

# “Steatite & Soapstones” (circa 1886)

(Including “Soapstones of the various States and Territories”  
beginning on pp. 358)

From Part II. “The Rocks, Quarries, and Quarry Regions of the United States,”  
in *The Collection of Building and Ornamental Stones in the U.S. National Museum:  
A Hand-book and Catalogue*

By George P. Merrill, Curator, Department Lithology and Physical Geology,  
pp. 357-361

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Note: This book, *The Collection of Building and Ornamental Stones in the U.S. National  
Museum: A Hand-book and Catalogue*, is available on Google Books at this link:

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

<http://quarriesandbeyond.org/>

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## PART II.

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### THE ROCKS.

#### A.—SOAP-STONE.

This, although not properly a building stone, is of sufficient economic importance to merit attention.

##### (1) COMPOSITION AND USES.

Pure soap-stone is a massive or schistose variety of the mineral talc. In this form it is often called steatite, soap-stone, or pot-stone; chemically, then, it is a hydrous silicate of magnesia of the following composition, according to Dana: \* Silica, 62.8; magnesia, 33.5; water, 3.7. The mercantile varieties are, however, nearly always more or less impure, iron sometimes replacing a part of the magnesia, while anthophyllite, pyrite, pyrrohotite and quartz are common accessories. It is soft enough to be easily scratched by the thumb-nail, and has a marked soapy or greasy feeling, two characteristics which readily distinguish it from most other rocks. It can be sawn into slabs or turned on a lathe, and being, when well seasoned, very refractory, is much used for fire-stones in furnaces and stoves; it is also very extensively used for lining stationary wash-tubs. The finer varieties are, according to Dana, made into images in China, and into ink-stands and similar articles in other countries. It is cut into vessels for culinary purposes in Lombardy, and was so used to some extent by the aborigines of North America. The harder varieties are cut into gas jets, and it is also used in the manufacture of porcelain. "French chalk" is a fine, compact variety used for tracing on cloth and for removing grease spots. The waste fragments are sometimes ground up and used for lubricating machinery. It is also utilized to some extent in the manufacture of so-called mineral paints. The total product of the United States for 1882 has been estimated at about 6,000 tons, with an average valuation of \$15 per ton. †

\* Manual of Mineralogy and Lithology, p. 305.

† Mineral Resources of the United States, 1883, p. 464.



## (2) SOAP-STONES OF THE VARIOUS STATES AND TERRITORIES.

*Arkansas.*—Specimens of a fine, compact, brecciated steatite have been received at the museum from some 12 miles north of Benton, Salina County. The supply is stated to be abundant.\*

*District of Columbia.*—A small bed of soap-stone of apparently fair quality occurs at Indian Hill, about 2 miles northwest of the city of Washington. It has not as yet been sufficiently quarried to demonstrate its value. Other beds of limited extent occur near Tennallytown, not far from the District line, and on the Woodley Lane road. The beds are interstratified with the micaceous and hornblendic schists of the vicinity, and have a northeasterly and southwesterly strike.

*Massachusetts.*—Quarries of soap-stone have been worked from time to time in Lynnfield and North Dana, in this State. The Lynnfield stone occurs in connection with serpentine. It is soft enough to be readily cut with an ordinary hand-saw when first quarried, but hardens on exposure. When quarried, which it has not been since 1880, it was used chiefly for stove-backs, sills, and steps. At North Dana the soap-stone quarries were opened as early as 1846, and have at times been quite extensively worked.

*New Hampshire.*—An extensive bed of fine quality soap-stone was discovered in 1794 at Francestown, in this State, and was worked as early as 1802. Up to 1867 some 2,020 tons had been quarried and sold. In this latter year some 3,700 stoves were manufactured by one company alone. The business has been conducted upon a large scale ever since. The bed has been followed some 400 feet, and the present opening is some 40 feet wide, 80 feet long, and 80 feet deep. Other beds constituting a part of the same formation occur in Weare, Warner, Canterbury, and Richmond, all of which have been operated to a greater or less extent. Five beds of soap-stone also occur in the town of Orford, and an important quarry was opened as early as 1855 in Haverhill. It has not, however, been worked continuously.†

*New York.*—Soap-stone or talc occurs in abundance in Fowler and Edwards, Saint Lawrence County, in this State. It is said to be of good quality, remarkably tough, and very refractory in fire.‡

*North Carolina.*—Soap-stone of fine quality occurs in several localities in the southwestern part of this State, the museum collection showing specimens from 7 miles northeast of Murphy, Cherokee County; from 4½ miles from Greenborough, Guilford County; from Alamance County; from Nantehala River, Cherokee County; and from Deep River, Moore County. Of these the Nantehala stone is a pure, nearly white, compact talc, said to be fully equal to the best French chalk. It has been much used as a white earth. The Deep River "soap-stone" is a

\*Agr. Min. & Timber Resources of Ark., 1884.

†Geology of New Hampshire, Vol. III, p. 86-88.

‡Geology of New York, 1838, p. 206.



compact variety of the mineral pyrophyllite. This is also used as white earth. Both these stones are shipped in bulk to New York, where they are ground and bolted. The stones from the other localities are of the ordinary type of soap-stones, but apparently of good quality.

*Pennsylvania.*—In the southern edge of Montgomery County, “extending from the northern brow of Chestnut Hill between the two turnpikes, across the Wissahickon Creek and the Schuylkill to a point about a mile west of Merion Square,” occurs a long, straight outcrop of steatite and serpentine. The eastern and central part of this belt on its southern side “consists chiefly of a talcose steatite” while the northern side contains much serpentine interspersed in lumps through the steatite. Only in a few neighborhoods does the steatite or serpentine occur in a state of sufficient purity to be profitably quarried. On the east bank of the Schuylkill, about 2 miles below Spring Mill, a good quality of material occurs that has long been successfully worked. It has also been quarried on the west bank of the river about a third of a mile away, and to a less extent on the west bank of the Wissahickon, opposite Thorp’s Mill. The material is now used principally for lining stoves, fire-places, and furnaces, though toward the end of the last century and the early part of the present one, before the introduction of Montgomery County marble, it was in considerable demand for door-steps and sills. It proved poorly adapted for this purpose, however, owing to the unequal hardness of its different constituents, the soap-stone wearing rapidly away, while the serpentine was left projecting like knots or “hob-nails in a plank.”\*

*South Carolina.*—Steatite or soap-stone is said to occur in this State in the counties of Chester, Spartanburgh, Union, Pickens, Oconee, Anderson, Abbeville, Kershaw, Fairfield, and Richland. The Anderson County stone is said to have been much used for hearthstones. That of Pickens County is considered of value, but it has been quarried to a very limited extent.†

The writer has seen some of this material. The national collections contain a single specimen of a very compact, nearly black steatitic rock marked as from Yorkville, in York County, but there are no data concerning its occurrence or utility.

*Texas.*—Soap-stone of good quality and inexhaustible in quantity is stated to occur in large veins on the Hondo and Sandy Creeks, about midway of their courses through Llano County.‡

*Vermont.*—Most of the steatite of this State is found on the east side of the Green Mountains and near the eastern line of the talcose slate formation, beds of it extending nearly the entire length of the State. The rock occurs usually associated with serpentine and hornblende. The beds are not continuous and have, as a rule, a great thickness in

\* Rep. C<sup>4</sup>, Geol. Survey of Pa., pp. 95, 96.

† South Carolina, Population, Resources, etc., 1883.

‡ Second Ann. Rep. Geol. of Tex., 1876, p. 26.



comparison with their length. It not infrequently happens that several isolated outcrops occur on the same line of strata, sometimes several miles apart, and in many cases alternating with beds of dolomitic limestone that are scattered along with them.

At least sixty beds of this rock occur in the State in the towns of Readsboro, Marlborough, Newfane, Windham, Townsend, Athens, Grafton, Andover, Chester, Cavendish, Baltimore, Ludlow, Plymouth, Bridgewater, Thetford, Bethel, Rochester, Warren, Braintree, Waitsfield, Moretown, Duxbury, Waterbury, Bolton, Stow, Cambridge, Waterville, Berkshire, Eden, Lowell, Belvidere, Johnson, Enosburgh, Westfield, Richford, Troy, and Jay.

Of the beds named those in Grafton and Athens are stated to have been longest worked and to have produced the most stone. The beds lie in gneiss. The quarries were profitably worked as early as 1820. Another important bed is that in the town of Weathersfield. This, like that of Grafton, is situated in gneiss, but has no overlying rock, and the soap-stone occurs in inexhaustible quantities. It was first worked about 1847, and during 1859 about 800 tons of material were removed and sold. The Rochester beds were also of great importance, the stone being peculiarly fine-grained and compact. It was formerly much used in the manufacture of refrigerators. The quality of the stone is represented to be unusually good and free from impurities.\* The bed at Newfane occurs in connection with serpentine, and is some half a mile in length by not less than 12 rods in width at its northern extremity. The soap-stone and serpentine are strangely mixed, and the general course of the bed being like that of an irregular vein of granite in limestone.

*Virginia.*—Soap-stone occurs in this State, according to Professor Rogers,† near the mouth of the Hardware River, both in Fluvanna and Buckingham Counties. There is also a bed of it associated with the talcose slates in Albemarle County, a little west of the Green Mountain. Specimens have been received from near this locality which were of excellent quality. The beds from here extend in a southwesterly direction, passing through Nelson County, where they are associated with serpentine; thence they cross the James River above Lynchburgh, and present an outcrop about 2 miles westward of the town on the road leading to Liberty; also one about  $2\frac{1}{2}$  miles westward of New London. Continuing in the same direction it is seen at the meadows of Goose Creek, where it has been quarried to some extent. Continuing in the same general direction the soap-stone again appears in several nearly parallel ranges, of which the most eastern makes its appearance near the Pigg River, in Franklin County. A second belt occurs in the same vicinity near the eastern base of Jack's Mountain; a third still farther west, about 1 mile from Franklin Court-House, and a fourth yet more to the west, on

\* Geology of Vermont, Vol. II, p. 783-91.

† Geology of the Virginias, p. 79.

the eastern slope of Grassy Hill. The material from near Franklin Court-House is stated to be the best of any of the above. About 30 miles southwest from Richmond, at Chula, in Amelia County, there are outcrops of soap-stone said to be of fine quality, and which in former times were quite extensively operated by the Indians. They have been re-opened within a few years, and the material is now in the market. Specimens of the stone in the Museum collection are by no means pure talc, but carry abundant long brownish fibers of some amphibolic mineral.