

Merguerian, Charles, 1981b, Coticules in New England - Ancient examples of metalliferous sediments.

Coticules are finely laminated to thinly layered metamorphic rocks consisting of idiomorphic to subidiomorphic manganiferous garnet set in a mosaic of granoblastic quartz; accessory minerals are numerous. They are associated with Ordovician eugeosynclinal rocks exposed in the Connecticut Valley Synclinorium of the New England Appalachians. In western Massachusetts they occupy a distinct stratigraphic position and together with their enclosing schists are associated with stratabound Fe+Cu±Zn sulphides, Fe oxides (itabirites), meta-basalt and serpentinite. The coticules of western and central Connecticut are more sporadic and not associated with metalliferous layers but, rather, with metamorphosed volcanic and volcanoclastic rocks.

It is suggested that coticules protoliths can develop 1) as chemically precipitated ferromanganous cherts due to volcanic exhalations in the vicinity of active ridge crests or submarine hot springs, 2) as halmyrolitic deposits on the fringes of volcanic arcs and seamounts, and, 3) as manganiferous sediments in deep marine basins. Coticules are useful in geologic field studies since they tend to be resistant marker units and in outcrop retain early fold geometries while the surrounding schists are transposed and recrystallized. In addition, they possess stratigraphic significance in that they may represent time-transgressive mineralized layers (ridge facies) or episodic time-stratigraphic deposits (arc, seamount and basinal facies). Rare-earth and trace element geochemical analysis may indicate parameters to differentiate between these facies thus making coticules useful tools in interpreting ancient geotectonic settings in the complexly deformed terranes.

To Cite This Abstract: Merguerian, Charles, 1981b, Coticules in New England - Ancient examples of metalliferous sediments (abs.): EOS, Transactions American Geophysical Union, v. 62, p. 310.