

Plutonism and porphyry copper-type hydrothermal activity in the back-arc region of the Izu-Ogasawara arc

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Plutonic rocks and porphyry copper-type hydrothermal activity in the Manji Seamount, which is in one of the back-arc seamount chains of the Izu-Ogasawara arc, were studied. From the Manji Seamount, hydrothermally altered rocks showing strong similarities to those associated with porphyry copper-type deposits were collected with plutonic rocks (tonalite and gabbro) and andesitic to rhyolitic lavas. $^{40}\text{Ar}/^{39}\text{Ar}$ dating revealed that both lavas and plutonic rocks are ca. 7 Ma and are the products of a series of volcanism. Porphyry copper-type hydrothermal system in the Manji Seamount is supposed to have been driven by this behind-the-front volcanism on this seamount occurred in the period between the cessation of Shikoku Basin spreading and initiation of currently active rifting.