

**The Dig Tree Review**  
Sarah Murgatroyd  
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In my first book, *Natural Eating* (Footnote 3, page 41), I mentioned, as an object lesson, the ill-fated Burke and Wills Expedition mounted by the Royal Society of Victoria, Australia.

Australia is about the same size and shape as the lower 48 states of USA. At the time (1860) Australia's interior was a "ghastly blank". Within a few miles of the coast, the countryside became hostile desert which proved extraordinarily difficult to explore. No one had any idea what the interior of the country was like. Some thought there would be an inland sea in the middle, others that there would be fine sheep grazing, and yet others thought it was hostile desert all the way through. Not only was this ignorance an embarrassment, there was prestige to be had, and money to be made, by linking Australia to the outside world by a telegraph line crossing the continent. The Expedition's mission was to cross the continent from Melbourne in the south to the Gulf of Carpentaria in the north and back again – a total journey of some 3,500 miles

Sarah Murgatroyd has written a fascinating account which exposes how the Royal Society bungled its way into a fiasco. It selected an impetuous rake of the Irish gentry, Robert O'Hara Burke for his "breeding" and "fine head" to lead the expedition, even though he had no exploration, management, navigational or bush skills; it gave him impossible exploration instructions; and it hired an oddball, contrary team of naturalists and observers predestined to squabble amongst themselves.

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On the other hand the Royal Society provided lavish equipment and supplies. Burke provisioned with enough food for the whole 3,500 mile journey – to feed some 18 men for 18 months. Marvel at what they were carrying: dried and salted beef, dried and salted pork, flour, rice, oatmeal, sugar, salt, coffee, tea, lime juice and some canned vegetables. With our superior knowledge today, we can predict disastrous health consequences on such a diet...

The Royal Society did make one successful recruit, William Wills – as Surveyor, Meteorologist and Astronomical Observer. Wills' job was, by star sightings, to navigate the explorers on their journey and to make all kinds of scientific observations. These he did meticulously for the entire journey, right up until the day of his death from malnutrition. It is thanks to Wills that we have a remarkable day-to-day diary of the expedition's travails.

Another extraordinary decision made by Burke was to set off just before the height of summer when the journey would be at its most gruelling and perilous. The eighteen men went on their way from Melbourne and had a horrendous first few hundred miles. Burke gradually dumped off stores and men until just he and three others, Wills, Gray and King, left a base camp at the desolate Cooper Creek oasis in central Australia for the 950 mile trek to the north coast – and 950 miles all the way back again. They went on foot, trailing some pack-camels and a pack-horse Billy. All their food was loaded on these creatures. For food they were still relying on the dried and salted beef and pork, flour, rice, oatmeal, sugar, salt, coffee, tea and a few canned vegetables.

Now listen to this: for the whole journey through the Australian wilderness the explorers came in contact with local bands of Aborigines. These peoples lived their entire lives in this inhospitable desert without once having recourse to imported salt beef, flour or sugar. It is fair to say that no one knew that Burke and Wills would find human life in their travels, but once they did, a more open-minded explorer would have tried to learn how to "live off the land". But no, the party pressed on to the Carpentaria coast where they floundered in the mangrove swamps. They tasted salt water but never saw the open sea. They needed to start back urgently: the "drop dead day" had passed. There was less food left for the return journey than they had consumed coming out.

They were half-starved, eking out their dwindling supplies on half rations. They started to eat the weakest camels and then the horse, Billy. But these creatures were also half starved and their meat although "healthy and tender" had not "the slightest trace of fat in any portion of the body". On the other hand the explorers began eating the purslane (portulac) growing wild along the creeks on the first part of the journey back. We laud purslane as being the plant containing the highest concentration of omega-3 oils. It also has high levels of vitamin C and vitamin A. Wills had no idea of this of course, but in his diary Wills declared purslane "an excellent vegetable". It was just as well – it was all that stood between the explorers and scurvy.

Even so, back in the desert, the purslane disappeared and anyway the party grew more and more feeble. Finally Charley Gray collapsed and died. Burke, Wills and King staggered back to Cooper Creek, one month late, only to find their base camp recently abandoned, but with "ample" supplies of flour, rice, oatmeal, sugar and dried meat. They spent six weeks wandering around Cooper Creek trying to find a way out. In spite of their "adequate" food supply they were getting weaker and weaker, more and more tired. Their plight became so desperate that they realized that the local Aborigines (of the Yandruwandha tribe) were their only chance of salvation.

The Yandruwandha showed Wills how to prepare a kind of flour from the seed of the nardoo plant which grew plentifully in the area. The Aborigines pounded the seeds into a gritty, bitter flour, washed it and then cooked it. So every day the explorers collected, pounded and consumed several pounds of nardoo seed each. But it didn't seem to help: the more they ate, the sicker they became. Wills complained of copious yet hard and difficult-to-pass stools. He wrote that "... I am weaker than ever although I have a good appetite, and relish the nardoo much, but it seems to give us no nutriment...". Within a further few weeks both Burke and Wills were dead; King staggered off to live with the Yandruwandha people.

Why did Burke and Wills die in spite of "ample" supplies, and of nardoo? If proof is needed that "man cannot live by bread alone", this is it. Their appalling expedition-long diet of grains, sugar, salt and dried meat is no better than today's junk food. Just in 2006, 20 year-old Scott Martin of Sunderland, UK died from a fast food diet – the immediate cause was liver failure and unstoppable bleeding. (see "Killed by Bread and Fries", Newsletter February 2006). Burke and Wills with their almost total absence of plant food, certainly suffered from a terrible deficiency of micronutrients. The main culprit is suspected to be vitamin B1 (thiamine) deficiency which, if unchecked, gives rise to the fatal disease of beriberi. Beriberi's very name means "I cannot, I cannot" – or overwhelming fatigue, paralysis of the leg nerves and then death.

It seems that Burke and Wills took short cuts in the preparation of the nardoo. They failed both to rinse it and then bake it like the Aborigines showed them. There are two issues here: the rinsing would have got rid of the poison which blocks vitamin B1, and starchy foods need cooking to be digestible. (Just try eating ordinary flour raw and see what happens!). So Wills was right, they might just as well have eaten sawdust for all the good nardoo was doing them. It had a fatal lack of certain nutrients, and the starch calories passed right through them undigested. A classic case of "junk in equals junk out".

Meanwhile King, living with the Aborigines, survived. Some two and a half months later, a rescue party led by the competent bushman Alfred Howitt, marched up to Cooper Creek with embarrassing ease and found him. Life on the Yandruwandha bush-tucker diet had stabilized King's condition. Howitt found the remains of Burke and Wills, buried their corpses and recovered their diaries and letters.

There is one other curious aspect to the story. What on earth led Burke to take such wild risks with such a sumptuously conceived expedition? He set off in summer when it would have been quite straightforward in winter, and he decided to do the second half of the journey with inadequate supplies or backup. It was an example of futile risk taking. Where have we heard about futile risk taking before? In my new book *Deadly Harvest* I describe how evolutionary behavioural science demonstrates:

"... that women are attracted to mate with high status men. How is this status perceived? One powerful criterion is the status that the man has with other men. Other men will accord high status on qualities that appeal to them; not what appeals to women. One of these qualities is futile risk-taking.

Putting it in modern context, men will admire another man who indulges in reckless driving, skateboarding or bungee jumping. Curiously, women are not impressed by the exploits in themselves, but in the importance other men give to them<sup>1</sup>...”

This is where Sarah Murgatroyd’s account casts an interesting light on Burke’s motivations. He was besotted with a beautiful 16 year-old theatre actress, Julia Mathews. His love was not returned. Burke’s avowed intention was to show Julia that he was “worthy” of her. He was crazy with love and would do anything to win her hand. In such conditions, just leading a competent and uneventful expedition across the continent is not enough – it has to have the element and drama of “futile risk-taking.” Of course, risk takers also risk losing their lives, which is just what happened to Burke and some of his unfortunate companions. But he certainly got the acclaim he craved – posthumously. His story set alight the imaginations of Melbourne society. He and Wills became household names. Their bodies were brought back from the bush to lie in state. On the day of the state funeral thousands thronged the streets and jostled for position. The funeral procession was a sumptuous cavalcade of consular officials from nine countries, assorted bigwigs, politicians, businessmen, marching bands and all led by a regiment of Light Dragoons. “The centrepiece of the cavalcade was the funeral car, a magnificent vehicle, modelled on the carriage used for the Duke of Wellington ... pulled by a team of six horses sporting elaborately decorated harnesses and black plumes”. The Royal Geographical Society in London awarded Burke its prestigious gold medal; statues of Burke and Wills adorned Melbourne and other towns.

So Burke did indeed get the recognition he craved. Had he managed to survive, he would almost certainly have earned the hand of his beloved. Julia Mathews gave several memorial performance for the dead explorers.

All in all, Murgatroyd gives an enthralling, meticulously detailed account of this extraordinary expedition. It gives us at [www.naturaleater.com](http://www.naturaleater.com) the material we need to make our points about human nutrition, and about the motivations of idiotic male endeavour.

I have just one small quibble: the inappropriate use of the metric system in an Anglophone world which still loves and uses Imperial units. I strongly doubt that Burke measured out “85 grams” of sugar as his daily ration (“3 oz”, more like) – and a cricket pitch is exactly 22 yards long, damn it – not 20.1 meters!

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1 Farthing, W; Evolution and Human Behavior; vol 26; p171.