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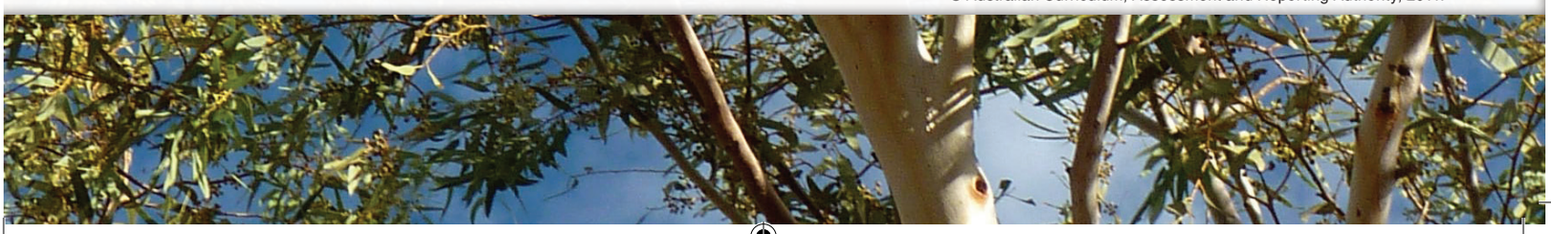
2011

Year 9



Marathon man to trade Kununurra for Big Apple

Nathan Dyer
The West Australian
15 January 2010

Torrential rain and muddy roads are not enough to deter a young Kununurra man in his bid to run in one of the world's most famous footraces, the New York Marathon.

Joseph Davies, who finished Year 12 at Kununurra District High School last year, has just returned home from selection trials in Alice Springs, where he was coached by Australian running legend Robert de Castella, a four-time Olympian and two-time Commonwealth Games gold medallist.

Davies, 18, was one of 12 hand-picked Indigenous hopefuls who attended the Alice Springs selection trials.

If selected in the final six-person squad, he will travel to the Australian Institute of Sport in Canberra for more training before flying to the US to compete in the marathon in November.

De Castella said the squad, the brainchild of his not-for-profit organisation, SmartStart, was the first step in establishing a program to develop Indigenous long-distance runners in Australia.

Davies, who is training daily, even in wet season downpours, said he understood training for the marathon would not be easy, but it was a challenge he was ready for.

'I know it's a once in a lifetime opportunity and I really hope I get selected,' he said.

The northern hemisphere cold will drive him to 'just run faster'.

Underwater fireworks

In May 2009, scientists unexpectedly filmed an eruption of the deepest submarine volcano yet discovered. This volcano, West Mata, lies south-west of Samoa in the Pacific Ocean.

Scientists had found volcanic debris in water samples close to West Mata in November 2008. This meant that the volcano was active and might erupt again at any time.

During the 2009 mission, a submersible robot (Jason) was lowered about 1200 metres to West Mata's summit. Jason was carrying cameras to film the volcano, when suddenly the volcano erupted. Through Jason's 'eyes', the scientists were able to witness a submarine eruption close-up for the first time. Fiery bubbles of molten lava shot up into the ocean – a spectacle described by the scientists as 'underwater fireworks'.

Figure 1 *A cloud of sulfur and molten lava erupts from West Mata.*

On land, a robot like Jason could not have moved so close to an eruption. The force and the heat of the lava would have destroyed the robot and its cameras.

The high water pressure in the deep sea reduced the violence of West Mata's explosion. The icy seawater quickly cooled down the exploding lava bubbles, turning them to black rock that sank to the ocean floor.

Scientists hope that the detailed images Jason took will give further insight into the formation of submarine volcanoes.

Figure 2 *Jason's robotic arm collects samples during the eruption.*

The first day

On his first day at a new school, Michael has been sent to the Principal's office.

'I'm Michael. I'm new here.' I gave her my best shallow smile and hoped she'd take the offer. She had to have better things to be doing with her time.

'I know who you are, Michael, and I know why you're here.' In other words shut up and let me do the talking. Fair enough too. I took the advice. She didn't look all that angry though. If anything she almost seemed amused by me and her tone was friendly. I tried to remind myself who she was, in case it was some sort of trap. She took a deep breath, like I was a small part in a big battle she'd long since stopped trying to win, and smiled at me.

'You're hardly the first person to change schools, Michael, and you're certainly not the first to try to make an impression. And just between you and me, you're not the first to be sent here by Mr Jensen.' She stopped, so I gave a little nod and mumbled my agreement, which seemed to please her. 'Quite. So what do you think we should do about this?'

'Maybe we could just chalk it up to experience,' I tried, heartened by her apparent good humour. She acted as if she hadn't heard me.

'Were you pleased your family decided to move here, Michael?'

'Um, not pleased exactly,' I admitted.

'And how have you found us?' It was bizarre. She was beginning to sound like some old auntie stuck for conversation during a Christmas visit.

'All right, I suppose.'

'Yes, we are.' She smiled at something I couldn't even guess at. 'And you think we should just leave this here do you?' It had to be a trap. I nodded, not trusting myself to say anything useful.

'Let me just tell you this then. You don't want to cross me, Michael. You'll find me a very loyal person to my staff. Do you understand that?' Again I nodded. 'Of course I'll have to ring home, to let them know things haven't started too well for you, but apart from that I think you should just get back to class and concentrate on keeping a low profile, don't you?'

It didn't feel right. She was being reasonable, no doubt about that, but I couldn't quite trust her. There was something about the way she looked at me when she spoke, like she had some private joke going I would never understand. And she was an adult. There had to be something in it for her.

Salinity – an environmental emergency

Salinity is one of Australia's greatest environmental problems. It occurs when too much salt rises from under the ground to the surface and ruins the soil. In 2000, there were 2.5 million hectares of salt-affected land in Australia. This may increase to 17 million hectares by 2050.

Rising watertable

Land clearing is the major cause of Australia's dryland salinity problem. Trees act as pumps, removing water from the soil and keeping the water level in the ground well below the surface. This level is called the watertable. Water absorbed by the roots travels through the trunk and out through the leaves into the air. In a day, over 700 litres of water may pass through the leaves of a fully grown river red gum.

Beneath the ground across much of Australia there are large deposits of salt laid down by ancient seas. The salt is harmless underground, but when it comes to the surface it does damage. When trees are removed the watertable rises, bringing the salt with it.

Costs

The cost of salinity to Australia's farming production is over $250 million a year, and the cost is increasing. The CSIRO estimates that salinity will cause the extinction of 1000 species of Australian plants and animals. Salinity also damages water pipes, roads, houses and parks. In the city of Wagga Wagga, this type of damage costs over $3 million each year. The level of salt in the Murray River is also increasing, and by 2020 the water in Adelaide piped from the Murray may be too salty to drink.

Halting the salt

Replanting native trees is a very effective method of lowering the watertable. Native grasses have long roots that prevent water from rising to the surface, unlike many introduced grasses that have shallow roots.

Slow change

For many years, the practices that led to today's salinity problems went on without anyone knowing the consequences. This was because the effects of land clearing on watertables were not immediately obvious. Similarly, the effects of changing these practices will not become noticeable for decades, because it will take that long for seedlings planted now to become trees and restore watertables to their natural levels.

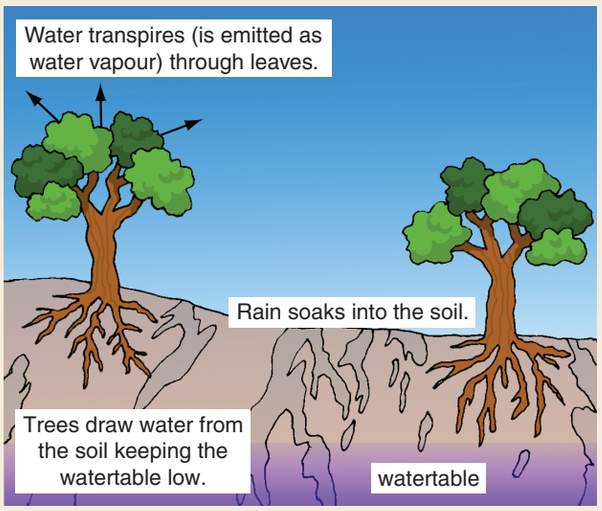


Figure 1 *Uncleared landscape*

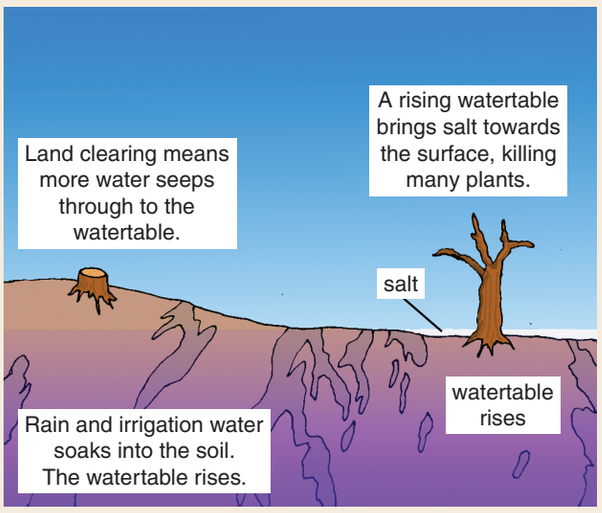


Figure 2 *Cleared landscape*

Mort's dog Blue

Mort is cooking a meal of fish for the Ranger. Mort's dog Blue is close by, as usual.

The Ranger grinned. 'Don't trust me, do you?'

'Trusts you more than most,' Mort declared, turning the fish. 'A man'd think he knew every word you said.'

'Course he does,' said the Ranger roundly. 'Most of 'em, anyhow. He knows a lot more of what you say than you know of what he says, mate.'

'Why don't you shift that paper off the table and make a bit of room? Instead of telling a man about his own dog?'

'All right, all right,' said the Ranger, bundling the newspaper off the table, 'but most people don't have a clue how an animal's talking to them, and understanding them. Body language, it's called. You talk the same way and don't know you're doing it, but Blue can read it all right.'

'That,' said Mort, dismissing body language and setting up the fish. 'Yeah, I've heard about that. Only I'm a poor ignorant coot, and I just talk words. Pull up a chair, will you, before this fish gets cold.'

'Words too,' said the Ranger, sitting down. 'Man, this smells good to a hungry bloke. You're a life-saver.' He broke off the tail of the fish and passed it to Blue, who took it neatly and thumped his own thick brush on the floor again. 'How many words do you reckon your dog knows?'

Mort considered, settling into a chair by the stove. 'More than a man realises, I reckon,' he admitted. 'There's "sit", of course. And "stay". And "lie down and shut up". There is "wait" and "come here". He's not a working dog, of course, or there'd be more.'

'All right,' said the Ranger argumentatively. 'That'll do. Now, how did you teach him those words, eh?'

'The way anyone does, I reckon.'

'How?' insisted the Ranger between mouthfuls of fish. 'Did you belt them into him?'

'Eh? No, I didn't.'

'How, then? Did you go through some routine like breaking in a horse?'

'No, you drongo, I didn't have to. A man just says them often enough.'

'Right!' shouted the Ranger, triumphant. 'You just said them and he learnt them! So why should he learn the words you want him to learn and not any of the others? Hm? He's only got to hear 'em often enough, you just said. Is he supposed to say to himself, "I'm not supposed to learn that word, so I won't." Hm?'

Where on Earth are you?

Twenty years ago the Global Positioning System (GPS) was for the use of military personnel only, a network of orbiting satellites designed to guide missiles and pilotless drones anywhere on the planet to the accuracy of a metre. Today, it's on car dashboards, virtually all new mobile phones and personal computers. Nearly a million satellite navigation devices have been sold in Australia alone.

In 2000, United States President Bill Clinton switched off the system's "selective" control by the military, releasing it for commercial purposes. However, it took some time for the wider potential of GPS to be realised. Now it's popping up on so many devices that privacy concerns are being raised. Some mobile phones can show you the nearest supermarket, hotel or dry cleaner. Some Internet services act like a beacon, showing friends – and potentially anyone else using the application – where you are at a particular time. Some retailers offer smart-phone applications that can tell users the location of their nearest store, wherever they might be at that time.

But that's just the first step. Marketers are particularly excited about being able to target advertisements at particular consumers based on their geographic location. Imagine finding an advertisement on your phone from a retailer offering $10 off your favourite brand of T-shirt as you're walking past their store. A handy service? Probably – but privacy advocates worry that location-based services are ripe for abuse by companies.

And then there are the risks for personal security. A robber could know precisely when a person is withdrawing money from a bank or a burglar could work out when to break into people's homes. Those scenarios may seem far-fetched, but the epidemic of identity theft and security breaches in recent years should raise some concerns about how well marketers will protect location information.

The living night

A guide is taking tourists to an isolated Australian beach where turtles are laying their eggs.

The party of twelve stood around murmuring solemnly and casting shadows. The sky amazed them. A woman exclaimed at a shooting star. They were in awe of constellations and geography, impressed by the blazing night and the encircling silence. The tourists were pleased with themselves just being in this yawning nightscape, especially knowing that where they presently stood would soon be deep ocean.

It was almost eleven o'clock but the moon on the white sand, the absence of any interfering artificial light – nothing along the silent breadth of land or sea or in the air – gave the night a stark clarity. Stars fizzed like fireworks. The sky was bright enough to read by. Grace could make out individual ghost crabs now resurfacing and regrouping, as well as their whorling sand patterns, as ordered and ornamental as Maori facial tattoos.

Several turtle species chose to lay their eggs on this slope of coast. Green turtles, loggerheads, olive ridleys, leatherbacks, hawksbills, flatbacks. The beach was sheltered and gently shelving, with few outcrops and obstacles to hamper the females' laboured passage up from the sea.

'Okay,' she called out. 'We're looking for semicircular marks in the sand.'

Almost immediately they saw tracks – the intuitive dragging scrape of the flippers. The imperative haul of the body. She handed out torches. 'Use these if you need to. I'd prefer not to use the headlights. We don't want to make the old girl's big night even more uncomfortable.'

The green turtle sprawled and gasped beside a pile of sandy, pulpy-looking eggs. Its straining face was eaten by the light of the torches. The front flippers, as automatic as a wind-up toy's, constantly flicked sand on the eggs. When the people came nearer, the turtle heaved a phlegmy sigh, as if something important had suddenly registered, and closed its eyes. It gave another shuddering sigh and two final eggs dribbled in quick succession onto the sand. Mechanically the flippers flicked sand on them.

The onlookers stood reverently by. In its dazed convalescent state, the turtle ignored them and their doting cameras. Neither its pained expression nor the rhythmic flippers seemed to indicate sufficient resistance to the large sand goanna that emerged then from the cliffs and snatched the last egg, still mucoid and dripping, from under it.

'*Oh!*' the shocked people shouted, as one. '*No!*'

Inventing daylight saving

Daylight saving involves putting clocks forward, usually by one hour, in summer.

In 1895, the New Zealand naturalist and astronomer, G.V. Hudson, submitted a proposal for daylight saving (which he called 'seasonal time'). Here, in an address to the Wellington Philosophical Society in 1898, he responds to some criticisms of his idea.

Amongst the objections which have been urged against the adoption of my scheme, I shall only briefly deal with those of more serious importance. A number of minor objections have been raised, which have simply arisen through the objectors not having taken the trouble to make themselves conversant with the subject. For instance, it has been urged that this scheme, if carried out, would deprive people of their long winter evenings, those raising this objection evidently having overlooked the fact that, during the seven months of the year which include the winter, the time would remain precisely as it is at present.

A more reasonable objection is that regarding the alteration of the clocks, some contending that it would be better for us to alter our habits during the summer, and leave the clocks alone. The reply to this is that such an alteration in habits would be wholly impracticable, as it would involve endless adjustment throughout the whole of the society, which could never be carried out in all its detail. Meal times, arrivals and departures of trains, steamers etc, opening of places of business, theatres etc, would all have to be simultaneously altered, whereas, by moving the hands of the clock in the middle of the night, all these adjustments could be effected quite automatically, without disturbing in any way the existing state of things.

It has also been urged that by lengthening the hours of daylight at the end of the day shopkeepers and others might be tempted to extend the hours of labour for their employees. This, it may be remarked, is really a side question which has already been specially dealt with by legislation, and although there are at present nearly two hours' daylight after closing-time in summer, I am not aware that any systematic attempt has been made to lengthen the hours of labour in summer on this account. The milkmen, and other persons who have to begin their work very early in the morning, would undoubtedly suffer under my scheme, as they would have to start their duties in the dark of early morning almost the entire year through. As these persons, however, constitute a very small minority in the social community, it is not to be expected that their personal comfort or convenience would be allowed to interfere with the adoption of the scheme if it were found to be beneficial to the large majority.

END OF READING MAGAZINE

ACKNOWLEDGEMENTS

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Snowboarding in Australia
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Snowboarding in Australia

Snowboarding is fast becoming one of the most popular winter sports in Australia. Australian athletes have been amongst the world's top snowboarders since Zeke Steggall represented Australia in the first Olympic snowboarding event in Japan in 1998. Nathan Johnstone was number two in the world in 2008 and 2009, and Torah Bright won a gold medal in snowboarding at the 2010 Winter Olympics.