

# **“Pennsylvania Building Stones”**

Parts 1 & 5

By R. W. Stone

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The January 1928 article begins:

“Pennsylvania, the giant among mineral producers, probably has as great variety of building stones as any State in the Union. These include granite, gneiss, schist, trap, serpentine, marble, limestone, sandstone, conglomerate, and slate. The granite, gneiss, schist, and serpentine are confined to the extreme southeastern part of the State, the limestone is mostly in the great valley, and the sandstones are found in all the rest of the state. Serpentine, marble, and slate have very local development....”

This article, which begins on the next page,  
is presented on the Stone Quarries and Beyond web site.

<http://quarriesandbeyond.org/>

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# Pennsylvania Building Stones

By R. W. STONE

*Pennsylvania Geological Survey*

## Part I

**P**ENNSYLVANIA, the giant among mineral producers, probably has as great variety of building stones as any State in the Union. These include granite, gneiss, schist, trap, serpentine, marble, limestone, sandstone, conglomerate, and slate. The granite, gneiss, schist, and serpentine are confined to the extreme southeastern part of the State, the limestone is mostly in the great valley, and the sandstones are found in all the rest of the State. Serpentine, marble, and slate have very local development.

*Philadelphia District.* There are more stone quarries within a given area in the vicinity of Philadelphia than in any other part of the State, and more stone buildings are being erected at the present time in that city than elsewhere. Practically all of these are of the local gneiss and schist. The gneiss is a granite rock having generally a light gray aspect banded with black minerals and may be illustrated by the product of the quarries at Holmesburg, Beth Ayres, and in the vicinity of Swarthmore. This rock is identical with granite except for the parallel or banded arrangement of the minerals and is used in the same way. Illustrations of its use are exceedingly abundant in that district and to mention any one building is hardly justified. The gneiss from a quarry near Media is rather coarse-grained, having exceptionally large lumps of augens of pink feldspar and makes a very attractive building stone as shown by the Upper Darby high school.

Schist, which is composed very largely of thinly laminated mica and quartz and which is softer than gneiss, but seemingly equally durable, is quarried at many places in the Philadelphia district, particularly for foundation stones. It was used, however, as much as 200 years ago for entire buildings and in these, as the Friends Meeting House at Radnor, the stone shows no deterioration. It is easily worked and may be dressed to smooth faces, or as is being done in recent years may be laid with the rough edges exposed. The color is generally a dark greenish tint on rough faces, and grayish on dressed faces. One feature of this stone is that when laid on edge the surfaces, which are composed largely of mica, give a decided glint to a house wall when reflecting the rays of the sun. The buildings at Bryn Mawr and Swarthmore College are a good illustration of the use of this stone and many houses and churches in the whole Philadelphia district. Many of the quarries are in the vicinity of Chestnut Hill, Germantown, and Bryn Mawr. This stone has recently been used within the last two

years in several houses on the river front in Harrisburg.

Another stone produced in the immediate vicinity of Philadelphia is serpentine which was used very extensively a generation or more ago, but experience seems to have shown it to be wholly satisfactory. It has a light green color and so makes a striking contrast to buildings of any other material. The principal quarries were located in West Chester, and it was used largely there and in Philadelphia, but the condition of many of the buildings explains why quarrying of serpentine for building stone has practically ceased. It has a strong tendency to spall and instances have been noted where this affect has gone



Bridge Erected in 1799 and Spanning Periomon Creek, Near Collegeville, Pennsylvania. The Stone is Pennsylvania Sandstone. The Upper Portions Have Been Rebuilt of the Same Stone.

to a depth of two inches. The buildings of the State Normal School at West Chester are an example of the use of the stone and of its deterioration. The rock faced blocks seem to have withstood weathering much better than the smooth dressed faces and cut cornices and trim. The writer knows of only one building erected of serpentine in the past year and that a small house at Oxford. The stone was taken from an old quarry near Nottingham.

Marble was used 75 to 100 years ago rather extensively in Philadelphia for doorsteps, sills, and lintels, and these, so far as observed, are still in good condition. They are of fine-grained white marble with a bluish tinge which came from the vicinity of Norristown. Another marble of coarser grain that was used in the Customs House on Chestnut Street near Independence Square and in the old Girard National Bank on Third Street, south of Chestnut Street, has not withstood weathering and the fronts of these buildings, particularly the fluted columns and the grooved panels around the windows, are in a dilapidated condition. Marble was formerly quarried also

near West Grove and a Catholic High School at Kennett Square was built of this stone in 1927. It is a coarse-grained white marble of attractive appearance and seemingly durable as one may judge by a school-house near Avondale and other buildings in that vicinity which have withstood the weather for many years.

On the outskirts of the Philadelphia district a quartzite has been quarried at several localities and used for building stone. The principal quarries now being worked are at Avondale near Kennett Square, at Edge Hill north of Chestnut Hill, and at Williams three miles south of Ambler. The quartzite at Avondale breaks readily in smooth slabs about two or more inches thick and contains a good deal of mica. It makes a very durable building stone and is easily laid. The Edge Hill stone is lighter in color because it contains a considerable quantity of white mica. Many houses in the vicinity of Edge Hill are built of this



Sandstone Quarry near Waynesburg, Greene County, Pennsylvania, Showing Brick Shale in Upper Strata Being Worked in Advance of Dimension Stone Operation Below.

stone, which is very slabby and breaks with square joints so it easily works into a smooth faced wall. The quartzite quarried at Williams is a more massive stone, practically free from mica. It is particularly attractive because of a variegated pink and red color mixed in a general cream background. The effect, therefore, as illustrated by a house built in 1927 just west of Broad Axe, is a warm pink tinge but with considerable pleasing variation due to some of the stone being much darker than others.

The Triassic valley, marked by red soil and extending from Easton and New Hope on the Delaware across the southeast corner of the State in a broad band to the southern border near Gettysburg is a wide belt underlain by rocks of Triassic age. These are very largely shale, but contain thick beds of sandstone and conglomerate which are suitable for building stone. These bedded rocks are included by large masses of diabase or trap—a black fine-grained igneous rock commonly known as black granite. The principal building stone in this area is brownstone, a brownish to reddish sandstone which has been used extensively for many years and formerly had a very considerable vogue. Throughout this belt brownstone

farm houses and barns are very numerous. Thirty to 50 years ago large quantities of this stone were used in Philadelphia and in many of the buildings the stone is still in perfect condition. In others, however, for some unexplained reason there has been sad deterioration. Generally speaking the stone is too soft to be used for door sills and it has been noted that foundations which received the splash from rain falling on the sidewalks have spalled. Also it has been observed that the smooth dressed faces have spalled more often than the rock faced blocks. The general durability, however, of this stone may be illustrated by the Daniel Boone house near Birdsboro which was built in 1730 and the stone in which is still in good condition. The principal quarry now producing brownstone is a very large one located at Waltonville, near Hummelstown. Long experience has taught the operators of this quarry, which has been in the same family for more than 100 years, how to select stone which will be durable, and its product has a good reputation.

Among the Triassic sandstones other colors than brown are to be found, as is illustrated by a quarry two miles north of Yardley which is now producing sandstone in three fairly distinct colors, reddish, bluish, and gray. The difference in color is not so striking but that when these are blended in a house wall they give an artistic rather than a bizarre appearance.

In this same group of Triassic rocks occurs in some places a conglomerate which may be either a brownstone with white quartz pebbles or a light cream or pink sandstone with white pebbles. A quarry of the lighter colored conglomerate is operated near Langhorne and the Town Hall and Post Office in that village is a good illustration of its use. A similar stone from the South Mountains was used last year in building a wall near the railroad station at Cornwall. Here the remark might be interjected that one of the most artistic brownstone buildings in the State is the railroad station at Cornwall which was designed by Stanford White. For many years a light reddish Triassic sandstone has been quarried near Ambler and many buildings in that town illustrate its use, some much more artistically than others.

In this same belt of Triassic sediments are large bodies of diabase or trap. This is a very tough stone of a granite nature and is quarried particularly at French Creek, Chester County, and in the vicinity of Coopersburg, Bucks County, for monumental rock. It takes a high polish and inscriptions cut in the black surface are gray. This stone has been used for buildings, but because of its dark color is not particularly desirable as the effect is very sombre. Although there is no more durable building stone in the State it cannot be recommended for general building because of its color. Commendable illustrations of its use are the National Bank at Elverson and the Lutheran Church at Schwenksville.

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By R. W. STONE

*Pennsylvania Geological Survey*

## Part V

**SOUTH MOUNTAIN AREA.** Extending from Bethlehem to Chambersburg is a belt of low mountains composed largely of granitic and volcanic rocks and sandstone. At the eastern end of this belt granitic rock has been quarried for building stone for many years and illustrations of its use are found, particularly in Bethlehem and Allentown. The only quarry now producing granite in that vicinity is at Siesholtzville. It is operating on a medium-grained granite which is mottled with red. The effect therefore on a wall of freshly quarried stone is a warm pink color. Its principal use in recent years has been in churches and schools, illus-



Seisholtzville Granite in St. John's Lutheran Church, Emaus, Lehigh County, Pa., Erected in 1923. This detail shows a masonry wall of unusual rustic beauty.

trations of which are to be seen in the St. Ursula church and school at Bethlehem, two churches at Emaus, Christ Lutheran Church, Harrisburg, and other churches in Hazelton, Reading and Northampton.

In the vicinity of Reading a coarse-grained granite and a black gabbro have been used, particularly around Mt. Penn. Further south in Adams County the rocks in the South Mountains are largely very old volcanics and here a reddish porphyry has found some small use. The chapel at Mt. Alto sanitarium is an example.

The sandstone or quartzite in the South Mountains is usually a cream or slightly pink color and the use of that occurring in the northern end of the belt is illustrated by the buildings at Lehigh University, particularly the recently constructed Memorial Building. Near the south end of the belt a quartzite quarried in the vicinity of York has been used to good advantage in the new Methodist Episcopal church in West York.

*The Great Valley.* The broad limestone valley extending from the Delaware River below the water gap through Allentown, Reading, and Harrisburg to

Chambersburg naturally is marked by many limestone buildings. The early settlers utilized the local stone extensively for their houses and barns and in all cases so far as observed the stone is in excellent condition and for the most part is of a light gray color. Huge quantities of limestone are quarried at present but largely for crushed stone and for portland cement. However, some quarries are engaged in producing building stone and some whose principal business is crushed stone save the suitable blocks for the building stone market. The product of some quarries is a very dark blue or almost black stone which will on exposure to the weather gradually show a lighter tint. Other quarries produce a gray stone, some a light pink, and an occasional quarry has some marble in it which is almost pure white. Some of the dolomitic rock has a slightly yellowish cast. Because of its abundance throughout all of this broad belt this stone is not shipped and any building may be assumed to have been derived from a local quarry. Some of the limestone is massive, some breaks in rather thin slabs, and some quarries produce a limestone which is banded. These bands may be fairly bluish, irregular streaks in a gray stone like that found and used near Lancaster, or some of the bands may be chert nodules or hard mud streaks which weather out in low parallel ridges on the edges of the bedding. Stone of this latter character occurs near Harrisburg and a good illustration of it is to be seen in the Pine Street and Grace Methodist churches in that city. White marble of fine grain which occurs in a limestone quarry at York is being used now for the construction of a house on the river front in Harrisburg.

*Central and Western Pennsylvania.* In the broad Valley-Mountain belt extending in a northeast-southwest direction across central Pennsylvania and throughout the western half of the State, sandstone



Dia Base Quarry, French Lick Granite Company, St. Peters, Chester County, Pa.

and limestone are the principal building stones. Very few quarries, however, are producing them for building purposes.

In the Valley-Mountain belt extending from Williamsport south to the Maryland line, the Helderberg and Cambro-Ordovician limestones outcrop for hundreds of miles, mostly in narrow bands that zigzag up and down the valleys. These limestones range from light gray to dark blue, and from massive to thin-bedded and shaly. Many of the early settlers built their houses and barns of the massive limestone and today these old buildings with the stone weathered to a light gray are a commendation on the industry of our forebears. The sandstone ranges from mas-



Pennsylvania Flagstone Yard at Meshoppen, Wyoming County, showing storage and large flag on crane.

sive to thin slabby material, from dense, almost quartzitic rock to soft sugary sandstone, and from light gray and sometimes slightly pink to light tan and greenish sandstones. This material is so common and so widely distributed that further description seems hardly necessary. A few localities, however, might be mentioned. Near Milton, on the Susquehanna, a light creamy pink quartzitic sandstone is taken from the talus of White Deer Mountain and has been used in that locality for the construction of very attractive houses. A quarry at Rockville produces a hard sandstone of several shades with the result that if the very dark, almost black sandstones are mixed with the lighter stone from other beds in the same quarry a strikingly bizarre and mottled effect is produced in a house wall which, in the writer's opinion, is not attractive.

Near Curwensville, Clearfield County, and Ellwood City, Beaver County, a very massive gray to cream-colored sandstone occurring in thick beds is quarried largely for heavy masonry. Illustrations of its use are the Pennsylvania Railroad bridge across the Susquehanna at Rockville, above Harrisburg, the Market Street Bridge at Harrisburg, and the railroad bridge at Beaver and many other massive masonry foundations, particularly along the railroads in Pittsburgh, Philadelphia, and many places between.

At Waynesburg, Greene County, a gray sandstone

very closely resembling in appearance the well-known Indiana limestone is quarried in a small way and is used locally. Farm buildings 100 years old show the durability of this stone and the South Side High School in Waynesburg is a recent example of its use.

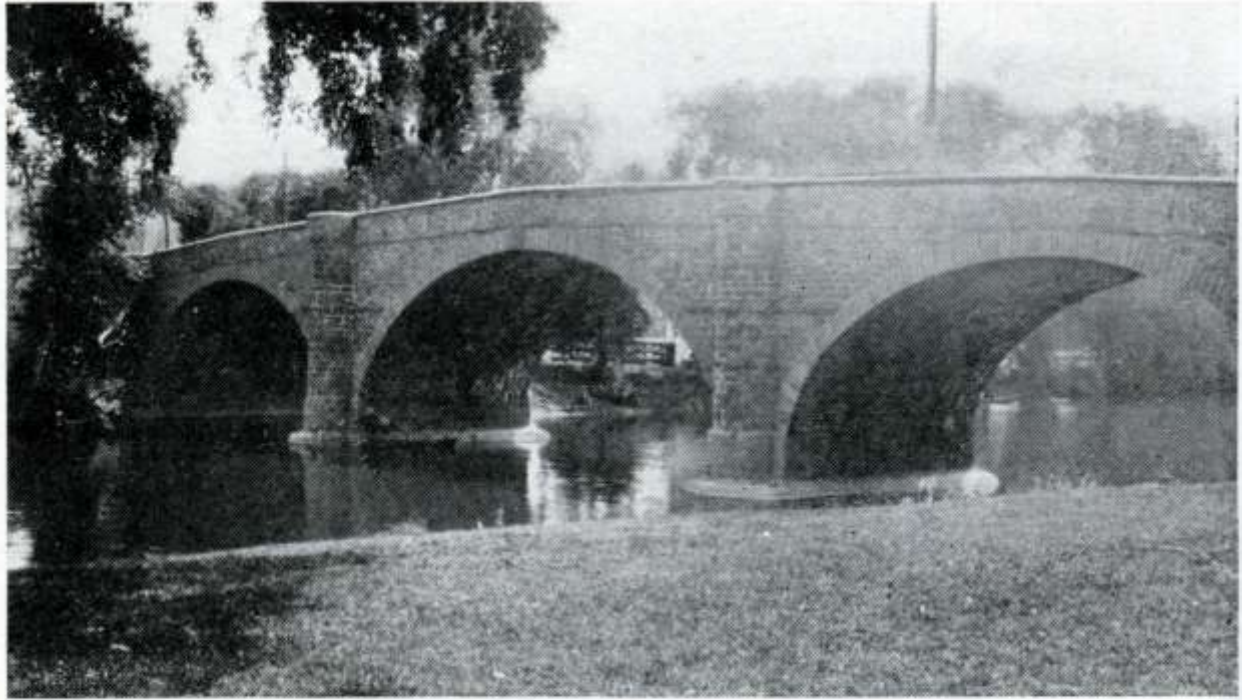
Throughout much of western Pennsylvania the local sandstones have a slightly greenish cast and on long exposure to the weather become an unattractive shade which in the writer's opinion unfits them for commercial exploitation, although they serve very well for farm buildings where solidity and durability outweigh the aesthetic considerations.

*Northern Pennsylvania.* Throughout the northern part of the State the sandstones in general are rather thin bedded and break in slabs only 2 or 3 inches thick. For this reason they could hardly find a wide market for building stone, although they serve very well for local use. In the northeastern part of the State, particularly these stones split in large flags and have been used very extensively for sidewalks. At Meshoppen a stoneyard is assembling the output from several quarries and producing dimension stone in three colors, red, blue, and gray. The principal market for this material, which may be either natural, faced, planed, or rubbed, and may be cut to desired dimensions or furnished in one foot squares, is in the floors of large public buildings as museums, art galleries, college buildings, and for the walks and porches on private estates. Examples of the use of stone from this locality are to be found in several buildings at Princeton University, University of Michigan at Ann Arbor, the new art museum at Philadelphia, and in four large staircases in the recently completed State Capitol at Lincoln, Nebraska. Here each step and riser is a single stone and the landings are made of stones 9 feet square and 1 foot thick.

In this same northern belt the surface is covered with glacial drift and here one finds an occasional building, the like of which is not seen elsewhere in the State. These are built of cobbles and boulders taken from the glacial drift and consisting of both granites and sandstones. The difference in character of the rock is not conspicuous but the round boulders set in concrete give an entirely different architectural effect from the usual building stone. An example of such a structure is the small Catholic chapel just north of Portland on the road below Delaware Water Gap.

### Eastern Capitalists Buy Tennessee Marble Properties

The Diamond Marble Company of Wilmington, Delaware, and Philadelphia, Pa., has purchased several marble properties formerly owned by John Knox, including a marble mill and quarry at Oster, Tennessee. These properties are located in Knox, Loudon, and Blount counties. H. G. Tener is vice president and general manager and J. H. Henderson, formerly of John J. Craig Co., is superintendent.



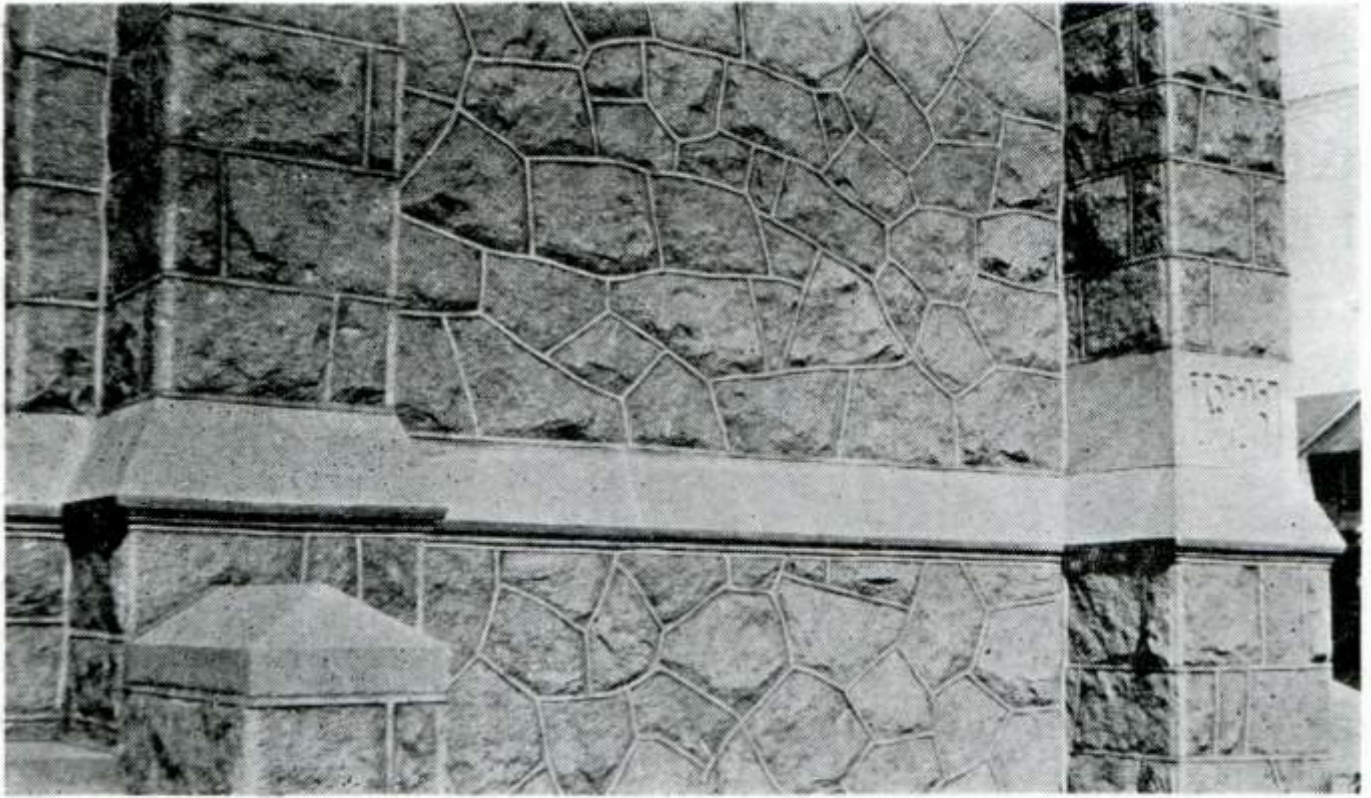
Bridge Erected in 1799 and Spanning Periomen Creek, Near Collegeville, Pennsylvania. The Stone is Pennsylvania Sandstone. The Upper Portions Have Been Rebuilt of the Same Stone.

*(photo caption)* "Bridge erected in 1799 and spanning Periomen Creek, near Collegeville, Pennsylvania. The stone is Pennsylvania sandstone. The upper portions have been rebuilt of the same stone."



Sandstone Quarry near Waynesburg, Greene County, Pennsylvania, Showing Brick Shale in Upper Strata Being Worked in Advance of Dimension Stone Operation Below.

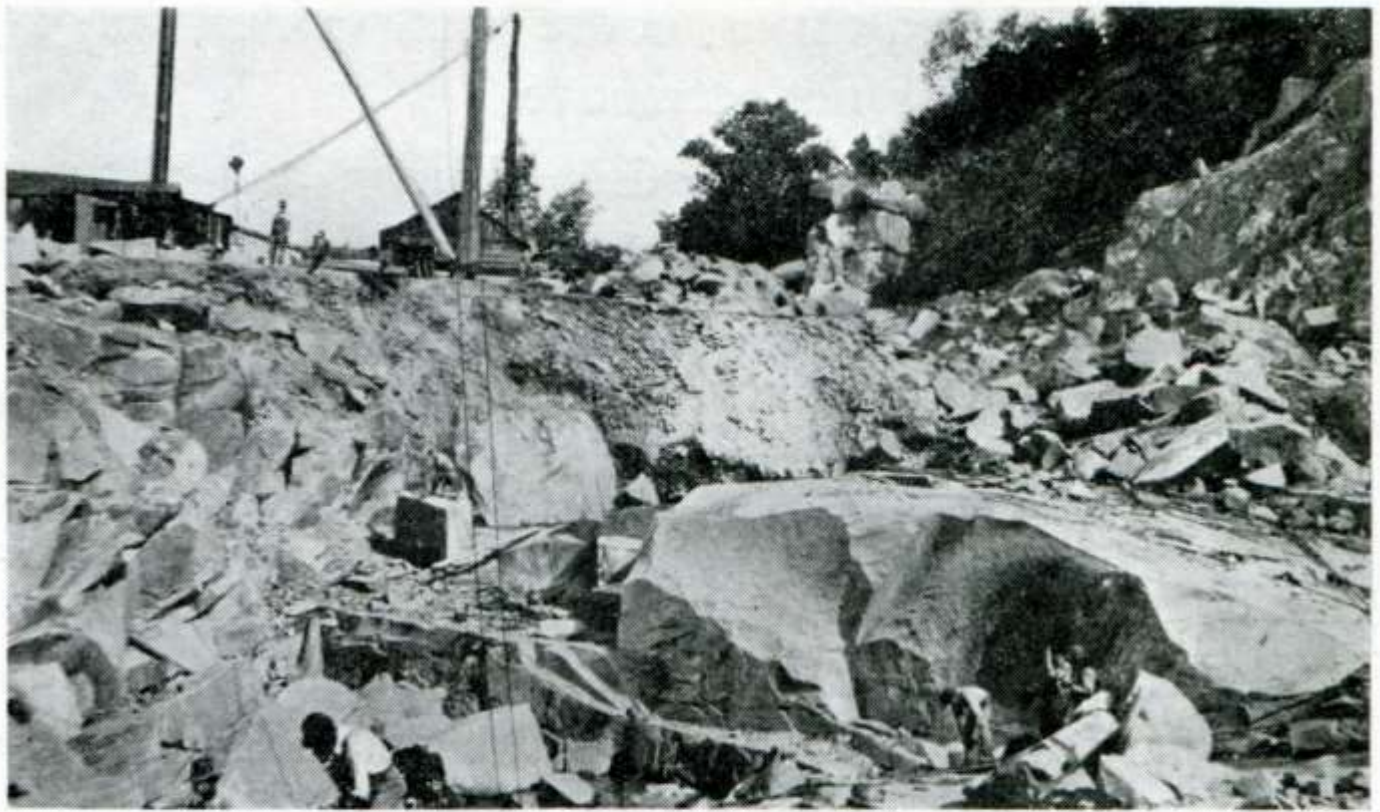
*(photo caption)* "Sandstone quarry near Waynesburg, Green County, Pennsylvania, showing brick shale in upper strata being worked in advance of dimension stone operation below."



Seishaltzville Granite in St. John's Lutheran Church, Emaus, Lehigh County, Pa., Erected in 1923. This detail shows a masonry wall of unusual rustic beauty.

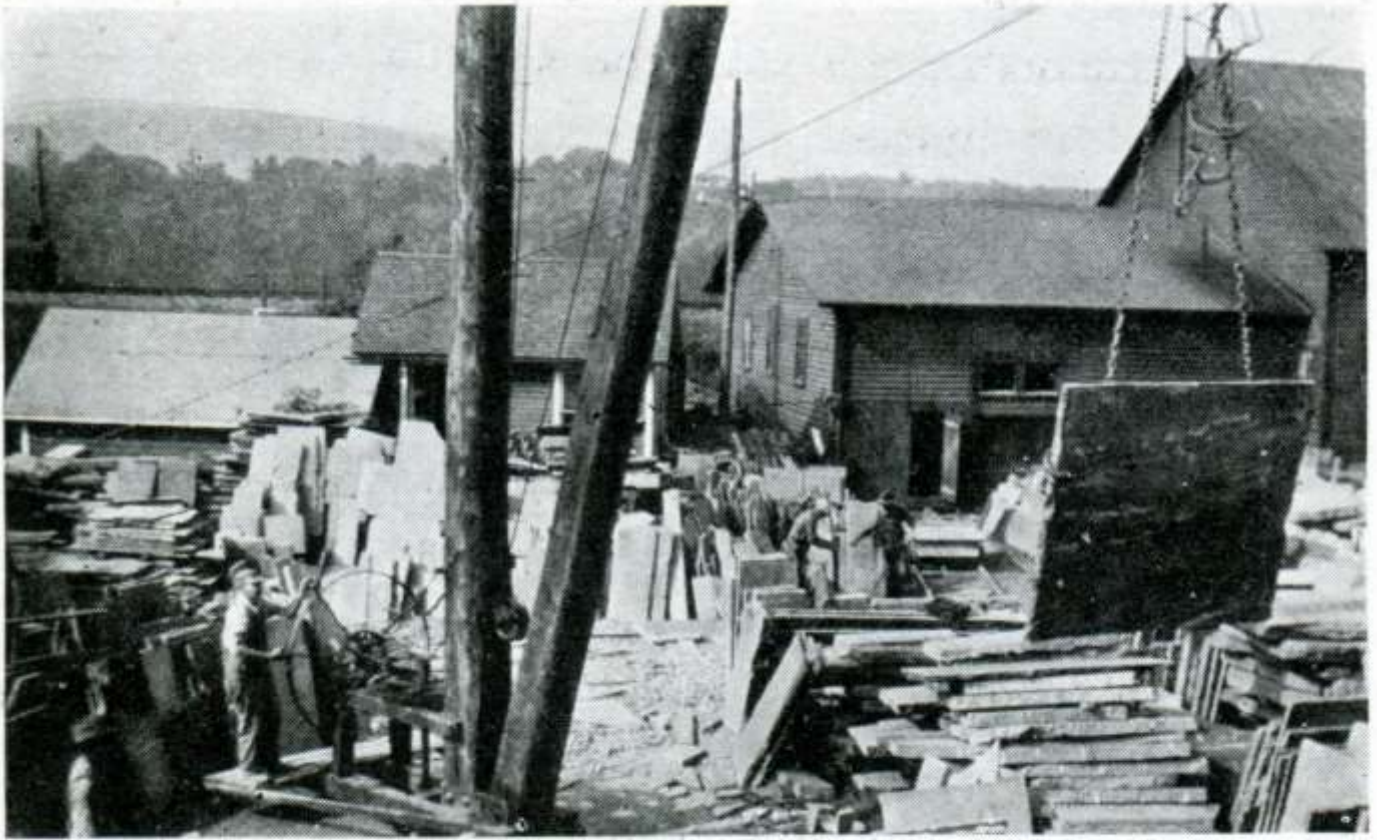
*(photo caption)* "Seishaltzville Granite in St. John's Lutheran Church, Emaus, Lehigh County, Pa., erected in 1923. This detail shows a masonry wall of unusual rustic beauty."





Dia Base Quarry, French Lick Granite Company, St. Peters,  
Chester County, Pa.

*(photo caption)* "Dia base quarry, French Lick Granite Company, St. Peters, Chester County, Pa."



Pennsylvania Flagstone Yard at Meshoppen, Wyoming County, showing storage and large flag on crane.

*(photo caption)* "Pennsylvania flagstone yard at Meshoppen, Wyoming County, showing storage and large flag on crane."

*(Continue to the next page for links to more historical information about the quarrying and use of stone in Pennsylvania.)*

I have not created the Pennsylvania stone quarry section of our web site, Stone Quarries and Beyond, although, below are some links on the historical stone building industry and the use of stone in Pennsylvania, visit the following links.

*Peggy B. Perazzo, Stone Quarries and Beyond*

***The Building Materials of Pennsylvania, I. Brownstones***, by Thomas C. Hopkins, M.S., M.A., Asst. Prof. of Economic Geology in the Pennsylvania State College, Appendix to the Annual Report of Pennsylvania State college for 1896.  
[https://books.google.com/books?id=M7RIAAAAMAAJ&dq=pennsylvania+quarry&source=gbs\\_navlinks\\_s](https://books.google.com/books?id=M7RIAAAAMAAJ&dq=pennsylvania+quarry&source=gbs_navlinks_s)

**“Slate-Making in Pennsylvania,”** in *The Manufacturer and Builder*, Vol. 16, Issue 11, November 1884.  
[http://quarriesandbeyond.org/articles\\_and\\_books/pdf/slate\\_making\\_in\\_pennsylvania\\_manufacturer\\_and\\_builder\\_nov\\_1884.pdf](http://quarriesandbeyond.org/articles_and_books/pdf/slate_making_in_pennsylvania_manufacturer_and_builder_nov_1884.pdf)

**“Peach-Bottom Slate,”** (York County, Pennsylvania), *The Manufacturer and Builder*, Vol. 22, Issue 10, October 1890.  
[http://quarriesandbeyond.org/articles\\_and\\_books/pdf/peach-bottom\\_slate\\_york\\_co\\_pennsylvania\\_manufacturer\\_and\\_builder\\_oct\\_1890.pdf](http://quarriesandbeyond.org/articles_and_books/pdf/peach-bottom_slate_york_co_pennsylvania_manufacturer_and_builder_oct_1890.pdf)

### **Pennsylvania Quarries:**

**“Pit and Quarry: The Cement and Slate Landscapes of Pennsylvania,”** by Frank Matero, Fall 2015, on the Scenario Journal web site.  
<http://scenariojournal.com/article/pit-and-quarry/>

**“Newell Creek #2 quarry Pennsylvania flagstone(bluestone)”** – YouTube video, by Cimarron Westfolk, <https://www.youtube.com/watch?v=1VJdorEU6yU>

### **Pennsylvania Architecture:**

***Stone Houses of Eastern Pennsylvania***, Mar 4, 2013, on the OldHouse online web site.  
<https://www.oldhouseonline.com/articles/stone-houses-of-eastern-pennsylvania>

***The Minerals Of Brinton’s Quarry, Chester County, Pennsylvania***, by Hugh E. McKinstry, in “The American Mineralogist,” pp. 57-62.  
[http://rruff.info/doclib/am/vol1/AM1\\_57.pdf](http://rruff.info/doclib/am/vol1/AM1_57.pdf)

Hamburg, Pennsylvania – ***Historical and Architectural Tour of Downtown Hamburg, Pennsylvania.***  
[https://www.schuylkillriver.org/Resources/3873/Hamburg\\_walking\\_tour.pdf](https://www.schuylkillriver.org/Resources/3873/Hamburg_walking_tour.pdf)

Lancaster, Pennsylvania – ***Lancaster’s Rich and Varied Architecture***, on the Lancaster PA Changed America web site.  
[http://visithistoriclancaster.com/history\\_art/lancasters\\_architecture](http://visithistoriclancaster.com/history_art/lancasters_architecture)

***Walking Tour of West Chester’s Downtown Historical Landmarks***, by Malcolm Johnstone, April 5, 2017, on the West Chester web site.  
[http://www.downtownwestchester.com/view\\_program.php?id=486](http://www.downtownwestchester.com/view_program.php?id=486)