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# Ring structure and laccolithic intrusion at the north body of the Kumano Acidic Rocks, Kii Peninsula, southwest Japan

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A felsic igneous activity including caldera-forming eruption and subsequent intrusion of magma into intracaldera deposits effectuated the formation of the north body of the Kumano Acidic Rocks in the Owase-Kumano area, Kii Peninsula, southwest Japan. By detailed field geologic mapping, we found that the Kumano Acidic Rocks consists of two caldera structures occupying the northern and southern parts. The northern half is 10× 15 km in size, and has an arcuate intrusion in the northern margin. The southern half is 5× 10 km in size, and is bounded on the south by an inferred arcuate fault. A pile of pyroclastic deposits, characterized by the dominance of crystal-rich ashes, varies in thickness at both sides of the inferred fault (cross section; E-F). Additionally, many boulders are included in the ash beds near the inferred fault, interpreted as caldera-collapse breccias that were sourced from the fault scarp during the caldera forming eruption. Arcuate intrusion of granite porphyry at the northern margin encloses prevolcanic sedimentary rocks and pyroclastic deposit (cross section; A-B) and is interpreted as a magma conduit along a subsurface circular fracture. This arcuate intrusion is connected with a huge laccolithic mass of granite porphyry that intrudes intracaldera deposits (cross section; C-D). Therefore the granite porphyry intrusion is a post-subsidence magmatic activity and is interpreted as a cause of resurgence of caldera in the area.

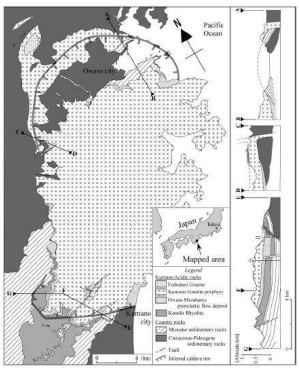


Figure 1. Geological map of Owase-Kumano area.