75-92

EXPLANATION

U. S. Geological Survey
OPEN FILE REPORT 75-92
This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards or nomenclature.

U. S. GEOLOGICAL SURVEY RESTON, VA. JUN 16 1976 LIBRARY

QUATERNARY

Holocene

Alluvium

Deposits of clay, silt, sand, and gravel along streams

Pleistocene

Qd

Drift

Remnants of glacial deposits older than Wisconsin

ORDOVICIAN

Middle and Upper Ordovician

Omb

Martinsburg Formation
Bushkill Member

Dark gray, thin bedded claystone slate

Middle Ordovician

Ojr
Ojru
Ojrl
Oji

Jacksonburg Limestone

Ojr, cement rock facies, dark gray to black, finely crystalline to aphanocrystalline, thin bedded argillaceous limestone with interbeds of medium to coarsely crystalline limestone, 700 feet thick

Ojru, upper crystalline limestone

Ojrl, lower crystalline limestone
thick

Oji, cement limestone facies, medium to dark gray, fine to medium crystalline, medium to thick bedded limestone, unit about 350 feet thick

Lower Ordovician

Beekmantown Group

Oe

Epler Formation

Interbedded finely crystalline to aphanocrystalline, light to medium gray limestone and finely to medium crystalline dolomite, bedded and nodular chert, especially near base, about 800 feet thick

Or

Rickenbach Dolomite

Finely to coarsely crystalline, light to dark gray dolomite, dolarenite, and dolorudite, with bedded and nodular chert, about 635 feet thick

CAMBRIAN

Upper Cambrian

Ca

Allentown Dolomite

Aphanocrystalline to coarsely crystalline, medium to dark gray, cyclic dolomite, dolarenite, and dolorudite, numerous sedimentary structures, oolites, algal stromatolites, about 1700 feet thick

Middle(?) Cambrian

Cl

Leithsville Formation

Aphanocrystalline to coarsely crystalline, medium to dark gray dolomite and dolarenite, shaly at base, cherty near top, locally very quartzose. Lithologies cyclic, with quartzose dolomite passing to silty and shaly rocks, and ultimately to thickly laminated, thickly parted pure dolomite. Oolites and algal stromatolites locally, about 1500 feet thick

Lower Cambrian

Ch

Hardyston Quartzite

Gray to orange-pink arkose, arkosic conglomerate, feldspathic sandstone, orthoquartzite, and silty shale, about 100 feet thick

UNCONFORMITY

IGNEOUS ROCKS

ga

Alaskite

Microperthite alaskite, light gray to pinkish gray, medium to coarse grained gneissoid rock containing quartz, oligoclase, and microperthite

gnh

Hornblende-clinopyroxene gneiss

Greenish gray to greenish black, fine to medium grained, well foliated rock containing variable amounts of hornblende, clinopyroxene, andesine, and quartz. Intruded by veins and layers of alaskite

grp

Clinopyroxene-garnet-quartz granofels

Light brownish gray to dark greenish gray, fine to medium grained, granofels with very conspicuous clots of garnet

YOUNGER PRECAMBRIAN METASEDIMENTARY ROCKS

msv

Metasedimentary rocks, undivided

Interbedded arkose, arkosic conglomerate, ferruginous quartzite

UNCONFORMITY

OLDER PRECAMBRIAN METASEDIMENTARY AND (OR) METAVOLCANIC ROCKS

Age relations among the following rocks are unknown

am

Amphibolite

Dark gray to greenish black, medium grained hornblende and hornblende pyroxene amphibolite

gnk
gns
gnb

Quartzo-feldspathic gneisses

gnk, potassium feldspar gneiss, light gray to pinkish gray, fine to medium grained, poorly foliated, and is composed of quartz and potassium feldspar, with minor magnetite

gns, sillimanite gneiss, light gray to light greenish gray, fine to medium grained, well foliated gneiss composed of quartz, microcline, microperthite, oligoclase, potassium feldspar and sillimanite

gnb, biotite-quartz-plagioclase gneiss, light to medium gray, fine to medium grained, well foliated gneiss of variable composition composed of quartz, oligoclase and biotite

PRECAMBRIAN

Contact

Dashed where approximately located, short dashed where inferred, dotted where concealed

Tear fault

Arrows indicate relative horizontal movement. Dashed where approximately located, short dashed where inferred, dotted where concealed

40

Thrust fault showing dip

Dashed where approximately located, short dashed where inferred, dotted where concealed. T, on upper plate

Overturned

Musconetcong fault

The contact of the crystalline core with the inverted limb of the Musconetcong nappe. Dashed where approximately located, short dashed where inferred, dotted where concealed. Sawteeth on the core side of the contact. Where overturned, sawteeth in direction of dip

Shear zone

Rocks characterized by light-gray to dull green mylonite or cataclasite, with close-spaced cataclastic foliation, or extreme granulation

Major antiform of Paleozoic age

Showing trace of axial surface, direction of dip of limbs, and direction of plunge. Stratigraphically youngest rocks are tectonically oldest, dotted where concealed

Synform of Paleozoic age

Showing trace of axial surface and direction of dip of limbs. Stratigraphically youngest rocks are tectonically oldest, dotted where concealed

26

Minor asymmetric fold

Showing bearing and plunge of axis. Pattern indicates profile of fold viewed down plunge

Anticline

Showing trace of axial surface and direction of dip of limbs and plunge. Dashed where approximately located, dotted where concealed

Syncline

Showing trace of axial surface and direction of dip of limbs and plunge. Dashed where approximately located, dotted where concealed

PLANAR FEATURES

40 Inclined

20 Overturned

90 Vertical

Horizontal

Strike and dip of beds in rocks of Paleozoic age

Dot or symbol indicates top of bed known from sedimentary structures. Position of 90 on vertical bed indicates top

Strike and dip of compositional layering and crystallization foliation in Precambrian rocks

28

Strike and dip of cataclastic foliation in Precambrian rocks

80

Strike and dip of cleavage in Paleozoic rocks

70

Strike and dip of slip cleavage in Paleozoic rocks

Mapped only where it cuts a preexisting cleavage

28

Strike and dip of essentially parallel bedding and cleavage in Paleozoic rocks

66

Strike and dip of bedding and cleavage parallel in strike but divergent in dip in Paleozoic rocks

LINEAR FEATURES

May be combined with any of the above planar features

10

Bearing and plunge of aligned minerals or streaking

20

Bearing and plunge of intersection of bedding and cleavage in Paleozoic rocks

46

Bearing and plunge of slickenside or striation

PLATE 3. Explanation of Symbols on Geologic Map and Cross Sections of the Nazareth Quadrangle, Pennsylvania.