



Technical Bulletin #5

NATIONAL SLATE ASSOCIATION

Technical Bulletin No. 5: Historic Production Data – Quantity and Value of Roofing Slate Sold in the United States, 1866-1979

Introduction

This Technical Bulletin pulls together information from various sources in an attempt to provide a meaningful window into the long and venerable history of the United States roofing slate industry. Various tables and figures present the quantity of U.S. roofing slate production for the period from 1866 to 1979. Roofing slate output peaked, in terms of both quantity and value, during the late nineteenth century and early twentieth century, roughly from 1897 to 1914. The highest production came in 1902, with 1,435,168 squares sold. In 1915, output fell below 1 million squares and continued in a protracted, fairly steady, decline through to the 1970s. The primary forces behind the rise, and subsequent decline, of the industry are presented.

More than just a concise source of historical documentation and past trends and events, it is hoped this Bulletin will be useful as a guide for strategic planning and marketing efforts to help move the industry for-

ward. For example, the history of the steep-slope roofing industry’s attempts to emulate and compete with slate are discussed. The historic data indicate that slate shingles represented 7.2% of the wood shingle roofing market from 1904-1932 and 3.5% of the asphalt shingle market in 1939. The point being, there always have been (and always will be) products to compete with and attempt to imitate slate roofing. Consequently, the data suggests that, rather than spend time and financial resources trying to discredit “synthetic slate” and composite materials (that have been around in one form or another for well over one hundred years), the slate industry might be better served by focusing its resources on educating and addressing the current natural slate market of institutional, high-end residential, and restoration markets. Another observation inferred from the historical record is that, rather than continuing intra-industry competition, the slate industry would do well to band together, speak with one voice, and promote one product – the best

roofing material yet discovered, natural slate shingles.

Historic production data for the roofing slate industry is presented in eight Tables and three Figures as follows:

Table 1: Total Quantity (Squares) of Roofing Slate Sold by Producers in the United States, by State, 1866-1979.

Table 2: Quantity and Value of Roofing Slate Sold by Producers in the States of Maryland and Pennsylvania, 1879-1957.

Table 3: Quantity and Value of Roofing Slate Sold by Producers in the States of New York and Vermont, 1879-1957.

Table 4: Quantity and Value of Roofing Slate Sold by Producers in the States of Maine and Virginia, 1879-1957.

Table 5: Quantity and Value of Roofing Slate Sold by Producers in the



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States of New Jersey and Georgia, 1880-1957.

Table 6: Quantity and Value of Roofing Slate Sold by Producers in the States of Arkansas and California, 1889-1957.

Table 7: U.S. Roofing Slate Production, Quantity and Percent Output, by State, 1879-1957.

Table 8: Operators of Roofing Slate Quarries, By State, 1925-1933.

Figure 1: Total Quantity of Roofing Slate Sold by Producers in the United States, 1879-1979.

Figure 2: Percent Output of Roofing Slate, by State, 1879-1957.

Figure 3: Quantity of Roofing Slate Sold by Producers in Pennsylvania, New York/Vermont, and Virginia, 1879-1957.

Tables and Figures are presented at the end of this Bulletin. Table 1 is a summary of the data presented in Tables 2-6 for the quantity of roofing slate produced. Table 7 presents the total production of each state as a percentage of total U.S. production. Figure 1 graphically presents the data in Table 1. Figure 2 graphically presents the data in Table 7. Figure 3 graphically summarizes the output of the three largest slate districts in the U.S. All values shown are Free on Board (F.O.B.) at the point of shipment.¹ Dollar values are as reported in the year of production and have not been indexed for inflation. Blank spaces mean no data was available for that year. Similarly, where the number of quarry operators is given, but the quantity and

value of slate produced is left blank, no data was available.

Note that the Tables present the quantity and value of roofing slate only (rather than all types of slate) sold in the United States only (rather than North America). Production data for slate mill stock, granules, and flour is not presented. It should be noted that some quarries and some quarry districts specialized in non-roofing slate production. The production of the Monson District of Maine, for example, was particularly well-suited for “electrical slate” (for such things as switchboards). The total quantity and value of slate (roofing and mill stock) produced in Maine was, therefore, much higher than reported herein. Published data for roofing slate production in Canada² is spotty and the raw data not readily available.

In the Early years, from roughly 1879 to 1892, many of the quantities and values end in “000,” suggesting that some degree of rounding must have taken place. During World War I and on through the early 1920s, production was largely aggregated, except for that of Pennsylvania, which was reported separately. It is not known why this was the case. After 1957, slate production became too small a part of the mineral industry and was no longer reported by state of origin by the U.S. Bureau of Mines. After 1979, it is increasingly difficult to track U.S. slate production as it is variously combined with other types of stone and quantities are reported in tons, rather than squares.

Sources

Sources for the production data contained in the Tables are as follows:

1866: Parrish, R.A. “A Statistical and Geological Report Upon the Slate

Trade of the United States,” *American Journal of Mining*, 26 January 1867, p.278.

1870: *Ninth Census of the United States*, Vol. 3, “The Statistics of the Wealth and Industry of the United States.” Washington, D.C.: U.S. Department of the Interior, Census Office, 1872.

1879-1913: Dale, T. Nelson, and others. *Slate in the United States*, Bulletin 586. Washington, D.C.: U.S. Department of the Interior, United States Geological Survey, 1914, pp.194-200.

1887-1920: Bowles, Oliver. *The Technology of Slate*, Bulletin 218. Washington, D.C.: U.S. Department of the Interior, Bureau of Mines, 1922, p.21.

1914-1923: Schanz, John C., “Historical Statistics of Pennsylvania Mineral Industries, 1759-1955,” *Bulletin of the Mineral Industries Experiment Station*, Bulletin 69, Mineral Conservation Series. University Park, Pennsylvania: The Pennsylvania State University, College of Mineral Industries, 1957, pp.57-60.

1921-1979: “Slate,” *Mineral Resources of the United States {Minerals Yearbook starting in 1932}*, Part 2, Nonmetals. Washington, D.C.: U.S. Department of Commerce, Bureau of Mines, 1927-1980.

Slate Districts

The principal commercial slate producing districts in the United States have been, and for the most part continue to be, located along the Appalachian Mountain chain. These include the Monson District, Piscataquis County,



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Maine; the New York/Vermont District, including Washington County, New York and Rutland County, Vermont; the Hard-Vein and Soft-Vein districts of Pennsylvania, including parts of Lehigh and Northampton counties; the Peach Bottom District, incorporating parts of Lancaster and York counties, Pennsylvania and Harford County, Maryland; and the Buckingham County (Arvon) and Albemarle County districts of Virginia. Between 1879 and 1957, quarries in these regions produced approximately 94 percent of total U.S. roofing slate output (see Table 7 and Figure 2). Figure 3 summarizes roofing slate production in the three largest districts – Pennsylvania, New York/Vermont, and Virginia – with Pennsylvania surpassing all others. From roughly the mid-1920s to the early-1930s, data collected by the U.S. Bureau of Mines included the names and, at least early-on, the addresses and type of stone produced by the operators of quarries in the various districts.³ These quarries, along with their year(s) of operation are listed in Table 8 as a sampling of roofing slate producers in the U.S. during this period; a window into the real names of the producers behind all of the data presented herein.⁴

In addition to the individual producers of roofing slate, there existed slate dealers at the time, much like present day distributors. The slate dealers provided some magnitude of economies of scale as they bought, marketed, and sold the slate of several quarries/districts. Among the larger roofing slate dealers in the 1920s were the Vendor Slate Company, Easton, PA (selling the roofing slate of Pennsylvania and Vermont), John D. Emack Co., Philadelphia, PA (distributor of roofing slate from the Pennsylvania,

New York, and Vermont quarries), the Knickerbocker Slate Corporation, New York, New York (New York, Vermont, and Pennsylvania quarries), and the Bangor Structural Slate Company, Bangor, Pennsylvania (distributors of blackboard slate, slate for structural and sanitary purposes, but also roofing slate).⁵ The Bangor Slate Association, Bangor, Pennsylvania, took a somewhat different tact, certifying and trademarking the roofing slate of select quarries in Northampton County, Pennsylvania, primarily for marketing purposes.

Other districts were in operation sporadically, opening when demand was high and prices strong, only to close when demand slackened. These districts were located in Georgia, California, New Jersey, Tennessee, Arkansas, Michigan, Massachusetts, Utah, Colorado, and a handful of other states. For more information on these slate deposits, please see NSA's *Technical Bulletin No. 3*, "Lesser Known Slate Deposits of the United States."

Production Trends

Roofing slate production began in the United States in 1734 when two brothers, William and James Reese quarried slate on their property located on the Maryland/Pennsylvania border and installed it on their house. Commercial production did not begin until 1785, also in the Peach Bottom district, and grew slowly at first, with production limited to that which could be consumed in local markets. The advent of the railroads in the 1840s spurred commercial slate production in most, if not all of the eastern districts – Maine, Vermont, New York, Pennsylvania, and Virginia.⁶

The meteoric rise in slate production from the mid-nineteenth century to

the early twentieth century (see Table 1) can be attributed, in the main, to the following:

- Population growth and the increasing demand for housing.⁷
- Growing concerns about fire safety, especially in urban centers
- An increase in the number of immigrants from foreign slate districts possessing the skills necessary to quarry and install slate shingles (e.g., the number of inhabitants from Wales living in the U.S. more than tripled in the latter half of the nineteenth century, from 29,868 in 1850 to 100,079 in 1890.⁸
- Lack of significant competition from other roofing products. Wood shingles of various types (pine, oak, cedar) were slate's main competitor during the first half of the nineteenth century. Metal, specifically terne metal, was not available in sheets larger than 14" x 20" until the 1870s, when technology advanced to allow the manufacture of 20" x 28" sheets. Clay tile became a potent competitor in the mid-nineteenth century, followed by concrete tile in the early twentieth century.
- The popularity of architectural styles with steep roof slopes in which the roof covering played a prominent role in the overall aesthetic by way of the use of colors and shapes. Such styles included Gothic Revival, Second Empire, Queen Ann, and Tudor. In addition to architectural style guides, images contained within contractor advertisements in trade magazines track the changing tastes in popular architectural styles.
- Quarrying advances, such as the introduction of the steam stone channeling machine in 1863 and



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electrification of the quarries and quarrying machines beginning in the late 1890s or early twentieth century.⁹

- The inherent properties of slate that make it suitable as a roofing material – durability, long service life, low-maintenance.

Table 1 shows total roofing slate production in the U.S. at 47.7 million squares between 1879 and 1979. That's a lot of slate, but how does that compare with the total steep-slope roofing market? It's hard to say, primarily because total steep-slope production figures are not readily available for this period. Two clues suggest that slate shingles have never represented a majority of the total steep-slope roofing market. First, total U.S. wood shingle production for the years 1904-1932 equaled 329,554,679 squares.¹⁰ The total quantity of slate shingles produced during this same time period was 23,794,099 squares, or 7.2 percent of that of wood shingles. Second, in 1939, 11.2 million squares asphalt shingles were manufactured compared to just 399,320 squares of roofing slate. Slate shingle sales thus represented approximately 3.5% of asphalt shingles sales in that year.¹¹

Figure 1 graphically shows the total quantity of U.S. roofing slate production for the period from 1879 to 1979 to more clearly illustrate trends in production. Roofing slate output peaked, in terms of both quantity and value, during the late nineteenth century and early twentieth century, roughly from 1897 to 1914, during which time there were over 200 quarries in operation in 13 states. The absolute peak came in 1902, with 1,435,168 squares sold. In 1915, production fell below 1 million

squares and continued in a long, fairly steady, decline through to the 1970s.

Periods of major U.S. economic recessions are overlaid on the graph shown in Figure 1. Generally, these recessions are short-lived and appear to be relatively minor blips in roofing slate production, except of course, for the Great Depression (October 1929-1933), when the entire U.S. economy, including the construction sector, declined dramatically. The Great Depression was bookended by World War I and World War II, both of which adversely impacted the roofing slate industry. In the lead-up to both world wars, and especially WWII, rigid curtailment of private residential development and small demand for slate in the types of defense-housing needed, hampered the industry. The same was true during the war years, when slate quarrying was, for the most part, deemed an unessential industry. Lack of demand was compounded by a lack of labor to man the quarries and install the product on roofs. Toward the end of WWII, the U.S. Bureau of Mines warned, in 1944, that the slate industry may not be able to take advantage of the predicted post war construction boom due to the fact that "some quarries will be abandoned permanently because they cannot be dewatered and reconditioned profitably."¹²

In fact, the data shows a little bit of a post-war spike in slate sales, from 1945-51, but, in retrospect, this can be seen as the slate industry simply being pulled along by an enormous surge in overall construction. Lurking behind the scenes, and what is evident in the post-1951 data, are structural issues within the construction industry that simply could not be overcome by roofing slate producers. Slate roofing sales were hurt by a

lack of skilled manpower to install the product and an overwhelming demand for quickly-constructed, low-cost, subdivision housing units, a market not well suited for natural slate shingles. Sales of manufactured roofing materials, thus cut deeply into the market formerly held by natural slate. In 1947, for example, 87.4 million squares asphalt shingles were shipped compared to just 170,590 squares of roofing slate.¹³ Strikes in some of the quarries in 1948 did not help the industry's recovery.

Weathering the unparalleled difficulties brought on by WWI, the Great Depression, and WWII hampered the roofing slate industry. These global events hurt many other industries as well. Some recovered, some did not. Aside from two major wars and an economic depression, there were underlying factors that contributed to, or perhaps caused, the decline in roofing slate production after 1914. Chief among these are the following:

- Lack of standard sizes. Apparently, standardization of sizes did not occur until 1924, most likely under the leadership of the National Slate Association. Standardization of thickness was also an issue as reported in 1916; "... failure to recognize a certain minimum thickness for slates has been unfavorable to the industry; that some producers are in the habit of splitting their slates too thin; and that the insistence by architects and the general public on thicker slates would result in less breakage. . . The minimum thickness suggested is three-sixteenths of an inch for the strongest slates and fully a quarter of an inch for the common slates of somewhat less strength. The growing demand



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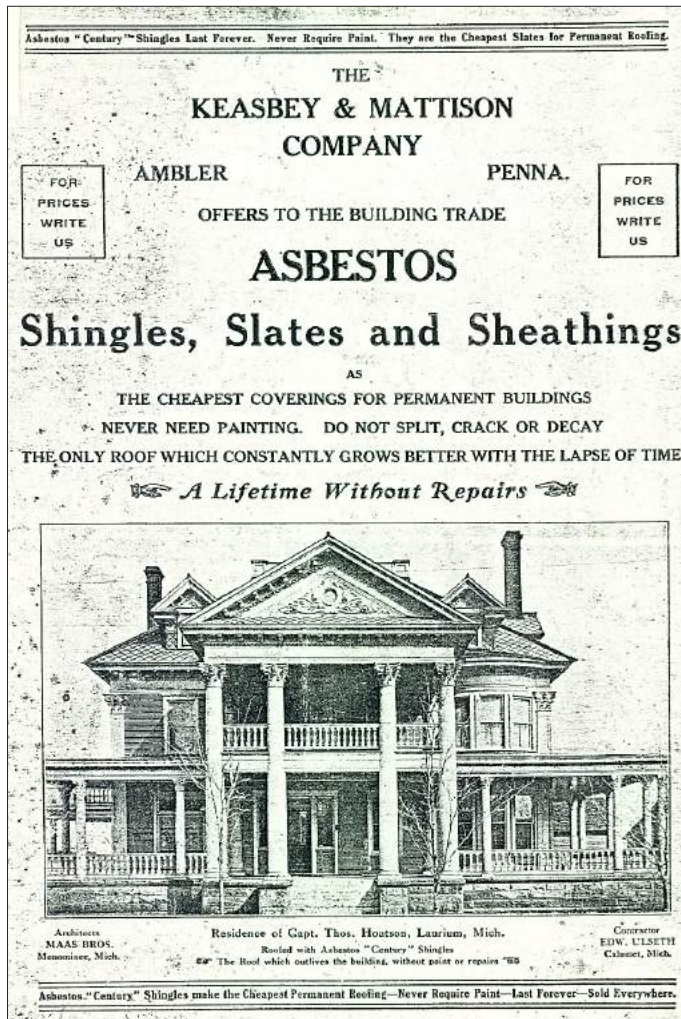


Figure 3. In the lower right, the advertisement states “Last Forever – Sold Everywhere.” (Source: Hagley Museum and Library, Wilmington, DE, Trade Catalogue, c.1906.)

for thicker slates to produce rough effects should assist in the development of this industry.”¹⁴

- Competition from other products, primarily “composition” (now called asphalt) shingles, but also from clay tile, asbestos-cement shingles (see Figure 3), wood shingles and shakes, and metal roof systems.
- The inability to adopt mass-production techniques. Whereas asphalt shingles could be purchased on demand at building supply houses across the nation, delivery times for slate shingles were measured in weeks,

or even months. To be fair, some advances in production were made. Wire saws, inserted-tooth saws equipped with barium and “carboly”-tipped teeth, traveling cranes, equipping derricks with roller bearings, pneumatic auto-rotation plug drills (see Figure 4), and productivity studies were all researched and introduced. In the end, however, these advances were not enough and roofing slate had difficulty competing with lower-priced products. This changed the market for slate shingles from vernacular buildings to high-end building construction, where the enduring qualities and architectural merits of slate roofing could be best realized.

- The large proportion of waste material in the quarrying and fabrication of slate shingles (70 to over 90 percent of gross production) hurt productivity, this despite numerous efforts by private and public entities to figure-out what to do with the waste material. In the ultimate irony, slate granules for many years served as the coating material for composition roofing, roofing slate’s chief competitor starting in the early twentieth century (see Figure 5).
- The general downturn in construction during the Great Depression furthered the slate industry’s decline. It also dampened steps toward progress taken by others, namely the National Slate Association and the then Committee D-16 on Slate of the American Society for Testing Materials, which had sponsored research and development of the testing and specification of slate products.

• Changing architectural styles, perhaps most notably the increasing use of flat (low-slope) roofs on non-residential buildings, such as schools and other public buildings, put a drag on a market in which slate formerly did quite well.

• The lingering effects of unfair trade practices, which apparently had been going on for some time.¹⁵ Hope for a “new era” in the slate industry came in November, 1933 with the start of hearings in Washington, D.C. on the “Code of Fair Competition for the Slate Industry.” The hearings were the result of numerous discussions held under the auspices of the National Slate Association. The Code, formally adopted on January 22, 1934,



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"Jackhammer" at work Drilling Horizontal Holes at the Diamond Slate Co.'s Quarry, Pen Argyr, Pa.

"JACKHAMER"

An Automatic Rotation Plug Drill

Do you know what it means to twist a heavy plug drill back and forth all day, in hand rotation? Try it ten minutes—and you'll understand why a driller gets tired toward noon or night. That means lost footage and lost money for you.

With the "Jackhammer," on the contrary, all he has to do is guide and steady the drill—the drill rotates its own steel. Your man likes that and it means more work per shift.

There are other valuable "Jackhammer" features. It's an "all-steel" drill—except its wood handles. It has an automatic offer. It is the fastest running, hardest hitting, quickest drilling, longest lasting plug drill ever built.

It is fine for all plug drill work—in many cases takes the place of a regular rock drill—it is fine for sinking. Better learn more about the "Jackhammer."

NEW YORK **INGERSOLL-RAND CO.** LONDON
OFFICES THE WORLD OVER

Compressors Rock Drills Channelers Stone Tools

Figure 4. Ingersoll-Rand Co.'s pneumatic auto-rotation plug drill shown in operation at the Diamond Slate Co.'s quarry, Pen Argyr, Pennsylvania, c.1913. The Wonder No. 65-A auto-rotate pneumatic drill by the Hardsocg Wonder Drill Co., Ottumwa, Iowa also seems to have been adopted by the slate quarries. (Source: *Stone*, Vol. 34, No. 12 (December 1913): p. back cover.)

was supposed to help mitigate unfair trade practices within the industry, such as selling below cost, marketing misrepresentations, and rebates.¹⁶ The next step was to be the development of a standard cost accounting system as an aid to producers in determining fair prices. Lack of further reporting on the issue suggests the effort lost momentum as some point.

- Mis-guided efforts at alternative installation methods.

This bird-eye view shows the towns of Merchantville, Maple Shade, Lenola, and Moorestown, N. J., near Philadelphia, Pa. Two out of every three of these homes are roofed with Ruberoid Shingles—indicated in red.

Two Out of Three Are Ruberoid

IN the suburbs of Philadelphia are the four towns of Merchantville, Maple Shade, Lenola, and Moorestown, N. J. They cover an area of five square miles and contain eighteen hundred homes. Two out of every three of these homes are roofed with Ruberoid Shingles.

This is a striking, but not unusual, demonstration of the fact that the quality, appearance, and prices of Ruberoid Shingles appeal strongly to home owners.

In Ruberoid Shingles and Roofings you find a wide variety from which to make selection—eight different styles of asphalt shingles surfaced with green, red, steel-blue or purple slate; and five different grades of smooth-surfaced and mineralized roll-roofings.

Near you is a lumber or building supply dealer who sells Ruberoid products. Ask him about them, or use the coupon below.

The RUBEROID Co. Dept. 1
55 Madison Ave., New York
Cut out and use information regarding the Ruberoid Products checked below:

Chicago New York Boston

RUBER-OID

SHINGLES ROOFING

Name _____
Address _____

Figure 5. Note the use of "green, red, steel-blue or purple slate" for surfacing the shingles. Note also that individual shingles are still being sold, as well as strip shingles. (Source: *American Builder*, Vol. 40, No. 5. Chicago, Illinois: American Builder and Carpenter Co. (February 1926): p.215.)

In 1940, and again in 1942, new methods of laying slate were introduced. These were said to reduce the weight of the material, install faster, and reduce the cost of a slate roof compared to slate shingles laid "according to the American method" (the traditional way). The new methods made use of "a single lap" and "heavy coated asphalt roofing" interlays and provided hope for reviving the market demand for slate (Figure 6). Although unreported, the interlays almost certainly



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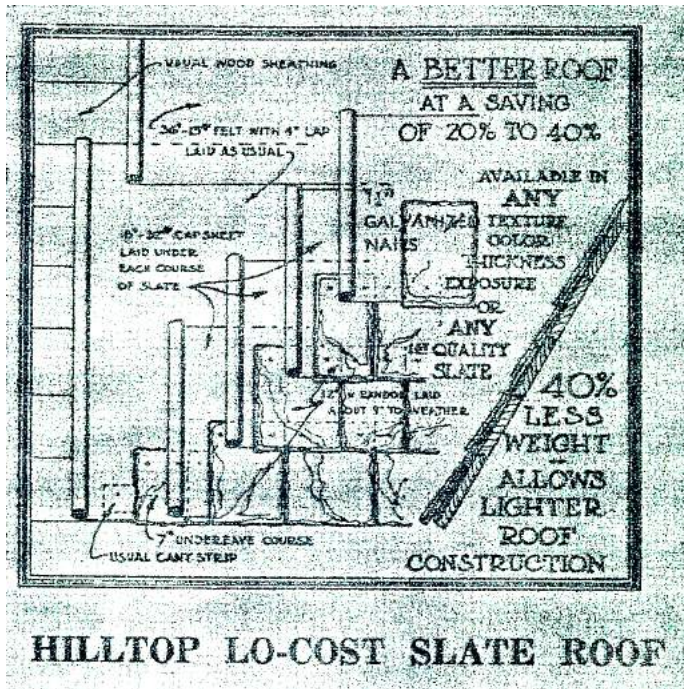


Figure 6. “A Hilltop Lo-Cost Slate Roof.” The original caption for the figure reads: “The drawing above shows a simple method of application for a water-tight roof. Nail heads are covered by both roofing felt and slate.” Note that there is no headlap. Rather the slate is laid “about 9” to the weather” and “8# to 32# cap sheet laid under each course of slate.” Thus, the only protection from the weather in the middle of the bond lines is two or three layers of felt. (Source: *Hilltop Slate Company, Manufacturers of Life-Long Products*. Middle Granville, New York: Hilltop Slate Company, 1948. P.37.)

keting campaign. Various other types of roofing, among them synthetic products (that could be manufactured at lower cost) were much more widely advertised than slate in the post-WWI years. By 1947, gross sales of asphalt shingles were on the order of 500 times that of roofing slate.

failed, and with them the reputation of an extraordinary product.

- Transportation and freight rates remained a hindrance to the wider distribution of roofing slate. Unlike manufacturing plants, the location of slate quarries is determined solely by geology. Freight rates were prohibitive for long-distance shipments. Abundant raw materials of suitable quality for roofing purposes was located in the mid-Atlantic and New England regions, with much of the output concentrated in the Pennsylvania districts (see Table 7 and Figure 2). Not surprisingly, statistics gathered by the Bureau of Mines in the late-1920s indicated that the vast majority of slate produced was sold in markets located in the mid-Atlantic region (59% in 1926; 62% in 1927; 70% in 1928; 66% in 1929). By way of comparison, in 1939 there were approximately 91 roofing slate quarries operating in five states versus over 90 plants in 25 states manufacturing asphalt shingles.¹⁷ The wide availability of asphalt shingles contributed to their extensive use.

- Marketing challenges. “The potential market for roofing slate is enormous, but the industry has made little progress in developing the market.”¹⁸ So said the Bureau of Mines in 1942. At issue was the fact that no individual quarry had sufficient output to marshal a national mar-

- Workmanship problems: Lack of skilled labor and workmanship issues lead to defective roofs. Insufficient headlap, improper nailing, and other dubious application processes did much to hinder the more general use of slate. Producers and their distributors did not help themselves in this regard, promoting the dubious proposition that “Any Good Carpenter Who Can Lay [composition, aka asphalt] Shingles Can Put On Slate” (see Figure 7).¹⁹ Trade notes and trade publication articles addressing the differences in installation practices between asphalt shingles and slate, and the indifference of slate operators to the manner in which their product was being installed were frequent in the early part of the twentieth century.²⁰

- Grading issues: Varying slate grades was particularly problematic in the Pennsylvania Soft-Vein region (the nation’s largest producer of roofing slates), where so-called “ribbon slate” was prevalent. Pennsylvania ribbon slate contains dark black bands of varying width running diagonally across the face of the shingles. The ribbons contained carbonaceous impurities and tended to deteriorate prematurely, whether on the exposed or unexposed portion of the slate. Failure to properly disclose the issue, injured the reputation of all slates.²¹ (Note: The use of ribbon slate for roofing purposes was stopped long ago.)

In the end, substitute roofing materials, most notably asphalt shingles, could be mass-produced, transported, and



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SLATE makes the BEST ROOF in the World

Lasts longer than the house. A slate roof is the handsomest, the safest, the most economical, and remember, it reduces the cost of insurance.



SLATINGTON-BANGOR SLATE SYNDICATE.
SLATINGTON, PA.

SLATE
NATURAL SLATE BLACK BOARDS AND SLATERS SUPPLIES

Any Good Carpenter Who Can Lay Shingles Can Put On Slate

WE ARE AFTER ORDERS and can do business at any place in the U.S., no matter how near or far, and when desired can name the cost delivered at any railroad station



We guarantee satisfaction and assure you that you will promote your own interests by corresponding with us before placing orders.

Write for **"FOOTE'S SLATE TALK"** Magazine for July Mailed Free

James I. Foote
Gen'l. Manager and Treasurer
Slatington, Pa.

Figure 7. This advertisement appeared in *Building Age* magazine in 1910, downplaying the need for skilled labor to install slate shingles.

installed at less cost than slate, and were more widely advertised as well.

Today, slate shingles represent approximately four percent of the total, multibillion dollar, domestic steep-slope roofing market.²² That steep-slope roofing market has grown, and with it the roofing slate industry. More widely available design information, well-grounded alternative installation techniques, general interest in traditional materials and historic preservation, and advances in quarrying and fabrication are all helping to propel the industry forward. Currently, the primary markets for natural slate roofing appear to be high-end residential and institutional clients, and the restoration market. Slate shingles are a weatherproof, attractive, and unusually enduring roofing material, and always will be. High quality North American roofing slate with a 100+ year expected service life is still available for those who wish to build for the long-term.

Endnotes

¹That is, the buyer had liability for any potential loss during transit, thereby requiring the buyer to purchase insurance to protect the shipment.

²See Cullen, Mary. *Slate Roofing in Canada*. Ottawa, Ontario: National Historic Parks and Sites, Parks Services, Minister of the Environment, 1990, pp.23-26.

³The Bureau of Mines listed the principal producers of slate, "many smaller producers being omitted."

⁴Table B lists producers of roofing slate only. Quarries involved only in the production of slate granules (for the coating of asphalt shingles), slate flour (for use in the production of Linoleum, paint, and wall finishes), and mill stock used in structural and sanitary work, for electrical purposes, landscaping, flooring, and in billiard-table tops, although in the Bureau of Mines data, are not listed.

⁵Behre, Charles H., Jr. *Slate in Northampton County Pennsylvania*, Bulletin M 9. Harrisburg, PA: Pennsylvania Geologic Survey, Department of Forests and Waters, 1927, p.125.

⁶Railroad mileage operated increased from 2,818 miles in 1840 to 351,767 miles in 1910. (Source: *Historical Statistics of the United States, Colonial Times to 1970*, Bicentennial Edition, Vol. 2. Washington, D.C.: U.S. Department of Commerce, Bureau of the Census, 1975, pp.727-731.

⁷U.S. resident population grew almost six-fold between 1840 and 1914, from 17.1 million to 99.1 million. Total annual expenditures for new construction in the private nonfarm residential building sector, including additions and alterations, grew from \$89.1 million in 1889 to \$1.187 billion in 1914. (Source: *Historical Statistics of the United States, Colonial Times to 1970*, Bicentennial Edition, Vols. 1 and 2. Washington, D.C.: U.S. Department of Commerce, Bureau of the Census, 1975, p.8 and p.623.

⁸*Tenth (Eleventh) Census of the United States*, Vol. 1, *Population*. Washington, D.C.: U.S. Department of Commerce, Census Office, 1884 (1894).

⁹Technological advances in the quarries were widely reported at the time. For example, in 1900 it was reported that "Norton Brothers, of Briar Hill, Granville, N.Y., are putting in electrical machinery at their quarries to operate the derricks." (Source: "The Slate Trade," *Stone, A Monthly Publication Devoted To The Stone Industry In All Of Its Branches*, Vol. 21, No. 3. New York, New York: Stone Publishing Company (September 1900): p.267.) The Pennsylvania quarries were generally slower to adopt new technologies, but in 1913 it was reported "Electricity is supplanting steam motive power in the slate

quarries of the Slatington district, much to the satisfaction of the operators. The quarries of Snyder Bros., Pennsylvania Blackboard Company, Monarch Blackboard and Structural Slate Company and the Blue Valley Slate Manufacturing Company are supplied with power. . . The operators find electricity more satisfactory to run the pumps, the hoists and even to run the machines that cut the stone into sizes of blocks." (Source: "Slate," *Stone*, Vol. 34, No. 2 (February 1913): p.96.)

¹⁰*Sixteenth Census of the United States*, Vol. 2, Part 1, *Reports by Industries*, "Lumber and Timber Basic Products." Washington, D.C.: U.S. Department of Commerce, Bureau of Census, 1942.

¹¹Snoke, Hunter R., "Asphalt-Prepared Roll Roofing and Shingles," *Building Materials and Structures*, Report BMS70. Washington, D.C.: U.S. Department of Commerce, National Bureau of Standards, 1941, p.2.

¹²"Slate," *Minerals Yearbook of the United States*, 1944, Part 2, Nonmetals. Washington, D.C.: U.S. Department of Commerce, Bureau of Mines, 1946.

¹³Slate shingle sales thus represented approximately 0.2% of asphalt shingles sales in that year. Source: "Slate," *Minerals Yearbook of the United States*, 1947, Part 2, Nonmetals. Washington, D.C.: U.S. Department of Commerce, Bureau of Mines, 1949.

¹⁴"Depression in the Slate Industry," *Stone*, Vol. 37, No. 7 (July 1916): p.369. Note that the thicknesses mentioned were indeed promulgated as "Commercial Standard Thickness" in the National Slate Association's 1926 publication, *Slate Roofs*.

¹⁵In early 1896, for example, it was reported that "The main trouble has been low prices and lack of profits in transactions. This has been brought about by competition engendered during the era of depression (likely the depression of 1893-94; see Figure 1) while business was less. Instead of doing that little [production] at proper prices the greedy sought to arrogate to themselves more than their share by cutting prices. Such competition, of course, was met, in some instances exceeded. As a consequence prices were shattered and profits destroyed." (Source: "Notes From Quarry and Shop," *Stone*, Vol. 12, No. 2 (January 1896): p.182.) The Note goes on to state that consumer confidence was damaged by the price cutting, as purchasers wondered whether they could have bought at even lower rates. In 1922, Oliver Bowles, a well-known slate geologist and advocate for the slate industry, stated that the slate industry had been "plagued" by the tendency of some producers to underbid the competition and even sell at a loss, this leading to instability in the

market and improper classification and representation on the part of salesmen of the material. "Slates are of different grades. Selling of a low grade where a highest quality is demanded is detrimental. More rigid classification and standardization of both roofing slate and structural slate could help to popularize the industry." (Source: Bowles, Oliver, "The Marketing of Slate," *Engineering and Mining Journal-Press*, No. 114 (November 1922): p.855.)

¹⁶"Slate," *Minerals Yearbook of the United States*, 1934, Part 2, Nonmetals. Washington, D.C.: U.S. Department of Commerce, Bureau of Mines, 1934.

¹⁷Snoke, Hunter R., "Asphalt-Prepared Roll Roofing and Shingles," *Building Materials and Structures*, Report BMS70. Washington, D.C.: U.S. Department of Commerce, National Bureau of Standards, 1941, p.2.

¹⁸"Slate," *Minerals Yearbook of the United States*, 1942, Part 2, Nonmetals. Washington, D.C.: U.S. Department of Commerce, Bureau of Mines, 1943. It is not that the industry did not try to muster efficient selling and advertising campaigns for slate roofing. For example, an attempt was made in 1928 to establish joint marketing agencies to help bring about better contacts between producers and roofing contractors. These agencies - the Unfading Roofing Slate Company of Fair Haven, VT, the Vermont Weathering Green Slate Co. of Granville, NY, and the Pennsylvania Institute of Pen Argyl, PA - were short-lived (dissolved by the early 1930s) and fell victim to lack of cohesiveness within the slate industry. In hindsight, three agencies competing to sell the same product was bound to limited progress for the industry as a whole.

¹⁹*Building Age*, Vol. XXXII, No. 7. New York, July 1910, p.1.

²⁰Oliver Bowles, for example, stated the following in 1922: "Some 'irresponsible' roofers reduce requisite headlap below three inches or otherwise improperly lay the slate; the resulting defective roofs have done much to retard growth." (Source: Bowles, Oliver, "The Marketing of Slate," *Engineering and Mining Journal-Press*, No. 114 (November 1922): p.855.)

²¹Snoke, Hunter R. and Waldron, Leo J., "Survey of Roofing Materials in the Northeastern States," *Building Materials and Structures*, Report BMS29. Washington, D.C.: U.S. Department of Commerce, National Bureau of Standards, 1939, p.19.

²²2015-2016 NRCA Market Survey, National Roofing Contractors Association, Rosemont, IL.



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Table 1
Total Quantity (Squares) of Roofing Slate Sold by Producers
in the United States, by State, 1866-1979

YEAR	MARYLAND	PENNSYLVANIA	NEW YORK	VERMONT	MAINE	VIRGINIA	NEW JERSEY	GEORGIA	ARKANSAS	CALIFORNIA	OTHER (C)	TOTAL
1866 (a)											218,320	218,320
1870 (b)												
1879	8,000	245,500	9,000	83,300	14,000	8,057						367,857
1880	12,280	271,313	19,850	108,891	26,200	11,500	4,683	1,000			1,550	457,267
1881	12,000	272,000	19,000	109,370	25,200	12,000	3,000	500			1,000	454,070
1882	15,000	292,000	21,000	127,300	26,000	15,000	4,000	200			500	501,000
1883	15,000	325,000	10,200	110,000	30,000	10,000	1,000				5,000	506,200
1884	10,000	329,004		85,000	41,000	9,000					7,000	481,004
1885	14,500	331,160		130,000	34,000	17,300					10,000	536,960
1886	12,000	348,805		111,385	36,000	16,600					12,000	536,790
1887	20,000	370,439		120,000	37,000	19,000					7,000	573,439
1888	19,000	416,000		160,000	37,000	17,400	6,000				7,000	662,400
1889	23,099	476,038	16,767	236,350	41,000	30,457	2,700	3,050		3,104	3,060	835,625
1890	15,460	485,029	22,614	213,799	43,145	23,438					25,505	828,990
1891	25,166	507,824	17,000	247,643	50,000	36,059	2,500	3,000	120	4,000		893,312
1892	24,000	550,000	20,000	260,000	50,000	40,000	3,000	2,500		3,500		953,000
1893	7,422	364,051	69,640	132,061	18,184	27,106	900	2,500			75	621,939
1894	39,460	411,550	7,955	214,337	24,690	33,955	375	5,000		900		738,222
1895	13,188	426,687	13,624	221,359	23,774	27,095	200	2,500		1,500		729,927
1896	15,557	431,324	16,002	155,523	23,078	26,863	200	4,597			160	673,304
1897	11,592	657,692	9,197	244,575	38,367	38,375	250			1,000	400	1,001,448
1898	18,332	571,256	7,160	241,762	29,834	43,745	200	3,450		400	100	916,239
1899	20,196	711,138	10,912	277,463	24,676	52,550	400	2,000		928	250	1,100,513
1900	27,158	788,571	7,713	282,820	21,771	56,365	3,600	2,500		3,500	50	1,194,048
1901	20,153	853,028	15,786	330,191	20,791	53,630	7,500	800		2,500		1,304,379
1902	22,569	908,206	21,165	400,029	26,468	42,731	8,000	1,000	500	4,500		1,435,168
1903	24,475	871,875	15,690	391,366	27,377	29,646	7,647		118	10,000		1,378,194
1904	22,628	778,825	10,022	361,126	20,789	31,852		1,000	1,750	5,600	165	1,233,757
1905	25,845	802,170	10,354	339,001	19,865	36,102	1,340	1,500	50	5,000		1,241,227
1906	25,288	755,966	10,788	354,134	18,498	39,068		1,000		10,000		1,214,742
1907	21,815	793,466	11,908	385,314	16,879	39,172	2,000			7,000		1,277,554
1908	18,521	825,078	18,485	402,258	20,151	41,678				7,000		1,333,171
1909	22,563	626,228	18,098	397,441	18,024	40,880				6,961	3,518	1,133,713
1910	14,529	777,190	17,618	395,640	16,708	31,787					7,149	1,260,621
1911	14,816	699,344	21,452	328,760	14,879	40,040					5,386	1,124,677



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Table 1(continued)
Total Quantity (Squares) of Roofing Slate Sold by Producers
in the United States, by State, 1866-1979

YEAR	MARYLAND	PENNSYLVANIA	NEW YORK	VERMONT	MAINE	VIRGINIA	NEW JERSEY	GEORGIA	ARKANSAS	CALIFORNIA	OTHER (C)	TOTAL
1912	18,236	716,770	27,024	373,638	16,640	42,220					2,760	1,197,288
1913	15,913	678,396	29,868	332,642	15,593	38,330					3,202	1,113,944
1914		614,863									404,690	1,019,553
1915		574,223									393,657	967,880
1916		531,342									304,531	835,873
1917		457,393									246,274	703,667
1918		211,196									168,621	379,817
1919		269,580									184,757	454,337
1920		220,366									175,864	396,230
1921		202,605									145,480	348,085
1922		283,365									195,878	479,243
1923		300,272									207,315	507,587
1924		249,450	10,974	168,083	5,313	31,706					3,867	469,393
1925		287,120	7,650	154,400		33,800					11,560	494,530
1926		263,668	11,093	148,926		31,172					11,041	465,900
1927		247,120	8,210	172,490		32,850					7,890	468,560
1928		256,540	21,040	161,280		37,000					7,420	483,280
1929		251,880	14,670	151,810	3,720	35,460					4,580	462,120
1930		194,700	3,740	108,580	5,130	24,040					3,950	340,140
1931		183,600	4,060	66,870	5,060	15,740					2,370	277,700
1932		86,500	2,050	43,260	2,280	7,870					2,450	144,410
1933		95,050	1,820	40,240	3,110	11,880					1,070	153,170
1934		84,690	4,760	30,220	3,580	13,750					10	137,010
1935		144,290	3,900	54,310	3,520	15,570				40		221,630
1936		235,780	5,300	89,460	5,590	29,890					110	366,130
1937		219,780	6,310	102,110	4,820	32,650					130	365,800
1938		195,560	2,780	83,490		34,440					5,770	322,040
1939		236,710	2,020	106,500	3,840	50,250						399,320
1940		216,020	2,900	86,270	2,950	38,990						347,130
1941		248,980	1,780	83,780	3,270	41,170						378,980
1942		125,950	2,200	41,850	1,130	20,940						192,070
1943		77,270	120			11,900					6,930	96,220
1944		70,220	140	9,770		8,960						89,090
1945		75,970		16,020		9,310						101,300
1946		113,490		20,010		13,290						146,790
1947		121,480	860	36,720		11,530						170,590



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Table 1(continued)
Total Quantity (Squares) of Roofing Slate Sold by Producers
in the United States, by State, 1866-1979

YEAR	MARYLAND	PENNSYLVANIA	NEW YORK	VERMONT	MAINE	VIRGINIA	NEW JERSEY	GEORGIA	ARKANSAS	CALIFORNIA	OTHER (C)	TOTAL
1948		146,860	3,730	50,700		17,360						218,650
1949		112,870	280	47,910		20,430						181,490
1950		124,280	800	46,940		25,550						197,570
1951		134,180	450	46,650		23,840						205,120
1952		93,200	600	35,190		16,650						145,640
1953		86,116	566	33,920		21,690						142,292
1954		77,819	242								39,668	117,729
1955		72,638	82								48,760	121,480
1956		56,924	171	24,872		25,087						107,054
1957		46,429	32								38,625	85,086
1958											86,000	86,000
1959											75,000	75,000
1960											66,000	66,000
1961											81,000	81,000
1962											79,000	79,000
1963											81,000	81,000
1964											88,000	88,000
1965											63,000	63,000
1966											61,000	61,000
1967											56,000	56,000
1968											50,000	50,000
1969											42,000	42,000
1970											58,000	58,000
1971											61,000	61,000
1972											31,000	31,000
1973											32,000	32,000
1974											37,000	37,000
1975											29,000	29,000
1976											26,000	26,000
1977											26,000	26,000
1978											22,000	22,000
1979											25,000	25,000
Total	645,761	28,567,262	651,222	10,927,109	1,000,894	1,823,766	59,495	38,097	2,538	77,433	4,119,418	47,912,995

(a) All states; a total of 203 quarries. Distribution unknown. Total value of \$1,531,740. Average price per square of \$7.02.

(b) Quantity of roofing slate unknown. Total value of \$1,311,492 produced by a total of 101 quarries.

(c) Includes Colorado, Massachusetts, Michigan, Tennessee, Utah, and undistributed production. The latter includes the output of Arkansas, California, Georgia, Maine, Maryland, New Jersey, New York, Vermont, and Virginia in certain years, when, for whatever reason, production by state could not be reported.



JANUARY 2019

Table 2
Quantity and Value of Roofing Slate Sold by Producers
in the States of Maryland and Pennsylvania, 1879-1957

YEAR	MARYLAND				PENNSYLVANIA			
	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE
1879		8,000	36,000	\$4.50		245,500	\$826,093	\$3.36
1880	7	12,280	56,700	4.62	30	271,313	862,877	3.18
1881		12,000	54,000	4.50		272,000	877,978	3.23
1882		15,000	67,500	4.50		292,000	1,002,000	3.43
1883		15,000	67,500	4.50		325,000	1,147,500	3.53
1884		10,000	45,000	4.50		329,004	1,162,560	3.53
1885		14,500	65,250	4.50		331,160	993,080	3.00
1886		12,000	54,000	4.50		348,805	979,415	2.81
1887		20,000	90,000	4.50		370,439	1,111,317	3.00
1888		19,000	85,500	4.50		416,000	1,270,400	3.05
1889	4	23,099	105,745	4.58	105	476,038	1,641,003	3.45
1890	5 (a) (b)	15,460	73,283	4.74	104 (b)(c)	485,029	1,668,501	3.44
1891		25,166	123,425	4.90	104	507,824	1,741,836	3.43
1892		24,000	114,000	4.75		550,000	1,925,000	3.50
1893	5	7,422	37,884	5.10	115	364,051	1,314,451	3.61
1894		39,460	150,568	3.82		411,550	1,380,430	3.35
1895		13,188	59,157	4.49		426,687	1,437,697	3.37
1896		15,557	70,194	4.51		431,324	1,391,539	3.23
1897		11,592	53,049	4.58		657,692	2,034,958	3.09
1898		18,332	80,786	4.41		571,256	2,097,735	3.67
1899		20,196	90,897	4.50	110	711,138	2,202,742	3.10
1900		27,158	126,271	4.65		788,571	2,277,192	2.89
1901		20,153	104,781	5.20		853,028	2,591,625	3.04
1902		22,569	117,155	5.19	84	908,206	3,001,545	3.30
1903		24,475	135,424	5.53		871,875	3,378,804	3.88
1904		22,628	131,245	5.80		778,825	2,922,259	3.75
1905		25,845	149,315	5.78		802,170	2,879,671	3.59
1906		25,288	129,965	5.14		755,966	2,710,249	3.59
1907		21,815	113,665	5.21		793,466	2,987,740	3.77
1908	6	18,521	101,204	5.46	102	825,078	3,070,906	3.72
1909	6	22,563	128,227	5.68	98	626,228	2,281,779	3.64
1910	4	14,529	77,791	5.35	104	777,190	2,809,593	3.62
1911	4	14,816	74,692	5.04	97	699,344	2,508,435	3.59
1912	4	18,236	90,993	4.99	93	716,770	2,528,791	3.53



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Table 2 (continued)
Quantity and Value of Roofing Slate Sold by Producers
in the States of Maryland and Pennsylvania, 1879-1957

YEAR	MARYLAND				PENNSYLVANIA			
	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE
1913	3	15,913	82,981	5.21	90	678,396	2,605,882	3.84
1914						614,863	2,463,944	4.01
1915						574,223	2,142,173	3.73
1916						531,342	2,056,324	3.87
1917						457,393	2,110,044	4.61
1918						211,196	1,161,545	5.50
1919			76,683		42	269,580	1,679,519	6.23
1920						220,366	1,746,026	7.92
1921						202,605	1,565,109	7.72
1922						283,365	2,076,585	7.33
1923						300,272	2,373,125	7.90
1924	3				54	249,450	2,020,986	8.10
1925	3				47	287,120	2,316,856	8.07
1926	3				43	263,668	2,127,782	8.07
1927	3				40	247,120	1,953,076	7.90
1928	3				39	256,540	2,033,588	7.93
1929	3				38	251,880	1,967,428	7.81
1930	2				36	194,700	1,470,669	7.55
1931	2				37	183,600	1,254,080	6.83
1932	2				36	86,500	492,917	5.70
1933	2				37	95,050	537,178	5.65
1934	1 ^(d)				34	84,690	585,973	6.92
1935	1 ^(d)				32	144,290	879,209	6.09
1936	1 ^(d)				31	235,780	1,603,734	6.80
1937	1 ^(d)				31	219,780	1,561,731	7.11
1938	1 ^(d)				30	195,560	1,293,426	6.61
1939	1 ^(d)				27	236,710	1,607,929	6.79
1940	1 ^(d)				27	216,020	1,444,696	6.69
1941	1 ^(d)				25	248,980	2,075,490	8.34
1942	1 ^(d)				22	125,950	1,068,300	8.48
1943	1 ^(d)				21	77,270	648,237	8.39
1944	1 ^(d)				18	70,220	614,077	8.75
1945	1 ^(d)				17	75,970	704,061	9.27
1946	1 ^(d)				20	113,490	1,401,427	12.35
1947	1 ^(d)				21	121,480	1,988,255	16.37



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Table 2 (continued)
Quantity and Value of Roofing Slate Sold by Producers
in the States of Maryland and Pennsylvania, 1879-1957

YEAR	MARYLAND				PENNSYLVANIA			
	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE
1948	1 ^(d)				26	146,860	2,846,371	19.38
1949	1 ^(d)				26	112,870	2,124,573	18.82
1950	1 ^(d)				28	124,280	2,341,127	18.84
1951	1 ^(d)				25	134,180	2,681,072	19.98
1952	1 ^(d)				18	93,200	1,866,479	20.03
1953	1 ^(d)				18	86,116	1,688,167	19.60
1954	1 ^(d)				17	77,819	1,487,870	19.12
1955	1 ^(d)				17	72,638	1,458,594	20.08
1956					16	56,924	1,217,404	21.39
1957					15	46,429	973,767	20.97
Totals		645,761	3,220,830			28,567,262	139,334,506	

(a) Value for 1890 is estimated from aggregate production data for the Peach Bottom region.
 (b) Quantity is approximate and derived from the value divided by the average price per square for the year immediately prior to and after the year in question.
 (c) Total value of roofing estimated from total value of roofing and other uses.
 (d) No roofing slate produced. Production included only slate granules and flour, flagstone, and miscellaneous uses.

Table 3
Quantity and Value of Roofing Slate Sold by Producers
in the States of New York and Vermont, 1879-1957

YEAR	NEW YORK				VERMONT			
	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE
1879		9,000	45,000	\$5.00		83,300	249,900	\$3.00
1880	12	19,850	95,500	4.81	31	108,891	352,608	3.24
1881		19,000	95,000	5.00		109,370	368,110	3.37
1882		21,000	105,000	5.00		127,300	435,100	3.42
1883		10,200	51,000	5.00		110,000	440,000	4.00
1884	(c)					85,000	340,500	4.01
1885	(c)					130,000	380,000	2.92
1886	(c)					111,385	353,155	3.17
1887	(c)					120,000	356,000	2.97
1888	(c)					160,000	480,000	3.00
1889		16,767	81,726	4.87		236,350	596,997	2.53
1890	10 (a) (b)	22,614	145,635	6.44	66 (a) (b)	213,799	572,981	2.68
1891		17,000	136,000	8.00		247,643	698,350	2.82
1892		20,000	160,000	8.00		260,000	754,000	2.90



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Table 3 (continued)
Quantity and Value of Roofing Slate Sold by Producers
in the States of New York and Vermont, 1879-1957

YEAR	NEW YORK				VERMONT			
	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE
1893	11	69,640	204,776	2.94	47	132,061	407,538	3.09
1894		7,955	42,092	5.29		214,337	455,860	2.13
1895		13,624	90,150	6.62		221,359	531,482	2.40
1896		16,002	78,612	4.91		155,523	509,681	3.28
1897		9,197	52,799	5.74		244,575	656,114	2.68
1898		7,160	46,744	6.53		241,762	612,902	2.54
1899		10,912	69,525	6.37		277,463	777,971	2.80
1900		7,713	58,360	7.57		282,820	795,474	2.81
1901		15,786	91,805	5.82		330,191	984,317	2.98
1902		21,165	116,628	5.51		400,029	1,338,817	3.35
1903		15,690	89,548	5.71		391,366	1,363,923	3.49
1904		10,022	64,102	6.40		361,126	1,245,730	3.45
1905		10,354	65,051	6.28		339,001	1,174,246	3.46
1906		10,788	60,000	5.56		354,134	1,189,799	3.36
1907		11,908	81,535	6.85		385,314	1,301,576	3.38
1908	13 (d)	18,485	130,439	7.06	51	402,258	1,513,580	3.76
1909	8	18,098	106,175	5.87	51	397,441	1,533,936	3.86
1910	6	17,618	84,089	4.77	48	395,640	1,585,324	4.01
1911	9	21,452	120,359	5.61	49	328,760	1,335,244	4.06
1912	10	27,024	135,136	5.00	54	373,638	1,576,294	4.22
1913	10	29,868	139,970	4.69	53	332,642	1,351,175	4.06
1914								
1915								
1916								
1917								
1918								
1919	(a)		130,000		(a)		1,607,388	
1920								
1921								
1922								
1923								
1924	14	10,974	170,749	15.56	41	168,083	1,986,911	11.82
1925	17	7,650	134,790	17.62	40	154,400	2,115,942	13.70
1926	17	11,093	177,455	16.00	46	148,926	2,310,410	15.51
1927	15	8,210	133,608	16.27	49	172,490	2,369,300	13.74



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Table 3 (continued)
Quantity and Value of Roofing Slate Sold by Producers
in the States of New York and Vermont, 1879-1957

YEAR	NEW YORK				VERMONT			
	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE
1928	15	21,040	409,821	19.48	43	161,280	2,423,830	15.03
1929	22	14,670	204,362	13.93	51	151,810	2,214,869	14.59
1930	15	3,740	54,316	14.52	51	108,580	1,433,384	13.20
1931	19	4,060	51,023	12.57	47	66,870	793,047	11.86
1932	18	2,050	19,675	9.60	40	43,260	439,892	10.17
1933	19	1,820	13,957	7.67	45	40,240	297,043	7.38
1934	20	4,760	41,733	8.77	49	30,220	260,268	8.61
1935	14	3,900	32,621	8.36	54	54,310	378,846	6.98
1936	17	5,300	44,525	8.40	57	89,460	652,980	7.30
1937	20	6,310	58,062	9.20	54	102,110	782,686	7.67
1938	17	2,780	26,340	9.47	51	83,490	577,279	6.91
1939	12	2,020	15,740	7.79	44	106,500	763,846	7.17
1940	13	2,900	24,972	8.61	44	86,270	610,691	7.08
1941	11	1,780	18,579	10.44	35	83,780	680,805	8.13
1942	8	2,200	32,518	14.78	26	41,850	396,601	9.48
1943	5	120	2,379	19.83	12			
1944	5	140	3,140	22.43	12 (f)	9,770	91,880	9.40
1945	6 (e)				14 (g)	16,020	170,594	10.65
1946	13				19 (f)	20,010	348,161	17.40
1947	15	860	17,905	20.82	29 (f)	36,720	824,699	22.46
1948	13	3,730	91,988	24.66	32 (f)	50,700	1,203,362	23.73
1949	16	280	12,616	45.06	28 (f)	47,910	1,064,061	22.21
1950	21	800	38,874	48.59	32 (f)	46,940	1,052,635	22.43
1951	19	450	19,580	43.51	23 (f)	46,650	1,019,558	21.86
1952	20	600	21,456	35.76	22 9f)	35,190	742,482	21.10
1953	20	566	20,037	35.40	20 (f)	33,920	709,847	20.93
1954	13	242	10,879	44.95	16			
1955	13	82	5,587	68.13	13			
1956	10	171	7,995	46.75	17	24,872	568,989	22.88
1957	14	32	2,554	79.81	17			
Totals		651,222	4,892,592			10,927,109	59,510,970	

(a) Value is estimated from aggregate production data for the New York-Vermont region.
 (b) Quantity is approximate and derived from the value divided by the average price per square for the year immediately prior to and after the year in question.
 (c) No record of production. Output for these years is most likely included with that of Vermont.
 (d) Includes the production of two operators in New Jersey.
 (e) Included in the production of Vermont.
 (f) Includes the production of Maine.
 (g) Includes the production of New York and Maine.



JANUARY 2019

Table 4
Quantity and Value of Roofing Slate Sold by Producers
in the States of Maine and Virginia, 1879-1957

YEAR	MAINE				VIRGINIA			
	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE
1879		14,000	42,000	\$3.00		8,057	32,228	\$4.00
1880	6	26,200	84,800	3.24	2	11,500	51,000	4.43
1881		25,200	77,500	3.08		12,000	54,000	4.50
1882		26,000	78,000	3.00		15,000	51,000	3.40
1883		30,000	120,000	4.00		10,000	50,000	5.00
1884		41,000	215,000	5.24		9,000	45,505	5.06
1885		34,000	102,000	3.00		17,300	58,137	3.36
1886		36,000	118,000	3.28		16,600	59,800	3.60
1887		37,000	81,000	2.19		19,000	57,000	3.00
1888		37,000	111,000	3.00		17,400	60,540	3.48
1889	4	41,000	201,500	4.91	3	30,457	113,079	3.71
1890	4 (a)	43,145	214,000	4.96	3 (a)	23,438	85,079	3.63
1891		50,000	250,000	5.00		36,059	127,819	3.54
1892		50,000	250,000	5.00		40,000	150,000	3.75
1893	5	18,184	124,200	6.83	4	27,106	104,847	3.87
1894		24,690	123,937	5.02		33,955	118,851	3.50
1895		23,774	118,791	5.00		27,095	92,357	3.41
1896		23,078	99,831	4.33		26,863	92,163	3.43
1897		38,367	161,262	4.20		38,375	130,495	3.40
1898		29,834	131,752	4.42		43,745	142,446	3.26
1899		24,676	121,640	4.93		52,550	174,950	3.33
1900		21,771	103,949	4.77		56,365	185,211	3.29
1901		20,791	111,295	5.35		53,630	178,979	3.34
1902		26,468	143,832	5.43		42,731	160,951	3.77
1903		27,377	157,911	5.77		29,646	115,356	3.89
1904		20,789	120,838	5.81		31,852	130,208	4.09
1905		19,865	106,271	5.35		36,102	146,786	4.07
1906		18,498	100,916	5.46		39,068	172,857	4.42
1907		16,879	91,583	5.43		39,172	173,670	4.43
1908	5	20,151	115,682	5.74	7	41,678	194,356	4.66
1909	6	18,024	101,865	5.65	7	40,880	180,775	4.42
1910	6	16,708	99,023	5.93	7	31,787	148,721	4.68
1911	5	14,879	98,074	6.59	7	40,040	188,808	4.72
1912	3	16,640	96,079	5.77	8	42,220	195,392	4.63
1913	4	15,593	89,933	5.77	7	38,330	175,774	4.59



JANUARY 2019

Table 4 (continued)
Quantity and Value of Roofing Slate Sold by Producers
in the States of Maine and Virginia, 1879-1957

YEAR	MAINE				VIRGINIA			
	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE
1914								
1915								
1916								
1917								
1918								
1919							203,068	
1920								
1921								
1922								
1923								
1924	3	5,313	65,552	12.34	5	31,706	336,627	10.62
1925	3				5	33,800	377,082	11.16
1926	3				4	31,172	331,651	10.64
1927	3				5	32,850	398,612	12.13
1928	3				6	37,000	458,153	12.38
1929	2	3,720	38,316	10.30	6	35,460	434,628	12.26
1930	3	5,130	50,908	9.92	5	24,040	303,335	12.62
1931	3	5,060	54,373	10.75	5	15,740	185,638	11.79
1932	3	2,280	19,697	8.64	4	7,870	76,264	9.69
1933	3	3,110	25,106	8.07	6	11,880	84,126	7.08
1934	3	3,580	32,034	8.95	6	13,750	113,035	8.22
1935	3	3,520	29,408	8.35	5	15,570	135,637	8.71
1936	3	5,590	45,382	8.12	6	29,890	259,921	8.70
1937	4	4,820	41,509	8.61	5	32,650	282,537	8.65
1938	2				5	34,440	300,527	8.73
1939	3	3,840	32,768	8.53	5	50,250	448,678	8.93
1940	3	2,950	25,877	8.77	6	38,990	329,887	8.46
1941	3	3,270	27,300	8.35	6	41,170	378,592	9.20
1942	2	1,130	9,100	8.05	5	20,940	197,534	9.43
1943	2				5	11,900	122,932	10.33
1944	(c)				5	8,960	93,082	10.39
1945	(c)				5	9,310	101,467	10.90
1946	(c)				5	13,290	233,340	17.56
1947	(c)				5 (b)	11,530	263,921	22.89



JANUARY 2019

Table 4 (continued)
Quantity and Value of Roofing Slate Sold by Producers
in the States of Maine and Virginia, 1879-1957

YEAR	MAINE				VIRGINIA			
	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE
1948	(c)				5	17,360	424,335	24.44
1949	(c)				5	20,430	558,314	27.33
1950	(c)				5	25,550	666,206	26.07
1951	(c)				5	23,840	637,202	26.73
1952	(c)				5	16,650	437,096	26.25
1953	(c)				5	21,690	587,598	27.09
1954	1				4			
1955	1 (d)				4			
1956	1 (d)				4	25,087	794,583	31.67
1957	1 (d)				5			
Totals		1,000,894	4,860,794			1,823,766	14,754,748	

(a) Quantity is approximate and derived from the value divided by the average price per square for the year immediately prior to and after the year in question.

(b) Includes the production of Georgia.

(c) Production for these years is included in Vermont's production.

(d) No roofing slate produced. Production included only slate granules and flour, flagstone, millstock, and miscellaneous uses.

Table 5
Quantity and Value of Roofing Slate Sold by Producers
in the States of New Jersey and Georgia, 1880-1957

YEAR	NEW JERSEY				GEORGIA			
	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE
1879								
1880	3	4,683	15,000	3.20	1	1,000	4,500	4.50
1881		3,000	10,500	3.50		500	2,250	4.50
1882		4,000	12,000	3.00		200	900	4.50
1883		1,000	4,000	4.00				
1884								
1885								
1886								
1887								
1888		6,000	22,000	3.67				
1889	5	2,700	9,675	3.58	4	3,050	14,850	4.87
1890	(a)				(a)			
1891		2,500	10,000	4.00		3,000	13,500	4.50
1892		3,000	12,000	4.00		2,500	10,625	4.25



JANUARY 2019

Table 5 (continued)
Quantity and Value of Roofing Slate Sold by Producers
in the States of New Jersey and Georgia, 1880-1957

YEAR	NEW JERSEY				GEORGIA			
	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE
1893		900	3,653	4.06	2	2,500	11,250	4.50
1894		375	1,050	2.80		5,000	22,500	4.50
1895		200	700	3.50		2,500	10,675	4.27
1896		200	700	3.50		4,597	20,388	4.44
1897		250	775	3.10				
1898		200	800	4.00		3,450	13,125	3.80
1899		400	1,600	4.00		2,000	7,500	3.75
1900		3,600	13,600	3.78		2,500	9,375	3.75
1901		7,500	30,000	4.00		800	3,000	3.75
1902		8,000	32,000	4.00		1,000	4,000	4.00
1903		7,647	33,403	4.37				
1904						1,000	4,500	4.50
1905		1,340	5,360	4.00		1,500	7,500	5.00
1906						1,000	5,000	5.00
1907		2,000	8,000	4.00				
1908	2 (b)							
1909	2 (c)				1 (c)			
1910	2 (c)				2 (c)			
1911	2 (c)				1 (c)			
1912	2 (c)				1 (c)			
1913	2							
1914								
1915								
1916								
1917								
1918								
1919								
1920								
1921								
1922								
1923								
1924					1 (c)			
1925					1 (c)			
1926					1			



JANUARY 2019

Table 5 (continued)
 Quantity and Value of Roofing Slate Sold by Producers
 in the States of New Jersey and Georgia, 1880-1957

YEAR	NEW JERSEY				GEORGIA			
	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE
1927					1 (c)			
1928					1 (c)			
1929	1				1 (c)			
1930	1				1 (c)			
1931					2			
1932					2			
1933					1 (c)			
1934					1 (c)			
1935					2 (c)			
1936					2			
1937					1 (c)			
1938					1 (c)			
1939					1 (c)			
1940					1 (c)			
1941					1 (c)			
1942					1 (c)			
1943					1 (c)			
1944					1 (c)			
1945					1 (c)			
1946					1 (c)			
1947					2			
1948					1 (c)			
1949					1 (c)			
1950					1 (c)			
1951					1 (c)			
1952					1 (c)			
1953					1 (c)			
1954					2 (c)			
1955					2 (c)			
1956					2 (c)			
1957					2 (c)			
Totals		59,495	226,816			38,097	165,438	

(a) Quantity and value not available.
 (b) Included in New York's production.
 (c) No roofing slate produced. Production included only slate granules and flour, flagstone, and miscellaneous uses.



JANUARY 2019

Table 6
Quantity and Value of Roofing Slate Sold by Producers
in the States of Arkansas and California, 1889-1957

YEAR	ARKANSAS				CALIFORNIA			
	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE
1879								
1880								
1881								
1882								
1883								
1884								
1885								
1886								
1887								
1888								
1889	1				2	3,104	18,089	5.83
1890	(a)				(a)			
1891		120	480	4.00		4,000	24,000	6.00
1892						3,500	21,000	6.00
1893								#DIV/0!
1894						900	5,850	6.50
1895						1,500	10,500	7.00
1896								#DIV/0!
1897						1,000	7,000	7.00
1898						400	2,700	6.75
1899						928	6,642	7.16
1900						3,500	26,500	7.57
1901						2,500	18,608	7.44
1902		500	4,000	8.00		4,500	31,500	7.00
1903		118	709	6.01		10,000	70,000	7.00
1904		1,750	10,300	5.89		5,600	39,200	7.00
1905		50	350	7.00		5,000	40,000	8.00
1906						10,000	80,000	8.00
1907						7,000	60,000	8.57
1908	1 (b)				1	7,000	60,000	8.57
1909					1	6,961	45,660	6.56
1910					1			
1911	1 (b)							
1912	1 (b)							
1913								



JANUARY 2019

Table 6 (continued)
 Quantity and Value of Roofing Slate Sold by Producers
 in the States of Arkansas and California, 1889-1957

YEAR	ARKANSAS				CALIFORNIA			
	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE
1914								
1915								
1916								
1917								
1918								
1919								
1920								
1921								
1922								
1923								
1924					1			
1925								
1926	1 (b)				3 (b)			
1927					1 (b)			
1928	1 (b)				1 (b)			
1929	1 (b)				2 (b)			
1930	1 (b)				3 (b)			
1931	1 (b)				4 (b)			
1932	2				4 (b)			
1933	3 (b)				5 (b)			
1934	1 (b)				4 (b)			
1935	1 (b)				5	40	320	8.00
1936	1 (b)				5 (b)			
1937	1 (b)				6 (b)			
1938	1 (b)				3 (b)			
1939	1 (b)				2 (b)			
1940	1 (b)				1 (b)			
1941	2 (b)				1 (b)			
1942	2 (b)				1 (b)			
1943	1 (b)				1 (b)			
1944	1 (b)				1 (b)			
1945	1 (b)				1 (b)			
1946	1 (b)				1 (b)			
1947	1 (b)				2 (b)			
1948	1 (b)				4 (b)			



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Table 6 (continued)
Quantity and Value of Roofing Slate Sold by Producers
in the States of Arkansas and California, 1889-1957

YEAR	ARKANSAS				CALIFORNIA			
	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE	NO. OF QUARRIES	QUANTITY (SQUARES)	VALUE (\$)	AVE. PRICE PER SQUARE
1949	1 (b)				2 (b)			
1950	1 (b)				5 (b)			
1951	1 (b)				2 (b)			
1952	1 (b)				2 (b)			
1953	1 (b)				2 (b)			
1954	1 (b)				2 (b)			
1955	1 (b)				3 (b)			
1956	1 (b)				3 (b)			
1957	1 (b)				3 (b)			
Totals		2,538	15,839			77,433	567,569	

(a) Quantity and value not available.
(b) No roofing slate produced. Production included only slate granules and flour, flagstone, and miscellaneous uses.

Table 7
U.S. Roofing Slate Production
Quantity and Percent Output By State, 1879-1957

STATE	TOTAL QUANTITY (SQUARES)	% OF TOTAL OUTPUT	STATE	TOTAL QUANTITY (SQUARES)	% OF TOTAL OUTPUT	STATE	TOTAL QUANTITY (SQUARES)	% OF TOTAL OUTPUT
Arkansas	2,538	0.01%	Maryland	645,761	1.39%	Vermont	10,927,109	23.49%
California	77,433	0.17%	New Jersey	59,495	0.13%	Virginia	1,823,766	3.92%
Georgia	38,097	0.08%	New York	651,222	1.40%	Other*	2,726,098	5.86%
Maine	1,000,894	2.15%	Pennsylvania	28,567,262	61.41%	Total	46,519,675	100%

*Includes Colorado, Massachusetts, Michigan, Tennessee, Utah, and undistributed production. The latter includes the output of Arkansas, California, Georgia, Maine, Maryland, New Jersey, New York, Vermont, and Virginia in certain years, when, for whatever reason, production by state could not be reported.

Table 8
Operators of Roofing Slate Quarries, By State, 1925-1933^{1, 4}

STATE/COUNTY/CITY	COMPANY (ADDRESS; QUARRY NAME, TYPE/COLORS ²)	DATES OF OPERATION ³
Maine	The General Slate Co. (address, 148 State St., Boston, MA)	1925-27
	The Monson Maine Slate Co. (address, 112 Water St., Boston, MA, '25; 38 Chauncy St., Boston, MA, '28)	1925-31, 1933
	The Portland Monson Slate Co., 25 Central Wharf, Portland, ME	1925-31, 1933
	Rising & Nelson Slate Co. (address, West Pawlet, VT; successor to the General Slate Co.)	1928, 1930-31, 1933
New York		
	Granville	Advanced Industrial Supply Co. (address, 111 W. Washington Blvd., Chicago, IL)
	Cook & Bahen Slate Co.	1933



JANUARY 2019

Table 8
Operators of Roofing Slate Quarries, By State, 1925-1933^{1, 4}

STATE/COUNTY/CITY	COMPANY (ADDRESS; QUARRY NAME, TYPE/COLORS ²)	DATES OF OPERATION ³
	Davies & Evans (heavy “freak”)	1925
	Elbel Slate Co.	1929
	John D. Emack & Co. (address, 112 S. 16th St., Philadelphia, PA)	1928-29
	Hilsdale Slate Co.	1933
	Robert R. Lewis	1929
	Thomas L. Lewis	1929
	Old English Slate Quarries (address, Glens Falls; variegated)	1925-27
	Paramount Slate Co.	1931
	Red Slate Producing Co., (address, Easton, PA; red)	1925
	John Ritchie	1929-31, 1933
	A.K. Schubert	1931
	Salem Slate Co.	1933
	Schubert Bros.	1929-30
	Searles Slate Co.	1927, 1929
	G.H. Hopkins (address, Whitehall)	1927-29
Hebron	John J. McDonough (address, W. Pawlet, VT; heavy “freak”)	1925
Middle Granville	Geo. Andrus	1929
	Wm. Darius	1929-31
	Ellis & Diplock (“freak”)	1925
	Jones & Hopkins (address, Whitehall)	1925, 1930-31
	Kelly & Owens	1925
	H.C. McDonough & Sons	1925-27
	McDonough Slate Co.	1928-30
	McGrath Bros.	1929-31
	Montvert Slate Co.	1931, 1933
	Sheldon Slate Products Co. (red)	1925-31, 1933
	Thomas Bros.	1925
	Amalgamated Slate Quarries Co. (address, Easton, PA)	1925
Truthville	Penrhyn Hill Slate Co.	1931
	Wold & Cullen (Wold & Vogel '34)	1931, 1933
Vermont		
Castleton	P.F. Hinchey & Co. (address, Hydeville)	1925
	The John Jones Slate Co. (purple)	1925-27
Castleton, Fair Haven, & Poultney	Fair Haven Marble & Marbleized Slate Co. (address, Fair Haven; Col. Allen, Allen, and Hazard quarries; mottled green and purple, green, purple)	1925
Castleton & Poultney	The Penrhyn Slate Co. of Vermont (address, Hydeville; Bomoseen and Alliance quarries; green, purple)	1925-31



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Table 8
Operators of Roofing Slate Quarries, By State, 1925-1933^{1, 4}

STATE/COUNTY/CITY	COMPANY (ADDRESS; QUARRY NAME, TYPE/COLORS ²)	DATES OF OPERATION ³	
Fair Haven	S. Allen's Sons (Eureka quarries; green, purple, variegated)	1925, 1928-31, 1933	
	C.R. Beach (variegated green and purple)	1925, 1929-31, 1933	
	Clark-Flanagan, Inc. (variegated green and purple)	1925-30	
	Fair Haven Marble & Marbleized Slate Co.	1929-31, 1933	
	General Slate Co. (address, 148 State St., Boston, MA; Sherman quarry; unfading mottled green and purple)	1925	
	Harvey Bush Slate Co.	1927-31, 1933	
	Hinchey Consolidated Slate Co. (successor to G.R. and J.F. Hinchey Slate Co. and General Slate Co.)	1927-30, 1933	
	Jones & Parkhurst (unfading green)	1925	
	Mahar Bros. Slate Co. (unfading green, mottled green & purple)	1925, 1933	
	Old English Slate Quarries (address, Glens Falls, NY; mottled green and purple)	1925	
	Old Homestead Slate Co., Inc. (purple)	1925	
	Pedro Bros. (address North Poultney '25, Poultney '28; unfading green, mottled)	1925, 1928-29	
	Roberts, Jones & Williams (address, Granville, NY)	1928-31	
	Sbarddella & Pedro Bros. Slate Co. (address, Poultney)	1930-31, 1933	
	Scotch Hill Slate Co.	1933	
Pawlet	W.H. Pelkey, Inc. (St. Mark quarry; unfading green, mottled green and purple)	1925, 1929-30, 1933	
	H.G. Williams Slate Co. (address, Granville, NY)	1927-31	
	Wm. Morris & Son (address, Granville, NY; sea-green)	1925	
	Norton Bros. (address, Granville, NY; sea-green, mottled gray, mottled purple, unfading green)	1925-31, 1933	
	O'Brien Brothers Slate Co., Inc. (address, Granville, NY; unfading green, sea-green, mottled, purple)	1925-31, 1933	
	Ondawa Slate Co. (address, Granville, NY; unfading green)	1925-30	
	Owen W. Owens Sons, Inc. (address, Granville, NY; sea-green)	1925-31, 1933	
	Progressive Slate Co. (address, Granville, NY; sea-green)	1925	
	Vermont Black Slate Co. (address, Granville, NY)	1933	
	Pawlet, Poultney, and Rupert	Fred C. Sheldon Slate Co. (address, Granville, NY; Eastern, Rice, and Southern quarries; sea-green, unfading green, mottled purple, red, "freak," black)	1925-31, 1933
		Poultney	Amalgamated Slate Quarries Co., (address, Easton, PA)
	The Auld & Conger Co. (address, 1920 E. 75th St., Cleveland, OH; Mammouth and Bush quarries; Mammouth sold '28; sea-green)		1925-31, 1933
	Berdew Slate Co., Inc.		1931, 1933
	Cambrian Slate Co. (address, Granville, NY; purple variegated, sea-green)		1925-31, 1933
	Consolidated Slate Corporation of Vermont (successor to Wm. Griffith Slate Co. and New York Consolidated Slate Corporation)		1928-29
Donnelly & Pineus	1925		
John D. Emack & Co. (address, 112 S. 16th St., Philadelphia, PA '27; 1700 Sansom St., Philadelphia, PA '34)	1927-31, 1933		
El Nido Slate Co.	1928-31, 1933		



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Table 8 (continued)
Operators of Roofing Slate Quarries, By State, 1925-1933^{1, 4}

STATE/COUNTY/CITY	COMPANY (ADDRESS; QUARRY NAME, TYPE/COLORS ²)	DATES OF OPERATION ³
	Mahar Bros Slate Co., Inc. (address, Fair Haven)	1927-31
	Mammoth Slate Co.	1929-31
	H.A. Matot	1933
	McCarty Slate Co.	1928-30, 1933
	Montvert Slate Co.	1928-31, 1933
	New England Slate Co.	1927, 1929-31, 1933
	New York Consolidated Slate Corp. (unfading green, unfading mottled green and purple)	1925
	Andrew Panda (A. Panda Slate Co., '31)	1929-31, 1933
	Red Morris Slate Co.	1929-31
	William Griffith Slate Co., Inc. (green, gray, black, purple)	1925
	John D. Williams	1933
	United Slate Co.	1931
South Poultney	Owens & Jones (address, Poultney)	1927-28
Poultney and West Pawlet	Rising & Nelson Slate Co. (address, West Pawlet; purple, green, gray, black, mottled)	1925-31, 1933
Wells	Evergreen Slate Co., Inc. (address, Granville, NY; sea-green, unfading green, unfading mottled green and purple)	1925-31, 1933
	R. Brereton Jones Slate Co. (address, Granville, NY)	1929-30
	Mettowee Valley Slate Co. (address Granville, NY)	1927-30
	Thomas Bros. (address, Granville, NY)	1925
	Wm. Morris & Son (address, Granville, NY)	1927-31
	O.L. Williams & Son (address, Granville, NY)	1931
	Williams Bros. (address Middle Granville, NY; sea-green)	1925-30, 1933
	Hugh George Williams (address, Granville, NY; sea-green, mottled green and purple)	1925, 1933
West Pawlet	Edwards Bros. (sea-green)	1925, 1929-31
	Hughes & Edwards	1925-30
	Jones & Griffiths	1925
	Jones & Roberts (sea-green)	1925-31
	Patrick Kehoe ("freak," black)	1925-31, 1933
	I.R. Lewis & Co.	1933
	Griffith T. Roberts Estate (Brownell quarry; sea-green)	1925-31
New Jersey	Lafayette Slate Mining Corporation (address, Port Chester, NY)	1929-30
Maryland		
Cardiff	The Peach Bottom Slate Co. (address, Delta, PA)	1925-31, 1933



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Table 8 (continued)
Operators of Roofing Slate Quarries, By State, 1925-1933^{1, 4}

STATE/COUNTY/CITY	COMPANY (ADDRESS; QUARRY NAME, TYPE/COLORS ²)	DATES OF OPERATION ³
	Peerless Slate Co. (address, Century Building, Pittsburgh, PA, '25-'27; 213 Martin Building '28; 119 Federal St., N. S., Pittsburgh, PA '29)	1925-29
Pennsylvania		
Lehigh County		
Slatedale	J.P. Kern Slate Co.	1927-31, 1933
	Manhattan Slate Co. (address, Slatington)	1925-31, 1933
	Royal Blue Slate Co.	1925-29, 1931
	Shenton Slate Co.	1927-31, 1933
	Thos. H. Shenton	1925
	Thomas Slate Co.	1925
Slatington	American Slate Quarries	1925, 1928-31
	Blue Mountain Slate Manufacturing Co.	1925-31, 1933
	Blue Ridge Quarries, Inc.	1925-31, 1933
	Cambridge Slate Co.	1925-31, 1933
	Wm. H. Dillard	1933
	Hankee Bros.	1933
	Pennsylvania Slate Blackboard Co.	1931, 1933
	Slatington Slate Co.	1925-31, 1933
	Edwin F. Snyder & Son	1933
Northampton County		
Bangor	Bangor Ideal Slate Mining Co.	1925-31, 1933
	Bangor Quarry Co. (address, 1920 E. 75th Street, Cleveland, OH; Bangor Union quarry)	1925-31
	Bangorvein Slate Co. (Bangor Peerless quarry)	1925-31, 1933
	Bangor Washington Slate Co.	1925-28
	Columbia Bangor Slate Co.	1925-31, 1933
	North Bangor Slate Co. (North Bangor & Northampton quarries)	1925-31, 1933
	Old Bangor Slate Co. (address, Easton)	1925-31, 1933
	Slate Products Co., Inc.	1925-31, 1933
Berlinsville	Amalgamated Slate Quarries Co. (address, Easton; Genuine Washington and Provident quarries)	1925-31, 1933
	Commonwealth Slate Co. (address, Walnutport)	1925
Chapman Quarries	Chapman Slate Co. (address, Bethlehem)	1925-31, 1933
	Chapman Standard Slate Co.	1925
East Bangor	East Bangor Consolidated Slate Co.	1925-30, 1933
Edelman	The Hard-Vein Slate Co. (address, Easton)	1925-31, 1933
Nazareth	Edelman Standard Hardvein Slate Co. (address, Edelman)	1929-31, 1933
	James W. Hughes	1933



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Table 8 (continued)
Operators of Roofing Slate Quarries, By State, 1925-1933^{1, 4}

STATE/COUNTY/CITY	COMPANY (ADDRESS; QUARRY NAME, TYPE/COLORS ²)	DATES OF OPERATION ³
Pen Argyl	The Albion Vein Slate Co. (address, Bangor)	1925-31, 1933
	Belmont Slate Co. (address, Bangor)	1925-31, 1933
	Doney Slate Co.	1925-31, 1933
	Jackson-Bangor Slate Co.	1925-31, 1933
	Keenan Structural Slate Co. (address, Bangor; Albion quarry)	1925-31, 1933
	Parsons Bros. Slate Co.	1925, 1928-31, 1933
	Stephens-Jackson Co. (Courtney quarry)	1925-31, 1933
	Wind Gap	Bolger-Heller Slate Co. (address, Bangor)
Colonial Slate Co. (address, Bangor)		1925-31, 1933
Imperial Slate Blackboard Co., Inc.		1925-31, 1933
Phoenix Slate Co.		1925-31, 1933
M.L. Tinsman & Co. (address, Pen Argyl '25; Easton '27)		1925-28
West Bangor	Bangor Fidelity Slate Co., Inc.	1925-31, 1933
Virginia		
Albemarle County		
Esmont	Blue Ridge Slate Corporation (address, Charlottesville; Flint Arrow and Dutch Gap quarries; blue black)	1925, 1928-31, 1933
Monticello	Monticello Slate Co. (address, c/o Williams-Arvonias Slate Corporation, Richmond)	1928-31, 1933
Buckingham County		
Arvonias	Arvonias-Buckingham Slate Co. (address, Richmond)	1925-31, 1933
	Pitts Slates Corporation	1933
	The Williams Slate Co. (Big quarry)	1925-29, 1931, 1933
Ore Bank	Le Sueur-Richmond Slate Corporation	1925-31, 1933
	The Pierce Slate Co., Inc.	1925-29
Georgia		
Fairmount	H.G. Williams Slate Co. (address, Granville, NY)	1931
Tennessee		
Maryville	Southern Slate & Marble Co. (address Empire Building Annex, Knoxville)	1933

¹Roofing slate producers only. Producers of others types of slate products (e.g., blackboards, structural, granules, and flour for various manufacturing activities), while listed in the various *Minerals Yearbooks*, are not listed here.

²"Freak" slates are slates of unusual color and texture or of special sizes. The National Slate Association provided the following definition of freak slates in 1926: "They are just what the name implies – freak slates from rock formations centuries old, of a character that will not permit splitting under 1/4" in thickness and from this up to 2" for architectural roof purposes. A great array of colors are available, comprising Opals, Bronzes, Buffs, and Browns, and others so varied and unique that when displayed en masse one is reminded of a beautiful tapestry. . . Some may not be true slate. . ." (Source: *Slate Roofs*. New York: National Slate Association, 1926, p.9.

³No data available for the year 1932.

⁴For a list of current-day slate quarries, fabricators, and distributors see NSA's website (www.slateassociation.org).



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Figure 1
Total Quantity of Roofing Slate Sold by Producers
in the United States, 1879 - 1979

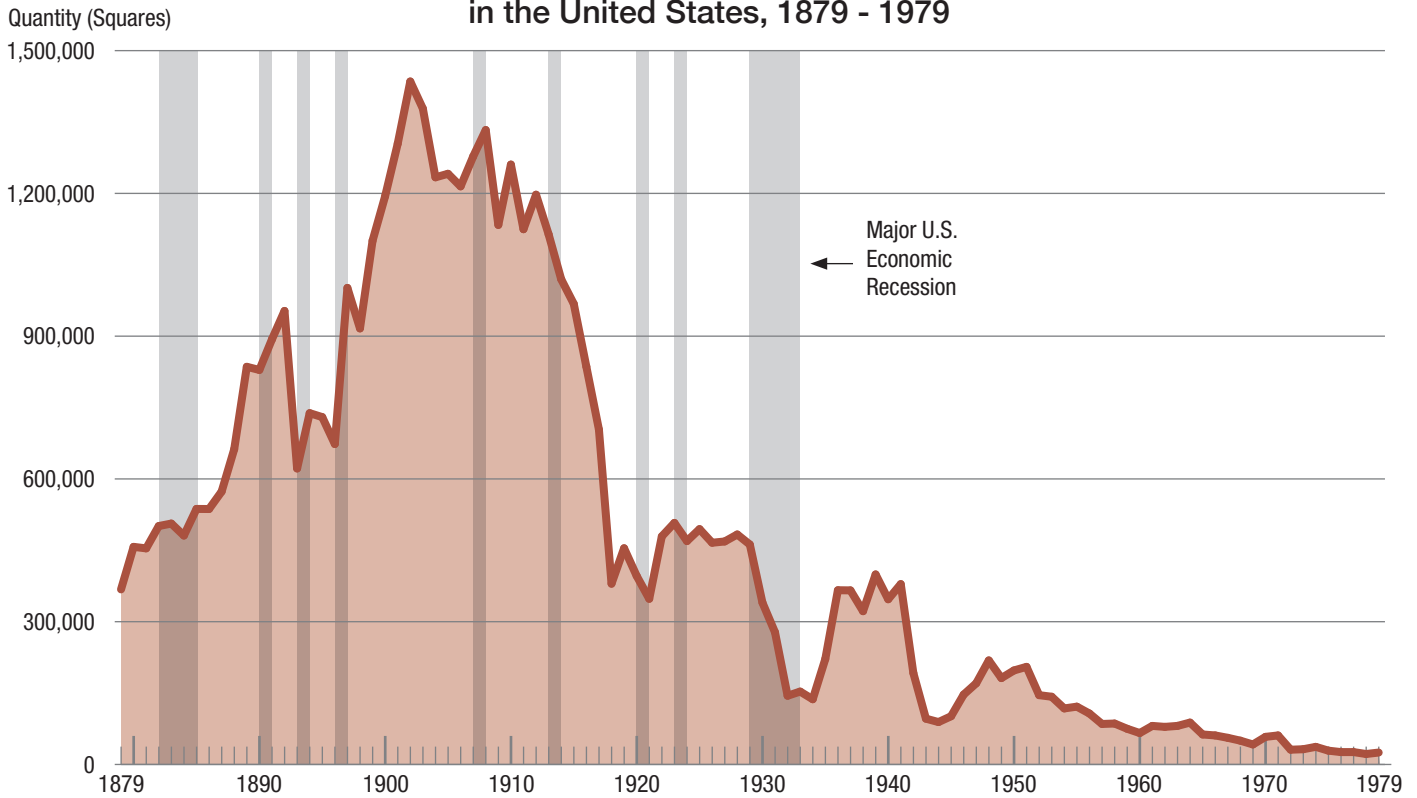
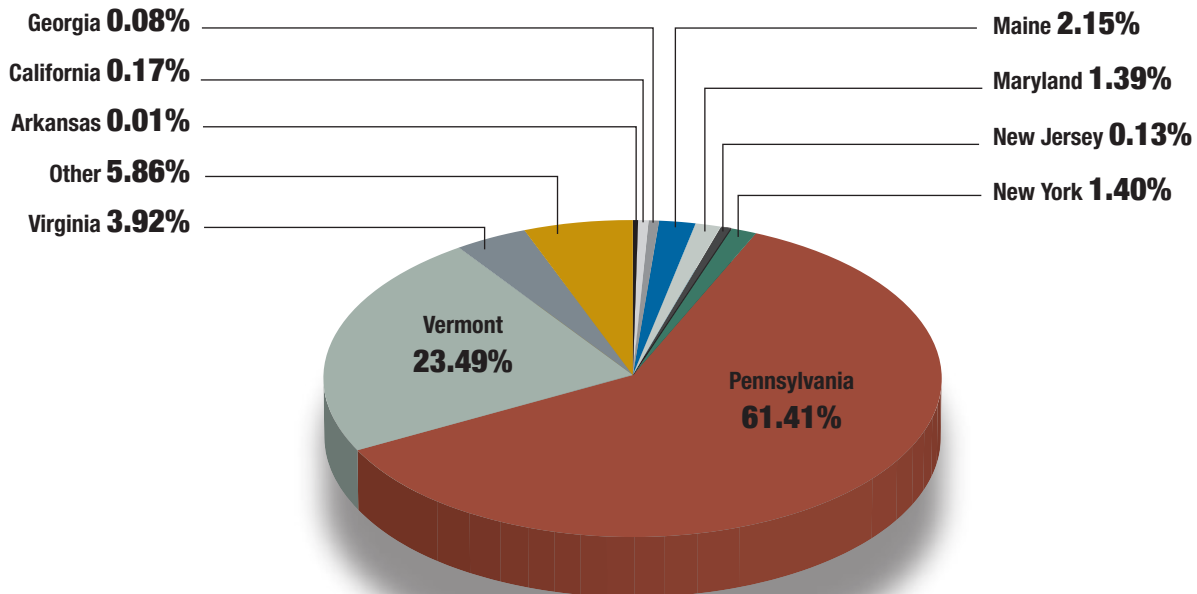


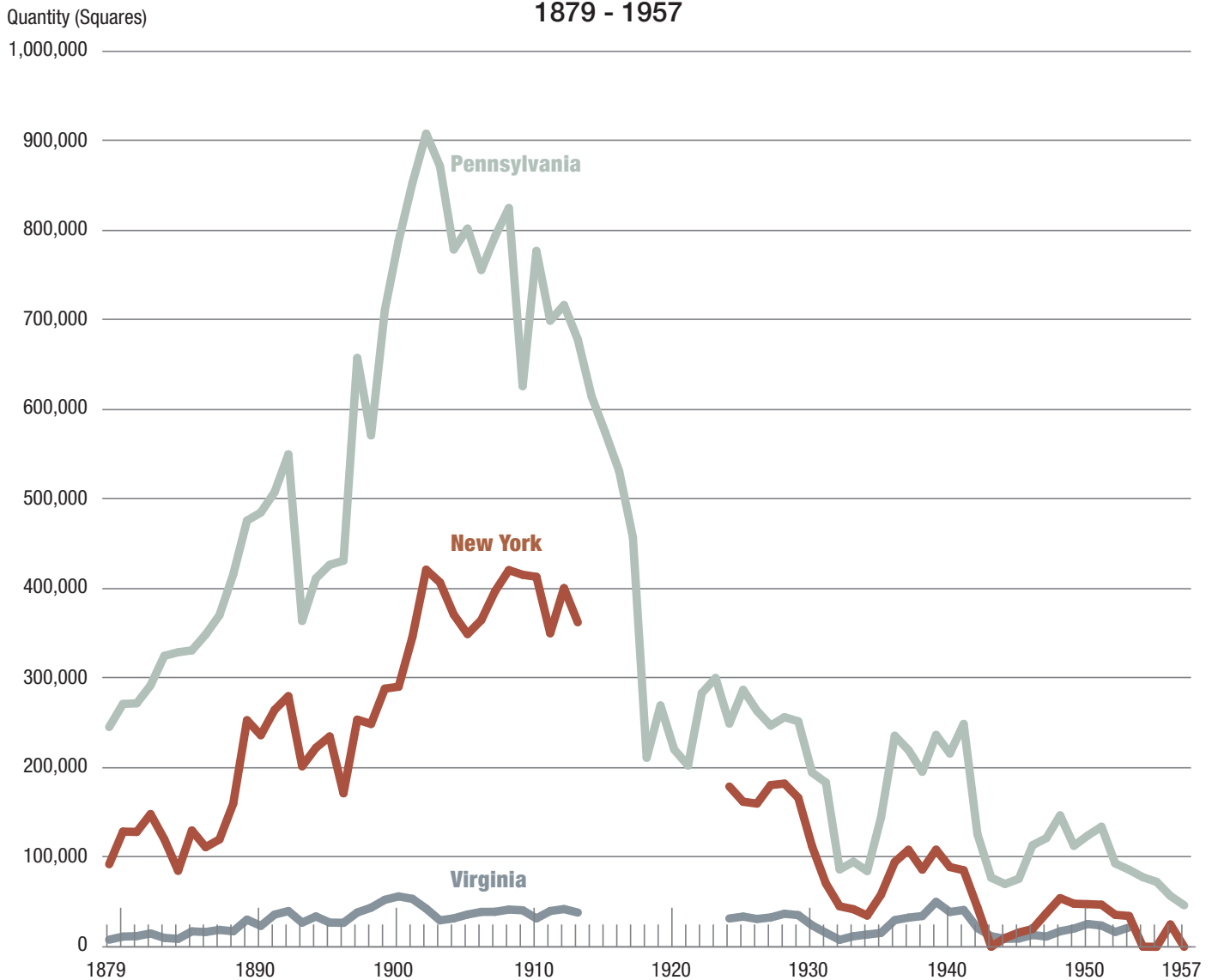
Figure 2
Quantity and Percent Output of Roofing Slate, by State, 1879-1957





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Figure 3
Quantity of Roofing Slate Sold by Producers
1879 - 1957



For more information on slate roofing, please see *Slate Roofs: Design and Installation Manual*, 2010 Edition, available at www.slateassociation.org



For more information about The National Slate Association, visit www.slateassociation.org

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