daavyy, comes a breathy voice. Have you had your first shave yet? Or do you just rub it off like peach fuzz?

Flanagan's mates are convulsed. They compete for the funniest question. Davy have your balls dropped yet, Davy have you ever touched a girl, Davy when did you know you were a faggot, Davy who's your boyfriend, Davy are you a top or a bottom.

Davy isn't sure he understands all these questions but it's not like he'd answer if he did.

They have to shut up once Mr McLennan shouts for silence and starts talking about geometry. But after 10 minutes or so Davy feels a jab in his buttock and hears a burst of stifled laughter. He risks a glance over his shoulder. Flanagan's come up with a new device. He's inserted his compass through a hole in his sock and he's holding it with his toes so the point sticks out, and he's swinging his leg back and forth, aiming for the gap between the seat and the back-rest of Davy's chair.

Daavyyyy, he says, does this remind you of your boyfriend?

Edging forward in his chair, Davy wonders how you'd calculate the length and curve of the arc drawn by that compass, from the floor to his buttock and back again. You'd start by measuring the angle at Flanagan's knee of course, but there's also a movement at his pelvis. The second brain, firing from the hip, getting its sums spot on.

Then he thinks about body armour like roof-tiles and a tail with three-foot spikes.

On rainy Sundays Mum and Dad always go for a drive. James refuses to go these days; he claims he needs to study, but Davy knows he wants to play his records really loud.

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While his parents bicker in the front of the car, Davy looks out at the passing suburbs. Tyres on the wet road and darkened shop windows and dripping trees. They stop in town for an ice-cream from the Strand Arcade. In the car park they have to spiral down several floors, like a descent through geological zones, before they find a space Dad's happy with.

After that they head for the countryside. Davy imagines dinosaurs roaming the hills. Diplodocus crashing through the pines, Struthiomimus like a naked ostrich running after the sheep. The rain intensifies as they take the motorway home. Tyrannosaurs lumber down the centre strip, ceratopsians topple the pylons. By the time they reach the suburbs the dinosaurs are left behind.

The rest of the afternoon Davy lies on his bed reading. Palaeontology books of course, but also *National Geographics* from the bookshelf in the hall. The yellow spines list the articles in each issue. Albatrosses - Tibetan Nomads - Computer Graphics - Dutch Elm Disease - Aral Sea. Spizbergen - Frog Plague - Mountain Goats - Ratites - Patagonian Orca. A lot of the stories are pretty depressing. You could put those ones together into a kind of apocalypse bumper issue. Melting Permafrost - Dutch Elm Disease - Ozone Layer - Frog Plague - Cypress Canker - Chestnut Blight - Foot and Mouth - Nuclear Winter.

Davy's been thinking a lot about nuclear winter. Last night the TV news had a story about International Physicians for the Prevention of Nuclear War. They had a big clock showing the approach of mutually assured destruction, and yesterday two old men from IPPNW moved the hands forward till the clock showed three minutes to midnight.

From James' room Davy can hear the Smiths' latest. *I am the son, and the heir, of a shyness that is criminally vulgar.*

One afternoon a couple of months back, Davy had to hide in the toilets for an hour after school finished because Ritchie Flanagan and his mates were kicking a rugby ball on the upper field, right beside the bike stands. At last, long after everyone else had gone, Davy heard them collect their gear from the lockers and swear and laugh and punch each other as they headed home. After waiting another ten minutes for safety's sake Davy poked out his head and saw the coast was clear.

But then as he rounded the corner by the gym, right in front of him, sitting there with his back to the concrete-block wall: Ritchie Flanagan.

Davy froze. But Flanagan hadn't seen him. He had his feet drawn up and his arms on the top of his knees and his face pressed against his arms. He seemed to be in tears, though it was hard to tell and Davy didn't hang about to make sure. He backed away and hid for another half-hour in the toilets. When he peered round the corner again Flanagan was gone.

If only the long vacation was in winter. Davy hates summer, the heat and glare and the bare bodies greasy with suntan lotion. Even on baking hot days last summer he wore skivvies and corduroys and socks and heavy shoes. Dad shook his head and James curled his lip and Mum said, Davy darling, you'll get heatstroke.

No I won't, he said. I'm staying inside.

One day she actually forced him to go out. You need some sun on your skin, she said. Don't come back till you've started a tan.

He spent an hour in the macroparcas at the bottom of the street. Between the trunks was a space like a cupboard, dry and dim, smelling like warm winter coats. He was hidden from view but through a little gap he could see the beach where some boys his age were riding skim boards. They waited as the big waves drew back, till there was nothing but a dark smooth skin of water barely covering the sand, then launched their boards and ran after them and leapt and skimmed. As he watched their bodies turning in the sun Davy felt something turn in him as well. A ganglial twist between the hips.

He went back up to the house and levered open his bedroom window. Once inside he threw himself on his bed with a book about prehistoric marine predators. Liopleurodon, a late-Jurassic pliosaur, grew to eighty feet, jaws alone twelve feet long. Hunted by bursting out of the deep to seize its prey from the water's edge, just as killer whales do today when they hunt sea lions on the Valdes Peninsula.

Phys Ed can be better than maths or much worse, depending on luck. Often the class is split in two and Flanagan's always in the group that plays rugby on the lower field. The other group does athletics. Mr Vincent coaches the able-bodied, those who can high-jump or hurdle or chuck things or run. Davy stays with the hopeless cases, the fat and the weak and the brainy and the unco, messing about in the long-jump pit.

Despite the cold the other boys are eager to be outside, and Davy takes his time getting to the changing room and has it to himself. He changes into shorts and T-shirt and crosses the field slowly. Cold mud squelches between his toes.

Even so he's too early; the class hasn't split yet. Mr Vincent turns and sees him. McLeod, says the PE teacher, get a move on. You're with them.

Mr Vincent turns back to the athletics group and Davy trails after the rugby players. They're leaping and yahooping down the bank. Flanagan has the ball; he punts it as they reach the lower field and the game's begun.

The lower field is reclaimed land. When Davy was a kid this site was a rubbish tip. Every Saturday he'd go there with Dad. He remembers the bitter smell and the bickering gulls. Dad, with his tongue between his teeth, backing the trailer. Dad and him, climbing onto the trailer to unload split buckets, flat batteries, broken-down bikes, dried-up cans of paint. Hiffing each thing as far as possible and on the way home feeling light and clean.

Eventually the tip was shut down and the bulldozers moved in. In time the school had a new field, new grass shining in the sun. But the bulldozers had to come

back a few times. Holes appeared and filled with water; toes were stubbed on scraps of metal that bubbled to the surface. During an interschool match last year the scrum collapsed when someone's boot went through the roof of a car.

The only thing Davy knows about rugby is that you can't pass the ball forward. So he concentrates on staying just ahead of his team mates. Usually he can get through a whole period of Phys Ed without touching the ball, but it can be tricky. One time he got too far from the action and someone sent a kick in his direction. Everyone yelled and he put out his hands and the ball smashed through them like a greased missile. His thumb ached for a week but that was the least of his problems.

Today he gets it just right; no one notices him and soon they're heading back to the changing room.

He slips into the corner by the door, takes off his T-shirt and puts on his uniform top. Glances round before pulling his Phys Ed shorts down. Hurries to put on his uniform shorts, treads on the hem and nearly falls over.

And Flanagan's there.

Davy! he says, where have you been?

Davy doesn't turn round, keeps struggling with his shorts. Then he feels Flanagan's hand, cold on the small of his back, pulling the waistband of his underpants.

Mind if I slip something in? says Flanagan.

Hilarity from the others as the elastic snaps back. Something's cold and wet down there but Davy's in flight mode - he can't stop to investigate. He pulls his shorts up somehow, grabs his socks and shoes and backpack, stumbles out with laughter at his heels.

In the privacy of a toilet cubicle he removes a big muddy clod from his underpants and wipes the dirt from his backside. The clod's soaking wet but it's very neatly dug, like a geologist's core sample, a layered cylinder of turf and soil and clay. Did someone bring a gardening tool from home, especially for this?

Sunday afternoon, raining again. The Sunday drive is over and Davy is lying in front of the fire, reading about epochs. The Cambrian Period. Ordovician, Silurian, Devonian, Carboniferous. Davy thinks of them as the Age of Sludge, the Age of Coal, the Age of Chalk, the Age of Tar, the Age of Asphalt.

He puts another carbonette on the fire, turns the page. More layers. Mesozoic, Cenozoic. The Age of Dinosaurs, the Age of Mammals.

Sometimes the books show them as a kind of pie chart. Big sectors of colour for each of the prehistoric epochs, and then the Holocene, the one we're living in, a tiny sliver, barely visible. Three minutes to midnight. Other diagrams show them as bands of colour stacked vertically, blue and black and brown, the top layer nothing but a line of pink. A filament, flimsy as tissue, the Age of Man. A scab of rust so thin you could put your foot through.

James and Mum and Dad come in to watch a rugby game on TV. Davy closes his book with a sigh, not sure what to do. Then he remembers the cartons of books at the back of the garage. They've been there for aeons, left over from a stall at the school fair. He's been meaning to dig through them.

It's always cold and damp in the garage. The pages of most of the books have rippled and they feel a bit tacky. He can see why nobody wanted them. Then at the bottom of one box he spots the yellow spine of a *National Geographic*. When he reads the

cover the back of his neck tingles. *New Theories about DINOSAURS*. He looks at the date: August 1978. It's half a dozen years old, how has he missed it till now?

Back in his bedroom he consumes the article in gulps. Startling finds in the fossil beds, a new wave of controversies among palaeontologists, fundamental assumptions turned on their heads.

The dinosaurs weren't slow and stupid and cold-blooded, they were hot-blooded and quick and shrewd. Stegosaurus didn't have two brains, Brachiosaurus didn't live in a swamp, T. Rex the tyrant king was a loving parent. The smaller dinosaurs never died out, they grew feathers and took flight, turned into birds.

Most sensational of all: how the giant dinosaurs became extinct. At Chicxulub on the Yucatan Peninsula, scientists have discovered a crater 100 miles wide. It was made 65 million years ago by an asteroid the size of a city. The impact caused global wildfires, thousand-foot-high tsunamis and a cloud of superheated ash that blanketed the earth for a decade. Photosynthesis declined, the food chain shattered, the mightiest were most vulnerable. By the time the skies cleared, the megafauna were history.

Davy's eyes are stinging. He feels shaken like a sack, emptied out. He gets under the covers and sleeps.

It's pitch-dark and very cold. Davy can hear the pounding of surf. Salt air blows in his face. Out of the blackness, the sky separates from the darker sea. Something's on the move up ahead. He can make out the line of the horizon but it keeps breaking and reforming. As he keeps staring, Davy realizes that the sound he took for waves falling is actually the blowing of nostrils; the undulating shapes are the contours of

massive bodies. He can smell their skin now, a hot, sharp scent like asphalt.

As the light grows, the surging mass solidifies and separates, becoming the shapes of sauropods loping along the foreshore. One big male lumbers into the surf and wades beside the others, sending up sheets of spray with each step. Two calves chase each other between the legs and under the bellies of their elders. At one point they swerve up the beach towards Davy, who can't move a muscle. The two youngsters, the size of elephants, skid to a halt in front of him, scattering stones and shells in his direction. They stand a moment yawping and rolling their liquid eyes before turning and cantering back to the line of adults.

Behind Davy a light grows in the sky, but ahead of him a mass of black cloud advances, releasing snowflakes over the sea. The beach stays dim, a corridor between the cliffs and the unlit breakers. The line of the migrating herd seems never-ending. In both directions colossal forms fade out of sight where the spray from the sea mixes with snow. Pterodactyls swerve and bicker amid a forest of legs and necks. Now a pallid sun leaks over the clifftops and the tallest sauropods feel it on their necks and domed foreheads, and they give voice with drawn-out calls and the others respond and the uproar is deafening.

At last the stragglers appear, the older animals, their mountainous flesh tumbling as they lumber on, necks stretched at 45 degrees, trying to keep up. Davy keeps watching till the last ones disappear along the beach, fading into spume. The cloud has rolled overhead and cut out the morning light. The snow falls steadily now. Davy reaches out his hand to catch a snowflake. It's warm on his palm and leaves a dark smudge when he rubs it.

Not snow at all, he thinks. Ash.

Next morning he can hardly wake up. He feels cold-blooded and swamp-bound. The rain has stopped but the clouds hang low. He walks to school torpidly, dragging his tail. Something's approaching at the speed of a missile, falling from space.

First period passes, second period comes. Numb and heavy, Davy makes his way to room G9. Flanagan's right behind him again. A boy comes with a message for Mr McLennan and the teacher leaves the room. There's laughter,

something happening behind Davy's back. He tries not to notice but when he raises his head, Flanagan's face is right in front of him. The others are gathered around, watching and grinning.

*I am the son and heir, of nothing, in particular.*

The roof opens and there's blackness right overhead. It's closing fast. Flakes fall on Davy's sleeve. He brushes them and they smudge. It's the Age of Man.

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[www.nzchas.canterbury.ac.nz/people/armstrong.shtml](http://www.nzchas.canterbury.ac.nz/people/armstrong.shtml)