

Documentary Series: Rise of the Continents presented by Professor Iain Stewart **Episode**: 2 - Australia **Duration**: 59 minutes

Overview of the Episode

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lain Stewart weaves a story of how the continent of Australia was formed and how it affected the evolution of organisms. He explores how formation of the continent has affected everything from mining to Aboriginal history.

Episode Index

- 2:30 min Platypus and the common ancestor of all mammals
- 6:45 min Ancient climate, as evidenced by Glossopteris fossils in coal
- 11:30 min Glossopteris as evidence of plate tectonics and continental drift
- 12:30 min Ancient Gondwana forest
- 14:45 min Coober Pedy, opal mining
- 18:00 min Opal formation and mining
- 22:30 min Evidence of an ancient inland sea and how it formed
- 24:45 min Exploration by Europeans, to find an inland sea
- 26:30 min Aboriginal songlines and the knowledge of finding water
- 30:30 min The Great Artesian Basin aquifer
- 33:00 min Australian Bight and evolution of whales
- 42:15 min Changing climate and the evolution of Eucalyptus
- 45:30 min Paleontologist Dr Michael Archer and fossil koalas
- 51:00 min Wangi Wangi Island and fossil corals
- 54:15 min Model of the sea floor around the Wakatobi Islands
- 55:45 min Landforms created by collision of Australia and Asia

Questions

- 1. Identify features the platypus shares with reptiles and those that it shares with mammals.
- 2. Describe what the fossils of Glossopteris in coal show about the past climate of Gondwana.





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3. **Describe** the evidence Glossopteris provides of continental drift and the plate tectonic supercycle.

- 4. **Identify** modern continents that made up the supercontinent Gondwana.
- 5. Describe the Gondwana forest.
- 6. **Identify** how long the Gondwana forest has survived and the animals that evolved during this time.
- 7. **Explain** why the town of Cobber Pedy is underground.
- 8. **Describe** how the interior of Australia has changed since the breakup of Gondwana.
- 9. **Describe** how the opal in Coober Pedy formed and how it is evidence of an ancient inland sea.

10. **Describe** how the inland sea was formed.





11. **Describe** the importance of songlines and how they are used by Aboriginal people to find water in inland Australia.

- 12. Identify how many mound springs there are thought to be and how much area this covers.
- 13. Identify how much water is thought to be in the Great Artesian Basin aquifer.
- 14. **Describe** how the inland sea formed the Great Artesian Basin aquifer.
- 15. **Describe** the effect of the formation of the circumpolar current in Antarctica.
- 16. **Describe** how the formation of the Australian Bight and the circumpolar current led to the evolution of the giant whales.
- 17. Describe the consequences of the northward movement of Australia on climate and plants.
- 18. Describe features of the skulls of modern koalas and why these evolved.
- 19. Identify the isotope scientists have used to date the fossil corals of Wangi Wangi Island.

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- 20. Identify evidence the stratigraphic sequence of rocks of the Wakatobi Islands provides.
- 21. Describe the model used to represent the sea floor around the Wakatobi Islands.
- 22. Explain how the structure of the sea floor drives evolution leading to rich biodiversity.
- 23. Identify landforms that have been formed because of the collision of Australia with Asia.
- 24. Describe the future geology and climate of Australia.

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