Merguerian, Charles, 1986c, The bedrock geology of New York City (abs.): Abstracts with Programs, Symposium on The Geology of Southern New York, Hofstra University, p. 8.

Detailed mapping and sampling of natural outcroppings, foundation excavations, water tunnels and examination of drill core of NYC has produced abundant new data on the stratigraphy and structure of the region. Such data allows new interpretations of the plate tectonic evolution of the NYC area, site of a former collision between a volcanic arc and a passive continental margin. Representing the deeply-eroded core zone of the Appalachian mountain belt, classical interpretation of the metamorphosed strata comprising NYC places the Middle Proterozoic Fordham Gneiss unconformably beneath discontinuous Lower Cambrian Lowerre Quartzite and/or Cambrian to Ordovician Inwood Marble. This continental sequence is overlain by presumably younger (medial Ordovician?) schistose strata named the Manhattan Schist by Merrill (1890).

Field and petrographic research has revealed that the Manhattan Schist Formation actually consists of **three** distinctive sillimanite-grade rock units separated by ductile faults which developed during the early stages of tectonism in the region. Cameron's Line, one of the major ductile faults, marks a regionally important shear zone in New England which separates predominantly continental rocks to the west from overthrust oceanic rocks to the east. Deep-seated folding, metamorphism and ductile faulting led to the juxtaposition of various units of the Manhattan Schist and imbricated the underlying continental sequence. All this occurred during the medial Ordovician Taconic orogeny ca. 450 million years ago. The deformed and highly sheared metamorphic bedrock of the NYC area thus records the Taconian collision between the passive continental margin of eastern North America with a fringing volcanic arc. Cameron's Line, now accurately traced through the heart of NYC, preserves a deep level of the actual Lower Paleozoic collisional zone between the continental and oceanic realms.

In addition, younger brittle faults invariably reactivate the ductile faults and crosscut them with NE, N, and NW trends. Recent seismicity in southeastern New York has refocused attention on these faults as possible sites for future earthquakes. Clearly, a better understanding of the geometry and recent movement of the brittle Faults is necessary to assist-in determining earthquake potential for the NYC region.

To Cite This Abstract: Merguerian, Charles, 1986c, The bedrock geology of New York City (abs.): Abstracts with Programs, Symposium on The Geology of Southern New York, Hofstra University, p. 8.