

SLATE.

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PRODUCTION.

The statistics presented in this report represent the output of slate as reported to this office directly by the quarrymen, and include the quantity and value of the roofing slate sold by them, the quantity and value of mill stock sold by them, and the value of a quantity of slate sold for other purposes. The statistics for the rough material of the mill stock represent the rough slate sold by the quarrymen to mills to be made into a finished product, and those for the manufactured material represent the slate used by the quarrymen in their own mills and sold in the finished or partly finished state. The values given represent the prices free on board at point of shipment.

The figures giving the quantity of mill stock and other slate sold by the quarrymen are shown for the first time in 1907, and it is hoped that their future publication will be of interest and value to the producer, representing as they do with the figures for roofing slate the entire quantity of slate marketed during the year.

During the years since and including 1903 the slate trade has been more or less adversely affected by the financial condition of the country or by labor troubles in the building trades and strikes in slate quarries, by the use of tiles, concrete, shingles, and of patent roofing processes and cheaper grades of material for roofing, by the high price and scarcity of labor, and by a decrease in the export trade.

In 1907 there were nine States producing a commercial output of slate in the United States. These States were Pennsylvania, Vermont, Maine, Virginia, Maryland, New York, California, Arkansas, and New Jersey, named in order of value of output. In 1906 Georgia reported an output and New Jersey had no production in that year.

Slate valued at \$6,019,220 was quarried and sold in the United States in 1907. This is an increase of \$350,874 over the value reported for 1906, which was \$5,668,346. The production in 1907 represents the largest output since 1903, when it was \$6,256,885, the largest production of slate in the history of the United States.

In 1907 the production of roofing slate was reported as 1,277,554 squares, valued at \$4,817,769; in 1906 the figures reported were 1,214,742 squares, valued at \$4,448,786, an increase in 1907 of 62,812 squares in quantity and of \$368,983 in value. The increase in average value per square from \$3.66 in 1906 to \$3.77 in 1907 was 11 cents. Producers generally reported an advance in price per square on account of increased cost of supplies and from scarcity and increased cost of labor.

The value of mill stock, including slate sold for other purposes, decreased from \$1,219,560 in 1906 to \$1,201,451 in 1907, or \$18,109.

Of the States producing mill stock, Vermont and New York decreased in value of output, a loss probably caused by the strike affecting almost all of the quarries in the Vermont-New York region which began in May, 1907, and is still in progress in May, 1908.

As already indicated, the greater part of the slate quarried in the United States is made into roofing slates. Produced almost entirely in the northeastern part of the country, these slates are shipped all over the United States, and are also exported to a small extent. A few years ago, during the strikes in the famous Welsh quarries, they were shipped in large quantities to England and English colonies. The great durability of slate as a roofing material overcomes to a large extent the disadvantages of the weight of the roof and of the cost of slate as compared with cheaper and lighter materials, and also unfavorable labor conditions. The scarcity and high price of shingles also have served to keep slate in favor both for local use and for shipment.

Roofing slate as put on the market is sold by "squares," a square meaning a sufficient number of pieces of slate of any size to cover 100 square feet of surface on a roof, allowing a 3-inch lap. The approximate weight of roofing slate of ordinary thickness is 650 pounds per square, and the slate is generally shipped in carload lots of from 50 to 100 squares per carload, according to the size of the pieces. The sizes of slate in a square vary from 24 by 16 inches to 9 by 7 inches, and the number of pieces necessary for a square varies from 85 to 686, according to the size of the pieces. The thickness of ordinary slate is from one-eighth to three-sixteenths of an inch, slates less than one-eighth commanding less price per square as they are more liable to breakage, while those over three-sixteenths command higher prices.

The price per square depends on the size of the pieces, the quality of the slate, and the uniformity of the pieces as to thickness, smoothness, and straightness. The color of the slates, which varies considerably, also affects the price. Among the distinguishing colors are the black, dark gray, green, and red of Arkansas slates, the very dark gray of California and Maine slates, and of the Maryland-Pennsylvania Peachbottom slates, the black of New Jersey, the red and green of New York, the bluish black, dark gray, and dark green of Pennsylvania, and the dark grays, green, purple, and bluish black of Vermont slates. Some of these slates fade somewhat on exposure to the sun, and are therefore not considered entirely satisfactory by some, though their other roofing properties remain unimpaired. On the other hand, these fading slates are often preferred as giving a softer tone and assisting in producing a roof of more beauty than the brighter slates. Roofing slates of cheaper quality are also made of mottled and ribboned slate, it being possible to conceal these deficiencies of color and appearance under the lap of the slate.

The prices per square of slate of good quality and of ordinary thickness range from \$3.75 to \$10 free on board at quarries, the highest prices being for New York red slate. Slate inferior in quality or color is quoted as low as \$2.75 per square, while squares of selected pieces over three-sixteenths of an inch thick are quoted at much higher prices. The prices per square vary from month to month, and the freight rates, changing according to point of shipment, range from \$1 to \$1.75 per square to places west of Pittsburg and east of the

Mississippi to nearly \$8 per square to San Francisco and along the Pacific coast, the only local source of supply for the West being in Eldorado County, Cal.

Among the uses of slate other than for roofing are for blackboards, school slates, flooring, sinks, laundry tubs, grave vaults, sanitary ware, electrical switchboards, billiard and laboratory table tops, mantels, hearths, and caps. Slate used for these purposes is known as mill stock and is sold either by the quarrymen to milling companies or is milled by the quarry operators who have their own mills. It is generally sold in the form of slabs from 1 to 3 inches thick, the price varying according to the thickness and to the work done on the slab. Maine, Pennsylvania, and Vermont produce nearly all the mill slate, and Pennsylvania reported the only slate that was used in 1907 for blackboards and school slates.

The following table shows the value of roofing and mill slate quarried in the United States in 1906 and 1907, by States:

Value of roofing, mill, and other slate produced in the United States in 1906 and 1907, by States.

1906.

State.	Roofing slate.		Value of mill stock.	Total value.
	Number of squares.	Value.		
Arkansas.....			\$5,000	\$5,000
California.....	10,000	\$80,000		80,000
Georgia.....	1,000	5,000		5,000
Maine.....	18,498	100,916	137,765	238,681
Maryland.....	25,288	129,965	1,004	130,969
New York.....	10,788	60,000	12,360	72,360
Pennsylvania.....	755,966	2,710,249	811,900	3,522,149
Vermont.....	354,134	1,189,799	251,531	1,441,330
Virginia.....	39,068	172,857		172,857
Total.....	1,214,742	4,448,786	1,219,560	5,668,346

1907.

State.	Roofing slate.		Mill stock.						Other.	Total value.
	Number of squares.	Value.	Manufactured.		Rough.		Total.			
			Quan- tity.	Value.	Quan- tity.	Value.	Quan- tity.	Value.		
			Sq. feet.		Sq. feet.		Sq. feet.			
Arkansas.....									\$8,500	\$8,500
California.....	7,000	\$60,000								60,000
Maine.....	16,879	91,583	404,829	\$145,023			404,829	\$145,023		236,606
Maryland.....	21,815	113,665							2,395	116,060
New Jersey.....	2,000	8,000								8,000
New York.....	11,908	81,535	13,000	1,950			13,000	1,950		83,485
Pennsylvania.....	793,466	2,987,740	3,447,654	557,714	1,492,839	\$63,039	4,940,493	620,753	\$247,147	3,855,640
Vermont.....	385,314	1,301,576	698,317	141,130	265,594	34,553	963,911	175,683		1,477,259
Virginia.....	39,172	173,670								173,670
	1,277,554	4,817,769	4,563,800	845,817	1,758,433	97,592	6,322,233	943,409	258,042	6,019,220

^a Used chiefly for electrical supplies.

^b Composed of 5,711,105 school slates, valued at \$48,152, and 1,531,330 square feet of blackboard material, valued at \$198,995.

The quantity and value of blackboard and school slates stated in the preceding table represent not the entire quantity and value of these articles made in 1907, but the quantity and value of the material sold as such by the quarrymen. It is possible that some of the rough milling stock sold to the slate mills by the quarrymen was used

for these purposes. This office does not, however, collect slate statistics from manufacturers, but from quarrymen. Were figures from dealers and slate-mill operators included, it would be almost impossible to avoid duplication. On the other hand, it is impossible to obtain the value of rough slate stock from the quarryman who mills his own slate, as the only value the material has to him is its value at the completion of his work.

The following table shows the total value of the slate production of the United States from 1903 to 1907, inclusive:

Value of slate produced in the United States, 1903-1907, by States.

State.	1903.	1904.	1905.	1906.	1907.
Arkansas.....	\$4,709	\$14,300	\$10,000	\$5,000	\$8,500
California.....	70,000	39,200	40,000	80,000	60,000
Georgia.....		4,500	7,500	5,000	
Maine.....	231,230	181,168	224,254	238,681	236,606
Maryland.....	137,631	133,972	151,215	130,969	116,060
New Jersey.....	33,403		5,360		8,000
New York.....	111,998	71,543	66,646	72,360	83,485
Pennsylvania.....	3,959,906	3,633,246	3,491,905	3,522,149	3,855,640
Tennessee.....		607			
Utah.....		300			
Vermont.....	1,592,652	1,408,151	1,352,541	1,441,330	1,477,259
Virginia.....	115,356	130,208	146,786	172,857	173,670
Total.....	6,256,885	5,617,195	5,496,207	5,668,346	6,019,220

The following table shows the value of slate for roofing purposes and for mill stock from 1903 to 1907, inclusive:

Value of roofing slate and mill stock, 1903-1907.

	Roofing slate.		Value of mill stock.	Total value.
	Number of squares.	Value.		
1903.....	1,378,194	\$5,345,078	\$911,807	\$6,256,885
1904.....	1,233,757	4,669,289	947,906	5,617,195
1905.....	1,241,227	4,574,550	921,657	5,496,207
1906.....	1,214,742	4,448,786	1,219,560	5,668,346
1907.....	1,277,554	4,817,769	1,201,451	6,019,220

The following table shows the average price of roofing slate per square since 1902:

Average annual price per square of roofing slate for the entire country.

1902.....	\$3.45	1905.....	\$3.69
1903.....	3.88	1906.....	3.66
1904.....	3.78	1907.....	3.77

IMPORTS.

Practically no slate is imported into the United States. In 1906 slate valued at \$9,471 was imported in the form of mantels, chimney pieces, etc., including \$228 for roofing slate; in 1907 the importations were valued at \$5,404, of which \$5,196 was for chimney pieces, etc., and \$208 for roofing slate.

EXPORTS.

In comparison with the total output the value of roofing slate exported from this country in 1907 was very small, being only \$220,995, as against \$255,785 in 1906.

SLATE INDUSTRY BY STATES.

Arkansas.—The development of the slate industry in Arkansas is still retarded by lack of transportation facilities. This slate is at present used principally for electrical purposes, although good roofing material may be obtained in the State. The developed deposits are chiefly in Polk and Montgomery counties.

California.—There was a decrease in the slate operations in the Eldorado County, Cal., district from 10,000 squares, valued at \$80,000, in 1906, to 7,000 squares, valued at \$60,000, in 1907.

Georgia.—Development work was done at the Rockmart, Polk County, slate deposits in 1907.

Maine.—Operations in the Maine slate district were practically the same in 1907 as in 1906, the output for 1907 being valued at \$236,606, as compared with \$238,681 in 1906, a decrease of \$2,075. The decrease was in quantity and value of roofing slate. The average price per square was \$5.43, against \$5.45 in 1906. The producing localities were Blanchard, Monson, and Brownville, Piscataquis County.

Maryland.—The entire output of slate in Maryland in 1907 was obtained from the Peachbottom region at Cardiff, Harford County. There was a decrease in value of \$14,909, from \$130,969 in 1906 to \$116,060 in 1907. The decrease was in the quantity and value of roofing slate. The average value per square was \$5.21 in 1907, as against \$5.14 in 1906.

New Jersey.—The slate properties in Sussex County, N. J., were operated to some extent in 1907.

New York.—The output of slate in New York was obtained from Granville, Middle Granville, and Salem, Washington County. The total value increased from \$72,360 in 1906 to \$83,485 in 1907, a gain of \$11,125. The average price per square was \$5.56 in 1906 and \$6.85 in 1907. This increase in value was on account of a larger quantity of the better quality of red slate sold in 1907.

Pennsylvania.—The output of slate from this State amounted to 64.06 per cent of the total value of the slate produced in the United States. This represents 62.02 per cent of the value of the roofing slate and 72.24 per cent of the value of all the other slate produced. The value of the slate output in Pennsylvania in 1906 increased \$333,491, from \$3,522,149 in 1906 to \$3,855,640 in 1907. The increase was both in roofing slate and in mill stock.

In 1906 the output was curtailed by a strike in the Bangor region lasting two months. In 1907 operators reported steady demand equal to or greater than the supply until October and November, when the general financial situation depressed the slate trade somewhat; however, but little stock was left on hand, and many orders were placed for 1908. Prices were higher in 1907 for roofing slate and mill stock.

The roofing-slate output increased from 755,966 squares, valued at \$2,710,249, in 1906 to 793,466 squares, valued at \$2,987,740, in 1907, an increase of 37,500 squares in quantity and of \$277,491 in value. The average price per square was \$3.59 in 1906 and \$3.77 in 1907, an increase of \$0.18 per square. The roofing slate in Pennsylvania comes from York, Lehigh, and Northampton counties. In 1907

Pennsylvania produced 62.11 per cent of the quantity of roofing slate produced in the United States, and Northampton County produced 70.07 per cent of the Pennsylvania output and 43.52 per cent of the total for the United States.

In 1906 other kinds of slate in Pennsylvania, including slabs, blackboards, school slates, and other milled products, were valued at \$811,900; in 1907 at \$867,900, an increase of \$56,000. In 1907 for the first time an attempt was made to separate the quantity of slate sold directly to the mills by the quarrymen from the slate milled by them in their own mills and also to separate the quantity and value of the slate sold by the quarrymen for school slates and blackboards. The results are shown in the tables showing the total slate output.

Pennsylvania is the only State reporting slate sold for blackboards and school slates. The detailed statement of the slate output in Pennsylvania in 1906 and 1907, by counties, is given in the following table:

Slate production in Pennsylvania in 1906 and 1907, by counties.

County.	Number of squares.	Value.	Mill slate.	Total value.
1906.				
York.....	11,468	\$59,833		\$59,833
Lehigh.....	206,505	741,933	\$197,487	939,420
Northampton.....	537,903	1,908,483	614,413	2,522,896
Total.....	755,966	2,710,249	811,900	3,522,149
1907.				
York.....	14,769	82,286		82,286
Lehigh.....	222,752	841,389	^a 166,224	1,007,613
Northampton.....	555,945	2,064,065	^b 701,676	2,765,741
Total.....	793,466	2,987,740	867,900	3,855,640

^a Represents 731,218 square feet of blackboard material, valued at \$88,707; 1,579,737 school slates, valued at \$12,792, and 909,621 square feet of mill slate, valued at \$64,725.

^b Represents 800,112 square feet of blackboard material, valued at \$110,288; 4,131,368 school slates, valued at \$35,300, and 4,030,872 square feet of mill slate, valued at \$556,028.

Vermont.—Vermont ranks next to Pennsylvania in the production of slate. In 1907 Pennsylvania produced 64.06 per cent of the total value of slate for the United States, and Vermont 24.54 per cent. A labor strike beginning May 1, 1907, caused the output of slate in Vermont to remain practically the same as in 1906. A good demand was reported, which, owing to the strike, could not be supplied. The total value in 1906 was \$1,441,330, and in 1907 \$1,477,259, a gain for 1907 of \$35,929. The gain was in quantity and value of roofing slate; this increased from 354,134 squares, valued at \$1,189,799, in 1906, to 385,314 squares, valued at \$1,301,576, in 1907, a gain of 31,180 squares in quantity and of \$111,777 in value. The average price per square was \$3.36 in 1906 and \$3.38 in 1907.

The mill stock decreased in value from \$251,531 in 1906 to \$175,683 in 1907, a loss of \$75,848. The slate output of this State was chiefly from Rutland County, a small production being reported from Washington County.

Virginia.—A labor strike for about three months curtailed the output of slate in 1907, although the total output remained practically the same as in 1906, being 39,068 squares, valued at \$172,857, in 1906, and 39,172 squares, valued at \$173,670, in 1907.