GEOLOGIC MAP
OF
GARRETT COUNTY

PREPARED BY THOMAS W. AMSDEN

STATE OF MARYLAND

DEPARTMENT OF GEOLOGY, MINES AND WATER RESOURCES

JOSEPH T. SINGEWALD JR. DIRECTOR

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Scale 1:62500

1 1/2 0 1 2 3 4 Miles

1 1/2 0 1 2 3 4 5 Kilometers

Contour interval 20 feet

Numbered ticks indicate the 10,000 foot Maryland State Grid

The last three digits of the grid numbers are omitted

Datum is mean sea level

EXPLANATION

Pm — Monongahela formation

Includes strata above the base of the Pittsburgh coal bed (P); interbedded claystone, shale, siltstone, sandstone, and coal beds. Present only in Georges Creek and Upper Potomac coal basins. May include some strata of Permian age (Dunkard). Thickness 210 to 270 feet

Pc (B, H, BC) — Conemaugh formation

Includes strata between top of Upper Freeport coal bed (UF) and base of Pittsburgh coal bed (P). Predominantly gray and brown claystone, shale, siltstone, and sandstone; part below Barton coal bed (B) characterized by several red beds, calcareous claystone and fossiliferous marine shales. Thickness 825 to 925 feet

The following Conemaugh coal beds are shown on the map:

Barton coal bed (B) - Georges Creek, northern part of Upper Potomac, and Castleman basins.

Harlem coal bed (H) - all basins.

Brush Creek coal bed (BC) - Lower Youghiogheny, Upper Youghiogheny, and Castleman basins.

UF — **Pap** — Allegheny formation, Pottsville formation

Allegheny and Pottsville formations, mapped together as a stratigraphic unit, comprise those beds between top of Mauch Chunk formation and top of Upper Freeport coal bed (UF). Lower part of Pottsville formation consists of medium- to coarse-grained sandstone, commonly conglomeratic at its base; upper Pottsville and Allegheny formations composed of interbedded sandstone, siltstone, claystone, shale, and coal beds. Thickness 300 to 600 feet

Mmc — Mauch Chunk formation

Brown to greenish-brown, fine-grained, micaceous sandstone, and red and green to greenish-brown shale; sandstone typically thin-bedded (less than 3 inches) and cross-bedded. No fossils observed. Thickness 500 to 700 feet

Mgb — Greenbrier formation

Calcareous shale and sandstone, and argillaceous and arenaceous limestone. Lower part grey to red, cross-bedded, arenaceous limestone (Loyalhanna member). Upper part calcareous shale and sandstone, typically red, interbedded with greenish-grey to reddish-grey, argillaceous limestone. Marine fossils common above the Loyalhanna member. Thickness 200 to 300 feet.

Mp — Pocono formation

Strongly cross-bedded, platy sandstone with some siltstone and shale; sandstone commonly medium-grained, but may be coarse or conglomeratic; weathered color dominantly grey or brown, but some beds red and reddish-brown. Fragmentary plant fossils observed. Hampshire-Pocono contact gradational. Thickness 700 to 1200 feet

Dh — Hampshire formation

Interbedded red and reddish-brown (rarely green) sandstone, siltstone, and shale; sandstone and siltstone beds commonly cross-bedded. No fossils observed. Contact with Jennings formation and with Pocono formation gradational. Thickness 1100 to 2000 feet

Dj — Jennings formation

Interbedded yellowish-grey, brown, and olive-brown shale, siltstone, and sandstone, with a few conglomerate beds; typically evenly-bedded. Marine fossils common, generally preserved as internal and external molds. Contact with Hampshire formation gradational; base not exposed. Estimated thickness 2000 to 5000 feet

Pennsylvanian — Conemaugh formation; Monongahela formation — CARBONIFEROUS

Mississippian — Mauch Chunk formation — CARBONIFEROUS

Upper Devonian — Jennings formation — DEVONIAN

Strike and dip of beds

Horizontal beds

Vertical beds

Folded beds

Contact of geologic formations

Fault

Outcrop of coal bed

Inferred outcrop of coal bed

Coal mine (operating or abandoned); prospect pit

STRIP MINE — Strip mine

Quarry

Fossil locality

Fossil locality in quarry

SUBDIVISIONS OF THE PENNSYLVANIAN STRATA IN MARYLAND

Shows the important coal beds, red beds and marine shales

PERMIAN		Dunkard group	1800–1700	Waynesburg coal
CARBONIFEROUS	PENNSYLVANIAN	Monongahela formation (Pm)	1700–1500	Lower Sewickley coal (Tyson coal); Pittsburgh coal (P)
		Conemaugh formation (Pc) — Upper member	1500–1100	Little Pittsburgh coal; Clarksburg red bed; Barton coal (B)
		Conemaugh formation (Pc) — Lower member	1100–600	Birmingham red bed; Ames marine shale; Harlem coal (H); Pittsburgh red bed; Upper Bakerstown coal; Lower Bakerstown coal; Meyersdale red beds (locally Cambridge marine shale at base); Brush Creek marine shale; Brush Creek coal (BC); Mahoning red beds
		Allegheny formation	600–300	Upper Freeport coal (UF); Bolivar clay; Upper Kittanning coal; Middle and Lower Kittanning coal groups
		Pottsville formation (Pap)	300–200	Mount Savage clay; Brookville coal (Lower Mount Savage coal)
	MISSISSIPPIAN	Mauch Chunk formation (Mmc)	200–100	

Feet

PENNSYLVANIA

WEST VIRGINIA — LOWER YOUGHIOGHENY BASIN — UPPER YOUGHIOGHENY BASIN — ACCIDENT ANTICLINE — CASTLEMAN BASIN — CASTLEMAN ANTICLINE — GEORGES CREEK BASIN — ALLEGANY COUNTY — MD. — DEER PARK BASIN — POTOMAC BASIN — UPPER POTOMAC BASIN

Accident Anticline — Geology by T. W. Amsden

Castleman Basin — Geology by K. M. Waagé

Deer Park Anticline — Geology by T. W. Amsden

Lower Youghiogheny Basin, Upper Youghiogheny Basin, Georges Creek Basin, Upper Potomac Basin — Geology by T. W. Amsden and R. M. Overbeck

Geologic mapping by K. M. Waagé and R. M. Overbeck was done in connection with cooperative projects with the United States Geological Survey