

The gemological potential of the State of Rio Grande do Norte, north-eastern Brazil

MORAES, J. F. S. Geological Survey of Brazil - CPRM, Recife, Brazil.

In addition to being a traditional producer of scheelite, beryl, tantalite and kaolin, the Rio Grande do Norte State has a considerable potential for gems as shown on the gemological map of the State (1999). This map shows 148 deposits, 94 of which are for aquamarine, 19 of tourmaline (rubellite, indicolite and verdelite), 10 of emerald, 8 of amethyst, six of lazulite, 4 of garnet, 2 of corundum (ruby and sapphire), 2 of beryl (collection quality) and 1 of iolite, euclase and rose quartz. Other gem species have been cited in the literature. The deposits are distributed over 28 municipalities, 7 of which contain 78.6% of the total. The most important municipalities in this respect are Lajes Pintadas, Tenente Ananias, Parelhas and Equador. Pegmatite is the main host rock of the deposits of aquamarine, tourmaline and lazulite. The pegmatites with aquamarine are relatively homogeneous, but locally differentiated in pockets, whereas those containing gem-quality tourmaline are more evolved, zoned and contain a larger variety of accessory minerals. Other types of host rocks include biotite related to mafic-ultramafic rocks, containing emerald and quartz veins in 11 deposits. The country rocks of the occurrences are the Paleoproterozoic (2.4 to 2.1Ga) basement orthogneiss, Neoproterozoic metasediments of the Seridó Group and Neoproterozoic porphyritic granite. The deposits of emerald are associated with mylonitized rocks in the Portalegre Shear Zone that runs discontinuously for over 30km.