



Documentary Series: Rise of the Continents presented by Professor Iain Stewart

Episode: 4 – Eurasia

Duration: 59 minutes

Overview of the Episode

Iain Stewart weaves a story of how the continent of Eurasia was formed from subduction and the closing of the Tethys Ocean. The collision of India to form the Himalayas and the active volcanism in Italy as the current subduction leads to the closing of the Mediterranean Sea into the future.

Episode Index

3:15 min – Istanbul centre of trade along the ancient Silk Road between Europe and Asia

6:00 min – Mt Chimera in southern Turkey where natural gas seeps from the ground and burns to form the ‘eternal fires’ of ancient stories

9:00 min – Formation of natural gas from fossilised sea creatures on seafloor of the ancient Tethys Ocean

10:15 min – Precious stones, rocks and metal evidence of Tethys Ocean

12:00 min – The Tethys Ocean and the supercontinent Pangaea

13:30 min – Freshwater fish called karimeen in the lakes of Kerala in Southern India

20:15 min – Deccan Traps of India

24:15 min – Mantle plume that triggered the Deccan Trap eruptions

27:00 min – Evolution of mammals

31:15 min – Flying over the Himalayan mountains

39:45 min – Himalayan mountains, weather and climate

45:30 min – Stromboli volcano in Italy

51:30 min – Andesite of the Stromboli volcano

56:15 min - Future of the Mediterranean Sea, Eurasia and all continents

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Questions

1. **Identify** the gas that is the source of the 'eternal fires' of Mt Chimera in Turkey.
2. **Describe** how the gas of the 'eternal fires' is evidence of past environments.
3. **Identify** precious stones, rocks and metals that are evidence of the ancient Tethys Ocean.
4. **Identify** the length of the Tethys Ocean, and the countries that span it, from the geological evidence found today.
5. **Identify** the supercontinent that wrapped around the Tethys Ocean ~200 million years ago.
6. **Describe** the anatomy of the freshwater fish called karimeen, a type of cichlid found in the lakes of Kerala in Southern India.
7. **Outline** how the anatomy of the Indian karimeen fish and the cichlids in Madagascar is evidence for plate tectonics.
8. **Describe** the geological evidence associated with the Deccan Traps and how they formed.
9. **Describe** the significance of the crystals of magnetic iron oxide minerals, ilmenite and magnetite, found in the basalts of the Deccan Traps.
10. **Identify** the trigger of the Deccan Trap eruptions.



11. **Describe** what geologists think happened to the bottom of the Indian plate as it passed over the mantle plume and what this did to the speed of the plate movement.

12. **Identify** what the eruption of the Deccan Traps over hundreds of millions of years led to for living things.

13. **Identify** the characteristics of modern rats that have led to them being so successful and may have allowed their small mammal ancestors to survive in the past also.

14. **Outline** how the Z shaped folds in the Himalayan mountains were formed.

15. **Identify** the fossils found in the shales of the Himalayan mountains and what they provide evidence of.

16. **Describe** how mountains as high as the Himalayan mountains affect weather.

17. **Identify** how sediments eroded from mountains such as these provide for human civilisations.

18. **Identify** the type of eruptions of Mt Stromboli.

19. **Describe** the lava of Mt Stromboli and how this is related to the eruption type.

