

# A bit of trivia

- The theory of natural selection was first proposed by ...*Patrick Matthew*
- Matthew seemed to regard the idea as more or less self-evident and not in need of further development.
- In a stunning example of how **not** to communicate science, he published his ideas in appendices B and F of his book "*On Naval Timber and Arboriculture*" (1831).
- Unsurprisingly, his peers failed to discover his ideas in such an obscure source, and

his work had no impact on the subsequent, more developed, work of Darwin and Wallace (1859).

- Do **not** emulate Patrick Matthew.



# Natural Selection

- Mutation, recombination and other processes introduce variation into genomes of organisms
- The fitness of an organism describes how well it can survive/grow/function/replicate in a given environment, or how well it can pass on its genetic material to future generations
- The same mutation can have different fitness costs in different environments (fitness landscape), and different genetic backgrounds (epistasis)
- Any particular mutation can be:
  - **Neutral:** no or little change in fitness (the majority of genetic variation falls into this class according to the neutral theory)
  - **Deleterious:** reduced fitness
  - **Adaptive:** increased fitness