

# ABSTRACT

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This report, part of the "Programa de Levantamentos Geológicos Básicos do Brasil – PLGB" which is being carried out by Companhia de Pesquisa de Recursos Minerais – CPRM, Geological Survey of Brazil, refers to the Curitiba Sheet (SG.22-X-D-I), that covers the eastern part of the State of Paraná. The Curitiba Sheet is limited by the parallels 25°00' - 25°30'S and meridians 49°00' - 49°30'W. The geological and the geochemical data were compiled to produce a Metallogenic Map at 1: 100 000 scale.

The geological mapping permitted the recognition of distinct geological units, mainly of Paleoproterozoic to Neoproterozoic age.

The Brasiliano event (Neoproterozoic) is responsible for the widespread greenschist facies metamorphism. (chlorite zone), with a marked NE-SW structural trend and widespread retro-metamorphism affecting the basement that includes ortho and paraderivated units.

The Atuba Complex (Siga Jr. et al., 1996) represents the oldest rocks, and was redefined in ten units, comprising two distinct lithological groups: i) orthoderived rocks (hornblende gneiss), stromatolitic migmatite, amphibolite and meta-ultrabasic rocks; ii) paraderived rocks including garnet-sillimanite schist and quartzite, both in part migmatized. The metamorphism of these groups reached the upper amphibolite/granulite facies and processes of migmatization are recurrent. U-Pb radiometric dating in zircon of granulitic rocks revealed Paleoproterozoic ages ( $2095 \pm 5$  Ma).

The Meia Lua Complex (Salamuni, 1991) shows intense imbrication between ortho and paraderivated rocks, including porphyroclastic biotite gneiss, metabasic rocks, quartzite and paragneiss, the ages of which were tentatively attributed to Paleoproterozoic. Tiger-type gneiss occurs in the north-eastern part of the area, including porphyroclastic biotite gneiss, belonging to the homonymous nucleus, probably constituting a basement of the Perau Sequence.

The Água Clara Formation occurs in the northwestern part of the sheet and includes three units: i) quartz-mica schist, marl and impure marble; ii) fine-grained amphibolite, and iii) impure and pure limestone, carbonate schist and mica schist, probably representing a metavolcano-sedimentary sequence, metamorphosed in upper greenschist/amphibolite facies.

The Perau Sequence occurs in the northeastern part of the sheet in contact with Tiger-type gneiss. It comprises restricted exposures of mylonitic quartzite and calc-silicate rocks.

In the Betara Formation, six units were recognized, comprising a metavolcano-sedimentary sequence metamorphosed in the greenschist facies (biotite and/or almandine zones). Both the Betara Formation and the Meia Lua Complex constitute the Betara Nucleus, underlying the western part of the area.

The Açungui Group is the largest meta-sedimentary unit that outcrops in the area covered by the sheet, corresponding to a major part of the area co-

verified by field work. It is underlain by the Votuverava, Capiru and Antinha formations, showing different depositional environments and tectonic patterns, mainly metamorphosed in the greenschist facies (chlorite zone).

The Capiru Formation consists of dolomitic limestone, phyllite and quartzite, deposited on a stable and shallow water carbonate shelf, with abundant sedimentary structures and columnar stromatolites.

The Antinha Formation comprises three sedimentary units: i) metapellitic unit deposited in a deep-water environment; ii) calcitic carbonate unit deposited in a calm marine below wave-base and, iii) terrigenous unit, deposited in a high-energy environment. The metamorphic grade is very low greenschist facies (chlorite zone).

The Votuverava Formation comprises two large units: i) metapellitic unit consisting of homogeneous phyllite, metarhythmite, metarenite, metacalcarenite, metaconglomerate and iron-manganese formation units. The presence of turbitite beds suggests a deep-water depositional environment; and ii) meta-volcano-sedimentary unit with carbonaceous and red phyllite, basic (meta-ultrabasic?) and volcaniclastic rocks, all metamorphosed in the greenschist facies (chlorite zones).

Intrusive granitic rocks occur in two domains: in the northern part of the Lancinha Transcurrent Shear Zone, calc-alkaline granitoid bodies are represented by several intrusions that are syn to tardi-orogenic emplacements in Neoproterozoic rocks. In the southern part of the same shear zone

the Anhangava Granite shows post-orogenic characteristics (alkaline and peralkaline) of Eopaleozoic age.

Basic Mesozoic dyke swarms with NW-SE strike are widespread in the sheet. They consist mainly of diabase, porphyry diorite and quartz diorite associated with the Ponta Grossa Arch, with origin related to the South Atlantic Rift during the break-up of Pangea.

The Guabirota Formation occurs in the Curitiba Basin. It consists of Pliocene-Pleistocene clay and sand in alluvial fan deposits. The deposition of these beds probably began in a semi-arid climate.

Two main deformational phases are present in the Curitiba Sheet associated with tectonic shear processes, which are probably associated with the Brasileiro event. The first comprises a low angle thrust system (noticeable in the Capiru Formation). The second was responsible for a shear zone transcurrent system, where the Lancinha Transcurrent Shear Zone is the most marked feature. Both regimes of deformation are probably progressive. All kinematic indicators reveal mainly dextral directional movements.

Two principal areas of mineral resources are recognized: i) dolomitic and calcitic limestone units of the Capiru, Votuverava and Antinha formations as worked for their applications as soil correctives and in the cement industries; ii) other areas underlain by the meta-volcano-sedimentary rocks of the Votuverava Formation have potential for gold in primary deposits.