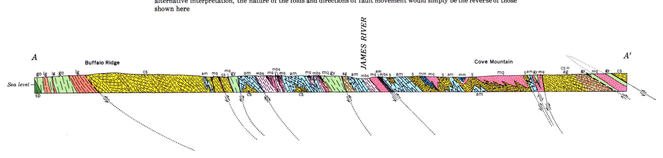
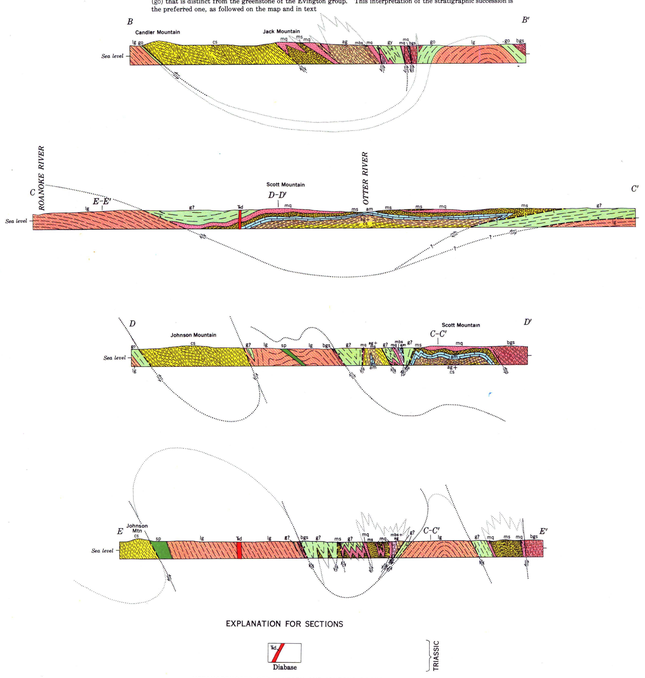
CROSS SECTIONS SHOWING STRUCTURAL INTERPRETATIONS BASED UPON TWO POSSIBILITIES OF STRATIGRAPHIC SEQUENCE OF EVINGTON GROUP

Section AA′ is based upon the preferred interpretation of the stratigraphic sequence of the Evington group. With the alternative interpretation, the nature of the folds and directions of fault movement would simply be the reverse of those shown here



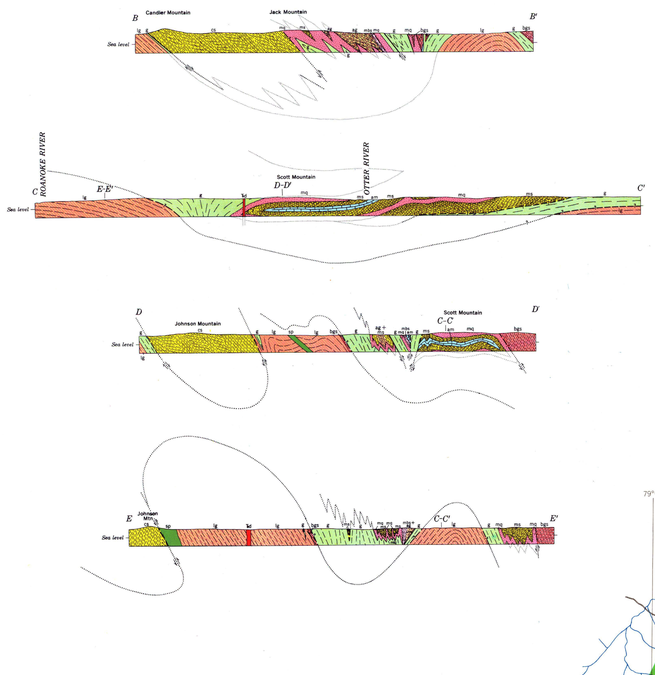
PREFERRED INTERPRETATION OF STRATIGRAPHIC SEQUENCE OF EVINGTON GROUP

The stratigraphic sequence of the Evington group is considered to be Candler formation (cs) at the base and greenstone (gy) at the top of the group. The greenstone associated with the Lynchburg gneiss is believed to be an older greenstone (go) that is distinct from the greenstone of the Evington group. This interpretation of the stratigraphic succession is the preferred one, as followed on the map and in text



ALTERNATIVE INTERPRETATION OF STRATIGRAPHIC SEQUENCE OF EVINGTON GROUP

The stratigraphic sequence of the Evington group is considered to be greenstone (g) at the base and Candler formation (cs) at the top of the group. If greenstone is at the base of the Evington group, it would probably be equivalent to the greenstone associated with the Lynchburg gneiss; hence, there would be only one greenstone formation



EXPLANATION FOR SECTIONS

Diabase

METAMORPHOSED SEDIMENTARY AND IGNEOUS ROCKS

ROCKS OF UNCERTAIN CORRELATION

Muscovite schist — *Probably equivalent to either mts or cs*

Greenstone — *May be equivalent to go or gy*

Biotite-garnet schist — *May be equivalent, in whole, or in part, to schists of Evington group or to Lynchburg gneiss*

Soapstone

PRE-CAMBRIAN OR PALEOZOIC

Evington group

Younger greenstone

Mount Athos formation
mts, muscovite schist member;
mm, white marble member;
mq, quartzite member;
mbs, biotite-muscovite schist member

Archer Creek formation
am, blue limestone and marble member;
ag, graphitic schist member

Chandler formation
Muscovite schist and phyllite member

PALEOZOIC (?)

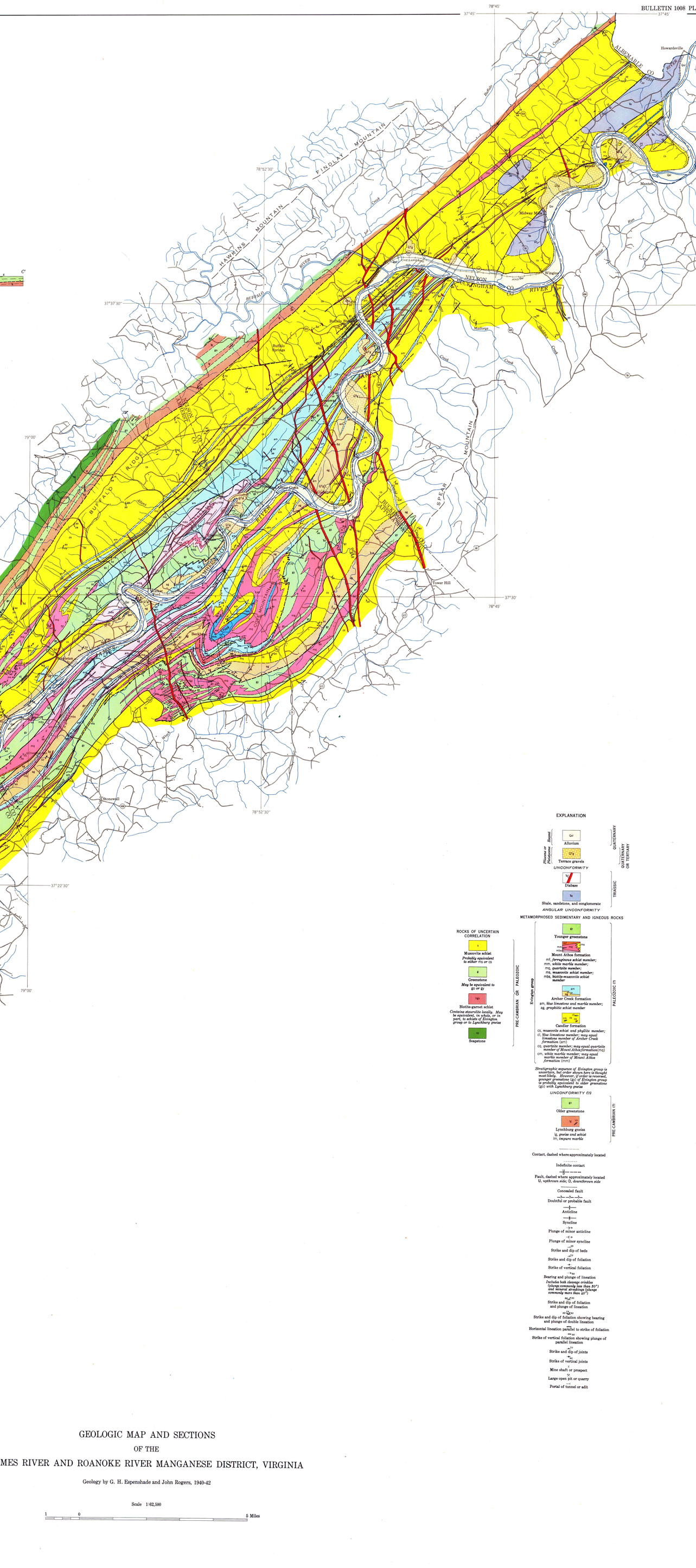
Preferred stratigraphic sequence of Evington group is shown

Older greenstone

Lynchburg gneiss

PRE-CAMBRIAN (?)

TRIASSIC



EXPLANATION

Alluvium — Recent

Terrace gravels — Pliocene or Pleistocene — QUATERNARY

UNCONFORMITY

Diabase

Shale, sandstone, and conglomerate — TRIASSIC — QUATERNARY OR TERTIARY

ANGULAR UNCONFORMITY

METAMORPHOSED SEDIMENTARY AND IGNEOUS ROCKS

ROCKS OF UNCERTAIN CORRELATION

Muscovite schist
Probably equivalent to either mts or cs

Greenstone
May be equivalent to go or gy

Biotite-garnet schist
Contains staurolite locally. May be equivalent, in whole, or in part, to schists of Evington group or to Lynchburg gneiss

Soapstone

PRE-CAMBRIAN OR PALEOZOIC

Evington group

Younger greenstone

Mount Athos formation
mf, ferruginous schist member;
mm, white marble member;
mq, quartzite member;
ms, muscovite schist member;
mbs, biotite-muscovite schist member

Archer Creek formation
am, blue limestone and marble member;
ag, graphitic schist member

Candler formation
cs, muscovite schist and phyllite member;
ci, blue limestone member; may equal limestone member of Archer Creek formation (am)
cq, quartzite member; may equal quartzite member of Mount Athos formation (mq)
cm, white marble member; may equal marble member of Mount Athos formation (mm)

PALEOZOIC (?)

Stratigraphic sequence of Evington group is uncertain, but order shown here is thought most likely. However, if order is reversed, younger greenstone (gy) of Evington group is probably equivalent to older greenstone (go) with Lynchburg gneiss

UNCONFORMITY (?)

Older greenstone

Lynchburg gneiss
lg, gneiss and schist
lm, impure marble

PRE-CAMBRIAN (?)

Contact, dashed where approximately located

Indefinite contact

Fault, dashed where approximately located
U, *upthrown side;* D, *downthrown side*

Concealed fault

Doubtful or probable fault

Anticline

Syncline

Plunge of minor anticline

Plunge of minor syncline

Strike and dip of beds

Strike and dip of foliation

Strike of vertical foliation

Bearing and plunge of lineation
Includes both cleavage crinkles (plunge commonly less than 30°) and mineral streakings (plunge commonly more than 30°)

Strike and dip of foliation and plunge of lineation

Strike and dip of foliation showing bearing and plunge of double lineation

Horizontal lineation parallel to strike of foliation

Strike of vertical foliation showing plunge of parallel lineation

Strike and dip of joints

Strike of vertical joints

Mine shaft or prospect

Large open pit or quarry

Portal of tunnel or adit

GEOLOGIC MAP AND SECTIONS
OF THE
JAMES RIVER AND ROANOKE RIVER MANGANESE DISTRICT, VIRGINIA

Geology by G. H. Espenshade and John Rogers, 1940-42

Scale 1:62,500

1 — 0 — 5 Miles

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.
M R-3810