

CHRONOLOGICAL AND STRUCTURAL CONSTRAINTS FOR THE ITY GOLD DEPOSIT, IVORY COAST

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The Ity gold deposit (south-west Ivory Coast) is hosted by the Birimian metavolcanic and metasedimentary formations of Toulépleu-Ity. The rocks constitute one of the units that was tectonically stacked onto the margin of the Man Archean block during the early Eburnian orogenic phase under tangential conditions (D1). The Birimian rocks tectonically overlie an older basement (Archean and/or Early Proterozoic) comprising supracrustal formations that have been subjected to high pressure granulitic conditions. During the second Eburnian deformation phase (D2), sinistral movement along a major regional NE-SW shear zone, accompanied by magmatic events, reactivated this area and led to the emplacement of the gold-bearing mineralization. The onset of mineralization emplacement is early with respect to D2 (pre- to early-D2), associated with the emplacement of felsic hypovolcanic bodies dated at 2100 Ma, and is characterized by a paragenesis of gold, pyrite and arsenopyrite. The late (syn- to late-D2) emplacement of granodioritic bodies, dated at 2091 Ma, led to the further development of more polymetallic mineralization (gold, pyrite, chalcopyrite, sphalerite, galena, etc.), associated with skarnification of the carbonate beds along the intrusion contact. These results reflect the development of a complex sequence of magmatic, tectonic and mineralization processes over a very short time span corresponding to the 2100 Ma metalliferous peak, with which the emplacement of most of West Africa's gold-bearing mineralization is associated.