

# AREAL GEOLOGY

U.S. GEOLOGICAL SURVEY  
GEORGE OTIS SMITH, DIRECTOR

STATE OF MARYLAND  
WILLIAM BULLOCK CLARK  
STATE GEOLOGIST

MARYLAND - WEST VIRGINIA - PENNSYLVANIA  
PAWPAW QUADRANGLE



## LEGEND

**SEDIMENTARY ROCKS**  
*(Areas of subaqueous deposits are shown by patterns of parallel lines; subaerial deposits by patterns of dots and circles)*

**Aluvium**  
*(gravel and silt on flood plains of the larger streams)*

**Terrace gravels**  
*(stream gravel and sand, terraces and abandoned channels 20 to 50 feet above present drainage)*

**Purllane sandstone**  
*(massive white sandstone and quartz conglomerate)*

**Rockwell formation**  
*(buff shale, dark gray shale with fossiliferous beds and coarse arkosic sandstone)*

**Catskill formation**  
*(red micaceous sandstone and shale, with greenish and grayish sandy layers)*

**Jennings-Catskill transition zone**  
*(red sandstone and shale of Catskill type and local yellow sandy strata containing Chenery fossils in upper portion)*

**Jennings formation**  
*(platy gray shale and buff sandy shale with thin conglomerate beds and burrhead sandstone member; thin, gray, argillaceous fossiliferous layers occur locally above the burrhead)*

**Romey shale**  
*(dark gray to black sandy shale with thin, hard sandstone above, with several hard sandstones in upper portion)*

**Oriskany sandstone**  
*(white quartzose sandstone, gray sandy and cherty limestone and thin quartz conglomerate)*

**UNCONFORMITY**

**Helderberg limestone**  
*(massive dark blue limestone and shaly cherty limestone)*

**Tonoloway limestone**  
*(dark gray limestone, weathering to shaly limestone)*

**Wills Creek shale**  
*(platy, dark calcareous shale, shaly limestone, and natural cement rock; Blounts Ferry red sandstone member; Slate lens)*

**McKenzie formation**  
*(gray shale with thin, crystalline and laminated limestone; lower sandstone member; hard white sandstone at base)*

**Clinton shale**  
*(dark to pink fine shales and thin sandstones, with locally thin iron-ore beds)*

**Tuscarora sandstone**  
*(hard white massive and thin-bedded quartzose sandstone)*

**Juniata formation**  
*(soft red sandstone and shale and locally quartz conglomerate)*

**Faults**  
**Concealed faults**  
*(covered by surficial deposits)*

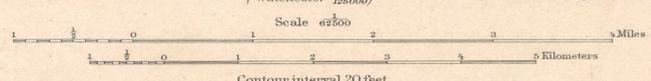
**Strikes and dip of stratified rocks**  
**Strikes of vertical strata**  
**Horizontal strata**

**Quarries**  
**Prospects**

**Note:** Glass sand and building sand can be obtained from the Oriskany natural cement rock from the Wills Creek limestone for lime and cement from the Helderberg and Tonoloway thin coal. From the Rockwell and Purllane iron ore from the Clinton shale for brick and cement and also for building ballast, and road material from most of the formations in the area.

H.M. Wilson, Geographer in charge.  
Triangulation by Geo. T. Hawkins.  
Topography by J.H. Jennings and W. Carvel Hall.  
Surveyed in 1898 in cooperation with the States of Maryland and Pennsylvania.

APPROXIMATE MEAN DECLINATION 1910



Swartz, Stose, Martin, & Otis

Geology by George W. Stose, Charles K. Swartz, George C. Martin, and D.W. Ohern. Ohern assisted by T.P. Maynard.  
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