

1998-1 Text 5

1- Scattered around the globe are more than 100 small regions of isolated volcanic activity known to geologists as hot spots.

Unlike most of the world's volcanoes, they are not always found at the boundaries of the great drifting plates that make up the earth's surface; on the contrary, many of them lie deep in the interior of a plate.

Most of the hot spots move only slowly, and in some cases the movement of the plates past them has left trails of dead volcanoes.

The hot spots and their volcanic trails are milestones that mark the passage of the plates.

2- That the plates are moving is now beyond dispute.

Africa and South America, for example, are moving away from each other as new material is injected into the sea floor between them.

The complementary coastlines and certain geological features that seem to span the ocean are reminders of where the two continents were once joined.

The relative motion of the plates carrying these continents has been constructed in detail, but the motion of one plate with respect to another cannot readily be translated into motion with respect to the earth's interior.

It is not possible to determine whether both continents are moving in opposite directions or whether one continent is stationary and the other is drifting away from it.

Hot spots, anchored in the deeper layers of the earth, provide the measuring instruments needed to resolve the question.

From an analysis of the hot-spot population it appears that the African plate is stationary and that it has not moved during the past 30 million years.

3- The significance of hot spots is not confined to their role as a frame of reference.

It now appears that they also have an important influence on the geophysical processes that propel the plates across the globe.

When a continental plate come to rest over a hot spot, the material rising from deeper layers creates a broad dome.

As the dome grows, it develops deep fissures (cracks); in at least a few cases the continent may break entirely along some of these fissures, so that the hot spot initiates the formation of a new ocean.

Thus just as earlier theories have explained the mobility of the continents, so hot spots may explain their mutability (inconstancy).

27. The author believes that _____.

- [A] the motion of the plates corresponds to that of the earth's interior
- [B] the geological theory about drifting plates has been proved to be true
- [C] the hot spots and the plates move slowly in opposite directions
- [D] the movement of hot spots proves the continents are moving apart

28. That Africa and South America were once joined can be deduced from the fact that _____.

- [A] the two continents are still moving in opposite directions
- [B] they have been found to share certain geological features
- [C] the African plate has been stable for 30 million years
- [D] over 100 hot spots are scattered all around the globe

29. The hot spot theory may prove useful in explaining _____.

[A] the structure of the African plates

[B] the revival of dead volcanoes

[C] the mobility of the continents

[D] the formation of new oceans

30. The passage is mainly about _____.

[A] the features of volcanic activities

[B] the importance of the theory about drifting plates

[C] the significance of hot spots in geophysical studies

[D] the process of the formation of volcanoes