

How the Marble Industry Transformed Rutland County into a Center of Commerce

Lia Schnackenberg

Geologic Background of Vermont Marble

Marble is a non-foliated metamorphic rock that is formed from limestone or dolostone and is composed of interlocking calcite or dolomite crystals. Because the characteristics of marble include compressive strength, cohesiveness, hardness, and luster after being shined (Dale, 1912), it is a construction material that has garnered a reputation for its durability as well as its beauty.

The development of marble deposits in Vermont can be traced back about 350 million years. At this time, faults were established as the Iapetus Ocean closed and pressure caused the folding of the continental crust to occur. This geological process eventually led to the formation of the Appalachian Mountain range. Due to the heat and pressure produced by orogeny, the ideal environment for the metamorphosis of limestone and dolostone into marble was created (Austin, 2010).

Glaciers also played an instrumental role in the creation of marble in this region. Approximately 12,500 years ago, Lake Vermont was formed as glaciers covering the area began to melt. Then, 2,500 years later, as glacial ice sheets retreated, ocean water flooded in and the Champlain Sea was established as an extension of the Atlantic Ocean (Austin, 2010). The conditions of the Champlain Sea resulted in the growth of various sea animals, such as mollusks, crinoids, trilobites, and corals, whose calcareous skeletons and remains eventually established beds approximately 1,000 to 2,000 feet thick covering western New England. These animal remains from the Champlain Sea provided calcium carbonate that would later be essential in the formation of marble (Battell, 1885).

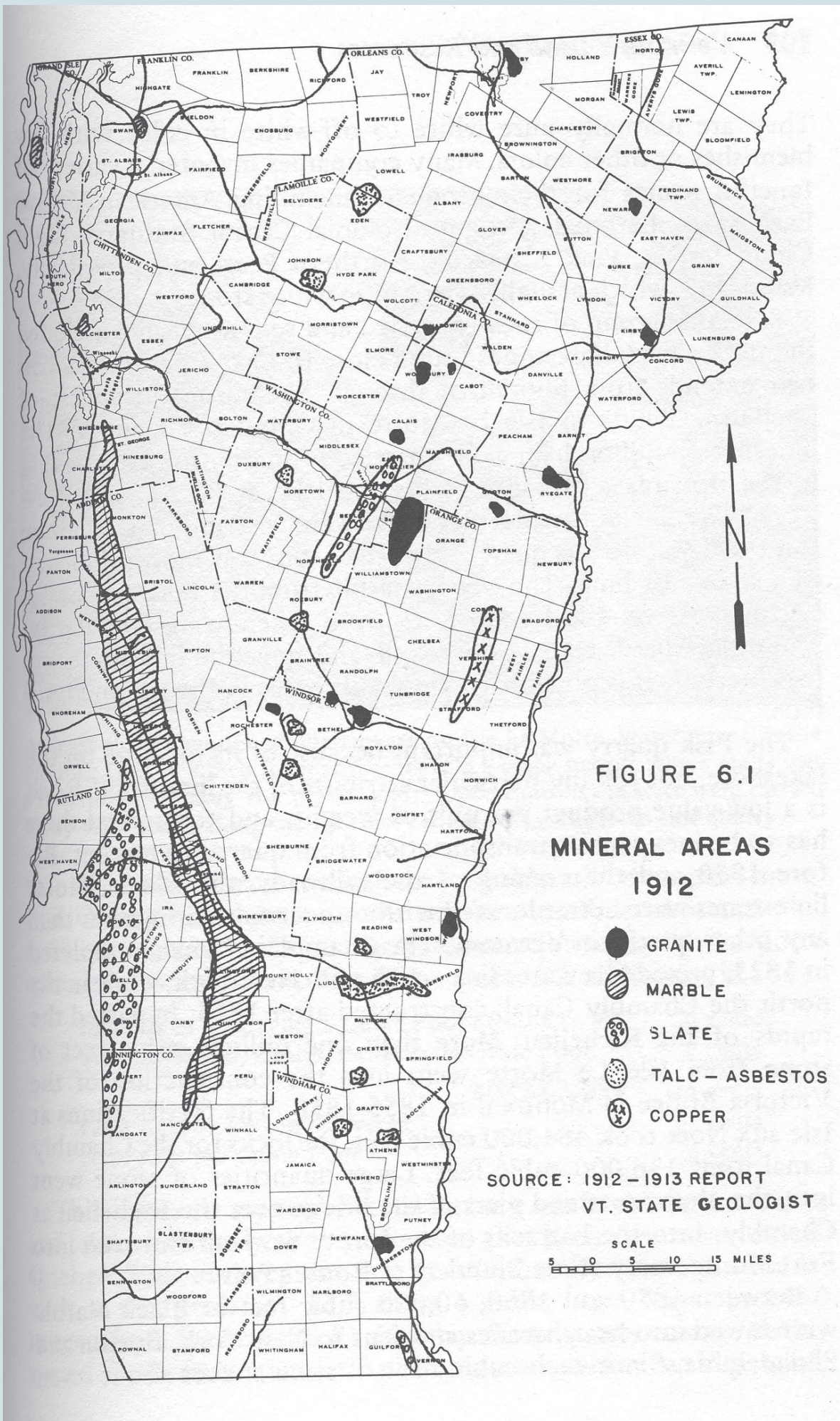


Figure 1: The Marble Valley extends from Middlebury in the north to Dorset in the south. The length of this belt illustrates the vast marble deposits in western Vermont (Meeks, 1986).

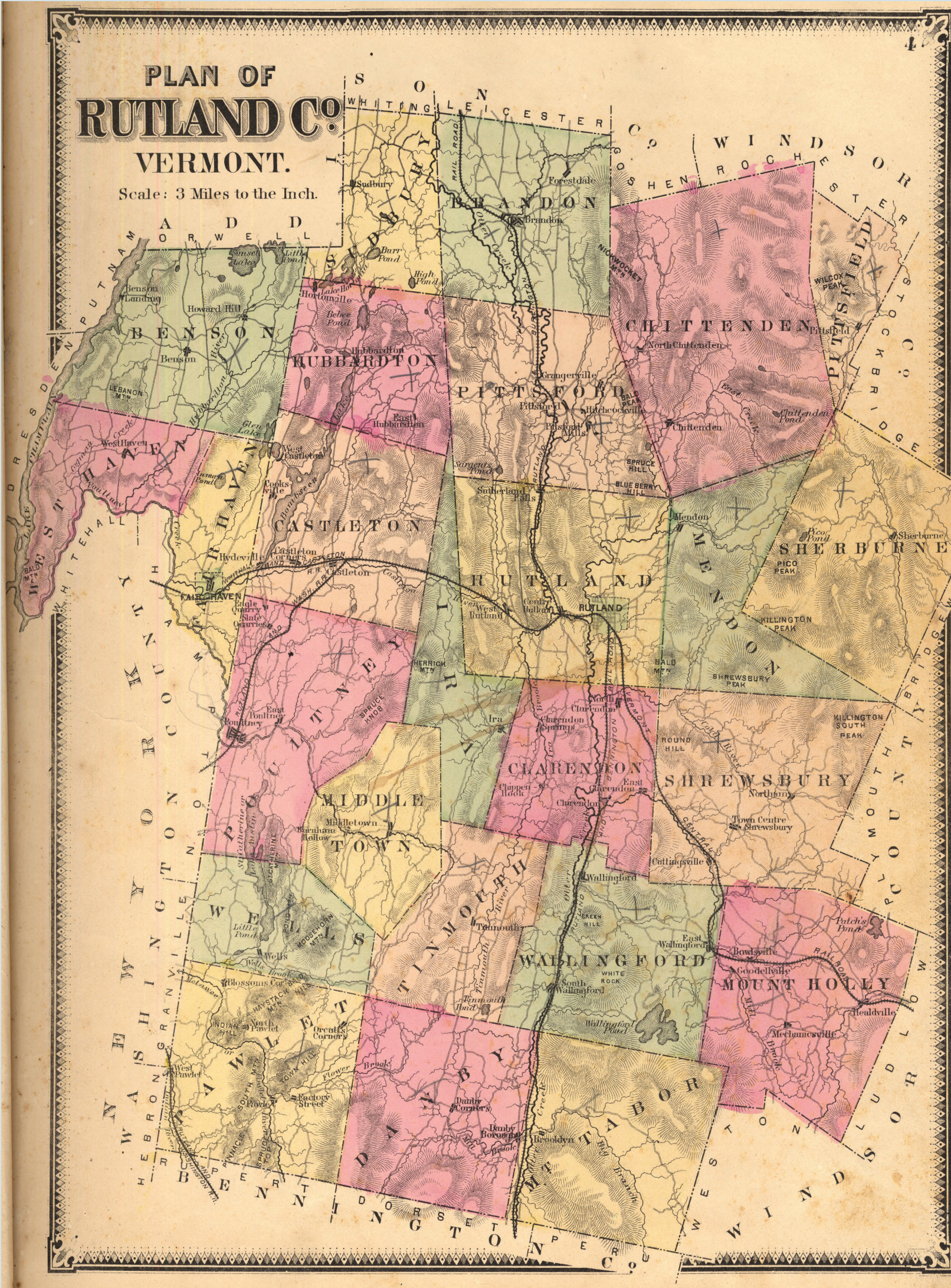


Figure 2: Rutland County was the area in which various significant events that impacted the marble industry in Vermont occurred (Beers, 1869).

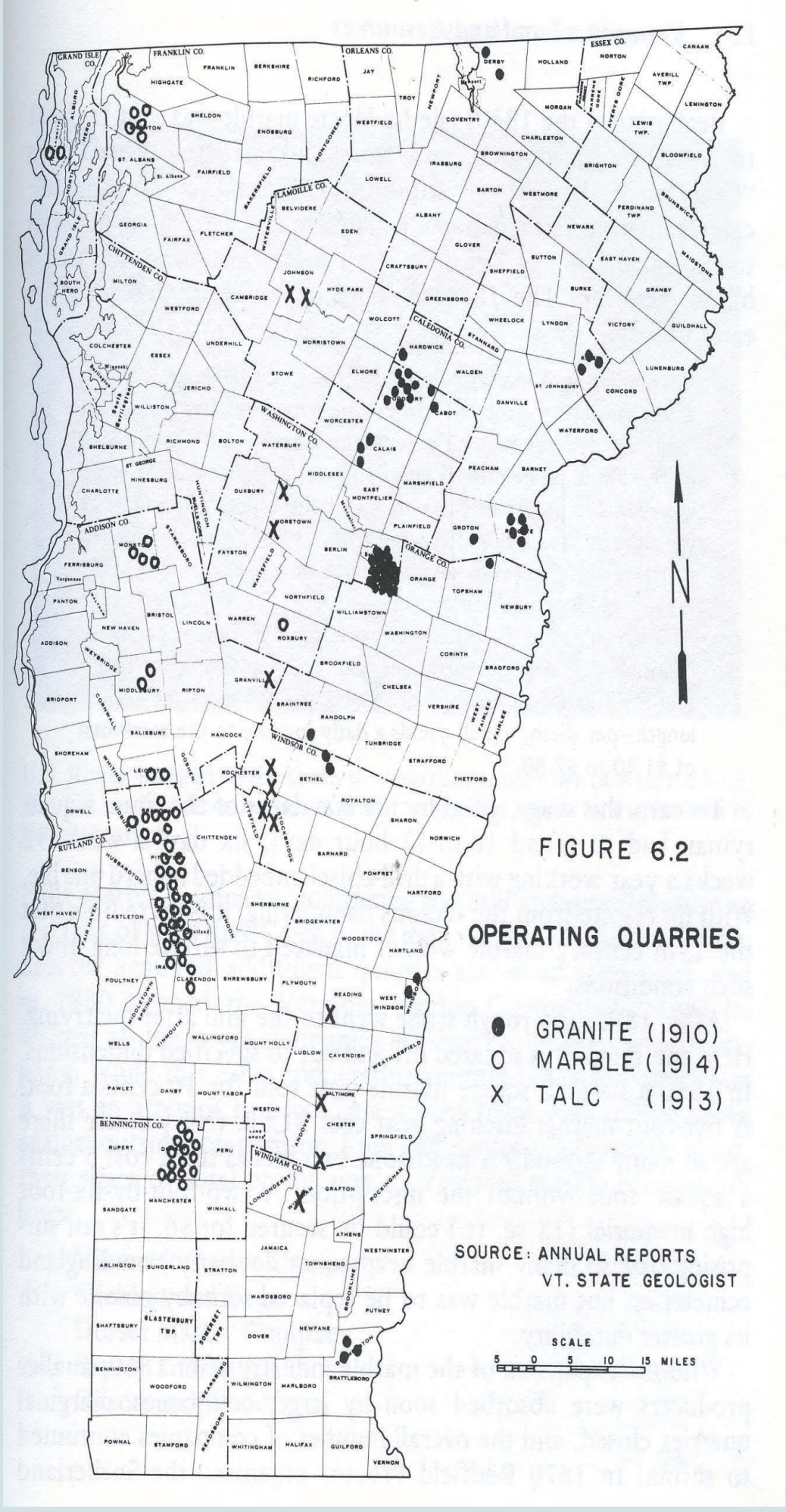


Figure 3: Although it is difficult to determine the precise number of marble quarries that existed in Vermont, most were located in and near Rutland County (Meeks, 1986).

The Transformation of Rutland County into a Center of Commerce

The development of the marble industry in Rutland County was accompanied by high population growth. The number of immigrants in Rutland County surged in the 1870s, and by 1880, the majority of the immigrant population was Irish or French Canadian, but also included Swedes and skilled Italian marble workers whom Proctor had hired from northern Italy. The population of Rutland in 1880 was 12,150, which surpassed that of its rival, Burlington. When Rutland split into West Rutland, Proctor, and Rutland in 1887, their combined population was approximately 16,000 (Austin, 2010). The population growth during these years illustrates the numerous jobs that the marble industry provided, which helped begin to transform Rutland County into a culturally diverse commercial center.

Railroads were instrumental in this evolution by facilitating the transportation of people and goods. Five railroads passed through Rutland from 1885 to 1890, one of which was the Clarendon and Pittsford. Incorporated into the Vermont Marble Company in September 1885, this railroad allowed the corporation to control transportation costs and easily move its workers and supplies. Not only did the construction of the railroad create job opportunities for county residents, but the Vermont Marble Company also owned various subsidiary organizations that contributed to the economic growth of the area. For example, it purchased land and hired workers to handle the timber that would be used for packaging and transporting marble. Moreover, it established Proctor Hospital in 1895 and provided medical care for both its workers and residents. Proctor also supported the construction of churches and libraries (Austin, 2010).

The evolution of Rutland County from a small county into a flourishing center of commerce with modern technology and infrastructure, as well as a steadily growing population, occurred in large part due to the myriad demands of the burgeoning marble industry that needed to be met, including a larger workforce and improved transportation.

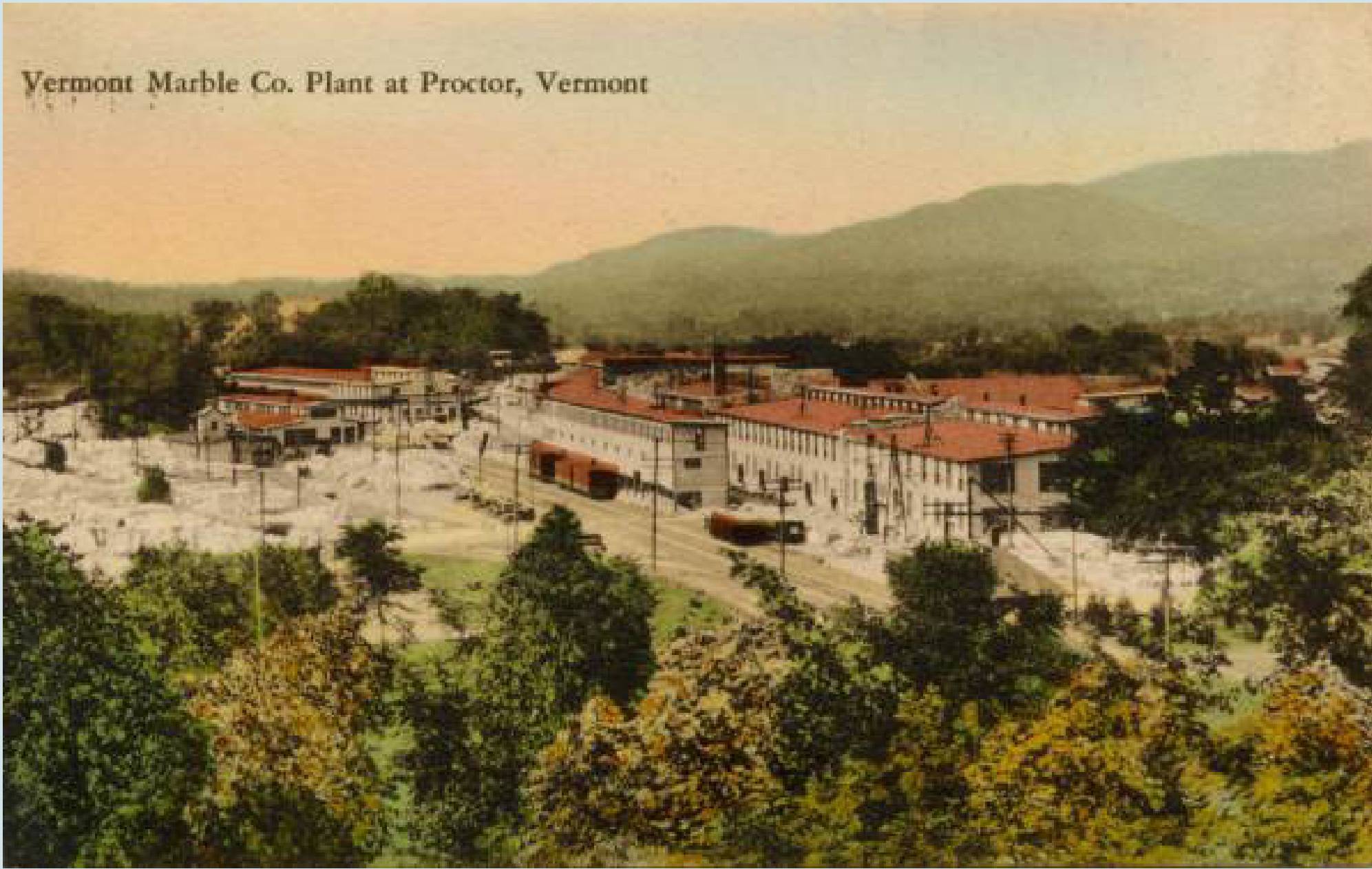


Figure 4: This postcard reveals the extensive operations of the Vermont Marble Company, which was considered to be the leading marble company in the world for a period of time (Geo. E. Chalmers Co., Early 1900s).

The Marble Valley

The Marble Valley of Vermont is a low-lying area located between Castleton River and Otter Creek that encompasses the region from Middlebury to Dorset. The orientation of the marble belt in this area is northwest-southeast (Austin, 2010). Not only do these two bodies of water mark the location of the Marble Valley, but it is also identifiable by the Taconic Mountains to its west and the Green Mountain belt to its east. Moreover, the Marble Valley received its name because it contains the most abundant deposits of marble in Vermont. Therefore, the majority of marble quarries are also situated there (Doolan, 1996).

The types of marble in the Marble Valley vary in their characteristics, including color and composition, which exemplifies the richness of the region. Studies indicate that most marble in Vermont is composed of at least 98% calcium carbonate, which is most commonly found in the form of calcite, but also exists as dolomite (Vermont Marble Company, 1929). While the typical marble in Vermont is white calcite with small amounts of muscovite, quartz, and pyrite minerals, various other shades exist. For example, marbles that are black and gray indicate the existence of carbon, while red, pink, and red-brown marbles signify the presence of manganese oxide or hematite. In addition, muscovite is responsible for the green color in green marbles, and brown and yellow marbles are tinted by limonite or ferric oxide (Dale, 1912).

Overview of the Development of the Marble Industry in Rutland County

Quarrying in Rutland began in 1794, but because only marble at or near the surface was extracted at the time, the growth of early marble companies was limited. One of the early entrepreneurs in the county was William F. Barnes. As one of the largest employers in Vermont, Barnes managed 50 employees in 1850, and in 1854, his company produced 300,000 feet of marble with 80 employees. Over fifty quarries were in operation in Vermont by 1860, with the majority located in the Rutland region. The construction of the railroad in the 1850s drastically influenced the expansion of the marble industry (Austin, 2010). In addition, technological improvements in the machinery used at quarries, including cranes, automatic saws, and rubbing beds, increased production capabilities (Smith, 1886).

While these factors were vital in the growth of the marble industry, without the business acumen of Redfield Proctor, it would not have flourished to the extent that it did. After moving to Rutland, Proctor was appointed as the receiver of the marble company, Dorr and Myers. In 1870, he decided to unite it with the Sutherland Falls Marble Company, which was also struggling financially. As the manager of the new Sutherland Falls Marble Company, Proctor opened branch offices in the Midwest and in major cities such as New York, San Francisco, Boston, and Chicago. In 1880, approximately 2,000 men worked in the marble industry in Rutland and 200 gangs of saws produced 60,000 tons of marble. Sutherland Falls Marble Company itself employed 300 men and possessed 64 gangs that produced 94,500 cubic feet of marble that year. After observing the success of Sutherland Falls Marble Company, the president of the financially distressed Rutland Marble Company transferred management rights to Proctor. Then, in September 1880, Proctor combined the Sutherland Falls Marble Company and the Rutland Marble Company into the Vermont Marble Company, which would come to symbolize the achievements of not only the marble industry in Rutland County, but also that of the entire state. At the time of the inception of the Vermont Marble Company, it had 750 employees. By 1889, it employed 1,400 workers, and by 1903, it was the largest marble operations in existence (Austin, 2010).

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