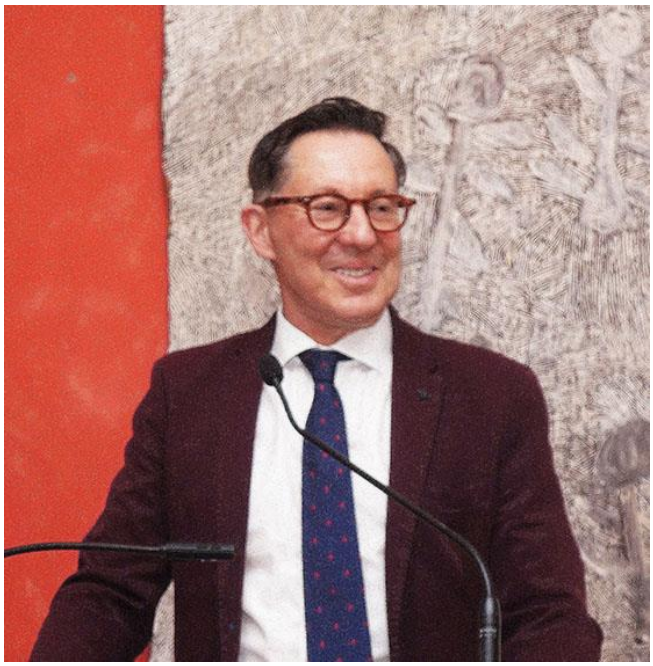
BRETT MASON

Wizards of Oz



Immunologist, educator, former Senator, former Ambassador, Brett Mason delved into the extraordinary contributions of two Adelaide scientists, Mark Oliphant and Howard Florey, who had a profound impact on the outcome of World War II.

To quote from his book "Wizards of Oz":

"The Allies eventually prevailed – this much is known. But the vital role the two Australians played in achieving that victory remains largely unrecognised."

Oliphant and Florey led teams that over a period of 100 days in early 1940 developed the device that was critical to winning the war, conceived the powerful weapon that ended it, and produced the miracle treatment that enabled countless casualties to survive it.

Their contribution, however, did not begin and end with science. Just as importantly, Florey and Oliphant were also instrumental in enlisting America's technological and industrial might for their cause. In another 100 days burst of activity a year later in mid 1941, their tireless lobbying and agitation across the length and breadth of the United States ensured the full potential of these breakthrough inventions would be realised.

Microwave radar, the atomic bomb and penicillin became the three most significant scientific and industrial projects of the Second World War. They also proved crucial to winning it. Without the two Australian scientists and their unheralded contributions in and out of laboratories, the course of the war would have been far deadlier and more protracted."

In covering the above key points, Brett gave us lots of fascinating details of these two remarkable men and their crucial inventions. Particularly noteworthy were the following:

- They were childhood friends, whose lives had many close parallels, especially in Adelaide, going to England to study in the 1920s, the coincidence of their discoveries in 1940, and their separate visits to USA in 1941

- After doing a lot of research work with Lord Rutherford at Cambridge, Oliphant moved to the University of Birmingham just before the war. It was there in Feb 1940, his team produced the cavity magnetron, which used microwave thereby revolutionising radar due to the device's hand size transportability and power (compared with the static 70 metre masts that previously had used longwave to detect incoming aircraft).

- Just 2 weeks later, another team there led by Oliphant, provided first proof that an airborne atomic bomb was technically feasible.

- Only 2 months later at Oxford University, Florey's team conducted trials on mice that demonstrated that penicillin could kill bacteria in a severe infection without harming the body of the mouse (and later the human patient). In time penicillin revolutionised health, not only in treatment of infected wartime wounds, but also across the spectrum of infection control.

- It was then important for these massive discoveries to be put into large scale use, with special immediate application into the WWII effort. Britain's industry was pressed by the war effort, so in 1941, both Oliphant and Florey went to USA separately on secret missions (unknown to each other) to persuade the US government and industry that these developments be expedited (noting at the time the US was initially sceptical and reluctant about developing these technologies and had not yet entered WWII). The benefits of microwave radar were soon realised and the Americans devoted huge resources to its mass production to revolutionise offence and defence and consequent success in WWII. Similarly, only US had the capacity to mass produce penicillin, and eventually the major US pharmaceutical firms were instructed by Roosevelt's office to do so, giving the allies a way to greatly reduce fatalities from infections.

- In addition, Oliphant was lobbying to US authorities to build a nuclear weapon before Hitler did. Despite US scientists' initial dismissal of the British proof that it would work, this eventually was taken up, as portrayed in the Oppenheimer movie which made no reference to Oliphant or his team's breakthrough research that gave foundation to the bomb design.

After Q&A, covering German radar, the Battle of the Atlantic, patents, the problematic relationship with fellow Nobel Laureate Alexander Fleming, their future careers, etc, Paul O'Sullivan thanked Brett on behalf of members for his fascinating and uplifting presentation on these two extraordinary Australians.

Peter James