

This memoir is the first to review all of Antarctica's volcanism between 200 million years ago and the Present. The region is still volcanically active. The volume is an amalgamation of in-depth syntheses, which are presented within distinctly different tectonic settings. Each is described in terms of (1) the volcanology and eruptive palaeoenvironments; (2) petrology and origin of magma; and (3) active volcanism, including tephrochronology. Important volcanic episodes include: astonishingly voluminous mafic and felsic volcanic deposits associated with the Jurassic break-up of Gondwana; the construction and progressive demise of a major Jurassic to Present continental arc, including back-arc alkaline basalts and volcanism in a young ensialic marginal basin; Miocene to Pleistocene mafic volcanism associated with post-subduction slab-window formation; numerous Neogene alkaline volcanoes, including the massive Erebus volcano and its persistent phonolitic lava lake, that are widely distributed within and adjacent to one of the world's major zones of lithospheric extension (the West Antarctic Rift System); and very young ultrapotassic volcanism erupted subglacially and forming a world-wide type example (Gaussberg).