Early Theories of Continental Drift

The idea that the past geography of Earth was different from today is not new. The earliest maps showing the east coast of South America and the west coast of Africa probably provided people with the first evidence that continents may have once been joined together, then broken apart and moved to their present positions.

During the late nineteenth century, Austrian geologist Eduard Suess noted the similarities between the Late Paleozoic plant fossils of India, Australia, South Africa, and South America. The plant fossils comprise a unique group of plants that occurs in coal layers just above the glacial deposits on these southern continents. In this book *The Face of the Earth* (1885), he proposed the name “Gondwanaland” (called Gondwana here) for a supercontinent composed of the aforementioned southern landmasses. Suess thought these southern continents were connected by land bridges over which plants and animals migrated. Thus, in his view, the similarities of fossils on these continents were due to the appearance and disappearance of the connecting land bridges.

The American geologist Frank Taylor published a pamphlet in 1910 presenting his own theory of continental drift. He explained the formation of mountain ranges as a result of the lateral movements of continents. He also envisioned the present-day continents as parts of larger polar continents that eventually broke apart and migrated toward equator after Earth’s rotation was supposedly slowed by gigantic tidal forces. According to Taylor, these tidal forces were **generated** when Earth’s gravity captured the Moon about 100 million years ago. Although we know that Taylor ‘s explanation of continental drift is incorrect, one of his most significant contributions was his suggestion that the Mid-Atlantic Ridge—an underwater mountain chain discovered by the 1872-1876 British *HMS Challenger* expeditions—might mark the site at which an ancient continent broke apart, forming the present –day Atlantic Ocean.

1. According to paragraph 2, Eduard Suess believed that similarities of plant and animal fossils on the southern continents were due to

A. living in the southern climate
B. crossing the land bridges
C. fossilization in the coal layers
D. movements of the supercontinent

2. According to paragraph 3, Frank Taylor believed that

A. present-day continents broke off from larger continents and drifted toward the poles due to tidal forces

B. the lateral shifting of continents caused the formation of mountain ranges

C. polar continents began to join together when Earth's gravity captured the Moon 100 million years ago

D. Earth's gravity and speed of rotation created large polar continents

3. Which of the following can be inferred from paragraph 3 about the Mid-Atlantic Ridge?

A. It was once above sea level.

B. It formed at the same time that Earth's gravity captured the Moon.

C. It was much more extensive when it was first formed than it is today.

D. It was unknown before the *HMS Challenger* voyages.

ANS: 1. B 2. B 3. D