STRATIGRAPHIC FRAMEWORK, STRUCTURAL EVOLUTION AND TECTONIC IMPLICATIONS OF THE EASTERN BLUE RIDGE SEQUENCE IN THE CENTRAL APPALACHIANS NEAR WARRENTON, VIRGINIA.

by Grigoris D. Kasselas
Orogenic Studies Laboratory
Department of Geological Sciences
Virginia Tech

LOCATION OF THE STUDY AREA

Explanation of geologic maps.

PLATE 1

DESCRIPTION OF MAP UNITS

Catoctin Formation
Zr mb metabasalt
- medium to dark green, metabasalt: massive and foliated greenstone, green schist, and epidote
Zr br breccia
- light to dark green, thinly (0.5-2 m) layered, metabasaltic volcanic breccia. They form crudely defined layers of "coarse" (mainly cobble size angular to subrounded clasts in a light green, metamorphosed matrix) and "fine" (scattered angular to subrounded clasts in a light green, metamorphosed matrix.
Zr ms metasandstone:
- whitish to light gray, medium bedded, medium to coarse grained quartz and quartofeldspathic arenite
- quartz muscovite schist with granule size clasts of blue and white quartz.

Zr Carter Run Formation
- gray to dark gray and white, laminated mudstones and siltstones
- whitish to light gray, very thick bedded to massive, dominantly medium to coarse grained, typically unsorted, quartz and felsic sandstones, with occasional rip-up clasts of dark gray to black mudstones.

Zr Swains Mountain Formation
Zr sw upper member
- whitish to gray, massive, medium grained, quartz arenites and wackes
- whitish to gray, typically cross-bedded, medium to fine grained, quartz arenites,
- rara interlayers of gray, very fine sand and silt
Zr sw lower member
- gray, massive, medium grained quartofeldspathic wackes
- gray, massive to thick bedded, graded granule-conglomeratic and coarse grained sands and thin interlayers (0-10 cm) of gray mudstones and siltstones.

Zr Ball Mountain Formation
- dark gray to black and white, laminated, mudstones or friable black schists
- whitish to medium gray, thick bedded to massive mudstone to coarse grained, quartz and quartofeldspathic sandstones
- (rarely) medium to dark gray, medium to thick bedded, granule to pebble conglomerates

Zr Monumental Mill Formation
- medium to dark gray and occasionally whitish, laminated to thinly bedded siltstones and mudstones and rare fine sandstones. Sandstones are commonly scoured by larger grains near the base
- greenish and gray mudstones and siltstones typically interbedded with fine to coarse, medium bedded, quartofeldspathic wackes.

Zr Bunker Hill Formation
- whitish to light gray coarse to very coarse grained feldspathic and quartz arenites and often granule conglomerates, commonly graded and/or cross-bedded.
- light to medium gray, matrix supported granule conglomerates with rare small pebbles, with varying amounts of mud, silt or fine sand matrix, and dominantly feldspar clasts, commonly showing a crude gradation.
- light to medium gray, medium grained, medium to coarse grained, feldspathic wackes, interlayered with thin beds (0-5 cm) of gray fine sands and silts.
Zr Bfm
- dark greenish laminated and thinly bedded mudstones [thin unit: 2-3 m, near the base of Zr Bfh.

Yp mb Middle Proterozoic granitic "Basement"
- undivided unit of metamorphosed "granitic" rocks which includes: a) Marshall Metagranite (fine grained and coarse grained member); b) Grenvillian (?) age metagranite (augen granite); c) Late Proterozoic pegmatites of the Robertson River Suite (?)

mi Mafic intrusives
- amphibolite and fine grained metabasite, metagabbro, and locally metapyroxenite. (probably Late Proterozoic)