



Australian Government

Chief Scientist

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The Chief Scientist addressed the 4th Australian Innovation Business Dinner in Munich as the head of the Australian Innovation Delegation to Europe.

I've noticed over the years that when we Australians think about Germany, we're usually thinking about two things. Beer, and cars.

And I promise I'll get around to them in my speech... but first, let me take a detour back in time.

I want to take you back exactly 170 years, to 1847, when a young German scientist named Ferdinand Jacob Heinrich Mueller decided to come to Australia.

And being German, of course the young Ferdinand Jacob Heinrich had come to *work*.

In six years, he was named the inaugural Official Botanist for Victoria.

In eight years, he had travelled 8,000 kilometres through the Great Sandy Desert, observing 800 new species along the way.

In ten years, he'd become the director of Melbourne's Royal Botanical Gardens.

And in twenty years he'd been kicked off the board. Why? Because he opposed all the *tourists* and *fountains* and *picnics* cluttering up the park. They got in the way of his experiments. *Ach du meine Gute*, who thought gardens were supposed to be fun?

And who has time for fun? Certainly not Ferdinand Jacob Heinrich Mueller: no, he spent the next four decades:

- writing 3000 letters a year;
- publishing more than 800 papers;
- serving on the first Australian Antarctic Exploration Committee;
- founding the Royal Society of Victoria;
- lecturing at every opportunity...

...and ended up, at a ripe old age, a hereditary baron and Knight of the British crown.

So stupendous was von Mueller's output that, for much of the nineteenth century, he basically *was* our scientific partnership with Europe: a German-born, Australian-made machine.

And he left his mark, as you can tell from the two mountain ranges, four individual mountains, two creeks and a river Australians named in his honour.

All that, plus a species of legless lizards. A baronetcy can't compare.

So, clearly a great man, but why tell his story tonight?

To me, von Mueller is Australia's model of the very modern German: formidably intelligent, endlessly curious and phenomenally hard to slow down.

He rocketed down the Autobahn of life, but never out of control. He travelled instead like a classic German car, with supreme efficiency.

He pledged his adopted country to the very highest standards, putting scientific rigour and professional reputation above the whims of fashion.

That legacy endures today, in the Australia he helped to bring about: an Australia that lives and dies by its quality brand.

We succeed in the global market when we jump the high bar, with science on our side.

- Whether it's the quality degrees on offer from Australian universities...
- Or quality Australian baby formula and beef...
- Or quality Australian clinical trials...

... the opportunities stem from knowledge, ideas and skills.

Even those exports that are usually placed in the category of "raw materials" – such as minerals like iron ore or agricultural commodities like wheat – represent astonishingly sophisticated knowledge chains.

You only have to visit Rio Tinto's Mine of the Future in the Western Australian desert to know that our export success derives from innovation. There you will see:

- the world's most sophisticated fleet of self-driving trucks,
- and the world's largest private railway,
- all managed remotely from an operations centre more than a thousand kilometres away in Perth.

A mining boom takes more than just raw luck. It's got to be luck *translated*.

So we have learned a great deal from the determined German way... and it is very much in our interests to invest in the relationship today.

Which brings me, as I promised, to great beer and fast cars. Good in moderation, and not combined.

First, to beer.

In the year 1487, the duchy of Munich set the standard for what a beer ought to be: made from nothing but water, barley, yeast and hops. For 500 years, it resisted the temptation to water down that standard – or compromise the reputation attached. It remains the definition of authentic German beer.

But for beer-lovers who can't have gluten, that's a problem. Barley contains gluten. Beer must have barley. Ergo beer can never be gluten-free.

Enter Australia's CSIRO, our flagship public agency for industry-focused research.

Amongst its many strengths is agricultural science, including a decades-old program in wheat and grains.

Harnessing that strength, CSIRO bred a strain of barley with 10,000 times less gluten than the standard variety.

Beer made from that barley can legally be marketed in Germany as “gluten-free”.

And in February this year the first commercial shipment of CSIRO barley grain left Australia, ready to be transformed into German beer.

CSIRO, with its German partner Radeberger, leapt the high bars no-one else could jump. And so, an opportunity for Australian farmers was made.

Now, to cars.

In my home state of Victoria, there’s a company called Carbon Revolution.

It makes the world’s best wheels for world-class German cars: Audis, BMWs, Porsches.

These wheels aren’t just half as light as standard aluminium wheels: they’re stronger and they reduce road noise.

The secret lies in the carbon fibre technology.

There are plenty of firms with capacity in carbon composites – but not many with the facilities to take a product all the way from basic research to production.

That capacity enabled Carbon Revolution to design, test and scale the world’s only one-piece, carbon fibre wheel.

They saw their market was global from the start. That’s why they reached out, when little more than a start-up, to conduct the early laboratory testing in Europe. Make a wheel that’s up to the standard for German cars, and you have a product fit to take on the world.

And the company’s motto is fittingly German: *Performance is everything. Efficiency is everything else.*

So here’s to the determined Germans. Here’s to modern beer that complies with the ancient laws. Here’s to fast cars that handle corners with supreme control.

And most of all, here’s to our joint venture in the great business of getting things done.

Vielen Dank, thank you, and goodnight.