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The geology of Nigeria formed beginning in the Archean and Proterozoic eons of the Precambrian. The country forms the Nigerian Province and more than half of its surface is igneous and metamorphic crystalline basement rock from the Precambrian. Between 2.9 billion and 500 million years ago, Nigeria was affected by three major orogeny mountain-building events and related igneous intrusions. Following the Pan-African orogeny, in the Cambrian at the time that multi-cellular life proliferated, Nigeria began to experience regional sedimentation and witnessed new igneous intrusions. By the Cretaceous period of the late Mesozoic, massive sedimentation was underway in different basins, due to a large marine transgression. By the Eocene, in the Cenozoic, the region returned to terrestrial conditions.

Nigeria has tremendous oil and natural gas resources housed in its thick sedimentary basins, as well as reserves of gold, lead, zinc, The oldest Precambrian rocks in Nigeria likely formed during the Archean or the Paleoproterozoic, forming the Beninian gneiss, in the Benin-Nigeria Orogen, formed during the Proterozoic Pan-African orogeny. The crystalline basement rock of the country is grouped as the Nigerian Province, a southern continuation of the central Hoggar reactivated basement.

The ancient rocks of the Nigerian Province are split up by thrust and shear zones. The Migmatite-Gneiss Complex covers half of Nigeria's surface area and encompasses Archean gray gneisses, with tonalite and granodiorite consistencies. Within this complex are occurrences of schist, migmatite, garnet, sillimanite, kyanite and staurolite, which together indicate high-grade metamorphism up to the level of amphibolite on the sequence of metamorphic facies. Granites are associated with charnockite bodies and granulite facies metamorphism.

The Migmatite-Gneiss Complex differs in the Ibadan area, in the southwest. Banded gneiss, schist and quartzite formed from the metamorphism of greywacke, shale and interbedded sandstones. Some amphibolite layers record the metamorphosed remains of a tholeiitic magma series. The early folding and metamorphism in the Ibadan area was followed by the emplacement of aplite schist and microgranodiorite dikes during the Liberian orogeny 2.75 billion years ago. More intense deformation followed 2.2 billion years ago during the Eburnean orogeny.

Metazquartzites in the Ibadan area, likely from the Proterozoic, are overlain by pelite schist, intruded by mafic sills rich in magnesium. They are overlain by Neoproterozoic pelites, including phyllite and both muscovite and biotite schists, as well as quartzites that form strike ridges in several parts of Nigeria.

Younger metasediments are found in the southwest and northwest in synclinorial schist belts. Compared to the surrounding migmatite-gneiss complexes, these low-grade metamorphic rocks have isoclinal folding and steeply dipping foliation. They have faulted and sheared boundaries with the surrounding rock.

Geologists have interpreted these schist belts the remains of paleo-rift systems. The Pan-African orogeny in the late Proterozoic affected all of the Archean and Paleoproterozoic rocks in the region. Continent-continent collision and eastward subduction affected the southern Trans-Saharan mobile belt and emplaced granitoids throughout the Nigerian Province. In Nigeria, Pan-African orogeny related granite, syenite and diorite intrusions formed between 700 and 500 million years ago and are known as the Older Granites.[1]tantalite, columbite, coal and tin.