

Abstract

The Yamakogawa Rhyolite, which erupted in the early Quaternary period in central Kyushu, Japan, comprises seven units, three contain of which spatter and stretched pumice. Our fieldwork shows that these are the deposits of strombolian fire-fountains and rheomorphic tuff. Such deposits derived from silicic magma have been previously described and still are controversial. Some of the reasons given for their formation were exclusively peralkaline composition and high-magmatic temperature. The chemical analyses of the Yamakogawa Rhyolite show non-peralkaline composition and low-magmatic temperature. Moreover, the mineral assemblage of the Yamakogawa Rhyolite suggests that its water content was indistinguishable from other rhyolitic deposits. This is the first report that demonstrates that eruption of silicic magma as fire-fountain and pyroclastic flow with rheomorphism is not, necessarily, restricted to peralkaline composition, high-magmatic temperature and low-water content rhyolite.