

# What if...?

## ...Chinese explorers — or Darwin's bulldog — had settled in Australia?

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If, as John Lennon sang, life is what happens to us while we are busy making other plans, then science is no less replete with 'might have beens'. For those of us who work in the Antipodes, but recognize that the centre of scientific and economic gravity is in the north, there is a particular piquancy about the contemplation of intellectual and cultural 'what ifs?'

James Cook made the determining discovery of Australia in 1770 but, with only sporadic contact by previous explorers, the discoverer might just as easily have been Spanish, Dutch, Portuguese or French. In fact, a Shou Lao statuette, discovered near Darwin in 1879, is possibly a relic of a visit by the great Chinese explorer Ch'eng Ho in around 1430, during the reign of Emperor Yung Lo. But the emperor died soon after this, and, owing to courtiers' opposition, Ho's voyages ceased — leaving Australia for European discovery. How would science have fared if Chinese policies had been different — given that, to quote Joseph Needham, "Chinese civilisation could not of itself produce modern natural science"?

Cook came to Australia on behalf of the British government and the Royal Society, leading a voyage with an important scientific mission — to observe the transit of Venus from the South Seas. He also carried a secret commission to determine the existence of a southern continent postulated by geographical philosophers. The presence on Cook's ship, the *Endeavour*, of the young Joseph Banks and Daniel Solander highlights that scientific purpose. The flora and fauna that they brought back to London were a crucial challenge to scientific orthodoxy, and would later aid the flourishing of Darwinism.

Darwin's own intellectual achievements had their genesis in the Pacific when he was aboard the *Beagle*, which visited several places in the fledgling Australian colony in 1836. Although influenced by what he observed of the plants, animals and aboriginal people, there was little chance that Darwin would stay in Australia. But it was otherwise for T. H. Huxley, who arrived in 1847 as surgeon-naturalist on the *Rattlesnake* and, with the support of the distinguished Sydney naturalist W. S. Macleay, described numerous marine invertebrates collected during the voyage. Huxley's paper "On the Anatomy and Affinities of the Family of the Medusae" (1849), read to the Royal Society on his behalf, secured his fellowship at the age of 26. But what if, in 1850, the nascent University of

Sydney had not, for undocumented reasons, abandoned plans to include a foundation chair in natural philosophy? Being both distinguished and on the spot, Huxley would have been the natural choice for this position. "Had the University of Sydney been carried out as originally proposed," he later wrote to Macleay, "I should certainly have been a candidate for the Natural History Chair. I know no finer field for exertion for any Naturalist than Sydney Harbour itself."

Had he remained, Huxley's influence in this paradise of biodiversity would have been incalculable — but what might this have meant for the acceptance of Darwin's theory of evolution and natural selection? Huxley's confrontation with Bishop Wilberforce is legendary, but his importance in the radicalization of European scientific thought cannot be overstated.

What, too, if the Braggs had remained in Australia? Sir William did important work on radiation in Adelaide, but the experiments for which he and his son, Sir Lawrence, won the Nobel prize were performed in England. And if Howard Florey had returned to Adelaide instead of remaining in Oxford, what might have been the story of penicillin?

And what if clinicians at Sydney Hospital had been more understanding towards the work done there in the 1940s by the remarkable trio of John Eccles, Bernard Katz and Stephen Kuffler? Katz and Kuffler were

refugees from Hitler, but the idyllic period of their collaboration with Eccles on problems of neuromuscular transmission could not survive the animus of those who thought that making plasma for troops at the front was far more important. All three left Australia prematurely, Eccles going to a chair in Dunedin, New Zealand, before moving to Canberra. Two of this trio went on to win Nobel prizes, and Kuffler is surely one of the greatest scientists not to have won one.

While in Dunedin, Eccles met Karl Popper, another scientist effectively rejected by Sydney University for xenophobic reasons, whose influence on him was enormous. Eccles came to understand that discarding his dogged adherence to the notion of electrical transmission at synapses was not intellectual death but, rather, that "killing our theories by superior ones" is essential for intellectual survival. What if this pair had met and worked in Sydney?

"You should have been here last week" is almost a proverb in Australia. Every event always happened 'last week' in a culture sceptical of ideas and prone to let ability and inventions slip through its fingers. This is part of a colonial inheritance, with its perennial fretting about the brain drain. But such might-have-beens can cut both ways, as life flows on.

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All aboard? If the *Rattlesnake* had left Sydney without Huxley, science might look very different today.

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