

THE POÇOS DE CALDAS ALKALINE COMPLEX ROCK BODY, MINAS GERAIS - SÃO PAULO, BRAZIL: A SHALLOW MUSHROOM-LIKE PHONOLITIC STOPING BODY WITH KILOMETRIC MEGAXENOLITHS

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The Poços de Caldas Alkaline Intrusive Complex Rock Body, Cretaceous in age, situated on the border between the States of Minas Gerais and São Paulo, Southeast Brazil, was interpreted by previous papers to be a large Valles Type collapse caldera, and the present morphology was correlated directly to the Cretaceous volcanic edifice.

The summit level map shows that the outer slope of the half ring-shaped mountains, so-called "castle wall", is generally steeper than the inner one, being incompatible with updated caldera models. The Palaeozoic and Mesozoic sedimentary bodies that happens in the main phonolitic body are intrusive contact with the latter, and show random dips and strikes. The fact suggests that they are kilometric large country bodies captured by phonolitic magma, so-called "magaxenoliths". The contact outcrops between supposed phonolitic lava flows and their basement body are not of unconformity, but of intrusion. The pyroclastic rock bodies, constituted mainly by well-consolidated ignimbrite-like welded tuff breccia, are sub-vertical intrusive contact with their country rock, indicating that these are highly welded vent-filling tuff breccia. The granulometric cross section of the phonolitic "castle wall" does not fit to "ring dyke" model. The observations of the contact outcrop of the main phonolitic intrusive body indicate that they correspond to the bottom of a flattened mushroom-shaped shallow intrusive rock body.

These field observations suggest that the denudation level is much deeper than the previous estimation, and the presente exposure of the Poços de Caldas body corresponds to basal part of a shallow magmatic stopping body.