

SIBUET, J. C., Ifremer Centre de Brest, Brest, France, J. LETOUZEY, Institut Français du Pétrole, Rueil-Malmaison, France, B. MARSSET, GIS Océanologie et Géodynamique, Brest, France, M. DAVAGNIER (affiliation not available), J. P. FOUCHER and H. BOUGAULT, Ifremer Centre de Brest, Brest, France, and L. DOSSO, R. MAURY, and J. L. JORON (affiliation not available)

Tectonic Evolution and Volcanism of Okinawa Trough

The Okinawa Trough is a back-arc basin formed by extension of the east China continental lithosphere behind the Ryukyu Trench system. The age of marine deposits drilled in the northern Okinawa Trough indicates a Miocene age for the splitting of the volcanic arc and the first tensional movements. The POP 1 cruise of the R/V *Jean-Charcot* (September-October 1984) provided new evidence concerning the two main periods of extension as recognized by Kimura (*Marine and Petroleum Geology*, 1985). Tilted fault blocks in the northern Okinawa Trough trend north 40°–60° and belong to the early Pleistocene phase (2–0.5 Ma). The present-day phase is characterized over the entire basin by normal faults oriented 80°N in the north and 90°N in the south. In the southern Okinawa Trough, most of the deformation occurs along linear, subparallel, en echelon depressions intruded by volcanic ridges associated with positive magnetic anomalies. The system of volcanic ridges ends northeast of Okinawa Island in a series of parallel volcanic ridges named the VAMP (volcanic arc-rift migration processes) area, which merges into an active volcanic chain extending north to Japan. Chemical analyses of the vesicular basalts dredged on the back-arc basin display flat to enriched rare-earth patterns. The niobium-tantalum negative anomalies reflect a subduction signature. A good positive correlation between strontium isotopic compositions and concentrations suggests a contamination effect.