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Abstract

The late Eocene Taxco volcanic succession constitutes an important record of explosive silicic volcanism in the north-central Sierra Madre del Sur of southern Mexico. Detailed stratigraphic studies with age dating of individual units in this area were lacking in spite of it being an important mining district. Re-examination of the stratigraphy together with geochronologic studies were used to define the eruptive style and constrain the age of the main episode of silicic activity. Major element data show a rhyolitic composition for all the units analyzed. The volcanic succession records silicic explosive eruptions during which ash-flows, surge and ash-fall deposits, lava flows and domes were emplaced. Earliest activity was contemporary with the end of sediment accumulation of the continental Balsas Group. The first main episode of volcanic activity produced massive, moderately welded, crystal-poor lithic ignimbrites and ash-fall deposits, which evolved into crystal-rich, densely welded ignimbrites with flattened pumice clasts (San Gregorio ignimbrite) thought to represent erupted mush related to caldera collapse during emptying of the magma chamber. A second episode of non-welded, vapor-phase,