

Merguerian, Charles, 1995a, The Taconic problem - alive and well in New York City (NYC).

The Taconic problem in NYC, focuses on ductile-fault imbrication of three lithologically distinct Cambro-Ordovician amphibolite-grade schistose-rock sequences formerly deposited across the shelf edge of embryonic North America. During Ordovician Taconian arc-continent suturing, the St. Nicholas Thrust (SNT) and Cameron's Line (CL) imbricated metamorphosed shelf-, rise-, and deep-water lithotopes in a continent-facing subduction complex. The Cambro-Ordovician Inwood Marble (€-Oi) of the Sauk Sequence is overlain by autochthonous calcite-marble bearing Middle Ordovician Manhattan Schist (Om) of the Tippecanoe Sequence. The SNT (Taconic frontal thrust) separates upper-plate gneiss, schist, and amphibolite of the former Cambro-Ordovician slope- and rise (Manhattan Formation; €-Om) above Tippecanoe (Om) and Sauk (€-Oi) rocks. A structurally higher ductile fault, (CL), juxtaposes muscovite-rich schist and gneiss, amphibolite, serpentinite, and coticule of a former deeper-water realm (Hartland Formation; €-Oh). As such, the subunits €-Om and €-Oh (usually combined as the Manhattan Schist) are here considered to be a ductile-fault-bounded tectonostratigraphic facies of the Taconic Sequence.

The two Taconian terrane boundaries (SNT and CL) occur as steep, highly laminated, complexly folded and annealed mylonite zones. They developed during progressive, culminative synmetamorphic ductile deformation accompanied by isoclinal folding ($F_1 + F_2$) and resulted in an internally sheared structural sheet now oriented N50°W, 25°SW. Both ductile fault zones are characterized by penetrative F_2 isoclinal- and shear folds, polygonized quartz ribbons and veins, lit-par-lit granitization, local syntectonic growth of lenses and layers up to 10 cm thick of kyanite + quartz + magnetite, imbrication of bounding lithologies, and local tectonic mélange.

To Cite This Abstract: Merguerian, Charles, 1995a, The Taconic problem - alive and well in New York City (NYC) (abs.): Geological Society of America Abstracts with Programs, v. 27, no. 1, p. 68.