

The augen gneiss of a bright and dark history

Nuria Castro (1), Kátia Mansur (2), and Maria Heloísa Frascá (3)

(1) Centre for Mineral Technology - CETEM/MCTIC, Natural Stones , Rio de Janeiro - RJ, Brazil (ncastro@cetem.gov.br),

(2) Geosciences Institute, Federal University of Rio de Janeiro, Rio de Janeiro-RJ, Brazil (katia@geologia.ufrj.br), (3) MHB Geological Services, São Paulo-SP, Brazil (mheloisa2@yahoo.com.br)

Rio de Janeiro's augen gneiss, known as 'facoidal' gneiss and 'the most carioca of stones' is a Neoproterozoic syncollisional porphyritic orthogneiss, coarse grained and well-folded, with almond shaped microcline megacrysts (3 to 7 cm) dispersed in a granitic matrix, rich in biotite and quartz. It may have expressive garnet content and the accessory minerals include hornblende, zircon, apatite, magnetite and ilmenite. It was originated during the collisional event that formed Gondwana, and it is related to the orogen known as Ribeira belt (southeast of Brazil). Radiometric ages for the facoidal batholith indicate its emplacement during the main tectono-metamorphic event of that belt (between 590 and 550 Ma), more specifically, at the peak of the low angle compressive tectonism coincident with the beginning of metamorphism (around 560 Ma). It occurs in the State of Rio de Janeiro from the Tijuca's Massif to the city of Maricá (more than 30 km away in straight line) and was expressively used in the urban development of the 'marvellous' city: buildings, monuments, walls, pavements, boardwalks, etc. This work presents two examples of Heritage Sites in Rio de Janeiro, both related to the city's harbor and built in/with facoidal gneiss, and both of equal historical importance but for opposite reasons. One is the 'Stone of salt' monument, an outcrop over which the 'Little Africa' was built and developed. It was the place where the salt shipments from Portugal (salt market was monopolized by Portugal from 1680 to 1801) were unloaded by the African workers, mainly coming from Bahia, who also lived at that local and used to collect the salt remains from the unloading and transport operations. So, at this site, several African cultures were mixed, and their religious and musical manifestations led to the most representative rhythm of Brazil, the samba. Stone of salt, this outcrop of gneiss, with buildings and a stair carved on the stone by its inhabitants, is the most representative register of the evolution of the Brazilian-African culture in Rio the Janeiro and its brightness. On the other side, another Heritage Archaeological Site reminds the darkness of the Brazilian African culture: The Valongo Wharf. This site, uncovered in 2011, is the old harbor of Rio de Janeiro and the remnants of the greatest world enforced human migration of all times, as it was the disembarking place for almost a million African slaves. It has also brought to light the ways of life of the population in the old city center. It was built with facoidal gneiss, between 1811 and 1817, from quarries of the Conceição Hill (center of the city). It was paved over in 1843 and renamed as the Empress Wharf, and, along with 1.2 million archaeological pieces (mainly slaves objects but also some from native Brazilians and high society), the uncovered remains show an irregular paved ramp, stairs, an also a column of an old fountain, some parts lost, other with diverse degrees of deterioration. Facoidal gneiss shapes those two memories that shouldn't be forgotten.