

Temporal sequence of ocean islands' base and precious metal deposits (by example of Fiji Archipelago)

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Islands' base and precious metal deposits form definite temporal sequence. For example, deposits, which are known from Fiji Archipelago, were formed under different geodynamic conditions in temporal sequence mentioned below. The oldest volcanic-hosted massive sulfide deposits (VHMSD) and manganese occurrences were formed in Late Oligocene - Middle Miocene. Numerous lode base and precious metal deposits are dated as Middle-Late Miocene (14-8 m.y.). About 75% of Fijian deposits (porphyry-type Cu and Au-Cu, lode Au-Ag, VHMSD and manganese) belong to 8-4,5 m.y. period.

Fijian VHMSD are of most interest because they show considerable similarity to VHMSD in ancient continental mobile belts and fundamental differences from modern VHMSD in spreading zones.

Fijian VHMSD differ by ore composition from modern VHMSD in spreading zones by higher Pb, Au, Ag contents, barite and anhydrite presence, and from Kuroko-type deposits on continents - by lower Pb, barite, anhydrite contents and by higher - Au and Ag. Fijian VHMSD are most similar to the Sunrise modern massive sulfide deposit recently discovered within the Myojin Knoll submarine caldera in active Shichito-Iwojima volcanic arc, that was separated by Ogasawara Trough from Nishi-Shichito relict arc about 2 m.y. ago. Their similarity is confirmed by the fact that average contents of Pb (2,27%), Au (20 ppm), Ag (1213 ppm), barite and anhydrite in Sunrise deposit are nearly the same as in Fijian VHMSD.