TABLE 1.—*Stratigraphic and lithologic descriptions of rocks in the Pittsburgh and Uniontown Formations, Washington area, Pennsylvania*

Formation	Member	Stratigraphic relations: General lithologic sequence and prominent strata, from top to bottom	Stratigraphic relations: Persistence of strata	Thickness of member: Range in thickness and area where thickest (by quadrangle)	Thickness of member: Direction of thinning	Limestone: Range in thickness and area where thickest (by quadrangle)	Limestone: Bedding and sedimentary structures	Limestone: Insoluble residue	Claystone and mudstone: Range in thickness and area where thickest (by quadrangle)	Claystone and mudstone: Bedding and sedimentary structures	Claystone and mudstone: Minerals other than quartz and mica	Siltstone and Sandstone: Thickness, shape, and trend of units; area where thickest (by quadrangle)	Siltstone and Sandstone: Bedding and sedimentary structures	Siltstone and Sandstone: Minerals other than quartz and muscovite	Coal bed: General nature and persistence, range in thickness, and area where thickest (by quadrangle)	Lithofacies: Number and type	Fossils	Distinctive features
Uniontown	Upper	Claystone Mudstone and siltstone Sandstone Siltstone a nd mudstone Coaly mudstone	Individual units not persistent; lenticular and intertonguing. Sandstone persistent in some areas.	8–42 ft; central Prosperity	Northwestward and northeastward				Claystone: 0–2 ± ft. Mudstone: 9–31 ± ft. Prosperity.	Claystone: laminated to structureless. Mudstone: even bedded; thin bedded; laminated.	Feldspar Illite Kaolinite Chlorite Siderite Pyrite (Note: Kaolinite seems to be absent from the underclay at top of member.)	Siltstone: 0–17 ft; sheetlike to lenticular. Sandstone: 0–19 ft; elongate, sinuous, anastomosing; W–SW; Amity, Prosperity.	Siltstone: even bedded; thin bedded; rhythmic laminations. Sandstone: top of beds even; base undulating; laminated; small-scale festoon and foreset cross-bedding locally; mudstone fragments near base of sandstone beds locally.	Potassium feldspar (orthoclase?) Plagioclase (both sodic and calcic varieties). Illite Kaolinite Chlorite Pyrite Calcite Heavy minerals: leucoxene, ilmenite, magnetite, brown tourmaline, garnet, rutile, apatite, biotite, zircon. The siltstones contain fewer heavy minerals and more calcite.	Absent; Little Waynesburg coal bed of other areas represented locally in Washington area by thin coaly and carbonaceous mudstone.	Four. Mudstone, siltstone, silty sandstone, sandstone.	Sporadic carbonized plant debris; *Stigmaria* and mineralized root casts in nonbedded siltstone.	Relative thinness, fine-grained character, and elongate sandstone units.
	Lower	Claystone Limestone Siltstone and mudstone Sandstone Coal bed	Generally persistent. Persistent in some directions. Persistent, but locally underlain by sandstone.	25–74 ft; NE ¼ Prosperity	Northeastward	Magnesium content is about 3 percent. 0–16 ft; NE ¼ Washington East. Individual beds: 3 in.–2 ft.	Even bedded; nodular locally; some beds laminated, suggesting algal structure; some beds wholly or in part breccia-conglomerate; masses of chert locally in NE corner of Washington East.	Quartz grains Chert Pyrite Illite Chlorite	Claystone: 0–1 ft. Mudstone: 3–49 ft; S½ Amity.	Claystone ; laminated to structureless. Mudstone: even bedded thin bedded, laminated ironstone and limy nodules locally.	Similar to upper member.	Siltstone: 0–25 ft; sheetlike to lentricular. Sandstone: 0–25 ± ft; elongate, sinuous; anastomosing; trends west; NW ¼ Washington West; Prosperity.	Siltstone: even bedded; thin bedded; rhythmic laminations. Sandstone: tops of beds even, bases locally undulating; thin to thick bedded; festoon and foreset crossbedding locally.	Similar to sandstone in other members.	Uniontown; 0–62 in.; Claysville SE; impure; locally represented by carbonaceous mudstone.	Seven. Calcareous sandstone, siltstone, calcareous siltstone, calcareous sandy siltstone, silty limestone-mudstone, mudstone, clayey limestone.	Limestone: freshwater ostracodes, fish remains, and *Spirorbis* locally. Mudstone: carbonized plant fragments in units above Uniontown coal bed. Sandstone: carbonized plant fragments abundant locally in channel sandstone at base of member.	Local channel-fill sandstone beneath Uniontown coal bed; chert in limestone.
Pittsburgh	Upper	Four sequences of limestone in units of 3–8 beds separated by siltstone and mudstone. Lower part of mudstone at base of member commonly carbonaceous.	All units persistent; sandstone beds within siltstone and mudstone units are local and lenticular.	48–82 ft; E½ Washington East; E½ Amity.	Northwestward	Magnesium content is about 7 percent. 25–41 ft; NE ¼ Prosperity. Individual beds: 6 in.–2½ ± ft.	Even bedded; a few beds laminated, suggesting algal structure; some beds structureless; some wholly or in part breccia-conglomerate; relic desiccation cracks locally.	Same as in Sewickley Member.	Claystone: layers a few inches or less thick between limestone beds. Mudstone: 20–41 ± ft; Prosperity and Washington East.	Claystone: laminated to structureless. Mudstone, even bedded; thin bedded; laminated; limy nodules locally.	Similar to Sewickley Member; chlorite is more abundant.	Siltstone: 0–12 ft, lenticular, elongate; anastomosing. Sandstone: 0–9 ft; sheetlike to elongate, sinuous; W–NW; Amity.	Siltstone: even bedded; thin bedded. Sandstone: bedding irregular; festoon crossbedding locally.	Similar to sandstone in other members; less heavy minerals, particularly magnetite.	None. Carbonaceous mudstone at base is highly variable in thickness but persistent.	Three. Clayey limestone, calcareous mudstone, silty limestone-mudstone.	Fresh-water ostracodes; fish remains; small high-spired gastropods in uppermost sequence; *Spirorbis* locally; small pelecypods rare.	High clay content of limestone beds that characteristically weather rapidly to clay; conspicuous light-greenish-gray siltstone and mudstone units between the limestone sequences; abundant mixed-layer montmorillonite-chlorite clay.
	Sewickley	Closely spaced, generally thick limestone beds containing local lenses of mudstone and claystone; coal bed locally.	Unit persistent; distinctive laminated dark-gray bed at top of member and several other beds seem to be regionally persistent.	44–63 ft; NE ¼ Washington West; central Prosperity; NE ¼ Amity.	Northwestward and northeastward	21–47 ± ft; central Prosperity; SE ¼ Washington East. Individual beds: 6 in.–3½ ft.	Even bedded; a few beds nodular; a few beds near top and base laminated; suggesting algal structure; thicker beds are structureless; some beds wholly or in part breccia-conglomerate.	Small chert nodules Quartz grains Pyrite Illite Chlorite Mixed-layer montmorillonite chlorite is 50 percent of clay fraction.	Claystone: 0–10 ft. Mudstone: a few inches to 21 ft. North-central Washington West; S½ Washington area.	Claystone: laminated to structureless. Mudstone: even bedded, thin bedded.	Illite Chlorite Mixed-layer montmorillonite chlorite. Calcite Pyrite				Sewickley; 0–60 in.; Claysville SE; impure; locally represented by carbonaceous mudstone.	Three. Limestone, clayey limestone, calcareous mudstone.	Data mainly from core logs, and no fossils reported. Based on outcrops in the Ellsworth quadrangle, which adjoins Amity to the east; fossils are probably relatively scarce and include fresh-water ostracodes, fish remains, and, near the top, fresh-water pelecypods.	Silty and clayey; relatively thick beds; hackly cleavage when exposed to weathering; abundance of mixed-layer montmorillonite-chlorite clay; scarcity of fossils; weathers rapidly to clay.
	Fishpot	Mudstone and siltstone; sandstone locally; carbonaceous mudstone locally at base.	Mudstone-siltstone units generally not persistent; sandstone persistent in some areas.	15–33 ft; S ½ Amity; Prosperity.	Northward and westward				Claystone: 0–1 ft. Mudstone: 4–15 ft. Washington East.	Olaystone: laminated to structureless. Mudstone: even bedded; thin bedded, laminated.	(Not analyzed)	Siltstone: 0–14 ft; sheetlike to elongate; anastomosing. Sandstone: 0–27 ± ft; sheetlike; thicker parts elongate, sinuous distributary; anastomosing; W–NW; NE ¼ Washington East.	Siltstone: even bedded, thin bedded, laminated; rhythmic laminations locally. Sandstone: bedding even to irregular; thin to thick bedded; laminated locally; ripple laminations and festoon crossbedding locally.	Similar to sandstone in other members.	None. Lenticular carbonaceous mudstone at base.	Four. Mudstone, siltstone, silty sandstone, sandstone.	Carbonized plant debris locally along bedding planes.	Relative thinness; elongate sandstone units; extensive lamination.
	Lower and Redstone	Limestone; 3–7 beds with layers of mudstone. Sandstone Siltstone and mudstone. Carbonaceous mudstone and coal. Siltstone and mudstone Sandstone and siltstone. Coal bed	Persistent. Persistent in some areas. Persistent.	72–122 ft; SE ¼ Washington East.	Northward and westward	5–35 ft; SW¼ Prosperity.	Even bedded; lower beds nodular; some beds wholly or in part breccia-conglomerate.	Quartz grains Pyrite Illite Chlorite Mixed layer montmorillonite chlorite? Phosphate <0.2 percent. Many microscopic particles of silica may be chert.	6–60 ft; SW ¼ Prosperity.	Claystone: laminated to structureless. Mudstone: nonbedded; limestone nodules abundant; ironstone nodules locally.	Feldspar Illite Kaolinite Chlorite Pyrite Calcite Siderite	Siltstone: 0–37 ft; sheetlike to lenticular; Washington East. Sandstone: 0–50 ft; sheetlike; thicker parts elongate, sinuous, and anastomosing; SW, W, NW; in NW-trending belt across central part of Washington area.	Siltstone: even bedded, thin bedded, laminated. Sandstone: irregular bedding; widespread festoon crossbedding.	Similar to sandstone in other members.	Redstone; thin, impure, lenticular. Pittsburgh; 31–124 in.; lower bench averages 68 in.; thick coal not restricted to a single area. Persistent; most prominent bed in southwestern Pennsylvania.	Four. Sandstone, calcareous sandy siltstone and calcareous siltstone, silty limestone-mudstone, mudstone.	Limestone: freshwater ostracodes; *Spirorbis* locally. Mudstone: scattered carbonized plant debris along bedding planes. Sandstone: log casts locally in basal part of lower sandstone.	Prominent Pittsburgh coal bed; extensive crossbedded sandstone in lower member.