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General Geology and Natural History of the Galapagos Islands

The Galapagos Islands, one of the world’s largest and most famous groups of active volcanoes, is located on the Galapagos Fracture Zone at its intersection with the Cocos Ridge about 10° of longitude west of the South American coast and on the equator. Notable volcanic features include large shield volcanoes, palagonitic tuff cones, calderas, fresh basaltic flows, raised terraces, and uplifted submarine flows. The islands also are the home of an extensive endemic biota, including the world-famous tortoises, finches, marine iguanas and Scalesia forests. Marine life in upwelling waters surrounding the island is exceptionally rich.

Since Darwin’s visit in 1831 during the voyage of the Beagle, the geologic history of the island and its biota has been of central concern to students of evolution. The fact that Darwin’s ideas and reports on the geology of the island are also important to the history of geology, however, is less well-known.

Impressions of the islands, their geology and the biota, gained during a geological field trip following the 1980 meetings of the Geological Society of America, will be presented. Scientific leaders of the trip were Tom Simkin and Ernst Mayr for vulcanology and biology, respectively. Participants in the excursion principally were geologists, including a liberal sampling of the more active vulcanological community.