

SHAPING MEDICAL SCIENCE IN AUSTRALIA:
WHAT HAVE WE LEARNT?

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THE RISE AND FALL OF ENLIGHTENMENT IDEALS

- Australian Growth-the Enlightenment Experiment
- Medicine – slow to learn
- 1900: Three Remarkable Men
- The British-Australian “science-circuit”
- 1950: a structure in place
- 2018: ? neglected heritage. Enlightenment Fails

THE ENLIGHTENMENT EXPERIMENT ("FREEDOM TO USE OWN INTELLIGENCE")

- No hierarchy, No tradition
- Problems to be solved
- Opportunities to be taken
- "Have a go"
- Tradition of learning and focus on science

MEDICINE (1788-1850)

- Few unexpected challenges
- Doctors government employed and part time
- Public lived with disease and death
- Doctors NO tradition as scientists
- Choice of care depends on price

MEDICINE(1850-1880)

- Moves to Professional Base
- Senses Enlightenment: adapts, innovates, and initiates
- Absence of stifling hierarchy
- Local Medical Schools: focus on teaching

MEDICINE(1880-1900)

- Scientific Medicine begins
- The Three Wise Men:
 - **Adrien Loir** (science-based medicine)
 - **John Ashburton Thompson** (the public health model – science – public responsibility)
 - **Harry Allen** (structure and organisation of medical science)

ADRIEN LOIR (FRENCH)

- Brought Scientific Credibility to Medicine
- The Cumberland Disease Triumph
- Establishes idea of biotechnology
- Brings International Connections

JOHN ASHBURTON THOMPSON(ENGLISH)

- A Giant Amongst Pygmies
- Physician with Public Health Training
- Drives Scientific Medicine in NSW
- Understands Political Realities
- Makes Bubonic Plague his Model
- Establishes framework for Public Responsibility for medical research & NH&MRC

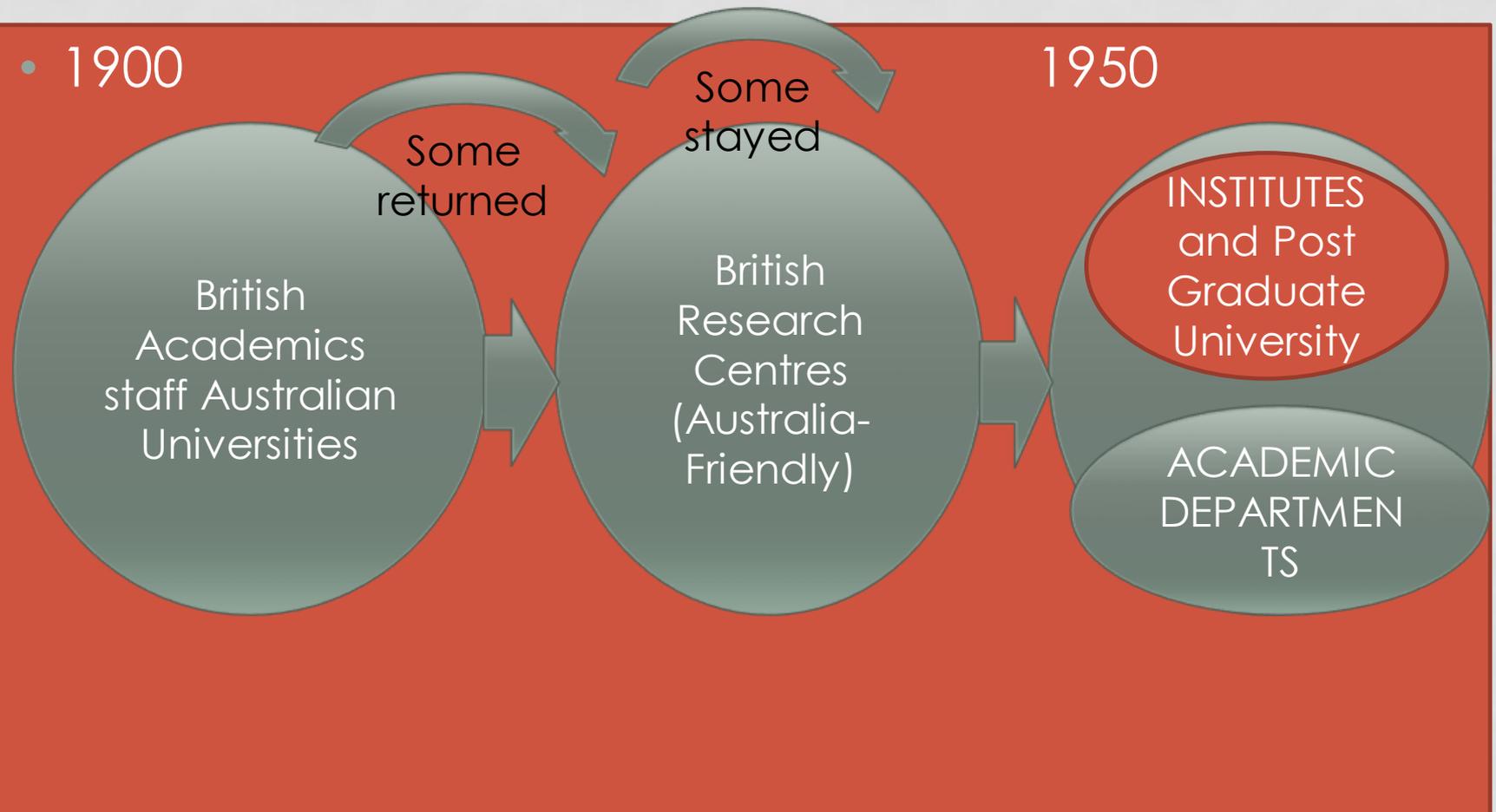
HARRY ALLEN (AUSTRALIAN)

- Dean of Medicine in Melbourne – great administrator
- Understands science-based medicine, and restrictions of university departments
- Key promoter of independent research institutes

THE SCIENCE DYNAMIC (THE AUSTRALIAN/BRITISH CIRCUIT)

• 1900

1950



1950'S

- Flexnerian medical education
- Academic University Departments
- Independent Research Institutes
- Postgraduate Research University
- Government thru NH&MRC accepts responsibility for research funding
- Runs on the Board (5 Nobel Awards)

THE NOW: THE IMPORTANCE OF SCIENCE

- Australian Academy of Science – importance of Physics/Maths to economy:

22.5% of economy (\$B292)

7% of employment (760,000)

28% of exports (\$B74)

THE NOW: THE FUNDING OF SCIENCE (ARC)

- 1966 406/\$m4/\$1,000
- 2016 1,300(7,000)/\$m800/\$30-500,000

THE NOW: THE PERFORMANCE OF SCIENCE

(a) Productivity.

430,000 publications (60% of zones “world standard) ie 2.8% of total (GDP 1.7%)

- BUT:
- lower than similar OECD countries
 - citation indices: 7- \rightarrow 9-16th
 - Nobel awards – most in first 50 years
 - science/maths standards falling

(b)The Process:

- career paths uncertain
- funding of method not ideas
- narrow training/experience
- failure of translational research

(c) Systemic Issues:

- bureaucracy stifling
- review process flawed
- political influence (eg CSIRO)
- social shift to control agenda

(d) Where are the Heroes?

Institutes: few leaders, independence conflicted by service/commercial pressures, focus on theme “off song” without an underpinning principal

Academic Departments: research opportunistic, and of marginal importance – failing to provide role models. Constant distractions

The Next “BIG THING” is lost in the noise of “survival research”, political correctness, focus on process, bureaucracy, and distractions

Change will not occur in a system which fails to recognise problems, where decision makers are a large part of the problem

The Enlightenment principals where “there is freedom to use your intelligence” are under severe threat, but perhaps provide a framework of hope, with role models of the past such as Burnet and Florey worthy of consideration.