FACIES AND STRATIGRAPHY OF AN ASSOCIATION OF BASALT FLOWS AND VOLCANICLASTIC BRECCIAS OF THE SERRA GERAL GROUP, CORNÉLIO PROCÓPIO, STATE OF PARANÁ

Valore, L.A.[1]; Licht O.A.B[2]

[1] Geology Graduation Course, UFPR; lucasvalore@ufpr.br
[2]State of Paraná Geological Survey, MINEROPAR, otavio@mineropar.pr.gov.br

In the vicinity of Cornélio Procópio, State of Paraná, in a 225 m wide road cut on the BR-369, a complex association of basaltic flows and thick volcaniclastic mafic breccias is exposed. This outcrop (central point 23°10'25.75"S/50°37'02.38"W) was systematically described through field sections and hundreds of grain size measurements, aiming the characterization of its facies and contact relationships. Its stratigraphy can be summarized, from bottom to top as: B1, a gray, phaneritic, fine to medium grained, amygdaloidal basalt flow with 5% of stretched vesicles > 0.5cm to < 10cm Ø, mostly filled with silica and celadonite. Beside B1, there's an oligomictic, grain-supported basaltic breccia with minor matrix, whose framework is composed of coarse lapilli and blocks. This breccia resembles the upper zone of a rubbly pahoehoe flow, although it's not possible to observe contact relations to an underlying flow. Amygdales of the basaltic fragments as well as small veins are filled with zeolites. Above this first set (B1 plus V1), another set was deposited, comprising a breccia bed (V2) and a basaltic flow (B2). V2 is a very poorly sorted polymictic basaltic breccia, mostly matrix-supported and locally grain-supported. Its framework is mostly composed by blocks, bombs and coarse lapilli (from most to least frequent) of amygdaloidal basalt, of which amygdales are filled with silica, zeolites, celadonite and other minerals and secondarily fine cuspate, vesicular or massive lapilli. Its matrix is pinkish, siliciclastic and massive. B2 flow lies on top of B1, V1 and V2 with a diffuse contact. Its section is shaped like a channel. Above B2, there's another lithological set composed by V3 and B3. V3 is a polymictic basaltic breccia, matrix-supported to grain-supported, with 60% framework and a sandy-clayey red siliciclastic matrix showing laminated structure. This breccia is poorly sorted and reverse graded, with a framework made of blocks and bombs, ranging from 10 to 45 cm and minor quantities of lapilli, whereas B3 is an aphanitic to fine grained basalt with clear lobe surfaces. The boundary between them is not completely clear, because V3 shows injections by B3, even if V3 seems to overlap it. Over an erosive surface above V3 lies V4, which is another basaltic breccia that differs from underlying V3 because of its finer framework (>5 to <20 cm) and greater matrix volume, while still being reverse graded. V4 is also injected by lobes of a basaltic flow (B4) that resembles B3. Covering the sequence and occupying another channel-like feature, there's another basaltic flow (B5) with well developed lobes, containing subhorizontal veins up to 10 cm wide. These veins are filled by many types of zeolites, such as chabazite, natrolite and stilbite. The interaction and intercalation of flows with breccias compose a volcanic-volcaniclastic sequence that marks the transitions between two major basalt flows sets Type 4 LSi-LZr-HTi-HP (in the base) to Type 1 CN LSi-LZr-LTi-LP (on the top), both composing the Center-North Subprovince of the Paraná Igneous Province in the State of Paraná.

KEYWORDS: MAFIC VOLCANICLASTIC DEPOSITS, SERRA GERAL GROUP, PARANÁ IGNEOUS PROVINCE