

Gold-Silver Deposits of Island Arcs of the Pacific Ocean

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Within the Cenozoic island arcs of the Pacific ocean, confined to the zone of transition from the ocean to the continent, along regional deep faults, three types of volcanic-plutonic belts (VPB) have been formed. They differ in the structure of the folded basement, in the composition of volcanic rocks and in metallogenetic associations of gold and non-ferrous metals, rare and ferrous metals. Epithermal deposits of gold-silver formation are the most frequent among gold-ore properties. In accordance with the ultimate recovered value of metals five industrial types of deposits can be distinguished among them: gold, silver-gold, gold-silver, polymetallic-gold-silver and silver. The main volume of gold mineralization is related to the Cenozoic VPB, developed on the continental- and transitional-type of crust. Gold-bearing districts are confined to VPB segments, limited by cross faults and by multi-structural deeply differentiated magmatic complexes with a wide composition range: from basalts to rhyolites. Gold-ore deposits are located within various constituent parts of the paleovolcano internal structure of the central type – calderas, explosive centers, wedge-shaped blocks of slopes, related to ring and radial faults. The principal tendencies of gold-ore deposits localization, conditions of their formation in various depth intervals and the degree of their preservation in connection with different erodibility degree of volcano-structures have been found out.