

BEDROCK GEOLOGY, LEBANON COUNTY, PENNSYLVANIA.

Contribution of the Bureau of Topographic and Geologic Survey, Department of Internal Affairs, Commonwealth of Pennsylvania. Dr. Carlyle Gray in Charge, November, 1958.

LEGEND

TRIASSIC SYSTEM

- Diabase:** Medium coarse grained, dark to greenish gray igneous dike rock intrusions and, or, extrusions composed chiefly of gray plagioclase feldspars and black or greenish black augite or pyroxene minerals. Locally the rounded or detached boulders are called "Iron Stones."
- Diabase "dike swarm." Limestone base.
- Quartz Conglomerate:** Reddish brown to brownish gray thick bedded coarse quartz conglomerates that generally occupy the higher and more narrow ridges of the Triassic section of the South Mountain area. These conglomerates, like the Triassic sandstones and shales, are held together by reddish colored hematite and silicate cementing materials.
- Triassic sandstones:** Brownish red to pinkish gray medium fine to coarse textured interbedded sandstones and siltstones.
- Triassic shales:** Generally interbedded strata of reddish colored silty shales and fine textured sandstones.
- Triassic Limestone-Shale conglomerate:** A brownish-red conglomerate that contains fragments of limestone, and some quartzite material in addition to quantities of consolidated shale and sandstone fragments.

PENNSYLVANIAN SYSTEM

- Allegheny series:** Dominantly yellowish gray silty shales that include thin beds of fine textured sandstones and thin bedded coal deposits. Reaction, medium to strongly acid.
- Pottsville series:** Dominantly brownish gray sandstones and conglomerates, but also contains thin shale beds.

MISSISSIPPIAN SYSTEM

- Mauch Chunk:** Chiefly brown, reddish-brown and greenish gray silty shales which contain thin beds of fine textured sandstones. Reaction, medium acid.
- Pocono:** Dominantly thick bedded coarse textured yellowish gray sandstones containing inter-beds of quartz conglomerates. Reaction, strongly acid.

DEVONIAN SYSTEM

- Catskill:** Dominantly reddish brown, brown or grayish brown silty shales, but also contains thin beds of fine textured sandstones. Reaction, medium acid.
- Trimmers Rock:** Dominantly yellowish gray silty shales that contain thin beds of fine textured sandstones. Reaction, medium to strongly acid.
- Marcellus and Hamilton Shales:** The Marcellus shales are dark gray, fine textured, and thin bedded. Reaction is neutral. Hamilton shales are coarse silty medium to strongly acid and thick bedded.
- Oriskany Sandstone:** A massive high silica brownish gray to yellowish white coarse textured sandstone. Reaction, strongly acid. A source of building sand.

SILURIAN SYSTEM

- Bloomsburg Shales:** Dominantly reddish brown silty shales. Reaction, ranges from slightly alkaline to medium acid.
- Clinton formation:** Yellowish brown to greenish gray coarse silty shales that contain thin beds of fine textured sandstones. Reaction, medium to strongly acid.
- Tuscarora formation:** Thick bedded quartzitic yellowish white to white hard sandstone. Reaction, strongly acid (pH. 4.0) source of a good quality building stone.

ORDOVICIAN SYSTEM

- Oswego formation:** A very thin deposit of a dirty graywacke type of sandstone. Reaction, strongly acid. The deposit is discontinuous or absent in eastern part of county.
- Martinsburg formation:** A massive dark gray neutral silty shale formation in which there occurs the following variations or alterations. Conglomerate.

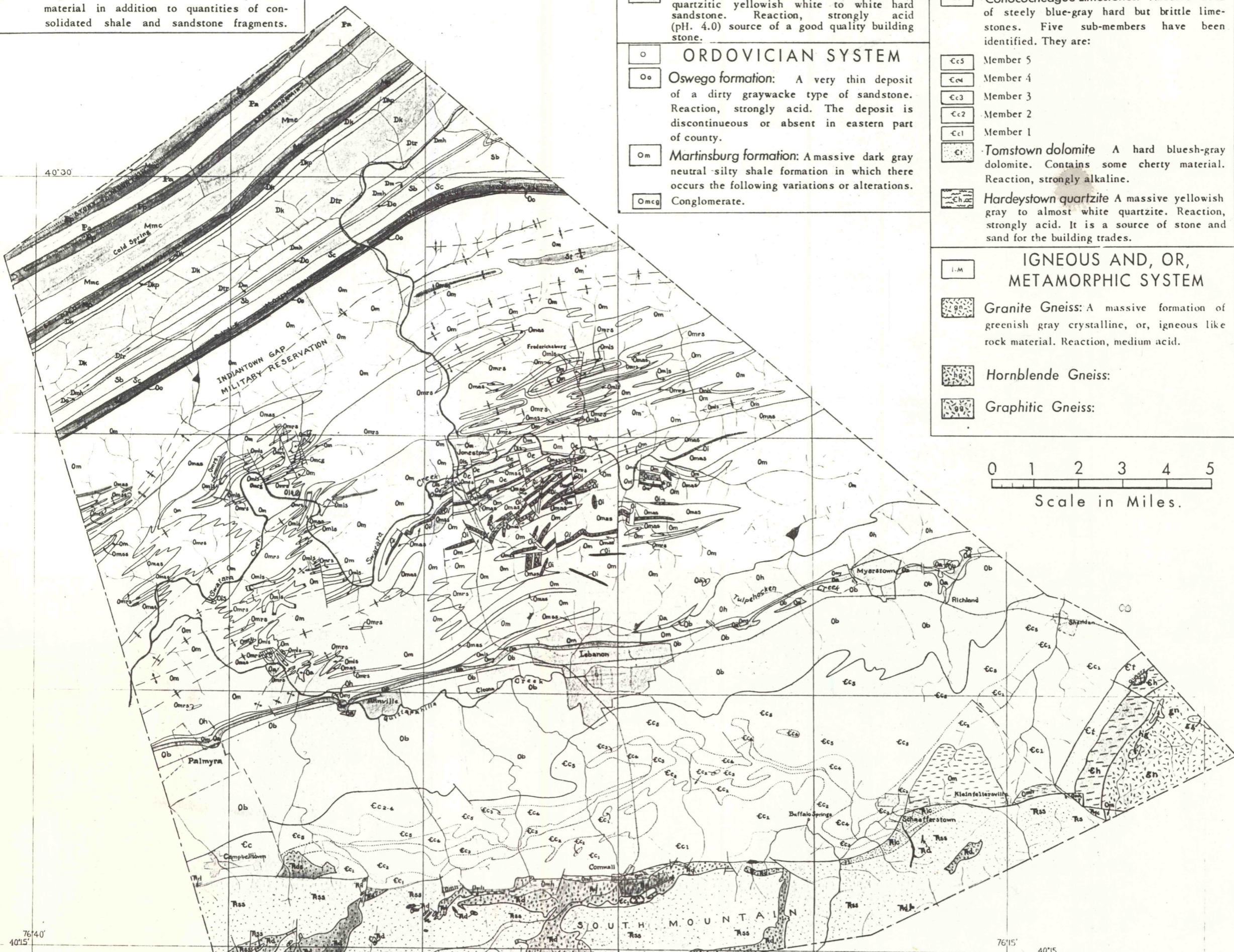
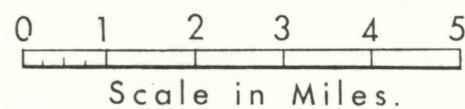
- Chert inclusions.**
- Gray shales.**
- Hornfels**
- Red shales.**
- Limestones.**
- Graywacke**
- Sandstones**
- Igneous diabasic intrusives.**
- Igneous diabasic extrusives.**
- Hershey limestone:** A shaly dark gray thin bedded silty to argillaceous limestone. Reaction, strongly alkaline.
- Myerstown limestone:** A gray thin bedded limestone. Somewhat graphitic in basal strata. Strongly alkaline.
- Annville limestone:** Light gray massive high calcium limestone. Source of high grade commercial limestone.
- Beekmantown limestone:** Massive beds of light gray to bluish gray limestones. Reaction, very alkaline.

CAMBRIAN SYSTEM

- Conococheague Limestones.** Massive beds of steely blue-gray hard but brittle limestones. Five sub-members have been identified. They are:
 - Member 5
 - Member 4
 - Member 3
 - Member 2
 - Member 1
- Tomstown dolomite:** A hard bluish-gray dolomite. Contains some cherty material. Reaction, strongly alkaline.
- Hardeystown quartzite:** A massive yellowish gray to almost white quartzite. Reaction, strongly acid. It is a source of stone and sand for the building trades.

IGNEOUS AND, OR, METAMORPHIC SYSTEM

- Granite Gneiss:** A massive formation of greenish gray crystalline, or, igneous like rock material. Reaction, medium acid.
- Hornblende Gneiss:**
- Graphitic Gneiss:**



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