

## A VIEW FROM THE ICE

**Ian Brown**

Polar Plateau, 88 degrees south, 21 December 1997:

*The mind struggle has begun. The whole world is ice. Each day is an eternity; every hour an ordeal. We pull our sleds across the emptiness for ten and more hours a day, every day, without respite. The day comes to an end, and we camp. Only our silent oracle, the satellite navigator, tells us we have moved at all. Another day closer, fifty-two gone, perhaps ten more to go: it is too many.*

*This is the 'graveyard shift': the final two-and-a-half-hour hauling session for the 'day'. I try to confine myself within the orbit of my parka hood. Then, as I plod along, I am not confronted by the vast horizon, now even more vast, even frightening, since we left the lumps and bumps of sastrugi behind. Head down, I won't see my two companions shrinking like tiny black ants into the shimmering distance, pushing on to make camp. Later, our tent will come into view as a tiny scab on the perfect white horizon, slowly growing into a limpet afloat on a shining sea. Just a thin smear of fabric, but it is our refuge, our survival. To avoid a disheartening sight of the tent too far away, I resolve not to look up again until the tracks inevitably lead me there. Slide slide slide slide.*

*Instead, I look down onto a few square metres of bright snow, encompassing the essential geometry of our journey: tracks pointing due south, my own deep blue shadow, and the infernal shadow of my right ski stock, my timepiece. So close to the summer solstice and to the Earth's axis of rotation, the sun performs a perfect 24-hour circle, twenty degrees above the horizon. Each hour the stick-shadow sweeps through fifteen degrees of the spinning circle. I see it will be another hour before the sun is due west, when the shadow falls perpendicularly across the ski tracks: 6 pm, the allotted time for my companions to stop hauling and camp for the 'night'.*

*When that time comes I will feel relief, because the distance between myself and camp begins to diminish, instead of steadily growing further as the others pull away. The shadow infuriates me - there is so little to think about that I cannot help fixating on it, yet the blue line moves with glacial slowness. It is like being locked in an empty, silent room with nothing but an hour hand on a ticking clock.*

*Yet it is not silent here, I am surrounded by noise: the harsh rustling of windproofs, the chunk-screech of stock-tips driving into the snow, the rhythmic slide and shush of skis. Behind, the sled bumps and grinds and groans over and through the snow. There are no more unsettling snowquakes: we have left them behind. They used to whoomp and shudder across the plain as the wind-packed layers settled under our weight - a little excitement in our simple existence.*

*I ski most of the day alone. I left camp early to lead the first shift, but the others soon caught me and passed - a necessary strategy in such a cold environment, with one of us slowed by injury. We can see each other on the otherwise empty horizon: me in the past; them in the future.*

*I'm running out of things to think about, even recycling old thoughts that were threadbare days ago. Peter spends his hauling time re-arranging his garage in his head, piece by piece. Keith manages to drift off to somewhere else, 'communing with the fourth dimension', and keeps walking as an automaton in some sort of meditative state. I envy them. I can only manage such reverie for short bursts before the pain of frostbite intrudes.*

*We all have afflictions. The strain of the heavy work, long hours, wind and cold is steadily breaking us down. On this great dome of ice that is the Polar Plateau, we are beyond the zone where life can be sustained. Nothing but microbes can live.*

*Today is a good day. The temperature hovers around the usual minus 21 degrees, but there is only a slight breeze and the sky is clear. A few days ago we were battling a head-high ground blizzard, white-out and winds up to fifty kilometres. Exposed flesh would have frozen in seconds and we could only stop for minutes at a time. Our balaclavas, goggles and face masks became welded together in ice. In such conditions it's hard to see or think, let alone talk, and we are unavoidably driven inside to commune with our own puny burning ember of existence.*

*This morning we ticked over 1100 kilometres; at camp we will have less than two hundred to go. Soon we will enter the final circle: 89 degrees south. Perhaps then, with just a hundred kilometres to go, I might feel like we are on the home straight. There is now little doubt that we will get to the pole: it is just a matter of when. My mind has already reached ahead, and waits for my body to arrive – a dangerous headspace. This journey has become stupid. Where is the joy, the magic? When I leave this place I never want to see it again: leave it to the winter blizzards and the darkness of space.*

*The way home is onward. I walk like a zombie, fighting sleep. The skis slide hypnotically, as if they belong to somebody else. Estimating the reach of each step, I calculate that I move each leg forward about 25,000 times every day. As long as I keep placing one foot in front of the other, I will get there.*

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By the last week of December, our long walk to the South Pole was nearly over. The hardship and tedium had reached a peak, and yet the intensity, beauty and power of the landscape still came shining through. And I remember softer times too, when it was possible to admire the simple beauty of snow, the sweep of untrammelled sky.

One evening on Berkner Island, early in the journey, we'd sat outside the tent with a well-earned dinner of rice curry. The air was cold but motionless and there was a touch of warmth in the hard sunlight. In the vast circle of white under the arching blue, there was just the three of us, our tent and our sleds. The snow was *absolutely* flat in all directions, stretching away, textured and glimmering. A three-quarter moon hung thirty degrees above the horizon to the north-east, and the sun hovered just half as high in the south-west. Antarctica seemed benign, even friendly.

On a wide scale the lowland snowscape could seem devoid of interest: flat and formless, with neither rock nor rise to break the stark horizon. But to look more

closely was to discover a world of detail at our feet, where the textures and patterns of the snow were constantly changing across both time and space: subtly or suddenly, beautifully, remarkably.

Snow falls only occasionally in Antarctica's arid climate. When it does, it delivers fresh particles for the wind to scatter and shape upon the previous canvas. Old material is airbrushed away and re-applied in new patterns. Fields of giant crystals that must have grown straight out of the atmosphere become painted over with drifts of powder, fanned out in the lee of small bumps by a shifting, soft wind. Stronger winds wield the same spindrift powder as a cutting agent, sand-blasting along grooves that are sculpted and scoured together in knife-edge crests, buffing to a marble-like translucency any parts hard enough to rise above the surface. Multiple layers of snow are laid bare like the polished laminates of a sand-worn seashell on the beach. Over all plays a changing light as the sun swings around the sky, throwing shadows and highlights in a thousand shifting tones of grey and silver, blue and white: monotonal, but not monotonous. Snow that had been opaque, even invisible, under overcast light becomes luminous as light grows, then sparkling like a wind-clipped sea on a bright summer's day.

Three and a half weeks from the edge of the continent we climbed into the Transantarctic Mountains – one of the longest ranges on Earth. After the scenic deprivation of Berkner Island and the Ronne Ice Shelf, the mountains were like a visual lifebuoy to a drowning sailor. At last we had something to measure our progress against. Three days after an exhausting ascent of the pass, we were chugging happily across the high Sallee Snowfield, drawing level with the bluffs and shining blue-and-white ice tables of the Forrestal Range, when I stopped to take in the scene.

Our tracks took a gunbarrel line across the diamond-studded plain, swirling with blue-tinged wind-carvings. The mountains rose abruptly on either side. Patches of wind-scraped ice reflected the sun with a mirror gleam. Ahead, the snowfield was punctured by scattered nunataks. Behind, the wonderfully symmetrical Dufek Massif was fading with distance into a silhouette. I swung my skis around, flicked the haul-ropes out of the way, pulled the camera from the sled and took one last photo of the mountain.

Sallee Snowfield, Transantarctic Mountains, 83 degrees south, 1 December:

*I hold my breath and the camera shutter clunks. I am suddenly aware of the intense silence. In the windless air, without my busy sounds, there is nothing. I'm sure I could hear a snowflake fall. The mountains shimmer, the snow stretches away in a sequined sheet of silk, the sky is an unblemished aquamarine. What an absolutely pristine and pure, yet lifeless and inhuman place. How can humanity possibly threaten this?*

*The lads are getting away. I grab up my stocks, shoulder the harness and pull on, carrying the scene and my thoughts with me to ease the burden.*

Beyond the brief interlude of the mountains we advanced into an infinity of white on the Polar Plateau. Soon, waves of sastrugi rose before us: difficult ice terrain that stretched on and off for weeks.

Polar Plateau, 85 degrees south, 10 December:

*One patch looks about three kilometres across: complex knots of arching spines, bombs and torpedoes on pedestals, and dolphins rearing in the sun, all burnished to an opaline, absorbent sheen. More like whales, some of them, whales and dolphins surfing with their heads and backs leaping from the breaking waves of ice. Or old American limos with their grand streamlined bonnets sculpted in fins and voluptuous curves. Others are more random and fantastic, like gargoyles and surreal creatures of myth. There are miniature figurines in transparent crystal, as small as a hand or a bird. At times it is like roaming through a garden of organic sculpture, individual creations placed randomly by the path for our appreciation.*

*This is a strange and wondrous landscape: fierce and unassailable. A product of natural forces and the laws of physics, it existed for centuries, for millennia, through darkness and light without an eye to see, a mind to marvel or to wonder. Mute and barely known, these radiant beauties reach to the heart of what it means to be human - sentient and responsive - in a mysterious universe.*

*Directly south, I look for a shining beacon, a sculpture brighter than the rest because it catches the sun just so, three or four hundred metres ahead. Finding one, I memorise its appearance and survey the intervening ground for a path of least resistance. Then I set off, ducking and weaving towards the beacon as directly as possible but avoiding the roughest terrain. Keith and Peter follow, sometimes opting for a slightly different track when they see me struggling to get my skis over a ridge or my sled jammed into an overhang. It takes me ten or fifteen minutes to get there, then I do it again.*

*The process reminds me of working through thick bush amongst the ridges of the more familiar wilderness of Australia's Great Dividing Range, and the same attitude of faith and perseverance is rewarded. You just keep going, one bit at a time. Eventually the wave of complexity passes, and we escape into more straightforward terrain of flattish ground with scattered, friendly dolphins watching. They all swim south-east, nosing into the relentless wind that blows into our faces too.*

The sastrugi inhabit a zone of wind that encircles the pole, driven by cold air draining off the high plateau and the perpetual low-pressure systems that surround the continent. In summer the winds are in a languid mood, but in winter fierce storms sweep across the darkened ice beneath the stars, carving and gouging.

Beneath our feet as we picked through the sastrugi fields, the ice was nearly three kilometres deep. The icecap reaches its highest elevation of about 4,100 metres on Dome Argus in East Antarctica. There the ice is 4,700 metres thick, and so heavy that it crushes the continent deep into the Earth's crust. Much of Antarctica's bedrock lies below sea level.

The icecap holds millions of years of accumulated snow. Drill-cores from 3,000 metres deep have revealed ice over 300,000 years old – and long-term trends in the Earth's climate. Russian scientists, amid much controversy over ecological risks, want to drill down into Lake Vostok – a mysterious, uncorrupted body of liquid water lying between the icecap and the rock beneath.

Up to about 135 million years ago, all the southern continents were joined together in the supercontinent of Gondwana. Then they began to split apart and travelled slowly into their present positions. Before that, Antarctica was largely ice-free. Tropical fossils are found in the sedimentary rocks of the mountains.

About fifty million years ago, the final breakup of Gondwana occurred when first Australia and then South America moved north, leaving Antarctica alone at the pole. This allowed the Circumpolar Current to develop, establishing a thermal barrier which isolates the continent from warmer oceans to the north. Antarctica chilled and glaciers began to form. The ice grew higher, and colder. One reason the place is *so* cold (much colder than the Arctic) and arid is that the eternal snows reflect eighty per cent of the incoming solar radiation. Astronauts looking down on the Earth have described Antarctica as a 'shining white lantern'.

The Antarctic icecap has profound implications for the climate of the whole planet. This massive fridge at the bottom of the world influences the global movement of the air and oceans and so the distribution of atmospheric heat around the Earth. Now that human-induced climate change seems beyond argument, it is significant that the icecap holds seventy per cent of the world's fresh water - and the recent calving into the sea of ice-shelves bigger than a small country is of great concern. If the icecap melts completely, it will raise the level of the world's oceans by sixty metres.

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Geography, geology and climate are all part of the special relationship Australia has with Antarctica. When Australia went its own way and wandered into the tropics, links with Antarctica persisted.

The theory of continental drift was first expounded by astronomer Alfred Wegener in 1912, although at the time there was no evidence to support such a preposterous idea – only the way the land masses seemed to fit neatly together. In an historical coincidence, Scott's fatal expedition to the South Pole in the same year was to provide some of that evidence, and make a lasting contribution to earth science.

Scott's diary of 8 February 1912 records that the team's scientist, Edward Wilson, spotted plant fossils in coal seams beside the Beardmore Glacier, in the Transantarctic Mountains. In spite of their desperate effort to race winter and dwindling supplies back to the safety of the coast, they selected some specimens and added them to the sled's killing load. By the end of March they were all dead. Their bodies, together with their sad pile of rocks, were found by a rescue mission eight months later. The men were buried there, and the specimens were taken back to England. The *Glossopteris* fossils proved a match for others from South America, India, South Africa and Australia.

Closer to home, research suggests that the sediments of the Sydney Basin's massive Hawkesbury Sandstone were washed from the Transantarctic Mountains by huge rivers when Antarctica was ice-free and the land masses were one. This rock layer forms the typical scenery of Sydney, extending into the Blue Mountains wilderness.

In Tasmania, the great dolerite sills that form many of the island's mountain-tops are matched by sills in the Dry Valleys of Victoria Land. They were once continuous

formations, like words on a page that have been torn apart – a chapter in life’s story on our planet. The southern beech trees that inhabit Tasmania’s cool temperate rainforests have relatives in the wild forests of New Guinea, New Zealand, New Caledonia, South America and mainland Australia (in Victoria and in the Northern Tablelands of New South Wales, extending into Queensland). The NSW species is known as Antarctic beech because of its similarity to fossils from the ice continent.

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In just the last two million years humans emerged out of Africa (another piece of Gondwana) and began wondering about our world. The philosophers of ancient Greece knew the Earth was round, and were the first to suggest the existence of a great unknown continent occupying the southern regions of the world: *Terra Australis Incognita*. Aristotle named the northern part of the Earth *Arktos*, after the constellation of The Bear under which it moved, and the balancing southern parts *Antarktikos*.

Further south, Polynesian legends tell of voyaging in canoes to a foggy dark sea with mountainous waves. But the first western navigator to cross the Antarctic Circle at 66 degrees south was James Cook. On his first voyage Cook had claimed the east coast of Australia. In December 1773, during his second journey, the brave captain sailed his wooden boats amongst the icebergs to the 71<sup>st</sup> parallel. Cook spent three years circling the southern rim of the world, looking for the great southern landmass of *Terra Australis*. He proved it was a myth, but left open the question of a land further south towards the pole. On his second and last Antarctic voyage, Cook became convinced that such a landmass must exist because of all the icebergs on the sea. But he wrote:

The risk one runs in exploring a coast in these unknown and Icy Seas, is so very great, that I can be bold to say, that no man will ever venture farther than I have done and that the lands which may lie to the South will never be explored. Thick fogs, Snow storms, Intense Cold and every other thing that can render Navigation dangerous one has to encounter and these difficulties are greatly heightned by the inexpressable horrid aspect of the Country, a Country doomed by Nature never once to feel the warmth of the sun’s rays, but to lie forever buried under everlasting snow and ice.

Antarctica had long dwelled in the human imagination before its existence was finally confirmed by human eyes in 1820. There followed decades of probing by sea and along the coast, then inland exploration commenced in the last years of the 19th century. In what has become known as the ‘Heroic Age’ of Antarctic exploration there was a race to be first to the pole. The epic journeys of Shackleton, Scott, Amundsen, Mawson and others are well known. They were driven by patriotism, ambition, curiosity and science...and perhaps something else. Sir Douglas Mawson, Australia’s greatest Antarctic figure, wrote in *Home of the Blizzard*:

Powerless, one was in the spell of an all-enfolding wonder. The vast, solitary snow-land, cold-white under the sparkling star-gems; lustrous in the rays of the southern lights; furrowed beneath the sweep of the wind. We had come to probe its mystery, we had hoped

to reduce it to terms of science, but there was always the 'indefinable' which held aloof, yet riveted our souls.

Today, we might call that a 'wilderness experience'.

After his first visit in 1911, Mawson couldn't leave the place alone. During his expedition of 1930-31 he laid official claim to nearly half the continent, more than any other nation, on behalf of the Crown. Although territorial claims are now 'frozen' under the Antarctic Treaty (1959), Australia's claim and Antarctic research activity have given it considerable influence over the future of the continent.

When a convention was being worked up under the Antarctic Treaty to regulate mineral exploitation, Australia was first to break rank and call for total protection instead. France soon followed and the bold ideal became widely accepted – helped by the groundwork done at the 1972 Second World National Park Conference, which called for a World Park for Antarctica. More recently, conservationists have proposed world heritage listing – the first, and only, continent-wide world heritage area. Australia's sub-Antarctic territories of Heard and McDonald Islands and Macquarie Island are already world heritage sites.

When the minerals convention failed, the Australian Government became a champion of its 1991 successor: the 'Protocol on Environmental Protection to the Antarctic Treaty'. The Madrid Protocol, as it is known, designates the ice continent as a 'Natural Reserve Devoted to Peace and Science' and prohibits mining indefinitely. Forty-five nations have now signed up to this unique agreement.

Despite its resilience and a level of international protection, Antarctica faces many perils – global warming among them. There are now 37 permanent research bases on the continent (including Australia's Casey, Mawson and Davis), plus twelve occupied seasonally and several more planned. The largest, the United States' McMurdo station, is a large town in summer and for many years dumped its raw sewage into the Ross Sea. From McMurdo they have recently cut a 1,600 kilometre 'ice road' to the winter-isolated Amundsen-Scott base at the South Pole. Sir Edmund Hillary described it as 'terrible'. Would Scott be turning in his icy grave? There have been other controversial actions by various Antarctic nations.

The biologically rich Antarctic seas have in the past seen devastating and dead-end exploitation of seals, penguins and whales. Many marine mammals were pushed close to extinction. Now, with whale-watching a valuable industry based on Antarctic species, the Southern Ocean Whale Sanctuary achieved under the auspices of the International Whaling Commission (IWC) is under threat. Investment by pro-whaling nations in the votes of non-aligned states is placing the majority conservation stance of the IWC at risk.

An estimated 34,000 tourists visited 'The Ice' in 2005. With numbers growing at perhaps fifteen per cent a year, tourism is a major industry. Most went by ship to the limited and vulnerable, ice-free and wildlife-rich areas of the Antarctic Peninsula and other coastal zones. Many visitors would have returned as advocates for the protection of this magnificent realm – if they weren't already – but we all have an impact.

Although the Madrid Protocol is a wonderful example of international cooperation, politics and nationalism have enveloped Antarctica since the earliest explorations. The Australian Government did not champion the protocol for entirely altruistic reasons - they feared Antarctica's deposits of coal might threaten our own rich exports. And such pressures remain.

After a recent visit to Antarctica and apparently ignorant of history, an Australian senator applied one of the most honoured but amoral arguments of the economic rationalist by declaring that we should start mining the place - because if we didn't... somebody else would! The United States has always refused to acknowledge territorial claims, and for emphasis built its first base on the very pole itself - and astride almost every national claim. One South American government even shipped a pregnant woman in to their base so they could claim the birth of the first 'Antarctic citizen'.

Nations constantly jostle for position, in case the continent is 'opened up'. And yet... and yet... Antarctica still holds aloof, living in our imaginations, still riveting our souls.

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*Imagine you are standing on the expanse of the Polar Plateau: as vast as Australia, 4000 metres above sea level. It is the middle of winter. It has been dark for over two months. For a few moments the hurricane winds that relentlessly reshape the snowfields have calmed. There is absolute silence.*

*As you walk slowly over the surface, the snow squeaks like plastic. You stop, and notice a faint crackling sound. It is the noise made by tiny droplets of moisture in your breath, snap-freezing as you exhale. It is so cold that if you threw a bucket of boiling water into the air it would instantly explode into ice dust.*

*Looking up, the sky is full of the most brilliant stars you have ever seen. The starlight glints off tiny crystals of ice drifting down out of the dark, cloudless nothingness. 'Angel's dust' they call it.*

*Around you rise weird sculptures of wind-polished ice, translucent in the faint light. Then, in the sky, a tiny aurora begins to shimmer and shake, slowly growing into a pulsating curtain of colour that waves and flaps across half the heavens. You stand transfixed, no longer a part of this world. You are out there in the dark cosmos somewhere.*

*The sun will not rise for another three months. As the wind returns to ruffle your thick clothes and loose grains of snow begin to whisper across the surface, you know you can't possibly survive.*

You can learn things, and you can *know* things. It has been said that nature is the great teacher. Perhaps it's the only teacher, and wilderness is its finest classroom. In Antarctica's cold austerity, some truths stand out clearly - truths which already hovered in my consciousness, but are now burned into my being.

I know that in life, few things really matter: certainly the animal needs of warmth, shelter, food and health, but also honour, satisfaction, family, company, love and kindness, beauty, the richness of all land and life. I know that much of the rest is trivial or peripheral, even mere distraction. I know that we humans have inflicted grievous hurt upon most of the Earth. And I know, most clearly of all, that life on our planet survives by the most fragile gossamer thread.

Antarctica is almost another planet. The Earth's equator is about 150 million kilometres from the sun, and the polar regions are just a few thousand kilometres further away. But this marginal difference renders the 'ends of the Earth' uninhabitable. The difference between the unliveable poles and the rest of our nurturing world is simple geometry, just a matter of degree – a few degrees of temperature, a couple of degrees of arc, some degrees in the angle at which sunlight strikes the surface.

I don't think that a higher being is watching over us. I believe we are responsible for what we do, and what we don't do, in our time in the world. There is no heaven above, but if we foul this wondrous Earth for ourselves and other life then we deserve to be thrown into the pits of hell. Antarctica should be left to the life that teems around its edge, to whatever gods we might believe in, and to the wind.