



PENNSYLVANIAN

- Pc** Conemaugh Formation
Cyclic sequences of red and gray shales and siltstones with thin limestones and coals; massive Mahoning Sandstone commonly present at base; Ames Limestone present in middle of sections; Brush Creek Limestone in lower part of section.
- Pa** Allegheny Group
Cyclic sequences of sandstone, shale, limestone and coal; numerous commercial coals; limestones thicken westward; Vanport Limestone in lower part of section; includes Freeport, Kittanning, and Clarion Formations.
- Pb** Pottsville Group
Predominantly sandstones and conglomerates with thin shales and coals; some coals mineable locally.

MISSISSIPPIAN

- Mmc** Mauch Chunk Formation
Red shales with brown to greenish gray flaggy sandstones; includes Greenbrier Limestone in Fayette, Westmoreland, and Somerset counties; Loyahanna Limestone at the base in southwestern Pennsylvania.
- Mp** Pocono Group
Predominantly gray, hard, massive, cross-bedded conglomerate and sandstone with some shale; includes in the Appalachian Plateau Barpoon, Shenango, Cuyahoga, Cassawago, Corry, and Knapp Formations; includes part of "Oswayo" of M. L. Fuller in Potter and Tioga counties.

DEVONIAN

UPPER

- Osw** Oswayo Formation
Brownish and greenish gray, fine and medium grained sandstones with some shales and scattered calcareous lenses; includes red shales which become more numerous eastward. Relation to type Oswayo not proved.
- Dck** Catskill Formation
Chiefly red to brownish shales and sandstones; includes gray and greenish sandstone tongues named Elk Mountain, Honesdale, Shohola, and Delaware River in the east.
- Dm** Marine beds
Gray to olive brown shales, graywackes, and sandstones; contains "Chemung" beds and "Portage" beds including Burket, Brazier, Harrell, and Trimmers Rock; Tully Limestone at base.

MIDDLE AND LOWER

- Dmh** Mahantango Formation
Brown to olive shale with interbedded sandstones which are dominant in places (Montebello); highly fossiliferous in upper part; contains "Centerfield corals bed" in eastern Pennsylvania.
- Mar** Marcellus Formation
Black, fissile, carbonaceous shale with thick, brown sandstones ("Turkey Rides") in parts of central Pennsylvania.
- Ono** Onondaga Formation
Greenish blue, thin bedded shale and dark blue to black, medium bedded limestone with shale predominant in most places; includes Selingsgrove Limestone and Needmore Shale in central Pennsylvania; and Butlerian Falls Limestone and Esopus Shale in easternmost Pennsylvania; in Lehigh Gap area includes Palmerston Sandstone and Bowmanston Chert.
- Ors** Oriskany Formation
White to brown, fine to coarse grained, partly calcareous, locally conglomeratic, fossiliferous sandstone (Ritigely) at the top; dark gray, cherty limestone with some interbedded shales and sandstones below (Shriver).
- Dhb** Helderberg Formation
Dark gray, calcareous, thin bedded shale (Mandata) at the top, equivalent to Port Even Shale and Becraft Limestone in the east; dark gray, cherty, thin bedded, fossiliferous limestone (New Scotland) with some local sandstones in the middle; and, at the base, dark gray, medium to thick bedded, crystalline limestone (Coeymans), sandy and shaly in places with some chert nodules.

SILURIAN

- Key** Keyser Formation
Dark gray, highly fossiliferous, thick bedded, crystalline to nodular limestone; passes into Menius, Rondout, and Decker Formations in the east.
- Ton** Tonoloway Formation
Gray, highly laminated, thin bedded, argillaceous limestone; passes into Coopersville and Pocono Island beds in the east.
- Wills** Wills Creek Formation
Greenish gray, thin bedded, fissile shale with local limestones and sandstone zones; contains red shale and siltstone in the lower part.

SILURIAN (CONT)

- Blo** Bloomsburg Formation
Red, thin and thick bedded shale and siltstone with local units of sandstone and thin impure limestone; some green shale in places.
- McK** McKenzie Formation
Greenish gray, thin bedded shale interbedded with gray, thin bedded, fossiliferous limestone; shale predominant at the base; intraformational breccia in the lower part. Absent in Harrisburg quadrangle and to the east.
- Clint** Clinton Group
Predominantly Rose Hill Formation - reddish purple to greenish gray, thin to medium bedded, fossiliferous shale with intertonguing "iron sandstones" and local gray, fossiliferous limestone; above the Rose Hill is brown to white quartzitic sandstone (Keefer) interbedded upward with dark gray shale (Rockester).
- Tus** Tuscarora Formation
White to gray, medium to thick bedded, fine grained, quartzitic sandstone, conglomeratic in part.

ORDOVICIAN

- Juni** Juniata Formation
Red, fine grained to conglomeratic, quartzitic sandstone with well developed cross-bedding and with interbedded red shale in places.
- Bald** Bald Eagle Formation
Gray to greenish gray, fine grained to conglomeratic, thick bedded sandstone; often iron-speckled and cross-bedded; some greenish gray shale in places.
- Reed** Reedsville Formation
Dark gray, olive weathering shale with thin silty to sandy interbeds; black shale of Antes Formation at the base.
- Cob** Coburn Formation
Dark gray to black, thin bedded limestone with black shale interbeds.
- Sal** Salona Formation
Dark gray, thin bedded, dense limestone.
- Neal** Nealmont Formation
Bluish gray, finely crystalline, fossiliferous limestone; lower part grades laterally into Curtin Formation.
- Curt** Curtin Formation
Gray, impure limestone; bluish gray, fine grained, high calcium limestone with some larger calcitic grains (Valentine Member, Ov) at the top.
- Ben** Benner Formation
Dark gray, mottled, dolomitic limestone and coarse granular limestone.
- Hatter** Hatter Formation
Dark gray, impure, fossiliferous limestone.
- Loys** Loysburg Formation
Dense limestone over irregularly banded dolomitic limestone.

CAMBRIAN

- Belle** Bellefonte Formation
Gray, cream to tan weathering, medium bedded dense dolomite.
- Axe** Axemann Formation
Bluish gray, medium bedded, impure limestone.
- Nitt** Nittany Formation
Gray, thick bedded, coarsely crystalline dolomite.
- Stone** Stonehenge-Larke Formation
Stonehenge - bluish gray, finely crystalline limestone and dark gray, laminated limestone with abundant "edgevic" conglomerate. Larke - Dark, coarsely crystalline dolomite; equivalent to Stonehenge.
- Mines** Mines Formation
Bluish gray crystalline dolomite; largely oolitic with much oolitic chert.
- Gates** Gatesburg Formation
Bluish gray, coarse crystalline dolomite with many sandstone interbeds; cryptozoan reefs common.
- War** Warrior Formation
Bluish gray, fine grained dolomite with shaly partings.
- Pleasant** Pleasant Hill Formation
Dark gray, thick bedded limestone and thin bedded, shaly limestone.
- Waynes** Waynesboro Formation
Green and red shale, sandstone, and conglomerate.