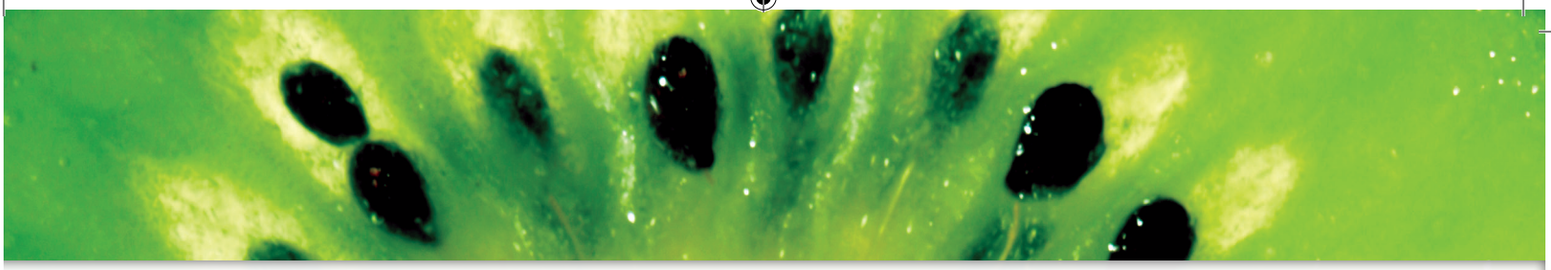

Reading Magazine
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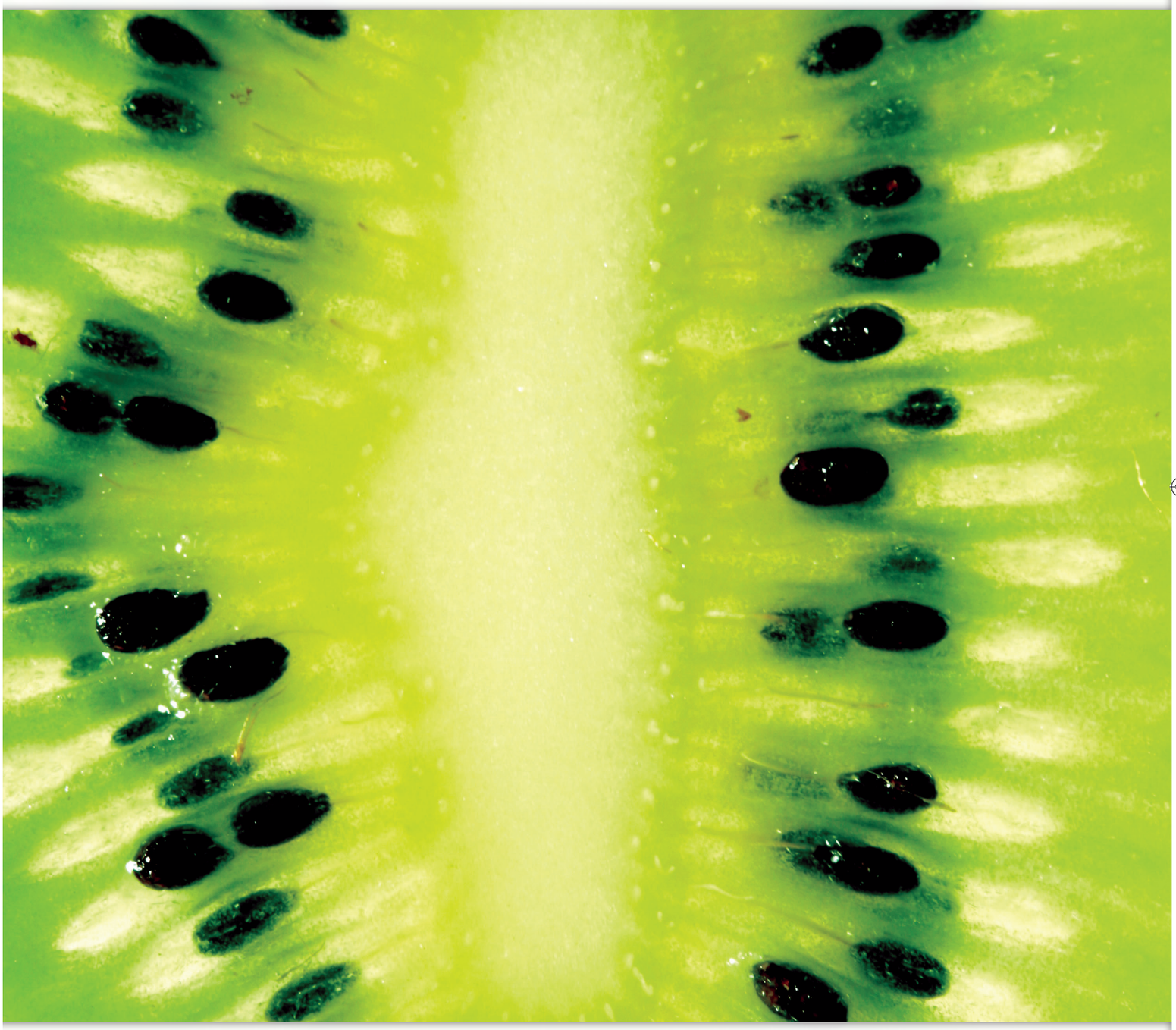

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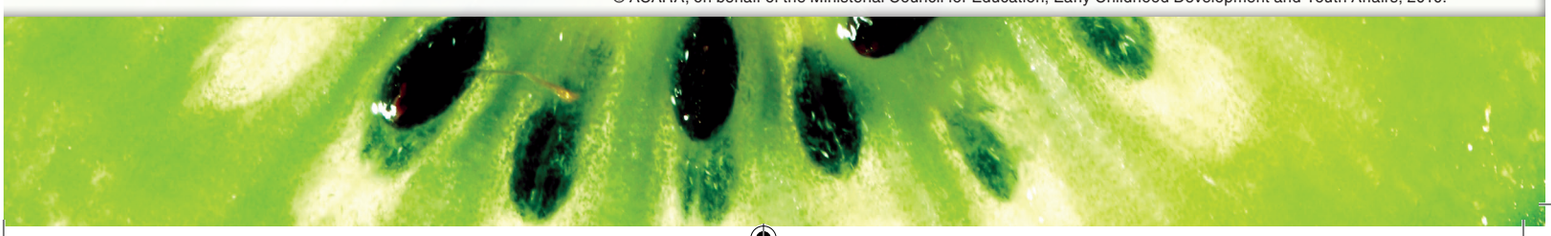


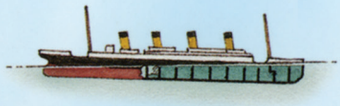
Titanic

The supposedly unsinkable steamship *Titanic* sank without trace on its first voyage in 1912 after hitting an iceberg. It was not until 1985 that the wreck of this famous ship was found. A French–American team, led by Dr Robert Ballard, used remote-controlled submersible vehicles to locate the wreck where it lay 3.5 kilometres below the surface. Dr Ballard and his team made the first manned dive to the *Titanic* in 1986. They took thousands of photos of the ship and the artefacts on the seafloor around it. They also left a sign asking people to leave the site undisturbed.

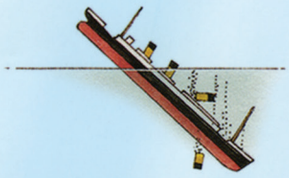
However, a year later, another team went to the site and brought back hundreds of artefacts. These included plates, jewellery, coins and even parts of the ship itself. This recovery team has now collected about 6 000 objects altogether from the *Titanic* and displays them in museums and travelling exhibitions. This team (now a company known as RMS Titanic Inc.) believes that people will remember the tragedy and learn about the period if they can actually see these artefacts, instead of everything being left to decay deep in the ocean.

Dr Ballard believes strongly that nothing should be taken from the site, and that it should remain as a dignified memorial to those who died on that cold night in April 1912. The Titanic Historical Society agrees, and its museum only displays artefacts that were not on the ship when it sank or that were saved by survivors. These include shipbuilding plans, lifejackets and small things carried in handbags, as well as letters and postcards written by passengers.

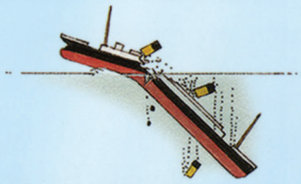
How the Ship Broke in Two



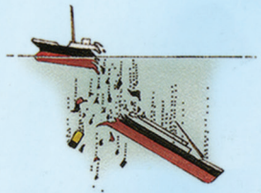
1. The supposedly watertight compartments flooded, and the bow began to sink.



2. The weight of the water pulled the bow under water and the stern out of the water.



3. The ship broke apart under the strain of the weight.



4. The bow plunged to the bottom, nose first. Then the stern sank.

Jacob

‘All right,’ Ben said. ‘Where are we going?’

Jacob was leaning against the white fence around the garden. He lifted his stick. ‘That way,’ he said, pointing across the paddock to the trees on the other side.

‘How do you know?’ asked Ben, curious. ‘I mean, how do you know where you are?’

Jacob paused. ‘I suppose I don’t think about it mostly. Like you. I know the house is there, behind me, because I just came out of it. I know we’re standing on the track because it feels different on my feet, not like grass or the path. I know there are sheep paddocks around because I can smell them, and I know the bush starts over there because I can hear it.’

‘The birds and things?’ asked Mary.

‘Sort of,’ said Jacob. ‘I can hear the trees too. A sort of furry sound. You don’t hear the wind like that on paddocks. The smells are different too, and the way the wind feels on your skin. Things like that.’

Ben glanced at Simon. Simon shrugged. ‘That’s what you mean by seeing?’ Ben asked. If that’s all there was to it they may as well go back inside.

‘Sort of,’ said Jacob.

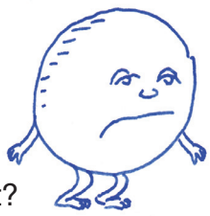
‘But we can see all those with our eyes,’ said Mary. ‘We don’t need to feel them or hear them or smell them.’

‘Maybe I can show you other things,’ said Jacob.

And then there were 8

In 2006, the International Astronomical Union (IAU) voted to change the rules about what constitutes a planet. As a result, Pluto, which was the smallest, coldest and generally most distant planet from the Sun, no longer qualifies. It *does* orbit the Sun, and it *does* have enough gravity to force it into a spherical shape, but – and here's the problem, the third criterion – it does *not* dominate its neighbourhood. In other words, Pluto still has lots of large objects orbiting around it.

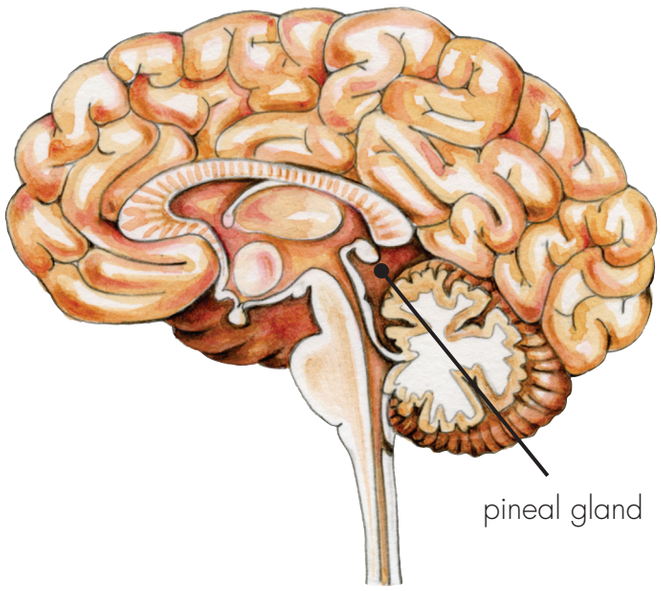
The IAU therefore created a new category – dwarf planet – into which Pluto now fits, along with four other celestial bodies in our solar system.



Astronomy Forum

What do you think about Pluto's demotion from planet to dwarf planet?

User	Comment
Cookie 4.15 pm	Let's start with the word 'demotion'. Pluto is still the same fascinating astronomical object, whether we classify it as a planet or not.
Spacegirl 4.23 pm	Well yes, Cookie, but classifications are very important to science. I know the IAU's decision was very controversial at the time but, as technology improves, they are likely to change their minds again.
Bookman 4.27 pm	And that will be a complete disaster! All the textbooks will have to be rewritten yet again, especially those for little kids.
The Doc 5.48 pm	It's far from a disaster. There's a really valuable lesson in this. Everyone needs to understand that our scientific knowledge is always open to change as we learn more about the world around us.
Cookie 6.02 pm	It's also misleading to say that Pluto is not a planet, but it is a dwarf planet. That's like saying a black dog is not a dog!
Spacegirl 6.10 pm	That's a false analogy. The IAU did define them as separate things. It's more like comparing fruit and vegetables – they're all food.
Pearly 9.05 pm	You are arguing about the wrong thing. The real problem is how you define when a dwarf planet has finally cleared the junk out of its neighbourhood, out of its orbit. That's what the Union didn't clearly define. It seems to me they left that for others to sort out in the future.



Our body rhythms

Shortly before you wake up in the morning, hormones flow from your glands into your bloodstream to get you ready for your daily activities. As you get ready for school, your heartbeat speeds up, and your breathing becomes more intense.

Throughout the day, your body goes through other changes. By late afternoon your body temperature has gradually increased by about 0.5°C. Your blood pressure, which is lowest during the early morning, fluctuates during the day until it reaches its peak by early evening.

Later at night, after the day's activities, you start to feel tired. While you are sleeping, your body goes through even more changes. Deep within your brain a structure called the pineal gland secretes a chemical called melatonin that flows into your brain to make you feel sleepy. The highest levels of melatonin occur at about 2 a.m., rising to about four to six times greater than during the day. If you woke up during this time of night it would be very difficult to do even simple tasks because the increased levels of melatonin would cloud your concentration and judgment.

Sleep also brings other changes. While your body is at rest, there is a decrease in respiration, heart rate and blood pressure. Your overall metabolic rate – the rate of the chemical reactions that go on in the body – also drops. The secretion of growth hormone, however, increases. About half the total day's amount of growth hormone is released during the first few hours of sleep, and most of the growth and repair of your body tissues occurs during sleep. By morning the cycle starts all over again.

The stowaway

The lights of the service station created a circle of warmth and movement amid the darkness. Weary travellers pulled in from the highway, gathering like moths around a grimy bulb to refill the petrol tank, stretch aching muscles and hunch over a cup of tea for a few minutes in the all-night café. None of these travellers noticed a lonely figure who shunned the bright light to wait among the semi-trailers parked at the edge of the tarmac. Only when a bus halted nearby, its airbrakes hissing, the gravel crushed and cracking under the massive wheels, did the figure stir and creep to the corner of an enormous prime mover to watch as the passengers stepped down, and wandered, yawning, into the café.

An elderly man was the last to leave. He lowered an arthritic leg gingerly from the bottom step, leaning heavily on the driver who waited patiently below. With this man safely on solid ground, the driver closed the door and headed off towards the lights in the wake of his passengers.

The figure stepped from the darkness and tried the door. Locked.

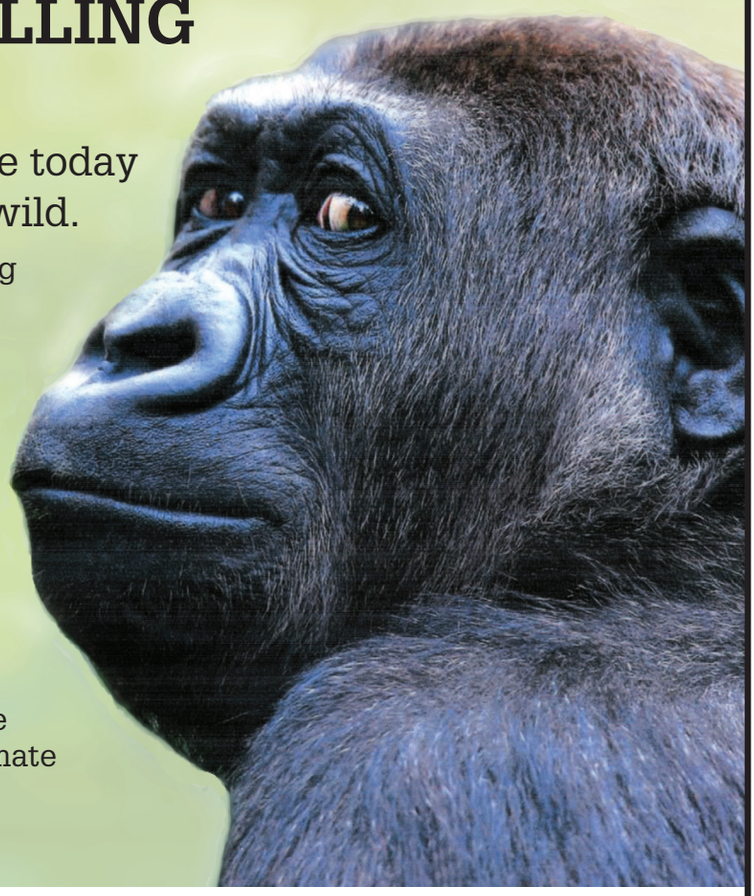
Twenty minutes later the driver returned, leading this time an informal line of passengers at his back. With a quick twist of his key, the door folded open and he stood aside to let them pass. The stragglers would be a few moments yet so he climbed aboard, easing his way into the seat as they came in ones and twos. He didn't notice a woman step from the shadows of a removal van and close up behind a pair of sleepy teenagers. She mounted the steps, careful to keep the tell-tale knapsack concealed as best she could and continue down the bus, nonchalantly checking the webbed pockets behind each seat until she found an empty one. She slipped into the seat, then leaned forward, taking an age to tie and re-tie her shoelaces.

The front door sighed as it closed and the bus lurched forward, to pause briefly at the edge of the highway. A car swept past, leaving the road behind it suddenly black and empty. The driver gunned the engine, commanding its throaty roar and the bus pulled away from the road-house into the sea of darkness.

Only then did the woman sit up and permit herself a smile.

Gorillas under threat

THEY'RE CALLING ON YOU



Recycle your old mobile phone today and help save gorillas in the wild.

Our reliance on mobile phones is driving gorillas to extinction.

Your phone contains the metal coltan mined from gorilla habitat. Each time you recycle a mobile phone, the need to mine coltan is reduced.

Next time your mobile rings, remember that 'they're calling on you'!

Recycle your old mobile phone today!

Funds raised from recycling your phone will be donated by Zoos Victoria to primate conservation.

www.zoo.org.au/Calling_on_You

MELBOURNE ZOO

the Jane Goodall Institute
WWW.JANEGOODALL.ORG

ARP
AUSSIE RECYCLING PROGRAM

Crisis in the Congo

Gorillas and other wild animals have always been hunted for meat by traditional forest peoples. However, in recent years there has been an unsustainable increase in the number of gorillas being hunted commercially.

Whenever new gold or coltan mines are built, and forests are logged, gorilla habitat is destroyed. This makes it easier for commercial hunters to access previously inaccessible areas of forest.

The Jane Goodall Institute is a not-for-profit organisation that focuses on wildlife conservation in Africa. The Institute believes that the illegal commercial trade in wild meat is the greatest current threat to gorillas, and is working with local communities, government and businesses in Central Africa to develop solutions to the current crisis.

Coltan facts

- Short for columbite-tantalite
- Highly heat-resistant
- Valuable 'magic dust' component of common electronic products such as computers, DVD players and mobile phones
- Main legitimate mines are in Australia, Canada and Brazil
- 80% of the world's reserves are in the Democratic Republic of the Congo

The photo

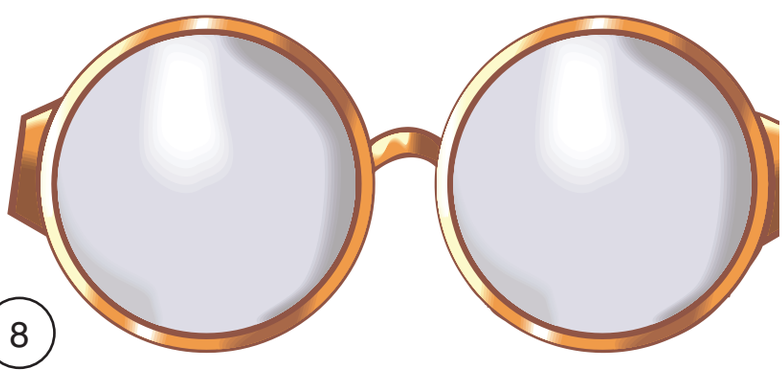
It was Johnno. No mistaking the big, lopsided grin, the oversized head with its Cagney-style middle parting and brilliantine waves. But what puzzled me, and had, I suppose, even more than the oddness of his pose, leapt out from the page and caught my eye, was the glasses he was wearing. Round gold-rimmed glasses that might have belonged to his grandmother or been a property from an end-of-term play.

Surely they were wrong! Johnno had never worn glasses. I stared at the photograph for a good three minutes, searching my memory for some image of him, bursting in through the door – breathless, late as usual, his socks round his ankles – or swerving dangerously close as he hurled off on his bike; he was as clear in my mind as if he were there. But the glasses, those odd gold-rimmed specs that sat so firmly on the saddle of his nose in the lifesaving photograph, they simply refused to materialise. Either my memory was at fault or the camera, on that particular afternoon, had lied.

I ran my eye along the row of faces and checked my memory against the names below. Carl Reithmuller, Jim Bostock, Bill Braithwaite, Neil Pickup, Colin Smalls, Tippy Thompson, Mervyn Deeks – I named every last one of them without fail. My memory, like Johnno's eyesight, was perfect. Twenty-twenty every time. I could see myself paired with each one of those figures, as we stood opposite one another ready to begin, hands on shoulders, heads up. With each of them, that is, except Johnno. And it occurred to me suddenly that he had never been a lifesaver at all. So how had he got into the picture? What was he doing there? I counted. And sure enough, the number was uneven. Johnno made thirteen.

So the camera *had* lied. Or Johnno had. Those glasses, if one could check them, would turn out, I was certain now, to have nothing in the frames. They were a disguise, a deliberate bending of the facts. A trick set up as carefully that afternoon as Mr Peck's camera, to preserve something other than the truth, and to make someone like me, nearly twenty years later, stop and look again. A joke with a time fuse.

How like him!



Being a science writer

WRITING ANYTHING that's any good is hard work, but science writers labour under a particular, and rather peculiar, set of constraints. Science is new – only about 400 years old, as a going concern – and prodigious, having transformed our conception of the universe and of our place in it. But precisely because its impact has been so rapid and so monumental, science has not yet been absorbed into our common consciousness. Readers come to the printed page already knowing something about crime and punishment, love and loss, triumph and tragedy – but not, necessarily, about the roles played by theory and observation in identifying a virus or tracing the curvature of intergalactic space. Hence science writers have to keep explaining things, from the significance of scientific facts to the methods by which they are adduced, while simultaneously holding the readers' attention and moving the story along. It's as if business reporters had to constantly explain what is meant by "turning a profit", or sportswriters by "scoring a touchdown".

Unsurprisingly, we science writers are often misunderstood. People tend to assume that we write computer software manuals or those buckram-bound engineering textbooks assigned to students in technical studies. Fellow authors dismiss us as translators. Editors may think us narrow. A quarter-century ago, when I was struggling to move away from writing about politics and rock music in order to concentrate on astronomy, the editor of a major magazine pressed me to do an article, called "The Bionic Man", on artificial body parts. When I declined, he became impatient.

"Well, what do you want to write about?" he asked, throwing up his hands, like a motorist cut off in traffic.

"Astronomy," I replied.

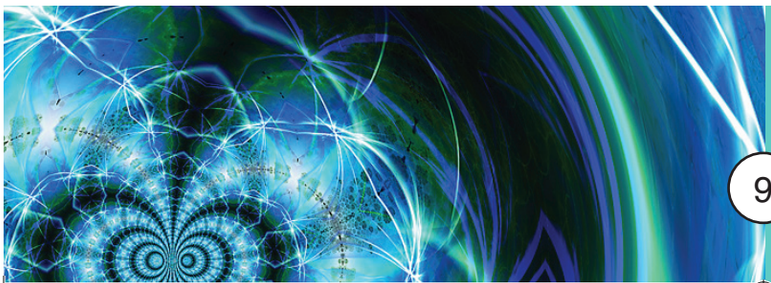
"You've already written about astronomy!"

"Yes, but I like it. It was my original interest in life."

"Aren't you afraid of becoming some sort of Johnny One Note?"

"Well, not really. You know, what's out there is something like ninety-nine, then a decimal point, then twenty-eight more nines per cent of everything. Covering nearly everything doesn't seem all that limiting. And it leads to lots of other things."

I've been on the wrong side of arguments with editors more often than it is comfortable to recall, but on this occasion I turned out to have been right. Astronomy did lead to everything else. It led me into other sciences of course – among them physics, chemistry, and biology – and also, by many winding paths, to poetry, literature, history, philosophy, art, music, and into conversation with some of the smartest and most creative people in the world.



END OF READING MAGAZINE

ACKNOWLEDGEMENTS

Titanic
Text and diagram adapted from *Underwater Treasures* by Maureen Haselhurst, Pearson Education Australia, 2004.

Jacob
Extract adapted from *Rain Stones* by Jackie French, HarperCollins Australia, 1991.

Our body rhythms
Extract adapted from *Clocks and Rhythms* by Alvin Silverstein, Twenty-First Century Books, 1999.
Image by Chantal Stewart.

The stowaway
Extract from *A Bridge to Wiseman's Cove* by James Moloney, University of Queensland Press, 2007.

Gorillas under threat
Adapted from Poster © Zoos Victoria, 2009.

The photo
Extract from *Johnno* by David Malouf, University of Queensland Press, 1975.

Being a science writer
Extract adapted from *The Best American Science Writing* © Timothy Ferris, 2001.

Surf lifesavers
Photograph by Sarah Rhodes, newspix.com.au

Surf lifesavers

Australia was the first country in the world to have surf lifesavers. In the early 1900s, surf lifesavers were all males. Today, the mix of people who patrol our beaches reflects Australian society. We can be proud that the lifesavers of today are both males and females and come from many cultural backgrounds.