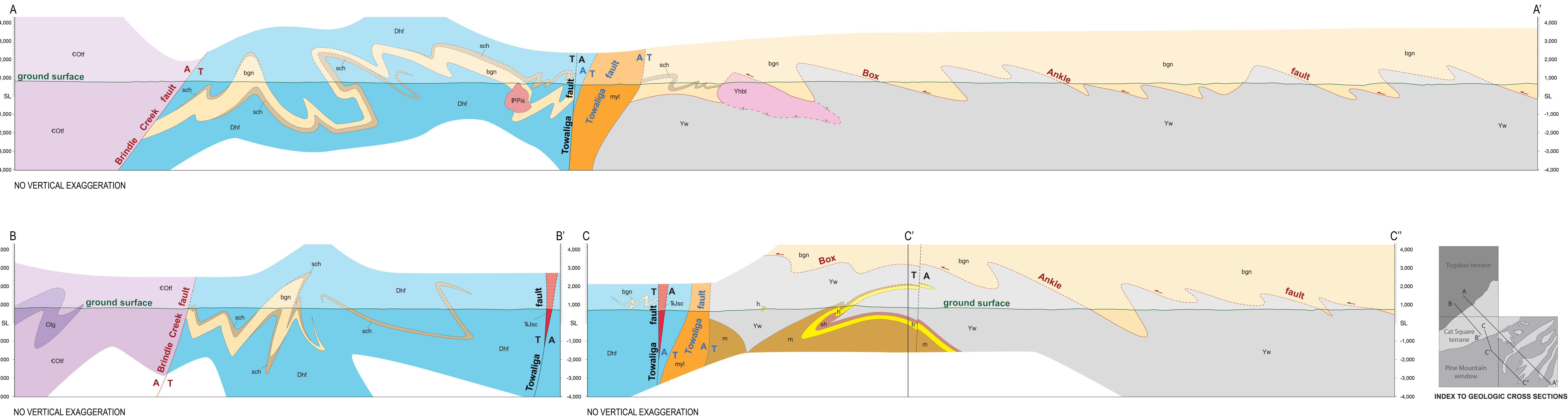


Plate I

Geologic Map of the Barnesville, Johnstonville, and a Portion of the Orchard Hill Quadrangles, Central Georgia



Qa

Quaternary

Alluvium

Poorly sorted, unconsolidated stream and colluvial deposited sediment ranging from silt to boulders.

Kulr

Mesozoic Rocks

Silicified cataclaste

White to tan, brecciated, cohesive, predominantly quartz, strongly jointed, and fine- to medium-grained. Generally has several generations of jointing in outcrop. Multiple episodes of fracturing are apparent from crosscutting quartz-filled veins. Some sericitic alteration of feldspars is evident in thin section. Accessory minerals include feldspar, sericite, and opaques.

Amf

Mesozoic Rocks

Amphibolite-facies mylonite

Garnet-grade quartzofeldspathic mylonite to ultramylonite. Porphyroclasts are predominantly feldspar, range in size from 1 mm to 1 cm, exhibit quartz-mica pressure shadows with no feldspar tails. Quartz-tail on- and S-type porphyroclasts, asymmetric folds of quartz ribbons, and S-C fabrics provide their sense. Occurs in small outcrops and extensively as float, associated with the Towaliga fault. Later reactivation of the fault has produced a brittle fabric that locally overprints the mylonite.

Tu

Tugalo Terrane

Undivided

Intrusive Rocks

Lithonia granitoid gneiss

Coarse-grained, strongly foliated granite to granodiorite. Mineralogy is comprised predominantly of quartz, biotite, alkali feldspars and plagioclase, along with minor garnet. Occurs as large pavement outcrops. Age 450 ± 1 Ma.

COlf

Metasedimentary/Metavolcanic Rocks

Lower(?) Tallulah Falls Formation

Metagraywacke-biotite gneiss, light to dark gray, medium- to fine-grained, generally thick layered, strongly foliated, commonly porphyroblastic. Major mineralogy is quartz, alkali feldspars, plagioclase, biotite, and muscovite. Minor constituents are epidote, chlorite, zircon, and opaque minerals. Porphyroclasts are plagioclase and microcline. Layer thickness varies from a few mm to several m. Foliation is defined by quartzofeldspathic material and micas in the metagraywacke, locally interlayered with abundant amphibole.

Dhf

Cat Square Terrane

Intrusive Rocks

High Falls Granite

Biotite-rich, megacrystic, light- to dark-gray, weakly to strongly foliated. Megacrysts consist of microcline and plagioclase; microcline often contains myrmekitic rims. Megacrysts locally are rectangular, blocky, and euhedral. Where megacrysts appear euhedral the High Falls Granite is designated Dhf, and where megacrysts appear extensively sheared it is designated Dhf. Matrix is composed of fine- to medium-grained quartz, plagioclase, microcline, biotite, and muscovite. Accessory minerals include garnet, zircon, apatite, epidote, and opaques.

PPi

Metasedimentary/Metavolcanic Rocks

Indian Springs Granodiorite

Fine-grained equigranular granitoid, light gray, non- to weakly-foliated. Outcrops appear as small to large boulders exhibiting exfoliation surfaces. Composed of alkali feldspars, quartz, plagioclase, and biotite. Accessory minerals include epidote-circocrate, sphene, apatite, and zircon.

bgn

Metasedimentary/Metavolcanic Rocks

Biotite gneiss

Gray to dark gray, thin- to thick-layered, fine- to coarse-grained, biotite-quartz-feldspar gneiss, in parts garnetiferous. Mineral assemblage includes: quartz, plagioclase, microcline, biotite, muscovite, garnet, opaques, and apatite. Accessory minerals include epidote and zircon. Locally inequigranular and porphyroblastic. Metamorphism increases in proximity of the Brindle Creek fault and localized shear zones, with frequent local quartzofeldspathic leucosomes. Contains interlayers and boudins of fine-grained calc-silicate. Gradational into and interlayered with sillimanite-mica schist.

sch

Metasedimentary/Metavolcanic Rocks

Sillimanite-mica schist

Thin- to thick-bedded sillimanite-mica schist, variably garnetiferous, locally pyritic. Bloomy muscovite commonly occurs as pseudomorphs after sillimanite, and sericitic alteration is abundant. Weathers to a light brown to reddish brown or silvery blue-gray.

Yw

Pine Mountain Window

Basement Rocks

Woodland Gneiss

Felsic augen gneiss with augens of microcline (up to 10 cm). Matrix is composed primarily of microcline, plagioclase, quartz, and biotite. Varies from a strongly foliated augen gneiss with definable S-C fabric to a weakly foliated coarse-grained megacrystic gneiss.

Yht

Basement Rocks

Hornblende tonalite

Coarse-grained, moderate to strongly foliated tonalite. Mineralogy is comprised predominantly of hornblende, biotite, alkali feldspars and plagioclase, along with abundant garnet. Outcrops appear as large, rounded boulders exhibiting well-developed exfoliation surfaces.

Hq

Cover Sequence

Holis Quartzite

Medium-grained, granular, micaceous-feldspathic, well jointed, medium- to coarse-grained foliation, with schistose layers averaging >0.25 mm in thickness and granular quartz layers averaging 0.5 to 1 mm; quartz layers are commonly ribboned and coarse-grained mica fish are locally developed; magnetite occurs in variable abundance as an accessory mineral; garnet locally occurs in mica-rich layers; weathers tanish to orangish-white, flaggy to blocky; ranges in outcrop width from 30 to 275 m; thinner portions are generally characterized by a mylonitic texture.

Ms

Cover Sequence

Manchester Schist

Sheared biotite-quartz-feldspar gneiss ± garnet ± muscovite, augen feldspar ranging from 0.05 to 2 cm long and ribboned lenses of interstitial quartz; garnet is typically concentrated in the more biotite-rich laminae; locally contains muscovite-feldspar porphyroblasts are common; grades laterally into zones of moderate to pervasive silicification that usually occur as very resistant blocky, porphyroblastic (feldspar clasts >5 to 10 mm) gneiss with abundant associated quartz veins.

Sk

Cover Sequence

Sparks Schist

Medium-grained quartz-mica schist. Lithologically similar to the stratigraphically higher Manchester Schist, but generally contains thin injections of granitic material and uncommon lenses of quartzite.

Orchard Hill

Cover Sequence

Reher, in progress

Barnesville

Cover Sequence

Sneyd, 1995; Reher, in progress; Sneyd and Kath, unpublished data

Johnstonville

Cover Sequence

Hatcher, unpublished data

PLANAR FEATURES

Strike and dip of inclined foliation

Vertical foliation

Strike and dip of mylonitic foliation

Strike and dip of mesoscopic fold axial surface

LINEAR FEATURES

Trend and plunge of mineral lineation

Trend and plunge of mesoscopic fold axis

Trend and plunge of overturned antiform

SIMPLIFIED GEOLOGIC MAP OF THE PINE MOUNTAIN WINDOW

