

THE HAWAIIAN-EMPEROR VOLCANIC CHAIN ---- TRACE INDICATOR OF THE EURASIAN CONTINENTAL DRIFT

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2 quandaries are linked with the Hawaiian-Emperor Volcanic Chain. The first is some peculiar non-age progressive volcanic edifices, e.g., Pearl & Hermes Reef and Kimmei Seamount. Although many intriguing and clever ideas have been advanced, the Hawaiian hot-spot mechanism is still somewhat mysterious. The second is the real cause of its 43 Ma Great Bend. The dynamic models formulated to date do not explain the observed nature of the dramatic change in Pacific plate motion implied by this sharp bend. Thus the exact relationship between Pacific seafloor spreading, worldwide plate motion, and the Hawaiian-Emperor bend has been an especially knotty problem. The Hawaiian-Emperor Chain belongs to off-ridge type, which is normally created at the centre of secondary oceanic basin where the lithospheric strength is relatively weaker. In Earth's rotation field, the 2 aspects of continental mass moving towards equator and evenly distributing along latitude form 2 main causes of continental drift. Accompanying continental drift, the centre of North Pacific has been moving correspondingly. From 65 Ma ago to 43 Ma ago the Eurasia drifted mainly from north to south which was reflected by the creation of Emperor chain from north to south. 43 Ma ago the collision of India and Eurassia strongly resisted the latter's moving towards equator. As the result of their confrontation, the merger moved then from northwest to southwest, which was traced by the Hawaiian Chain with the same mechanism. This hypothesis might unlock the 2 quandaries above and apply to the formation of the other 2 gigantic volcanic chain in the South Pacific.