Tyranny of Stone: Economic Modernization and Political Radicalization in the Marble Industry of Massa-Carrara

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TYRANNY OF STONE: ECONOMIC MODERNIZATION
AND POLITICAL RADICALIZATION
IN THE MARBLE INDUSTRY
OF MASSA-CARRARA (1859-1914)

A DISSERTATION SUBMITTED TO
THE FACULTY OF THE GRADUATE SCHOOL
IN CANDIDACY FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

DEPARTMENT OF HISTORY

BY
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CHICAGO, ILLINOIS

MAY, 1994
To my parents,
Domenico Lorenzini and Rosina Gregori Lorenzini
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INTRODUCTION

The Tuscan province of Massa-Carrara has an important place in the modern history of the Italian people. Predominantly a mountainous and agricultural region, Massa-Carrara's economy has been a microcosm of the rural economy which historically has dominated the peninsula's Apennine chain. The abundance of small landholdings, pasture and woodlands which carpet Massa-Carrara's mountains and hills, valleys and glens can be found throughout the Apennines from Lombardy to Calabria. Yet while the Massa-Carrarese peasantry arduously worked the small plots of land which dominate the provincial landscape, seldom did many fully enjoy the fruits of their labor. All too often crops not seriously damaged by the mountains' chilling frosts or turbulent storms were destroyed by drought or disease. Adding to the uncertainties inherent in farming and native to mountain agriculture, the growing rural population in Massa-Carrara, as elsewhere along the Apennines, often had to contend with an overpopulated countryside where available land was frequently rocky and easily overworked.

For many who lived in Massa-Carrara's hill towns and mountain villages, the traditional response to the inherent
risks and limitations of mountain agriculture and to rapid demographic growth was seasonal migration to other regions in Italy. For centuries, men from the smallest mountain hamlets in the region, such as Camporaghena, left the high Apennine pastures to winter in the Maremma of southern Tuscany. Similarly, countless villages and towns in the province provided seasonal workers for fields and mines, shops and docks throughout Tuscany, Liguria, Lombardy and Reggio-Emilia. During the nineteenth and twentieth centuries new avenues were opened for those who were willing and able to emigrate; the Americas, other European states and, eventually, even Australia now provided a much needed outlet for the expanding population and industrious peoples of Massa-Carrara and Apennine Italy.

While the topography, demography and agricultural economy of Massa-Carrara created conditions of labor and emigration which were similar to those experienced by other Apennine farmers, the province's ancient marble industry provided its inhabitants with experiences which were particular to the region. Marble has been quarried in northwestern Tuscany's Apuan mountains since the Roman Republic. During the nineteenth century, the quarrying and working of marble became a truly industrial enterprise. In the first half of the 1800s wide-scale exploitation of Massa-Carrara's marble riches was promoted by growing international demand for Carrarese marble, increased foreign and local investment and technological
advances. By the end of the nineteenth century, the industry was in the hands of an able entrepreneurial class which was imbued with capitalist values. While extending their control over excavating, transporting, working and marketing the valuable stone, the marble entrepreneurs both modernized the industry and expanded production. Amassing huge personal fortunes, marble industrialists established family dynasties which collectively controlled the province's richest natural asset, it largest single work-force and, eventually, local politics as well.

Representing the most dynamic and wealthiest group in the area, Massa-Carrarese marble industrialists became deeply involved in the region's politics in the mid-nineteenth century. Much as elsewhere in Restoration Italy, the local entrepreneurial elite became attracted to political liberalism and laissez-faire economics. Influenced by the ideals of the Risorgimento and by the principles of nineteenth century liberalism, leading marble industrialists joined ranks with members of Massa-Carrara's middle classes and turned against Modenese rule under the Este dynasty and its Habsburg supporters in the late 1850s. The marble entrepreneurs' support of the Piedmont's attempt to gain control of northern and central Italy was principally the result of their belief that the marble industry would expand rapidly once released by the progressive Turin government from the confines of the small and relatively backward Modenese state.
The successful unification of Italy under the House of Savoy benefitted the marble industry beyond the most optimistic expectations. The dissolution of the Duchy of Modena and the incorporation of the newly created province of Massa-Carrara into the much larger kingdom of Italy by the more progressive Piedmontese ended economic and structural barriers which historically had limited the industry to moderate growth. Within a relatively short period, investments increased, new technologies were introduced, roads and rail lines were built, domestic and international markets expanded, and production soared. As the industry grew, the most successful industrialists consolidated their hold over ever larger segments of the marble industry and in the process they created a commercial empire which spanned the globe. The huge profits they made came from the sale of the much prized Carrara marble in cities as far as Hong Kong and Sydney, Rio de Janeiro and Buenos Aires. By the start of the twentieth century, the industry was controlled by a mere handful of marble entrepreneurs whose impressive wealth and political influence was matched only by the power they head over the lives of thousands of marble workers and their families.

From palatial villas nestled between the Apuan mountains' quarries and the Tyrrhenian Sea, the marble industrialists commanded the largest single work force in Massa-Carrara. Toiling from early dawn to past sundown, men from surrounding villages excavated ton after ton of precious marble from
Quarries cut deep into the high mountains surrounding Carrara and Massa. Experienced teams then moved the heavy stones down the steep mountainsides to dusty, noisy, wet and dangerous sawmills and workshops where hundreds of men, women and children cut and polished the stone to order. As market demand for Carrarese marble grew, workers from throughout northern and central Italy were employed by an industry whose injury and death rates were among the highest in the kingdom. Yet, as long as demand for marble was up, the industry continued to draw new employees even for the most arduous and perilous work. When given an option, many peasants from local villages as well as those from more distant towns continued to choose to leave subsistence agriculture for the relatively high wages paid by this all too dangerous industry.

Quarrymen and lizzatori laboring in distant quarries and separated by towering mountains gradually developed a sense of solidarity with the marble workers employed in the sawmills and workshops as well as with those who transported the stone to the docks and raillines. Influenced by republican, socialist and anarchist ideals, the Carrarese marble workers developed a radical political tradition which eventually attacked both the economic and political power of the marble industrialists. Mutual aid societies, anarchist and socialist inspired unions, newspapers, schools and social clubs, strikes and work-slowdowns, demonstrations and elections were used by Carrarese workers not only to achieve better wages and working
conditions but also to challenge the industrialists' control of the region's marble riches. From the late nineteenth century until the establishment of the fascist dictatorship in the twentieth century, northwestern Tuscany was known throughout Italy for its prized Carrara marble as well as for a proletariat which was determined, well organized and often violent in its opposition to Massa-Carrara's marble industrialists.

Historical studies dealing with the history of the northwestern most part of Tuscany from late the eighteenth century to the early twentieth century, however, have been few in number. While many local writers have focused on particular aspects of modern Massa-Carrarese history, all too little scholarly research has been devoted to the complex relationships between the ancient Carrarese marble industry and the region's work-force, on the one hand, and the various governments which controlled the territory from the French occupation to the twentieth century, on the other.

Most studies on conditions in Massa-Carrara are generally of limited value either because of the narrowness of their focus or as a result of the partisanship of the authors.¹

Other works have dealt with the history of the local working class and anarchist movement; the origins and development of local fascism; and the partisan struggle against the Fascist regime. Although the published literature sheds light on particular aspects of Massa-Carrarese history, the province has remained a little understood region.

There are only very few published works which concern themselves with the interplay between political, social and economic conditions in Massa-Carrara. The first of such studies, La Lotta Sociale in Lunigiana, was written in 1958 by Renato Mori. This work reviews provincial politics from 1859 to the turn of the twentieth century. While Mori addressed developments in the marble industry, the author's main focus dealt with conflicts which arose between the province's Moderate-liberal political elite and the republican, socialist, anarchist and Catholic movements. Similarly, Antonio Bernieri turned his attention to regional politics. In two monographs, titled Cento anni di storia sociale a Carrara and

Italiana fra L'80 e il '900, (Venice: Marsilio, 1988).

Storia di Carrara Moderna, Bernieri wrote of political events in nineteenth and twentieth century Carrara from the perspective of the class relationships which arose out of the marble industry. Yet an in depth analysis of Carrara's primary industry was not done until Lorenzo Gestri published his seminal work, Capitalismo e classe operaia in provincia di Massa-Carrara. In this study, Gestri described the growth of the marble industry as well as provincial political developments from the unification of Italy to the Giolittian era. Professor Gestri's book remains an invaluable scholarly contribution to understanding how political and economic changes transformed the province of Massa-Carrara in the late nineteenth and early twentieth centuries.\(^3\)

The present study continues to examine the political and economic transformation of the modern province of Massa-Carrara. Unlike most of the existing literature, this work summarizes the political history of the region before the French Revolution, and the offers an assessment of local political and economic conditions under the French and during the Restoration. Moreover, using newly discovered evidence and recent scholarship, this monograph reassesses the state's relationship to modernization and growth in the marble

industry as well as the condition of the local work-force. While confirming the claim that both urban middle classes and leading marble entrepreneurs in Massa-Carrara supported the Savoyard monarchy during the Risorgimento, this study further examines why support for the kingdom remained strong throughout the nineteenth and early twentieth centuries only within the circle of marble industrialists. Much as elsewhere on the peninsula, Massa-Carrarese business leaders firmly supported the Italian state. The technological and industrial innovations in the quarrying and working of marble which had been promoted by marble industrialists were now complimented with a modern state whose officials and bureaucrats sought to facilitate industrial investments and expansion. Continued industrial modernization and expanded productive capacity now allowed the marble entrepreneurs to take full advantage of the new national market which had been created with the unification of Italy. The resulting increase in profits helped solidify ties between those who controlled Carrara's marble riches and the government in Rome.
CHAPTER I
THE POLITICAL SETTING

The province of Massa-Carrara lies in the northwestern most part of Tuscany. It is a land of high Apennine and Apuan mountain peaks, rolling foothills and a rich Tyrrhenian coast. Throughout recorded history, this territory was fought over because it provided access from Pisa and Lucca to northern Italy, arable lands for cultivation, and precious marble from the Apuan mountain slopes. Massa-Carrara's marble wealth and strategic importance as a gateway linking Tuscany to the north proved to be both a burden and a source of profit for its people up to modern times.

The marble rich province presently includes most of the area which had been part of a territory known in the Middle Ages as Lunigiana.\(^1\) During the medieval period, contending feudal dynasties and northern Italian city-states battled for control of this mountainous region. As early as the eleventh century, for instance, Lucca and Pisa warred with Lunigiana's

\(^1\)Eugenio Branchi, *Storia Della Lunigiana Feudale*, 3 vols. (Pistoia: Arnaldo Forni, 1897-98). Although this work was published in the late nineteenth century, it remains one of the most important accounts of Lunigiana during the Middle Ages. Lunigiana received its name from the Roman colony of Luna founded in 177 B.C. Geographically, Lunigiana runs from the Lucca-Massa boundary on the south to the Magra river on the northwest and the Apennines on the north.
numerous feudal lords, and with one another, as well as with other Italian states, in order to extend their respective dominions over northern Tuscany's mountains, valleys, forests, and roads.

From the late Middle Ages until the French occupation at the end of the eighteenth century, Lunigiana, a politically fragmented but still geographically coherent region, was a pawn in the traditional rivalries which existed among the northern and central Italian powers. While the Genoese managed to wrestle control of the coastal towns in northwestern Lunigiana away from Pisan influence in the thirteenth century, the extension of Tuscan power into the area continued. By the early fifteenth century, the Florentines became entrenched in various towns along the Magra river. During the latter half of the century, Florence gained control of Fivizzano, the most important Apennine town in Lunigiana.\(^2\) Fivizzano, located in southeastern Lunigiana, was a prosperous urban center nestled in the foothills of the northern Tuscan Apennines. Holding sway over the largest territory in Lunigiana, this town was strategically located between

Florence and Reggio-Emilia. The Florentines used Fivizzano as a base to expand their influence throughout the rest of Lunigiana. Meanwhile, the Milanese, who had long sought to extend their power into the Tuscan Apennines, managed to take control of Pontremoli, Lunigiana's northern most urban center. Thus by the end of the fifteenth century, the Genoese, Florentines and Milanese had carved up much of Lunigiana in an attempt to gain control of the region's important mountain passes, roads and coastal parts as well as its rich forests, and iron deposits.

During the following centuries, Lunigiana remained a prized possession of the major states of northern and central Italy who continued to compete with one another for a greater foothold in the region. While Genoa kept northwestern Lunigiana and its bay of La Spezia, Florence expanded her dominion from Fivizzano northward, eventually taking control of Pontremoli in 1650. The principality of Carrara and the Duchy of Massa with their marble rich territories came, in turn, into the possession of the Este dynasty of Modena in 1741. Increased demand for Apuan marble, which had been initially stimulated by Renaissance building projects and

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artistic endeavors, made control of Carrara and Massa profitable for the Este. Furthermore, the acquisition of these two new territories gave Modena an outlet to the Tyrrhenian sea. The Italian states' long struggle over Lunigianese territories came to an abrupt halt at the end of the eighteenth century. The French Revolution and Napoleonic wars forcibly brought Lunigiana and much of the rest of the peninsula into the orbit of the French state. The French redrew ancient boundaries and completely erased others. While some Italian territories were allowed to remain, for a time, independent in name, new states were also created. In 1797, with the formation of the satellite kingdom of Italy, the greater part of Lunigiana, along with most of northern Italy, was incorporated into a new French empire.

Much as elsewhere on the peninsula, the seventeen years of French dominance resulted in fundamental changes in Lunigiana. Under the French, the last vestiges of feudalism which still existed in isolated pockets of Lunigiana were destroyed. A significant portion of the region, known as Lunigiana feudale, had been held, since the late Middle Ages, as the private domain of various members of the Malaspina family. Supported by the French, the communal governments took these territories from this ancient clan. While some of the lands were sold outright to wealthy townsfolk, the

\[4\] For a detailed description of feudalism in Lunigiana and of the role played by the Malaspina see Branchi, Storia, vols., 1, 2 and 3.
communes retained ownership of many of the expropriated properties and leased them, when possible, to peasants. Another new source of state revenue was found in the area's many large mills and grape and olive presses which communal authorities also took from the region's feudal nobility. The fees peasants paid for milling grain, and pressing grapes and extracting oil from olives now went to the local communes. The coffers of the pro-French communal governments were also filled with monies from the sale and leasing of properties confiscated from the Catholic Church. Augustinian, Franciscan and Servite monasteries, convents and seminaries were closed and their buildings and adjacent lands were expropriated. While the communes retained direct ownership and possession of some of these properties, many of the assets were either sold or leased.

With the resulting increase in revenue, civil authorities in Lunigiana assumed new obligations. Aside from providing modest pensions for those priests, monks and nuns who had been displaced by the closure of their religious communities, the communes assumed responsibility for supervising and financing local grammar schools and paying teachers, all of whom were clerics.\(^5\) The definitive defeat of Napoleon Bonaparte's

\(^5\) For Lunigiana under the French see Giorgio Pellegrinetti, La Lunigiana Ex Feudale nel Triennio 1796-1799, (Pontremoli: Artigianelli,) 109-44; see also Giorgio Pellegrinetti, La Lunigiana Napoleonica dal 1799- al 1806, (Pontremoli: Artigianelli, 1986), 97-129 and 187-211. A good review of the complicated events which occurred during French rule is found in Giorgio Candeloro, Dalla Restaurazione nazionale, 1815-1846
armies, however, brought to an end many of the changes made by Lunigiana's pro-French authorities.

The collapse of the Napoleonic regime in 1814 led to a partial revival of the status quo ante. In Lunigiana, the Restoration witnessed the return of the Florentines and the Modenese, while the House of Savoy inherited the lands formally controlled by the Genoese. A period of reaction and repression followed in Lunigiana, especially in the territories controlled by the Duchy of Modena, lands governed by the Este dynasty.

Long before the end of Este rule in 1859, the dynasty had gained the reputation of heading one of the most repressive governments in Italy. Maria Beatrice Cybo d'Este, Duchess of Massa and Carrara marked her family's return to power with a partial restoration of land to the aristocracy and Church. Moreover, unlike her more liberal cousins governing Tuscany, Maria Beatrice punished local officials who had collaborated with the French. At the death of the Duchess, her son, Francesco IV, as Duke of Modena, officially inherited Massa and Carrara. A deeply conservative ruler, Francesco IV, grandson of Habsburg empress Maria-Theresa and nephew of Austrian emperors Joseph II and Leopold II, allowed the Jesuits to regain enormous influence in the Duchy and placed educational institutions under direct clerical supervision.

Anyone suspected of reformist sympathies was simply arrested. Such a climate of suspicion existed in the Duchy that even the wearing of a mustache or beard could mark a man as a subversive. Este rule was intolerant of non-political offenders as well. New laws were enacted which called for corporal punishment for many offenses. Public drunkenness, for example, was punished with a beating of 15 strokes with a wooden board and public indecency earned the guilty party 25 strokes. Moreover, the legal system itself was subject to interference by the Este. Francesco V, inheriting the Duchy at his father's death in 1846, did not hesitate to intervene arbitrarily in the judicial process. Whenever the young Duke was especially displeased with a court's exoneration of an accused, he would order as many new trials as required to obtain a conviction.

The reactionary and repressive policies of the Este and


of the other Restoration governments in Italy did little to halt the pressures for change. In general terms, the earliest discontent with the Restoration and with the Este regime in particular tended to be political in nature. The legacy of French Revolutionary reforms gave rise to democratic sentiments which, by the 1820s, spawned groups opposed to authoritarian rule for ideological reasons. The manifestation of this discontent can be seen in the carbonari movement which during the early years of the Restoration began to radiate throughout the peninsula. While the carbonari vaguely reflected the influence of the progressive and egalitarian ideas of the French Revolution, they were only loosely united by a general sentiment of protest against the established order. This clearly seemed to be the case in the Duchy of Modena where carbonari societies became the only avenue for those who were dissatisfied with the Este regime in the early years of the Restoration. Shrouded in secret rituals, members were simply required to commit themselves to work against the government. By the 1830s, however, the absence of clear aims and firm leadership limited the appeal and the effectiveness of the outlawed movement.

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8See Bedoni, "Il Ducato di Massa e Carrara dal 1829 al 1859," 125-51. The author, reviewing the growth of the carbonari in Lunigiana, related how in the 1830s, Domenico Cucchiari (a student from Carrara) became the leader of the local carbonari and sought, unsuccessfully, to overthrow Modenese rule. See also Rombaldi, "L' economia di Massa e Carrara," 139-93; and for a good assessment of the workings of Este laws see Bedoni, "Il Ducato di Massa e Carrara dal 1815 al 1829," 257-303.
The carbonari gave way to secret societies loosely organized around vague nationalistic sentiments and republican principles. By the 1840s Mazzini's brand of republicanism, in particular, found a certain following in Lunigiana. Police records, although sketchy at best, indicate that while membership in Mazzinian societies was small, members were drawn primarily from the more educated and skilled townsfolk. Attracted by Mazzini's Young Italy movement, lawyers, physicians, shopkeepers, students and artisans formed local clandestine groups which covertly promoted his nationalistic and republican ideals throughout the region.

Mazzini's followers in Lunigiana embraced a program that called for the abolition of the aristocracy's political power and the destruction of the papacy's temporal authority. They also subscribed to the Genoese revolutionary's vaguely defined vision of a moral regeneration of the Italian people and interclass cooperation in a newly united republican Italy. Influenced by Mazzinian groups in Tuscany, Modena and Piedmont, Lunigiana's republicans held that national unification under their party's leadership would promote political and intellectual freedom by abolishing the petty laws which hampered the movement of people and ideas across the old political boundaries. While such ideas may have had a certain appeal in urban areas that had to support Modenese military detachments, the immediate impact of the Mazzinians in the region was small. Given the military power of the Este and of
the other Restoration governments during the first half of the nineteenth century, Mazzinian societies in Lunigiana and elsewhere on the peninsula could do little to effect change. 9

During the late 1840s and 1850s, a quieter but ultimately more potent brand of discontent developed within the propertied classes. Throughout northern and central Italy supporters of moderate reform from the propertied elites turned to the House of Savoy. In Lunigiana, significant segments of the propertied classes began to favor the prospect of being governed by the more economically advanced and progressive Piedmontese state. While enforcing a severe political repression, Francesco V had continued to raise taxes on land as well as on the manufacture, sale and consumption of goods in the region. The revenues, however, were not spent to maintain or expand Lunigiana's economy. These monies were, instead, funneled back to the Este treasury and therefore

9Bedoni, "Il Ducato di Massa e Carrara dal 1829 al 1859," 125-51. Bedoni referred to Modenese police reports in which men suspected of radical sympathies were detained by the authorities. The author suggested that republicanism was most popular among the middle classes in the region's towns. See also Bernieri, Storia di Carrara Moderna, 37-48. Since the Restoration, a clandestine book market existed in Pontremoli where not only political works but also French Romance titles were secretly bought and sold. The state's unwarranted restriction of Pontremoli's traditionally healthy book market treated every book vendor as a possible revolutionary. This had the legal effect of turning book buyers and sellers into subversives. See Pietro Quartieri, "L'emigrazione nella Lunigiana toscana," Studi Lunigianesi, 1974, 19-35. For a general overview of social and economic conditions in Lunigiana as well as interesting insights into the region's intellectual life in the generation after the Napoleonic Age see Michele Angeli, Aronte Lunese, (Pisa: Prosperi, 1835), 119-89 and 207-20.
those involved in local agriculture and industry suffered from Modenese misrule. Moreover, the Este preference for employing men from the Austrian empire as government officials in Lunigiana increasingly alienated the region's educated elite. Equally objectionable to this group was the requirement that those who sought university training had to attend the University of Modena. Shortly after having graduated in medicine from the University of Florence, Count Giuseppe Tenderini, for example, discovered that only a degree from the University of Modena would qualify one for a professional position in the Este domains. Eventually, Tenderini was given a job at Carrara's SS. Giacomo e Cristoforo hospital only when the young physician, once again, passed his oral exams, this time at the university in Modena.10

Despite the economic and political discontent within important segments of Lunigiana's propertied and educated elites, the real catalyst for change came from outside of the region. In 1848 the news of a rebellion in Paris triggered the collapse of the old order in much of the peninsula. In the absence of any direct Austrian military support, Francesco V now faced an openly hostile population and was forced to flee his capital in March of 1848. For his part, Grand Duke Leopold II of Tuscany responded to popular unrest in Livorno

10Bedoni, "Il Ducato di Massa e Carrara dal 1829 al 1859," 125-51; and Rombaldi, "Dalle Sette alla Costituzione," 106-23; See also Claudio Pisani, "L' antico ospedale dei SS. Giacomo e Cristoforo di Carrara dal 1830 all' unità d' Italia," in Massa e Carrara da Maria Beatrice, 85-104.
and Florence by adopting a constitution that promised limited reform. When this proved to be insufficient, Leopold II fled into exile in 1849.11

With the fall of the Restoration regimes in Modena and Tuscany, moderate reformers took over the government in both the Este capital and in Florence. The collapse of Este rule and resultant absence of Modenese military detachments caused the propertied elites in Carrara and Massa to fear a complete break down of authority. Recognizing that something had to be done, local men who recently had held municipal posts under the Modenese stepped in to establish a provisional government which quickly sent a special delegation, led by Count Andrea Del Medico, to Florence to discuss the possibility of union with Tuscany. Del Medico was a leading figure in the propertied class of Carrara, a man who personified the interests of the region's marble entrepreneurs. He realized that marble production had to be protected at all costs. Since the Este regime could no longer be counted upon to maintain order in the streets of Massa and in the quarries of Carrara, it had proven itself expendable. Under existing circumstances, approaching the Tuscans seemed the best option. The propertied classes of Carrara were attracted both by Tuscany's

tradition of liberal economic reform as well as because the
government in Florence was influenced by moderates such as
Bettino Ricasoli. Moreover, union with Tuscany rather than
rule from Modena had long been popular among the Lunigianese.
Unlike the Duchy of Modena, the Tuscan state had very deep
historical, cultural and linguistic ties to Lunigiana, a
region separated from Modena by high Apennine mountain peaks.
But the defeat of Piedmont by Austria brought an end to Count
Del Medico's endeavors in Florence. The Austrian army re-
occupied Tuscany and Modena and restored both Leopold II and
Francesco V by the end of 1849.12

Despite their marginal role in 1848, republicans were the
chief victims of the political repression that came with the
return of the Duke of Modena. Although the republican
movement suffered from disunity and lack of clear goals,
Mazzinian societies had spread rapidly throughout Lunigiana.
While the numerical strength of these secret societies was
unknown, the continued presence of these subversive groups in
the region was serious enough to alarm the Duke. Moreover,

12Bernieri, *Storia di Carrara Moderna*, 37-40; See also
Renato Mori, *Massa e Carrara nel 1848*, (Massa: Apuania, 1949),
especially chap., 1. While Bernieri depended on Mori's
earlier scholarship, Bernieri suggested that Del Medico had
been alienated from the Este because Francesco V, in the end,
had refused to allow the Count to build a marble rail line in
Carrara. For a general review of Tuscan ties to Lunigiana,
see W.K. Hancock, *Ricasoli and the Risorgimento in Tuscany*,
(New York: Faber and Faber, 1926. repr., New York: Howard
See also Walter Pagani, *Vocabolario del Dialetto di Filattiera*,
(Pisa: Pacini, 1983).
throughout the 1850s the Modenese exaggerated the true power and influence of local republicans because of the increasing number of verbal, physical and armed assaults on civilian and military authorities. Government officials concluded that these attacks as well as the wide-spread anti-Este sentiment in the region's urban areas were largely sparked by secret republican societies which fueled local resentment against Francesco V's regime.\textsuperscript{13}

The Este responded to this perceived threat by passing laws and regulations enforced by special military tribunals. Severe punishments were set for a variety of offenses which included disseminating republican literature, uttering rebellious slogans, encouraging desertion among soldiers, conspiring to overthrow the government, threatening civil or military authorities, and even wearing "revolutionary cockades." Especially concerned with the political climate in the Carrarese marble districts, the Duke outlawed all weapons in the commune and ordered marble quarry operators to supply the authorities with information detailing their workers' political beliefs and activities. Moreover, the Este dynasty increased the number of soldiers stationed in Lunigiana and, eventually, proclaimed martial law. Steady government persecution of the secret societies further weakened the Lunigianese republican movement which was now increasingly

\textsuperscript{13}\textit{See Rombaldi, "Dalle Sette alla Costituzione,"} 106-23; and Bedoni, "Il Ducato di Massa e Carrara dal 1829 al 1859," 125-51.
divided over both strategy and goals. In the end, Duke Francesco V's harsh rule temporarily restored order to the area but it also helped drive many who had earlier supported republicanism towards the more liberal Piedmontese monarchy. As the only Italian power capable of successfully challenging the Este, the House of Savoy became the lesser evil to those who regarded national union and an end to Habsburg influence on the peninsula more highly than their republican principles.\textsuperscript{14}

Ex-republicans discovered new allies among Lunigiana's propertied and educated elites who also found continued Modenese rule intolerable and actively began supporting the House of Savoy. Their support was channeled through the National Society which, led by Giuseppe La Farina and favored by Piedmontese Prime Minister Camillo Cavour, aimed to make Victor Emmanuel II king of Italy and thus bring to an end Este rule and Austrian influence on the peninsula. Political

\textsuperscript{14}Renato Mori, \textit{La Lotta Sociale}, 1-4; and Bernieri, \textit{Storia di Carrara Moderna}, 40-55. Martial law was proclaimed in Lunigiana in 1854 and again in 1857. Areas of special concern to the Este were Avenza, Carrara, Fivizzano and Massa. Fivizzano, part of the Florentine state since 1477, was transferred by the Tuscan Grand Duke to the Modenese in 1848. After Francesco V was restored to power in 1849, he discovered a deep-seated anti-Este sentiment among the Fivizzanese which was accompanied by the spread of local republican societies. For an account of the negative Tuscan response to Modenese encroachments into Tuscan Lunigiana see LoRomer, \textit{Merchants and Reform}, 220. See also Bedoni, "Il Ducato di Massa e Carrara dal 1829 al 1859," 125-51; and Raymond Grew, \textit{A Sterner Plan for Italian Unity: The Italian National Society in the Risorgimento}, (Princeton: Princeton University Press, 1963), 141-45 and 149-53.
expediency drove La Farina and his National Society towards Piedmont. While La Farina originally had been a Mazzinian republican, by 1857 he concluded that Italian unity could only be achieved by the Savoyard state. The popularity of this organization among former republicans in Lunigiana, as well as throughout northern Italy, is evidence that many who had looked to Mazzini now turned to Cavour. The movement was a marriage of convenience which offered Turin the services of a wide array of Italians. Within the ranks of the National Society, men of property and education, along with former republicans, often of plebeian origins, dedicated themselves to achieving a united Italy free of reactionary local regimes and Habsburg control. For his part, Cavour did not hesitate to use the National Society as an instrument of Savoyard foreign policy.15

During a July 1858 meeting at Plombières, Cavour had succeeded in getting Napoleon III to agree secretly that France would aid the House of Savoy when war would break out between Piedmont and Austria. This conflict was to be ignited by events in Lunigiana, a region which was the key to Cavour's strategy. Taking advantage of the firm footing which the

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15On the secret societies as well as the republican and democratic movement in Lunigiana see Rombaldi, "Dalle Sette alla Costituzione," 106-23. For insight on relations between republicans and the National Society see Grew, A Sterner Plan, chaps., 1 and 2. Grew points out that even some of the closest to Mazzini came to support Piedmont in the late 1850s. La Farina, for example, had been Mazzini's principle agent in Paris in 1850.
National Society had established in Lunigiana, Cavour encouraged La Farina to make a full report of Modenese abuses in Lunigiana to Turin. He was especially interested in an assessment of the political climate in the region's main cities. Moreover, the Prime Minister gave tacit approval to La Farina's plans for the National Society to lead an armed insurrection in this pivotal area. As a result of Habsburg ties to the Este, a revolt against Modenese misrule in Carrara and Massa would offer the Piedmontese the necessary *casus belli* against the Austrians. But the plan to use Este repression and popular rebellion in Massa and Carrara as a pretext for war against Modena and its Austrian ally proved unnecessary. The Austrians had decided to act on their own and on April 23, 1859, they declared war on Piedmont. 16

In Lunigiana, resentment against Este rule erupted into open rebellion four days later with insurrections in the cities of Carrara and Massa. Although these insurrections lacked firm leadership, the Modenese military chose to

evacuate from the towns and their coastal territories. After the Battle of Magenta, a similar rebellion in Modena forced Francesco V to withdraw from the Duchy.\textsuperscript{17}

The Piedmontese were quick to support the establishment of provisional governments throughout central Italy. In Lunigiana, such a government was proclaimed in early May by Vincenzo Giusti, a local attorney and leader of the National Society in Massa. As in 1848, concern for law and order once again provided some among the propertied elites of Carrara and Massa with a powerful incentive to come quickly to terms with the forces which had altered the political status quo. Giusti, supported by some of the leading merchants in the region, sought union under the House of Savoy. Count Cavour immediately accepted Giusti's offer. The Piedmontese then sent Luigi Carlo Farini to direct the reigns of government in Modena and a military detachment to oversee the occupation of Lunigiana.\textsuperscript{18}

The Piedmontese military presence found a broad base of support locally. Both republicans and moderates saw the need

\textsuperscript{17}Bernieri, Storia di Carrara Moderna, 49-55. Bernieri notes that Francesco V was so despised in Carrara that he was popularly referred to an "Can" (dog) in Carrarese dialect. See also Mori, La Lotta Sociale, 2-3; and Giacchino Forzano, Carrara dal 27 aprile al agosto 1859, (Carrara: Sanguinetti, 1909). For a general review see Candeloro, Dalla Rivoluzione Nazionale all' Unità, 1849-1860, vol. 4 of Storia dell' Italia moderna, 244-46, 288 and 342; and Hancock, Ricasoli, 164-225.

\textsuperscript{18}Mori, La Lotta Sociale, 3-5; and Forzano, Carrara dal 27 aprile. For an overview of the complicated events in the Duchies of Modena and Parma during this formative period see Hearder, Italy in the Age, 218-37.
for guarantees against the possibility of a Modenese return. For their part, many within the local propertied classes viewed the presence of the Piedmontese military as necessary insurance against any popular violence. Wealthy merchants and marble entrepreneurs also recognized that the region's economy would be advanced more quickly under Turin. Although Carrarese marble production had increased in the 1850s, the industry's growth remained stunted by the limited market available in the small Duchy as well as by the existence of various tariffs which had been instituted by the numerous independent Italian states. A Piedmontese inspired union promised a much larger market and a more dynamic economy. The marble industry could grow only within this new and expanded Savoyard state. Accordingly, on May 13th, 1859, the city council of Carrara, representing the interests of the area's richest merchants and marble entrepreneurs, requested that the town be annexed to Piedmont. Nevertheless, even with this demonstration of pro-Piedmontese sentiment by the representatives of the region's wealthy and powerful elites, annexation was, as yet, premature. Cavour could not annex the area without the approval of his chief ally, France.\textsuperscript{19}

\textsuperscript{19}Grew, \textit{A Sterner Plan}, 201-05. Grew points out that because of contradictory accounts there is some uncertainty as to the exact role played by the National Society in Lunigiana during the events of April and May 1859. See also Forzano, \textit{Carrara dal 27 aprile}. For an interesting account of how leading marble entrepreneurs, a few local nobles and Carrarese townsfolk viewed the Piedmontese, see the Fabbricotti, Early Papers, N.d., 1859, \textit{Fabbricotti Family Papers, Fabbricotti Records, Istituto di Ricerche e Studi Storici Apuo-Lunese di
In the final analysis, local sentiments and Italian regional interests were subject to international developments. The fate of Parma, Tuscany, and Modena, with its Lunigianese territories, thus, remained uncertain throughout the summer of 1859. On June 24th, the Battle of Solferino shocked Napoleon III into reassessing his alliance with Piedmont against the Habsburg throne. Early the next month, Napoleon III and Franz Joseph met at Villafranca and concluded a settlement that gave Lombardy to Piedmont, but left Venetia in Austrian hands. The hereditary rulers of Tuscany, Modena and Parma were to be restored to their respective duchies. Finally, it was agreed that a new Italian confederation under the presidency of the Papacy would be formed. Cavour, caught unprepared by the Villafranca agreement, resigned as Prime Minister.  

The peace settlement made by the two emperors at Villafranca failed to stabilize the situation in central Italy, however, as the pro-Piedmontese provisional governments refused to disband. In Tuscany, the withdrawal of Grand Duke Carrara (hereafter cited as Fabbricotti Records: IAL). The Fabbricotti family played a leading role in the marble industry. From the late nineteenth century through the 1920s, Fabbricotti's controlled some of the most profitable quarries in Carrara. While the privately run Istituto is very rich in material (especially Fabbricotti family records), it suffers dearly from lack of funding and thus the volunteer staff, led by Antonio Bernieri, has only begun to organize the documents in its possession.

*For a review of these events see Candeloro, *Dalla Rivoluzione Nazionale all'Unità, 1849-1860*, vol. 4 of *Storia dell' Italia moderna*, 333-35, 342-44, 347-58, 363-66; and Hancock, *Ricasoli*, 220-33, and 260-71.*
Leopold had been followed by the formation of a provisional government led by Baron Bettino Ricasoli which had the approval of the Piedmontese minister in Florence, Carlo Boncompagni. In Modena, Luigi Carlo Farini proceeded to unite Parma and the Romagna under his control. After considerable political negotiations, both the Ricasoli and Farini governments petitioned Piedmont for annexation. But once again, Piedmont found that it could not accept annexation without the consent of France and the tacit approval of the other great powers of Europe.

After Cavour returned to the premiership in January 1860, Turin moved closer to formal annexation. Cavour proposed to the French that Tuscany and Emilia should go to Piedmont and Nice and Savoy to France. Napoleon III recognized this plan as an opportunity to advance his interests and thus accepted Cavour's proposal. The plebiscites which later were held in Tuscany, Emilia and Lunigiana confirmed their annexation to Piedmont. Thus only ten months after Villafranca, Cavour had transformed Victor Emmanuel II into king of most of northern Italy.

Savoyard rule, however, did not meet with unanimous approval for the benefits of unification under Piedmont's

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21 On the role played by men such as Boncompagni see Grew, A Sterner Plan, 217-20.

22 Candeloro, Dalla Rivoluzione Nazionale all'Unità, 1849-1860, vol. 4 of Storia dell' Italia moderna 360-68, 508-10; see also Hancock, Ricasoli, 286-90.
moderate liberal government were not shared equally. Indeed, disaffection with Turin in the new province of Massa-Carrara appeared soon after the kingdom of Italy was officially proclaimed in March of 1861.\(^{23}\) As part of a general strategy, Victor Emmanuel II and his Piedmontese officials sought political stability by forging an alliance with the propertied classes, the chief beneficiaries of the new kingdom. Men of property, who were often nobles, found that their wealth and power was preserved by the new order. Even those aristocrats in Massa-Carrara who had sided with the Este dynasty did not suffer punishment, exile or alienation of their wealth under Savoyard rule. Moreover, by expropriating Church lands and communal properties (beni) and selling them to the highest bidders, Turin promoted the interests of the propertied classes. The communal lands, in particular, were a vital resource to peasants in Massa-Carrara because they were well suited for pasturage, foraging and woodcutting. These lands were, in short, valued highly by all those whose livelihoods were dependent on local agriculture. While exact statistics are not available, it is clear that the sale of expropriated properties in Massa-Carrara, as elsewhere in the new kingdom,\(^{23}\)

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\(^{23}\) With unification under Victor Emmanuel II, the modern province of Massa-Carrara was created. Formally placed within the boundaries of Tuscany, the province included the modern communes of Carrara, Massa, Fivizzano, Licciana-Nardi, Aulla, Garfagnana, Pontremoli, Bagnone, Coman, Casola, Mulazzo, Villafranca, Fosdinovo and Zeri. Lunigianese territory near La Spezia and Sarzana was left under the control of Genoa, the capital of Liguria.
in the seven years following unification transferred former communal properties to the provincial nobility, bourgeois speculators and wealthy peasant investors. These groups benefitted at the expense of the less affluent segments of the rural population. The expropriations thus inspired strong protests and acts of violence among the Massa-Carrarese peasantry that included the destruction of crops, vines and olive trees.24

The 1860s also witnessed serious discontent among the urban lower classes. Their dissatisfaction can be traced, in part, to the frustrated expectations of the Carrarese marble workers who had hoped that unification would improve their lives by stimulating the marble industry. While the marble

24 Archivio di Stato di Massa (hereafter ASM) Gabinetto di Prefettura, Rapporto del Sindaco di Fivizzano al prefetto, 11 May, 1868. While evidence is sparse, at best, it seems logical that the expropriated beni would end up in the hands of the nobility, speculators and investors from the region's towns. This conclusion, although tentative, is consistent with the fact that many local peasants lived near subsistence levels. See also Raffaello Raffaelli, Monografia storica ed agraria del Circondario di Massa Carrara compilato fino al 1881, (Lucca: Rossi, 1882), 217-66. Raffaelli was a native of Garfagnana. His monograph was the first serious work to focus on economic conditions in Massa-Carrara after Italian unification. This work, with some revision, was later included in the famous Atti della Giunta per la inchiesta agraria e sulle condizione della classe agricola, vol. 10 (Rome: Lombardi, 1883). On peasant agriculture in Tuscany see Roland Sarti, Long Live the Strong: A History of Rural Society in the Apennine Mountains, (Amherst: University of Massachusetts Press, 1985), 98-114. Sarti offers an excellent analysis of Apennine agriculture. On the peasant economy in Massa-Carrara see Isabella Ferrando Cabona and Elizabetta Crusi, Storia dell' Insiemiamento in Lunigiana: Alta Valle Aulella, (Genoa: Sagep, 1980), and also their Storia dell' Insiemiamento in Lunigiana: Valle del Rosario, (Genoa: Sagep, 1982). On early agriculture see Calendario Lunese, (Fivizzano: Bartoli, 1834).
industry did experience expansion immediately after unification, the conditions of life for the marble workers and for other elements of the provincial labor force did not in fact improve. The political turmoil and social unrest associated with the process of national unification had the effect of raising, appreciably, the cost of living. Between 1859 and 1862, the price of refined grain increased 12.75%, meat jumped 31.58% and wine 36%. The urban small businessman, artisan, worker and professional were all especially sensitive to increased food costs.\(^{25}\) While the demarcation between urban and rural life was not yet clearly defined and thus the town dweller may still have had recourse to a small family landholding or to a network of farming relatives who could at least provide food at less cost, he was nevertheless dependent on the market place for the bulk of his diet.

Predictably, the urban lower classes blamed the rise in the cost of food stuffs and other economic problems they

\(^{25}\)Fabbricotti Records: IAL, Carlo Francesco Fabbricotti to Francesco Fabbricotti, 15 March, 1866. Carlo noted (along with news of their marble business interests) that discontent with the government had reached a new high in the quarry districts as well as in Avenza and, in general, in the region as a whole. Statistics were compiled from Annuario della Camera di Commercio ed Arti di Carrara per L' Anno 1863, (Sarzana: Frediani, 1865), and from Atti del Consiglio Provinciale di Massa e Carrara, (Massa: N.p., 1871); see also Mori, La Lotta Sociale in Lunigiana, 28, 43-46. For a good summary on the local economy see Carlo Lazzoni, Carrara e le sue ville: Guida storico, artistico, industriale seguita da brevi cenni su Luni e sue rovine, (Carrara: Drovandi, 1880), 287-97. Lazzoni offers deep insights into the social, cultural and economic life of Carrara and surrounding areas. Note also his analysis of Carrarese history from ancient times to 1880.
experienced on the new government. Slogans such as "Viva la Repubblica!" and "Viva Mazzini!" were typical of the graffiti that commonly appeared in Carrara, Massa and Fivizzano. More worrisome still were popular protests such as those which took place during the early 1860s. During these protests, the presence of angry crowds, often composed of workers chanting anti-government slogans, seemed to threaten government's control of the main urban centers place. Many believed that local merchants charged unfair prices that the government should roll-back. Furthermore, there was a general disenchantment with the government's policy of handing over communal lands (beni) to the region's wealthy elites. The government responded in the usual way. Fearing that the Carrarese demonstrations had been led by anti-monarchists, the Prefect intensified surveillance of all suspected radicals.26

Provincial authorities were especially concerned with the anti-government demonstrations in Massa-Carrara's marble district. It was the Carrarese marble industry which had, after all, employed the largest single number of workers in the province. Severe inflation, deteriorating working conditions and the continued uncertainty of steady employment in this cyclical industry provided a fertile terrain for the rapid spread of Mazzinian as well as utopian socialist and anarchist ideas. At the same time, the marble industry was

26ASM Gabinetto di Prefettura, Rapporto al prefetto di Massa, October, 1865, in Mori, La Lotta Sociale, 37-38; and Bernieri, Storia di Carrara moderna, 52-58.
also the source of great wealth and power for Carrara's marble entrepreneurs, and its profits promised to generate enormous revenue for the province. The authorities therefore naturally concluded that supporting the entrepreneurs' exploitation of the region's marble resources was the best way to gain the firm allegiance of the province's most dynamic economic elite. The resulting industrial growth was expected also to generate more employment and thereby (it was hoped) temper the growing discontent of the marble workers who were rightly seen as posing the most serious popular threat to the new order in Massa-Carrara. The provincial civil and military authorities therefore focused their attention on promoting the marble industry's expansion while, at the same time, policing the growing and increasingly radicalized marble work force. In short, the national government realized that the key to economic and social stability in Massa-Carrara was inextricably tied to the fortunes of this ancient industry.
CHAPTER II
THE MARBLE INDUSTRY: EARLY DEVELOPMENTS

The origins of the Carrara marble industry are rooted in the distant past. Excavation of Carrara marble began in the first century before Christ. After having established a colony at Luna, the Romans began removing the valuable stone from the Apuan mountains.¹ They clearly preferred to use Carrarese marble in the sculpting of works of art and in building architectural monuments which celebrated the power and majesty of the state. The intrinsic beauty of Carrarese marble has been the primary source of its fame since ancient times.² From Republican Rome up to the Italian Republic, Carrara's marble mines and quarries have remained the chief source of the peninsula's most valued stone. Beginning with the Renaissance through much of the twentieth century, marble

¹The Apuan mountains, extensions of the Apennines, were named after the Apuan tribes who long fought Roman dominion. During the Fascist period, an attempt was made to rename the area Apuania. Although this attempt failed, the area is still closely associated with the Apuan mountains.

²Christine Klapisch-Zuber, Carrara e I Maestri Del Marmo, (Massa: Palazzo di S. Elisabetta, 1973), 57-71; and also H.W. Pullen, Handbook of ancient Roman Marbles, (London: N.p., 1894), 42-48. Some of the original Roman quarries, named Fantiscritti, Cava Gioia, Colonnata and Fosscava in the Middle Ages, are still worked.
excavation was Carrara's most significant and profitable industrial enterprise. The enduring popularity of Carrarese marble among architects, artisans and artists provided the people of the region with a valuable natural resource which, when properly exploited, resulted in great fortunes for the few and employment for the many. As a result of the industry's importance, virtually all major political, economic and social issues which arose in Massa-Carrara were inextricably intertwined with the extraction, transportation and working of the local mountains' wealth of marble.

The Apuan Mountains, which lie on the edge of the Tuscan Apennines, are the source of Carrara's resplendent marble. Nestled between the Tyrrhenian sea to the west and the Val del Serchio to the east, the Apuans are part of a metalliferous chain that reaches an elevation of 2,000 meters. The Apuan mountains are composed of a stratum of schists, or crystalline rocks, formed in the Triassic Age and by dolomitic calcareous limestone found along the mountains' central crest. They form a rectangular figure of 57 kilometers in length by 27 kilometers in width which reaches northward to the Magra river

See Marmi, Graniti e Pietre, (Milan: Edizioni Globo, 1966), 329. Of Italy's numerous types of marble, Carrarese marble, particularly Statuario, has been one of the most popular marbles. Its attractiveness lies in its color, purity and ease with which the stone is worked.

Klapisch-Zuber, Carrara e I Maestri, 58-64; Enrico Walser, Les Marbres de la Region Apuane, (Montreux: Ganguin & Laubscher, 1956), 13-32; see also Domenico Zaccagna, Descrizione geologica delle Alpi Apuane, (Rome: N.p., 1932); Iginio Cocchi, Della vera posizione stratigrafica dei marmi sacca-
valley and south to the Luccan plane.

The Apuan mountains' marble deposits rise to heights of more than 1,000 meters above sea level. Four main valleys penetrate these high mountains and allow access to the marble rich areas. The Gragnana valley, the two Torano valleys and the Bedizzano valley are the main arteries through which the natural wealth of the Apuan chain is reached. The total amount of marble which remains to be exploited is approximately 60 billion cubic meters. This enormous quantity of stone is in a marble producing region which is subdivided into two main branches. The first, the "Inferior Branch," is approximately 1,000 meters wide. It begins at Mount Sagro and descends southwest towards the city of Carrara. The second branch, called the "Superior Branch," is only 200 to 250 meters wide but it holds a wide variety of some of the best marble. The marble nearest Carrara belongs to this "Superior Branch." It is more crystallized than marble found in the "Inferior Branch." Marble which is more crystallized and finely grained is easily worked. Statuario, the most precious stone, is very crystalline and especially finely grained. Found in the quarries surrounding Carrara, Statuario is delicately white, and when it ages it turns a pale white.

roidi delle Alpi Apuane, (Florence: Barbera, 1871); Arturo Giampaoli, I marmi di Carrara, (Pisa: Nistri, 1897); and Arturo Giampaoli, I minerali accessori del marmo di Carrara, (Carrara: D. Sanguinetti, 1906).

5See Klapisch-Zuber, Carrara e I Maestri, 19-58.
Worked for thousands of years, Statuario has been the most prized Apuan marble.\(^6\)

For all the great quantity and quality of marble available in the Apuan mountains, marble excavating, as an industrial enterprise, did not develop in any consistent or rapid way until well into the nineteenth century.\(^7\) Even though detailed information about marble excavation is not readily available before the unification of the Italian state, municipal reports from the cities of Carrara and Massa offer a general view of conditions within the local industry prior to 1861.\(^8\)

Although European demand for Apuan marble slowly began to increase after 1815, the marble industry, stunted by insufficient investment and technological barriers, did not experience any rapid growth until the late 1830s. The impetus for the marble industry's expansion came largely from the increased foreign demand, due to global industrial development.

\(^6\)Klapisch-Zuber, *Carrara e I Maestri*, 19-64; and Eric Walser, *Les marbres*, 14-20; see also *Marmi, Graniti*, 269-72, 329-63.


\(^8\)For a description of the varieties of marble, production statistics and a listing of the most profitable quarries see Lazzoni, *Carrara e le Sue Ville*, 293-96.
and the great wealth that was generated as well as the simultaneous boom in building caused by concomitant urbanization. As demand for Carrarese marble accelerated, increased investments and technological improvements translated into greater industrial productivity. Between 1838 and 1858 demand for Carrara marble became worldwide and industrial exports increased over five fold. In the five years from 1838 to 1842, Carrara and Massa exported 63,458 tons of marble. From 1848 to 1858 the region's total marble exports reached 369,950 tons. This enormous quantity of marble was sent off by ship and was unloaded on the docks of London, Marseilles, Antwerp and New York. Apuan marble had increasingly become the material of preference of foreign and native artists, artisans and architects. While sculptors demanded Carrarese Statuario for their works of art, artisans used Apuan stone of lesser quality to make tables, wash basins, ash trays, funerary stones and other popular items. But the largest portion of marble exported from the area was chosen by architects to

9See Camera di Commercio, Annuario della Camera di Commercio ed Arti di Carrara per l' anno 1864, (Sarzana: N.p., 1865), 168-78; see also Lorenzo Gestri, Capitalismo, 1-4. Gestri's work is a significant account of workers and the marble industry in Massa-Carrara. His study is indispensable for understanding the development and growth of the industry in the nineteenth and early twentieth centuries.

construct countless churches, stately mansions, opera houses and, of course, government buildings.

Expanded foreign investment in Massa-Carrara's marble industry increased with the growing demand for Apuan marble. British and French investors injected capital into the excavation, transportation, finishing and marketing of Carrarese marble. New marble quarries developed, as did workshops where excavated marble was cut, polished and prepared to order. Such international involvement in Massa-Carrara also provided the marble industry with increased sales through global networks that only foreign investors could fully develop. Most important, the large influx of foreign capital made possible the modernization and restructuring of the entire local marble industry. William Walton, an English entrepreneur, was among the first and most important of the foreigners to become involved in Carrara's marble industry. In the late 1840s Walton began to control some marble rich properties in the Carrara region. By 1851 his profits allowed him to construct Carrara's first modern port facility. This new facility, equipped with rails and mobile

11 Gestri, Capitalismo, 5-6; Magenta, L' Industria, 54-100; Tenderini, Della Segatura, 21-31; Mario Betti, Quadro storico dell' escavazione dei marmi di Luni-Carrara da due secoli avanti Cristo ai giorni nostri, (Massa: N.p., 1934); and Vincenzo Da Milano, "Industriali e commercianti di marmo inglesi a Carrara fra il 1861 e il 1870," in Atti del V Convegno storico toscano: Relazione fra Inghilterra e Toscana nel Risorgimento, (Lucca, N.p., 1953); see also Atti del Consiglio Provinciale di Massa e Carrara, 1871, (Massa: N.p., 1872).
cranes, spelled the beginning of the end for the traditional method of moving heavy marble blocks through the sandy beach area, where they were hoisted onto waiting shallow-bottom sailing ships. Within the next few years, Walton's company became one of the principal marble excavators in the Apuan region. At the same time, the English firm he had founded continued to expand. In 1857 the newly named Walton, Goody and Cripps company constructed a sawmill whose modern hydraulically driven machine blades were capable of cutting over 2,000 tons of marble a year to required size.\textsuperscript{12}

Other sawmill operations in Carrara copied the Walton company's successful modernization of the cutting process in which the large rough-cut marble blocks were sawed into smaller sizes and shapes. Fratelli Fabbriicotti was one of the firms which led the local marble companies down the path of full scale modernization. Besides motorizing its sawmill operation, the Fabbriicotti company eventually moved to house its milling and cutting operations in permanent structures and to purchase mine cars to facilitate the movement of marble through the company's mills and workshops. The increase in productivity which resulted from these innovations convinced other local firms to adopt similar methods in their enterprises. By 1874 there were new docks with mechanized crane

\textsuperscript{12}Mori, \textit{La Lotta Sociale}, 89; Gestri, \textit{Capitalismo}, 5-10; see also Magenta, \textit{L' Industria}, 68, 130-133; Tenderini, \textit{Della Segatura}, 19-31, 53-56; and \textit{Annuario della Camera di Commercio ed Arti di Carrara, per l'anno 1863}, (Massa: Frediani, 1864).
facilities and 53 sawmills in various stages of modernization in Carrara. Within six years, the mechanization of ten more sawmills confirmed the Apuan marble industry's commitment to technological innovation and industrial diversification.\textsuperscript{13}

The Massa-Carrarese marble industry had traditionally been, above all, a source of unfinished marble, destined to be shipped, cut and otherwise fashioned elsewhere in Italy and Europe. The absence of any mechanized means of producing marble tables, vases, statues, columns and other popular items meant few finished marble products could be made by the limited number of skilled workers in Massa and Carrara. In his government report on the state of the marble industry in 1866, Carlo Magenta\textsuperscript{14} lamented the fact that rough-cut marble blocks from the Massa-Carrara region would too often be shipped to Belgium or France to be cut and polished to order. Magenta concluded that local firms were losing great potential profits to foreign companies because of the latter's superior

\textsuperscript{13}Tenderini, \textit{Della Segatura}, 41-57; and Gestri, \textit{Capitalismo}, 9-13. As a result of the promise of greater productivity and increased profits, the commitment to industrial modernization often produced simple yet important changes. Traditionally, for example, rough-cut marble had been sawed, cut and milled to order in company yards. Exposure of workers and artisans to inclement weather or the scorching mid-summer sun was met with the use of canvas tarps which were hung directly over the marble stone which was being worked. These removable tarps provided workers with little protection from the elements and thus adversely affected productivity.

\textsuperscript{14}Magenta, a professor at the nearby University of Pisa, had long been familiar with Carrara and Lunigiana and the region's marble industry. His views concerning the industry, therefore, came to be highly respected.
mechanization. Renovation of the entire industry through the adoption of new technology, he wrote, was the only logical course.\textsuperscript{15}

Even as his monograph went to press, Magenta's ideas for transforming the industry from quarries to the workshops were being put into practice. The new generation of marble entrepreneurs was keenly aware that the implementation of Professor Magenta's suggestions was one of the best ways to achieve greater profits. The introduction of new technology into the industry, which the infusion of local and foreign capital made possible, helped create a more diversified and more sound industry.\textsuperscript{16} As a result the scope and depth of the Apuan marble industry radically changed. Once it became apparent that the most innovative entrepreneurs made greater profits, other marble industrialists also were drawn to the newest technology. In this fashion the largest and most successful marble entrepreneurs helped establish an industry-

\begin{flushright}
\textsuperscript{15}Magenta, \textit{L' Industria}, 54-93; For an overview of Magenta's analysis of the marble industry during the 1860s and 1870s see Mori, \textit{La Lotta Sociale}, 39-40; Gestri, \textit{Capitalismo}, 4-12; and Antonio Bernieri, \textit{Storia di Carrara Moderna}, 58-60, 63-64.

\textsuperscript{16}Tenderini, \textit{Della Segatura}, 50-56; Gestri, \textit{Capitalismo}, 6-13; Bernieri, \textit{Storia di Carrara Moderna}, 58-64 and Carlo Andrea Fabbricotti, \textit{Alcuni Cenni circa L' Industria Marmifera Apuana}, (Borgo di Taro: Cesare Cavanna, 1928), 45-51. As Fabbricotti pointed out in his important monograph, it is noteworthy that the process of modernization in the Massa-Carrara marble industry depended not only on entrepreneurial investment and risk-taking, but also on technological improvements resulting from suggestions made by innovative and inventive marble workers.
\end{flushright}
wide tradition which favored experimenting with the most advanced techniques and machinery for quarrying and working Apuan stone.

TABLE 1

DEVELOPMENT OF CARRARA SAWMILLS

<table>
<thead>
<tr>
<th>Year</th>
<th>1820</th>
<th>1860</th>
<th>1866</th>
<th>1874</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sawmills</td>
<td>28</td>
<td>36</td>
<td>38</td>
<td>53</td>
</tr>
<tr>
<td>Cutting-frames</td>
<td>--</td>
<td>74</td>
<td>160</td>
<td>252</td>
</tr>
<tr>
<td>Cutting-blades</td>
<td>266</td>
<td>888</td>
<td>--</td>
<td>3,024</td>
</tr>
<tr>
<td>Sifting-machinery</td>
<td>--</td>
<td>--</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

Sources: Gestri, *Capitalismo*, 1-10; and also *Elenco delle segherie esistenti nel Comune di Massa* and *Elenco delle segherie nel Comune di Carrara* in Tenderini, *Della Segatura*, 56-59.

TABLE 2

DEVELOPMENT OF MASSA SAWMILLS

<table>
<thead>
<tr>
<th>Year</th>
<th>1838</th>
<th>1860</th>
<th>1866</th>
<th>1874</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sawmills</td>
<td>1</td>
<td>10</td>
<td>13</td>
<td>19</td>
</tr>
<tr>
<td>Cutting-frames</td>
<td>4</td>
<td>65</td>
<td>72</td>
<td>99</td>
</tr>
<tr>
<td>Sifting-machinery</td>
<td>1</td>
<td>7</td>
<td>10</td>
<td>14</td>
</tr>
</tbody>
</table>


The earliest industrial innovations involved more precise and rapid methods of cutting, sawing and polishing marble. The sawmills and workshops were located near rivers and streams, and motors which could make use of the available natural resources were introduced into the industry in the late 1830s. In turn, motors used in the mills and shops went
through various and significant stages of development. Moreover, from 1850 through 1880, an industry-wide acceleration of mechanical advances was witnessed. The major marble industrialists helped finance the engineering breakthroughs that led to improvements in the design and synchronization of motors, gears, cutting-frames and sifting machines. The Fabbricotti, Walton, Sarteschi, Corsi and Lazzoni families were among those who led the way in up-dating the marble industry's machinery and hardware. 17 Under the old system of production which prevailed in the 1830s and 1840s the most a sawmill could be expected to produce was two cut and polished marble tables per week. By 1874, however, Oreste Bramante Mattei, an engineer and inventor of the most advanced sawing and cutting machinery in the industry, reported that sawmill production of similar tables had reached approximately 250 per week. 18 Throughout the early and middle of the nineteenth

17Tenderini, Della Segatura, 23-28, 53-56; Magenta, L' Industria, 55-56; see also Gestri, Capitalismo, 6-16 and Bernieri, Storia di Carrara Moderna, 58-64. One of the most significant impediments to increased productivity was that sufficient water was available only circa 250 days per year. Thus reductions in the water level of rivers and streams meant that the workshops and sawmills were subject to the changing seasons, weather and climate. Among the families who were most willing to adopt new technology were the Waltons and the Fabbricottis. Their initial innovations successfully provided them with sufficient profits to continue to risk trying new technology. These innovations paid off well. Both families' companies played a major role in the industry's development well into the twentieth century.

18Tenderini, Della Segatura, 24-31. While researching this monograph, Professor Tenderini obtained much data and information from Oreste Bramante-Mattei. Recognizing Bramante-Mattei's expert status, Tenderini included in his work one
century, continued modernization by Walton and the other key entrepreneurial firms resulted in huge increases in the industry's productive capacity. As a result, by the last two decades of the century the sawmills and workshops of Massa-Carrara, aided by the latest tools and machinery, were able to work ever greater quantities of large rough-cut marble blocks into smoothly-cut and finely finished marble products.

The improved technology at the local sawmills and workshops meant that Apuan quarries could send more and more of their marble to be worked and finished in the local sawmills, shops and studios. The shipment statistics of Carrara's chief port, Avenza, show how quickly the increase in the number of re-tooled sawmills and workshops affected the production of finished and semi-finished marble products. The first significant rise in the number of such marble goods occurred in the 1860s. During the 1860s, mechanization resulted in a 36.4% increase of finished and semi-finished of the letters he had received from Bramante-Mattei. This 12 page letter provides some useful insights into the marble industry and technological developments. See also Gestri, Capitalismo, 6-16.

The town of Avenza, approximately 6 kilometers southwest of Carrara, served as the marble industry's main port from the late eighteenth century to the late nineteenth century. In 1833, Emanuele Repetti reported that years of marble shipments from Avenza had riddled its sandy beaches with marble rubble. See Emanuele Repetti, Dizionario Geografico Fisico Storico Della Toscana: Contenente la Descrizione Di Tutti Luoghi Del Gran Ducato, Ducato di Lucca, Garfagnana e Lunigiana, Vol. I, (Florence: Tofani, 1833), 174-76. Yet the town's port facilities were inadequate until modern dock facilities were constructed in the mid-nineteenth century.
marble products shipped from Avenza.\

\[\text{TABLE 3}\]

\text{SHIPMENTS OF MARBLE PRODUCTS FROM AVENZA (in tons)}

<table>
<thead>
<tr>
<th>Year</th>
<th>1863</th>
<th>1865</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tables less than 150 centimeters in length</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of pieces.......</td>
<td>60,732</td>
<td>64,222</td>
<td>6%</td>
</tr>
<tr>
<td>Tables 150 centimeters in length</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of pieces.......</td>
<td>185</td>
<td>21,258</td>
<td>74%</td>
</tr>
<tr>
<td>Baths</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of pieces.......</td>
<td>185</td>
<td>240</td>
<td>30%</td>
</tr>
<tr>
<td>Funerary stones</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of pieces.......</td>
<td>15,746</td>
<td>24,129</td>
<td>64%</td>
</tr>
<tr>
<td>Stairs, cornices and pillars</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of pieces.......</td>
<td>3,626</td>
<td>3,921</td>
<td>8%</td>
</tr>
</tbody>
</table>

The increased ability of local firms to work on rough-cut marble blocks stimulated, in turn, the development of more quarries and, thus, the extraction of greater quantities of marble. Technological improvements and industrial diversi-

\[\text{\textsuperscript{20}Gestri, \textit{Capitalismo}, 6-19; see also Magenta, \textit{L' Industria}, 22-31. While relying heavily on Magenta's earlier scholarship, Gestri drew from much wider sources in his analysis of the marble industry in Carrara. Yet the records are incomplete in that they do not refer to quality and cost of marble quarried, sold and shipped from Carrara or Massa. Nevertheless, it may be reasonably assumed that profits increased at least in proportion to the increase in marble shipments. For an interesting discussion on the development of the marble industry in Versilia during the mid-nineteenth century see Tenderini, \textit{Della Segatura}, 20-22.}\]
fication, combined with favorable market conditions, greatly increased production between 1861 and 1879.\textsuperscript{21}

\begin{table}
\centering
\begin{tabular}{lrr}
\hline
\textbf{Years} & \textbf{1861-1869} & \textbf{1870-1879} \\
\hline
\textbf{Rough-cut marble} & 483,306 & 867,014 \\
\textbf{Sawed & worked marble} & 232,110 & 323,995 \\
\textbf{Total marble production} & 783,755 & 1,191,009 \\
\hline
\end{tabular}
\caption{Marble Production in Massa-Carrara (in tons)}
\end{table}

While production statistics shed light on the general condition of the Massa-Carrarese marble industry, difficult questions arise as to industrial operations at the source of marble production in the region's quarries. A thorough analysis of the industry must consider those factors concerned with the quality of stone excavated from quarries in the different marble producing zones as well as the duration of the excavation process at the various quarries. The continued extraction of marble from a particular quarry depended on a

\textsuperscript{21}Gestri, \textit{Capitalismo}, 7-8; see also Ministero Agricoltura e Commercio, Direzione Generale della Statistica, \textit{Notizie statistiche sulla industria mineraria in Italia dal 1860 al 1880}, (Rome: Eredi Botta, 1881), 220-26 (hereafter referred to as MAIC-DGS). For an interesting comparison see Fabbrocini, \textit{Alcuni Cenni}, 53-58. While sources differ as to how much stone was quarried and worked, they do agree that there was a great increase in production and in the working of marble. Nevertheless, reaching definitive conclusions as to the industry's early expansion remains particularly difficult since the available sources do not always agree.
number of variables which were all related to profitability. There were over 10 distinct types of marble in the region and an even greater number of gradations in quality and price. Marble used as statuary, architectural and ornamental stone was generally of high quality and cost. The marketability of any specific type or grade of marble depended, however, upon additional factors that included: rapidly changing demands in the international marketplace, consistency in the quality of quarried marble, difficulties of extraction and transportation of the quarried stone to the sawmills, continued popularity of a particular color, type or grade of marble, obstacles presented by the lack of capital, and exhaustion of an over worked quarry.

Depending on any one of these factors, a particular quarry might be excavated for a long or a short period. Within a year's time, in fact, it was not unusual for the same quarry to be opened, abandoned and, then re-opened due to renewed demand. A dependable quarry, consistently producing dark-veined marble might, for instance, be closed as a result of unforeseen changes in the demand for dark-veined white-based marble or perhaps because of rising quarrying and

22Lazzoni, Carrara, 273-88. Count Lazzoni, himself a member of one of the leading families of Carrara, recorded that the major types of marble were: Statuarj, Bianco-Chiaro, Venati, Ordinarj, Bardiglio fiorito, Bardiglio-turchinetto, Neri, Mischi and Breccie. See also Emanuele Repetti, Dizionario, 1:489-490. Repetti offered a somewhat different classification of marble. This is likely due to the development of the industry in the 47 years which separated Lazzoni's monograph and Repetti's famous work on Tuscany.
transportation costs.\textsuperscript{23}

Whatever the swings in fashion, taste or cost, however, the general trend during much of the nineteenth century was one of continuous growth in output for the Massa-Carrarese quarries. As early as the 1830s, Emanuele Repetti noted in his seminal work on Tuscany that the region's marble industry was expanding. He observed that there were 31 actively quarried properties in the Carrara marble district in 1833.\textsuperscript{24} Repetti, on the other hand, did not record the specific number of quarrying operations in Massa. He did note, however, that marble quarries were just beginning to be developed in the mountains surrounding the ducal capital. The Massese marble industry, Repetti predicted, would have a promising future as well.\textsuperscript{25} Repetti's optimism proved to be well-founded when three years later a French firm founded by Jean Henreaux set up the first modern sawmill in the region. This mill was a sign that the Massese quarries were flourishing to such an

\textsuperscript{23}Lazzoni, \textit{Carrara}, 273-88. The author listed quarries and types and gradations of marble quarried in Carrara. He also recorded the life-span (\textit{cave in attivitã}) of some particular quarries. Noteworthy is that often quarries initially would be opened to excavate large single blocks for specially commissioned works. Once accomplished, they were only worked sporadically according to market demands.

\textsuperscript{24}Repetti, \textit{Dizionario}, 1:490. Repetti was born in Carrara in 1776 and he died in Florence in 1852. He had been formally trained as a pharmacist, but he spent the majority of his professional life as a naturalist, geographer and historian. After writing a history of Florence, a monograph on the Apuan mountains and his famous \textit{Dizionario}, he was given a ministerial post by Leopold II of Tuscany in 1840.

extent that they made a separate sawing and cutting operation in Massa economically feasible.\textsuperscript{26} Thirty years later, Carlo Magenta noted that in Carrara there were 500 privately owned quarries while another 175 individuals leased quarries from the municipality of Carrara. During the same period, 30 marble industrialists, whose rough-cut marble was being locally sawed and milled by 13 local sawmills, placed the quarrying of marble in Massa on a sound footing.\textsuperscript{27} By 1879, Lazzoni noted that there were 645 quarries in Carrara of which 387 were active (in attivitá). Moreover, at the end of the 1870s the Carrarese industry alone employed 3,237 workers in the surrounding quarries and sawmills.\textsuperscript{28} The relative inaccessibility of many mountain quarries and the consequent difficulty of moving rough marble blocks down to the sawmills, the studios and the sea had previously restricted the development of the marble industry in Massa-Carrara. Improvements in transportation helped overcome this problem and increased the industry's productive capacity and profitability in the middle decades of the nineteenth century. Above all, railroads seemed to offer a dramatically new solution to the age old

\textsuperscript{26}Tenderini, \textit{Della Segatura}, 19-26; see also Gestri, \textit{Capitalismo}, 3-4 and Bernieri, \textit{Storia di Carrara Moderna}, 28, 32. Henreaux was a French entrepreneur who moved to Tuscany in the 1820s. In 1831 he built a sawmill in Seravezza in the province of Lucca. By the mid-1830s he had established a mill in Massa as well.

\textsuperscript{27}Tenderini, \textit{Della Segatura}, 19-69; and Magenta, \textit{L' Industria}, 23-69.

\textsuperscript{28}Lazzoni, \textit{Carrara}, 287-89.
problem of moving the rough-cut marble blocks down the mountains to the mills and shops. As early as 1843, Count Andrea Del Medico pointed out the potential benefits of a rail-line in the marble districts of Lunigiana to Archduke Francesco IV. The Modenese ruler was the personification of Restoration Italy. As such Francesco IV was deeply suspicious of any innovations because he feared that economic changes brought about by technological modernization could act as a catalyst for political reform. After a year trying to allay the Archduke's political concerns, Andrea Del Medico managed to convince Francesco V to grant him the right to construct a railway. Nevertheless, Count Del Medico never achieved his goal. While ready to confront the technical and financial difficulties presented by this enormous project, he was overtaken by political events. During the revolutionary year of 1848, Count Andrea Del Medico's liberal sympathies led him to support Tuscan annexation of Carrara and Massa. The return of the Restoration regimes the following year brought an end to Del Medico's involvement in the plans to build a railway in Lunigiana. For the next 22 years the right to build the railway was sold and re-sold to a number of different investors, but construction was begun only after the unification of Italy by the House of Savoy. By 1876 the Società Anonima della Ferrovia Marmifera Privata di Carrara, whose major shareholder was the Banca Nazionale Toscana, had completed the first lines of track in the marble district of Massa-Carrara.
This railroad connected some of the most significant marble quarries near the villages of Miseglia and Torano to Carrara. Carrara, in turn, was then linked by rail to the marina near Avenza. During the next decade, the construction of rail lines was continued and resulted in the linking-up of other major quarries, including the highly profitable Colonnata, Fantiscritti, Canal Grande and Ravaccione quarries, to the main terminal in Carrara. By 1890 the major marble producing centers of the commune were connected to Carrara and from there to the sea.29

Development of the railway and its trunk lines to the quarries was a major benefit to the entire industry. The railway's tracks ran through kilometers of man-made mountain tunnels and over deep valleys. Its locomotives had been especially designed to carry heavy loads up and down steep mountains. Capable of moving thousands of tons of excavated marble down the mountains, the locomotives also brought up tons of sand used in the stone cutting process at the quarries. Between 1876 and 1895, the industry's railway had proven itself by transporting 171,773 tons of marble alone. Furthermore, within the first four years of its operation, the

29Lazzoni, Carrara, 303-19; Magenta, L'Industria, 77-95; see also Bernieri, Storia di Carrara moderna, 34-36; Gestri, Capitalismo, 15; and Antonio Bernieri, Luciana Mannoni and Tiziano Mannoni, Il Porto di Carrara: storia e attualita, (Genoa: Sagep, 1983), 112-15. While Lazzoni and Gestri both maintained that Count Andrea Del Medico was granted the right to construct the railway in 1846, Bernieri held that this concession was granted two years earlier.
benefits of the rail line was clear as the cost of transporting marble from the quarries to the ship docks had been lowered by some ten per cent. This reduction in shipping cost helped stimulate the entire industry. Many quarries which had been previously abandoned because of the prohibitive cost of moving marble were re-opened. Similarly other marble rich areas which had been undeveloped due to the difficult terrain began to be excavated. As a result, even greater quantities of marble were shipped to the sawmills in Carrara and Massa, where the rough stone was cut and polished with increased speed and precision by the newly adopted system of hydraulically driven machine blades. The sawmills traditionally had used a combination of water and silica sand to reduce the heat caused by the friction produced during the cutting and polishing process. The increase in marble production

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30 Bernieri, Il Porto, 118-20; and Bernieri, Cento Anni di storia sociale a Carrara, (Milan: N.p., 1961), 60-65 and 110-10; Gestri, Capitalismo, 15; and also Antonio Bernieri, Carrara, (Genoa: Sagep, 1985), 75. See also Fabbricotti, Alcuni Cenni, 57. Bernieri's knowledge of the marble industry is vast. He acquired this familiarity after a life time of political and social agitation in Carrara. Having been an anti-fascist partisan during the war, he entered local politics at war's end as a communist candidate for Parliament. He succeeded in being elected under the Communist party's banner as the region's representative to the lower house of Parliament. From the 1950s to the 1980s, Bernieri devoted himself to studying Carrara's economy and political history. As a result, he has written a number of works concerning the city and its province. These works are especially noteworthy in that they offer many insights into the industry's modernization.

31 Tenderini, Della Segatura, 23, 53. Tenderini described the working of stone in the Carrara sawmills in a concise yet complete manner. Particularly noteworthy is his detailed
therefore made it necessary to import greater quantities of good quality silica sand. While much of what was required was obtained from the Tyrrhenian beaches which stretched from the Magra river to Viareggio, the highest quality sand came from Lake Massaciuccoli in the province of Lucca. Now connected to the Tuscan rail system, the marble railway was able to transport all the sand required by the burgeoning industry inexpensively and efficiently.\(^{32}\)

In the decades after 1851 when William Walton first constructed his new dock facility, the marble industry made significant strides towards modernization. Foreign investments helped spawn a process of technological advancement which was continued by local entrepreneurs. Accordingly, more quarries opened, modern sawmills and studios began to flourish, production increased and the new rail system promised a bright future for the entire industry. But for all the improvements and growth it experienced since the mid-nineteenth century, Massa-Carrara's primary industry was, paradoxically, more than ever dependent on the vicissitudes of a

analysis of the evolution of the technical improvements which the industry experienced up to 1874.

\(^{32}\)Gestri, *Capitalismo*, 16; Bernieri, *Il Porto*, 118-22; see also Fabbriticotti, *Alcuni Cenni*, 53-58. Carlo Andrea Fabbriticotti was one of the region's most successful marble industrialists. Throughout his career he was a constant promoter of modernization. This particular monograph is to be seen in the light of his confirmed belief in the necessity to widely disseminate the most advanced technological knowledge available. Therefore he was prone to point to past industrial successes which resulted from technological improvements in the Apuan marble industry.
still nascent world market. The last two decades of the nineteenth century underscored the fragile nature of this industry which produced what was, after all, a luxury product easily replaced by inferior and less expensive stone.
CHAPTER III

INDUSTRIAL GROWTH AND RETRENCHMENT

The marble industry experienced both growth and retrenchment in the 1880s. A close examination of the industry's activities during this decade reveals a maturing industry whose fortunes were tied to the complexities of national and international demands. During the first half of the decade, demand for Apuan marble led industrialists to quarry 593,770 more tons of marble than had been produced during the last five years of the 1870s.\(^1\) Stimulated by steadily growing domestic and foreign demand, the industry's sawmills and workshops were continuously being re-tooled with the latest equipment. More efficient and rapid machinery seemed necessary to keep pace with expanding demand for Massa-Carrarese marble. Yet in this decade there also arose a variety of

\(^1\)Ministero di Agricoltura, Industria e Commercio, Annali di Agricoltura, Rivista del Servizio Minerario, (Florence: G. Barbera, 1886), 115-119, (hereafter MAIC-AA). The Rivista del Servizio Minerario was a magazine published once a year by the Italian Mining Corps which was under the jurisdiction of the Ministry of Agriculture, Industry and Commerce. See also Gestri, Capitalismo, 16-17. While Professor Gestri's made good use of the Ministry's assessments in his seminal work on the Massa-Carrarese marble industry, he did not, in general, refer to specific editions of (or pages in) the Rivista del Servizio Minerario, but instead he often only cited the publication as one of his the chief sources for statistics relating to the marble industry.
factors which coalesced to cause a recession within the industry.

By the second half of the 1880s, the marble industry was already showing signs of contraction. Between 1885 and 1889, provincial statistics show a 29,349 ton decline in marble production when compared to production during the latter half of the 1870s. The decrease in marble production was the direct result of a fall in demand for Apuan stone in the world market. This reduction in demand occurred partly because the domestic building boom that followed national unification began to slow down by the third decade after Italian unification. Furthermore, a rise in protectionism in Europe, North America and Latin America threatened to undermine the export dependent local marble industry. This threat became a reality during the 1880s when a number of foreign governments imposed high import duties on Italian marble. The heaviest foreign tariffs were placed on imported sawed and worked marble. As

2 Gestri, Capitalismo, 18-19; See also MAIC-AA, Rivista del Servizio Minerario, (Rome: Eredi Botta, 1888), 96 and MAIC-AA, Rivista del Servizio Minerario, (Florence: G. Barbera, 1892), 112.

a result, the tonnage of excavated marble in the Carrara region decreased in the 1880s when compared to previous levels. Nevertheless, the marble industry continued to quarry more marble than was actually being sold in the national and international markets. Over production reflected the belief that slack demand would give way to increased orders, as in the past. Throughout the latter half of the 1880s, the local entrepreneurs repeatedly announced that the tons of stockpiled rough-cut and worked stone that were stacked high and deep in the local warehouses, workshops, and eventually, along major roads were ready to meet the impending rise in demand.  

Such confidence proved to be unfounded. In both Belgium and France new sawmills were constructed and additional legislation passed to protect domestic industrial production. While the French and Belgians continued to import, cut and polished un-worked marble blocks, Apuan worked-marble was all

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4 Gestri, *Capitalismo*, 20-22, 40. For detailed statistics regarding marble production and exports, Gestri's work directs the reader to the *Rivista del Servizio Minerario*. A complete citation concerning developments in the industry during this period is MAIC, Direzione Generale dell'Agricoltura, Publicazione del Corpo Reale delle Miniere, *Rivista del Servizio Minerario*, (Rome: G. Bertero, 1895), 98-99, (hereafter MAIC-DGA-PCRM); and also MAIC-DGA-PCRM, *Rivista del Servizio Minerario*, (Rome: G. Bertero, 1897), 112-13. To avoid confusion, note that Gestri's citations of the *Rivista del Servizio Minerario*, are 1894 and 1896, respectively. The author of this monograph believes that the years which Gestri cites in his work are in fact the years in which the statistics had been compiled by the *Rivista del Servizio Minerario*. The dates cited in the present work, instead, are the dates of publication of the statistics in the *Rivista del Servizio Minerario* by the Ministero di Agricoltura, Industria e Commercio.
but denied a share of these profitable foreign markets. Moreover, the spread of protective legislation in the 1890s to Spain made it very difficult for Apuan marble to compete in the Spanish market. The Spanish tariffs set a 17.50 lire per ton tax on rough unworked foreign marble, a 102 lire per ton duty on sawed marble and from a 150 to 300 lire per ton tax on worked stone. The Spanish tariffs aimed to foster native industry by making the cost of imported sawed and worked marble prohibitive. For many in the Carrarese marble industry, export statistics seemed to suggest that the Spanish were reaching their goal. Before 1893, approximately 20,000 tons of marble were shipped annually to Spain. That very year only 1,984 tons were exported to Spain.  

At the same time, the Apuan marble industrialists faced serious problems at home. Between 1888 and 1894, the domestic marble market felt the effects of a severe national economic crisis. During this six year period, Italy experienced a deep economic depression that was particularly hard on the building industry in the nation's largest cities. The economy of Rome was especially damaged. With the incorporation of Rome into the Italian kingdom, leading national and foreign banks became involved with firms which purchased huge tracts of real estate; and they also funded vast construction projects. Thousands of apartments and hundreds of public buildings were

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constructed to shelter the hordes of civil servants employed in the new capital. Italy's major banks engaged heavily in investment banking operations that involved long term loans. They also, all too often, took the risk of establishing business enterprises with their own capital. By 1888 national confidence in the banks' large-scale real estate speculations and funding of massive construction projects all but collapsed. With fewer buildings being constructed or renovated in Italy's major cities, marble which had been destined for countless stairways and floors, bathrooms and bedrooms was no longer in great demand. As inventories increased, Carrarese entrepreneurs' concerns were exacerbated by the growing political instability and violence in Latin America which escalated the risks of doing business in the lucrative South American market.

By 1894 the Apuan marble industry was in a serious crisis. Six years of reduced domestic and foreign demand resulted in a stockpile of over 175,000 tons of unsold marble. While the largest companies were still able to weather the storm, the smaller firms had little choice but to reduce their prices and sell their marble at a loss in France and Spain.

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7 Gestri, Capitalismo, 21.
The crisis also affected export markets in Britain and the United States. Total Italian marble exports to Britain went from 47,476 tons in 1891 to 24,578 tons four years later. Adding to the industry's difficulties, the American government raised duties on foreign marble in 1896. Within one year, marble exports to the United States fell some 60%. Faced with steadily falling demand, the marble industry in Massa-Carrara began to retrench. By the end of the century, the number of registered sawmills in the province was reduced from 112 to 107. The loss of only five sawmills seems, on its face, insignificant considering the serious nature of the crisis that faced the industry. Yet of the 107 registered sawmills a significant number were reported as being inoperative or working at reduced capacity. 8

The number and the condition of the quarries in the province provided a better indicator of the industry's condition. The available evidence attests to a decisive increase in the number of abandoned quarries in Massa-Carrara. In 1885, there were 387 actively worked quarries in Massa-Carrara; eleven years latter that number fell to 284. In 1896, 514 quarries were also listed as abandoned in the Carrara mining districts. The quarrying zone surrounding the city of Massa went through a similar decline. In 1896 the number of quarries producing stone in the Massese district was down to 53 from the 70 active quarries eleven years earlier.

8 Gestri, Capitalismo, 20-21, 24.
Furthermore, by 1896 the number of abandoned quarries in the Massese mining district totaled 186.\(^9\)

Significantly, the crisis that affected the Apuan marble industry at the end of the nineteenth century also produced some positive results. Falling demand for marble forced a general rationalization of the industry. Although the industry's transportation and milling capacity had been slowly modernizing after 1850, it was not until the end of the century that these processes had a direct impact on the quarries themselves. The quarrying of marble in the Apuan mountains had not changed much until modern times.\(^10\) The most dramatic change occurred in the second half of the nineteenth century when the industry adopted explosives to break off huge blocks of marble from the mountains' slopes. Even though explosives made the already perilous work of quarrymen and transporters extremely dangerous, the use of explosives to quarry marble became common among small and large marble industrialists by the end of the century. Explosives were popular because enormous quantities of marble could be detached from the mountains in very little time and

\(^{9}\)Gestri, *Capitalismo*, 23. The statistics on the number of quarries in the Carrara district listed in Gestri's work include quarries in the commune of Fivizzano.

\(^{10}\)For a very interesting account of marble excavation procedures during Roman, Medieval and Renaissance times, see Klapisch-Zuber, *Carrara e I Maestri*, especially chapters 2 through 4. On the status of technology in the Roman period as compared developments in the eighteenth and nineteenth centuries see Tenderini, *Della Segatura*, 5-31.
with considerably less effort. What had once previously taken dozens of men days and weeks could now be done in moments.

The traditional method of employing skilled and experienced quarrymen literally to hammer and chisel, wedge and saw selected pieces of marble from the mountains meant that excavated block and the surrounding stone had been left relatively undamaged. The use of explosive powder, of course, changed all this. At first, little attention was paid to the destruction that an explosion would cause. When huge pieces of marble were blown loose from the mountains, a good portion of these detached blocks was destroyed as they hurled down the slopes. When their journey came to an end, considerable quantities of marble stone which lay along the path of trajectory were also ruined. To make matters worse, productive Carrarese quarries were buried on numerous occasions beneath the marble rubble produced by the use of explosives in nearby excavations.\footnote{Mori, La Lotta Sociale, 41-42; See also Arturo Giampaoli, I marmi di Carrara, (Pisa, N.p., 1897), 12-21; Gestri, Capitalismo, 28-29; and I Marmi di Carrara, (Rome: Industria Grafica, 1953), 7. It is interesting to note that initially the use of explosives in the quarries surrounding Carrara was warmly greeted by leaders of the industry because it was seen by as being another example of a beneficial innovation which resulted from the industry's readiness to make use of modern technology.}

Ludovico Mazzetti, chief government engineer for the mining district, suggested that the widespread use of explosives might put an end to the traditional method of extracting marble by men carefully quarrying stone by hand from mountain
sides. He concluded that use of explosives threatened the long term interests of the industry because too much good stone was damaged, splintered, shattered or destroyed, and the quality of the stones salvaged from the explosions was too often seriously compromised.¹²

The use of explosives was only gradually abandoned. But by the second decade of the twentieth century, the indiscriminate damage and wastefulness produced by the use of explosives was but a lamentable memory. Explosives were not abandoned because of the danger they created nor because their use proved unprofitable. Rather, leading marble entrepreneurs like Adolph Corsi implemented technological innovations that reduced the advantages of explosive powder. In 1895 Corsi brought a new method of extracting marble to his Carrarese quarry that involved the use of hundreds of feet of helicoidal wire driven by a gasoline engine. Helicoidal wire had already been successfully used to cut marble blocks to size in many Carrarese sawmills. The wire was constructed of three separate steel-wire strands twisted together into what became a single cutting cable. Placed on marble and tied to a system

of interconnecting pulleys, the motor-driven helicoidal wire, constantly doused with a mixture of sand and water, cut through the marble with relative ease.\textsuperscript{13}

By the time Corsi was constructing his third helicoidal cable system, Italo Faggioni, Cirillo Muraglia and the Walton company's directors had adopted the innovative cutting system in their own respective operations. These marble entrepreneurs worked to perfect this new cutting method by overcoming difficult technical problems. Often helicoidal cable would, for example, overheat due to difficulties in maintaining the proper balance of water and sand during the cutting process. Cables also would become stuck in the grooves they were cutting through the marble stone. During attempts to set them free, the cables would often snap, whipping their way past frightened quarrymen. Work would come to a stop as the workmen checked for injuries or worse, and then the time-consuming process of rigging the system back together would begin again. Once the wires were finally in working order,

\textsuperscript{13} Gestri, \textit{Capitalismo}, 28-29; \textit{I Marmi di Carrara}, 7-8; The work, \textit{I Marmi di Carrara}, noted that cutting stone by helicoidal wire was invented in 1854 by the Belgian, Eugene Chevalier. Thirty years later, Michele Thonar made the large scale cutting of marble at the quarry cites possible by perfecting a complex pulley system through which hundreds of feet of helicoidal wire could be pulled. Through the use of pulleys, helicoidal wire could cut, with great precision, both small and large blocks of stone from the mountain side. For a detailed description of how marble is cut by helicoidal wire see Giovanni Tortora, \textit{L' Estrazione e la Lavorazione del Marmo}, (Bergamo: San Marco, 1967), 78-86; For a general overview of excavation process by helicoidal wire see \textit{Il Marmo: Ieri e Oggi}, (Carrara: Apuana, 1978), 27-28.
the cutting process would begin anew, detaching tons of marble stone from its mountainous base.\textsuperscript{14} To the marble entreprenuers, the time lost because of malfunctioning helicoidal cables was especially costly, and the fact that the men were injured or killed was seen as an unfortunate yet unavoidable price which had to be paid for doing business in the highly profitable marble industry.

The adoption of helicoidal cables to cut marble from its quarry bed was a slow process. Until the first decade of the twentieth century, most marble excavation at the quarries continued to be achieved by the use of explosives or human muscle. Considering that this system of cutting marble had

\textsuperscript{14}Fabbricotti, Alcuni Cenni, 58-61; Gestri, Capitalismo, 28-29; I Marmi di Carrara, 8. While Gestri maintained that Corsi's implementation of the helicoidal system in the Massa-Carrarese district was followed by the Muraglia and Walton companies, Fabbricotti noted, in this earlier work, that after Corsi, the helicoidal cutting method was first adopted by Italo Faggioni. Carlo Andrea Fabbricotti also offered a detailed explanation of how helicoidal wire was used to cut marble both in the quarries and in the sawmills and workshops. The work, I Marmi di Carrara, added that the helicoidal cutting system was initially tried at the Fantiscrilli quarries and in the Sagro region. It is interesting to note that this same Fantiscrilli area which experienced this important modernization was first quarried by the Romans. I also would add that, while researching helicoidal cutting methods in 1983 and 1985, the quarriers of Fantiscrilli kindly and patiently explained and demonstrated the methods which had been employed in the late nineteenth and early twentieth centuries (as well as modern methods) in the cutting of marble with helicoidal wire. While I observed one of their demonstrations, a helicoidal wire snapped and whipped about the area where the workmen and I had placed ourselves. Although this particular area had been deemed relatively safe by the capocava (foreman of the quarry operations), we narrowly escaped serious injury only because of recent technical innovations which have increased the helicoidal systems' safety.
been successfully used for almost a generation in the sawmills of Carrara and Massa, it seems difficult to understand why it took so long for this same system to be adopted at the quarries. Ironically, contemporary writers were ready to placed the blame on the absence of a true innovative spirit among marble industrialists. Since the industry had welcomed innovations in the transportation of marble and in the cutting of blocks in the Carrarese and Massese sawmills and workshops, it is surprising that anyone would imply that the industry was too resistant to change. The reasons for the slow adoption of the helicoidal cable system in the quarries, instead, were primarily the result of the following four factors: the persistent technical difficulties which arose in the attempts to implement it at the quarries; the high cost of its initial implementation and continued maintenance; the relatively cheaper cost of manual labor; and, of course, the easier, quicker and, as yet, more profitable use of explosives. As long as undamaged marble could be sold at a profit, it mattered little to many marble entrepreneurs that using explosives at the quarries destroyed great quantities of stone. After all, it was commonly believed the mountains contained ample quantities of precious marble and endless amounts of semi-valuable stone.¹⁵

¹⁵Fabbricotti, Alcuni Cenni, 58-61; Gestri, Capitalismo, 28-29. Gestri maintained that one of the main reasons behind the fact that helicoidal cable systems were adopted later in the quarries than in the workshops and sawmills was that foreign investments were directed primarily towards the latter
From the turn of the century until the outbreak of World War I, the marble industrialists nevertheless did adopt technical innovations which continued to modernize all levels of the industry. Yet acceptance of new technology by the industry as a whole came slowly. The introduction, refinement and perfection of transportation, cutting, sawing and, lastly, excavation methods by the leading marble entrepreneurs eventually made the new technologies economically rational. Those marble industrialists who were less willing or able to risk their enterprises on technological innovations sooner or later were convinced of the necessity of modernization by the great profits made by the more innovative firms. Thus even those marble excavators most closely tied to traditional ways of quarrying eventually abandoned the methods of their fathers once the helicoidal cutting system had proven itself in the quarries of the more innovative marble entrepreneurs. 16

Marble entrepreneurs, as a group, continued in their

sectors of the industry. The absence of large capital investments by foreigners, according to Gestri, meant that the older methods of extraction, therefore, remained dominant in the quarries well after modern innovations had been successfully implemented in the local sawmills and workshops. While there is evidence which suggests that quarry operations did not see the infusion of large amounts of foreign capital as early as some sawmills and workshops, one of the primary reasons that the helicoidal system was adopted only later in the quarries, nevertheless, involves the limitations of the technology behind the cable system. Once these technological barriers were eliminated, those willing to invest in modernizing the quarrying of marble were not difficult to find.

16 Fabb ricotti, Alcuni Cenni, 58-61; Gestri, Capitalismo, 29.
search to find new ways of making the industry more profitable. One of the improvements many believed necessary was the development of a cable-way for moving quarried stone. In 1897 a small cable-way system was introduced to transport marble blocks from the most difficult to reach quarries to more readily accessible mountain transfer points. This method of transportation, although promising, was yet of limited value. The cost of construction and maintenance was high. Furthermore, the engineering and technology behind the cable-way was such that only relatively small blocks of marble could be transported but limited distances. Nevertheless, one of the largest firms in the marble district, Walton, Goody and Cripps,\(^\text{17}\) committed itself to developing a better and more dependable cable-way transport system. In 1907, the firm built a cable-way transport system which connected a number of its quarries and was able to transport five-ton marble blocks 1 ½ kilometers. Having successfully implemented the cable-way system, the Walton company was able to transport the excavated marble from quarries from the Sagro district to the Valle del Lucido.\(^\text{18}\)

The industry's modernization process also involved the widespread adoption of pneumatic hammers at the quarries,

\(^{17}\)After William Walton died, his nephew, John Goody took over the company's direction and in 1877 he became the president of Carrara's chamber of commerce. See Bernieri, *Il Porto*, 106.

\(^{18}\)Gestri, *Capitalismo*, 29.
motors of various types in the sawmills and quarries as well as industrial electrification. The process of upgrading the industry's technology involved great changes which necessarily responded to the complex needs of the marble industry. Motorization of the industry, for example, required the use of hydraulic engines, natural gas and gasoline engines, and electric motors. The hydraulic engines were of limited value in those quarries and sawmills which were too distant from a system of running water. The lack of a water supply also proved problematic for the oldest sawmills in Carrara. While the oldest mills had been built near the Carrione River, during particularly dry seasons they were left without sufficient water power. As a result of these and similar factors, the number of hydraulic motors in the Carrarese sawmills went from 101 in 1889 to 70 twenty-four years later. The establishment of the Società Idroelettrica Apuana in 1910 all but ensured the electrification of the industry from mountain quarries to seaside docks. By 1913, for example, electric motors had largely replaced hydraulic engines in the Carrarese milling operations. An analogous situation existed in the quarries of Massa-Carrara. In 1898 there were no electric motors in use in the Carrarese and Massese quarries. By 1913 Carrara's quarries had 102 in use while 11 had been adopted in the Massa district. Overall, the motorization of the quarries and sawmills proceeded steadily. In 1898, for example, there were only three motors in the province's marble
quarries; by 1913 the total number of motors (electric, steam gasoline) had reached 124. Similarly, electric and gasoline driven engines increased in the Carrarese sawmills and marble finishing shops.19

The successful adaptation of technological improvements to the quarrying and working of marble resulted in renewed attempts at improving methods for transporting rough-cut and worked marble products to the industry's domestic and international customers. Road, rail and port improvements were vital to the continued growth of the industry. Increased marble production had, after all, quickly taxed the province's already overburdened transport network. The Ferrovia Marmifera, built in the 1870s was able to transport only 300 tons of marble daily. Through bank investments, this private rail line saw steady improvements which by 1912 increased the line's maximum transport capacity to 1,500 tons per day. This five-fold increase in the ability of the Ferrovia Marmifera to transport stone from the Carrarese marble district necessarily involved the construction of new rail-beds, transfer stations, offices and track. While the Ferrovia Marmifera never did

19 Fabbricotti, Alcuni Cenni, 61-72; Camera di Commercio, Industria e Agricoltura di Massa-Carrara, Cento Anni della Camera di Commercio, Industria e Agricoltura di Massa e Carrara: 1862-1962, (Carrara: Sanguinetti, 1963), 54-55; Gestri, Capitalismo, 29-33; I Marmi di Carrara, 8. Carlo Andrea Fabbricotti noted that electric power was adopted readily after the establishment of the region's first hydro-electric power station. Moreover, he observed that within the first five years of the nineteen-twenties the use of electrical power in the Carrarese region more than doubled.
transport its daily maximum capacity, by 1912 the improved rail system did carry over 270,000 tons of excavated marble from the quarries to transfer points outside the marble district. 20

In 1889 the municipal government of Massa tried to duplicate the success achieved by Carrara's Ferrovia Marmifera by entering into an agreement with Ettore Belloni. Belloni was a Milanese entrepreneur who saw the possibility of making a good profit by building a narrow gauged tramline for the commune of Massa. The tram system he envisioned was primarily intended to transport marble from the marble stockpiles at the base of the Massese quarrying district to the seaside. The Tramvia di Massa, completed in 1893, was granted a sixty year lease by local authorities who, in turn, agreed not to give any similar right-of-way to possible competitors. The Massese tram line, established with a working capital of one million lire, was a success. In the Tramvia's first year, it transported 24,577 tons of freight, 31,211 tons the following year and 81,652 tons ten years later. These statistics, however, 20

For a detailed account of events behind the financing and construction of the Ferrovia Marmifera see Lazzoni, Carrara, 308-24; See also Bernieri, Il Porto, 112-28. Using Lazzoni as a chief source of information, Bernieri gave ample coverage to the development of the industry's transportation systems. He noted that the first rail line was fully operational only by 1876. Bernieri also recorded the change in names and owners experienced by the railway in the early years of its development and growth. The Società Marmifera Privata di Carrara became the Società della Ferrovia Marmifera Privata di Carrara and ownership went from the Banca Nazionale Toscana to the Banca d'Italia.
reflect the total tonnage of freight carried by the Tramvia di Massa as opposed to solely the amount of marble it transported. Nevertheless, since its tramlines had purposefully been built near the Massese marble stockpiles, sawmills, polishing shops and studios, it is reasonable to conclude that the vast majority of freight hauled by the Tramvia was marble.²¹

Continued improvements of the province's transportation system allowed the marble industry to meet revived demand. With the reconstruction of the Italian banking system, which occurred between 1893 and 1895, the national economy began to recover from the last depression. Increased economic growth in Italy resulted in a construction boom in which architects, contractors, and builders of large and small scale projects once again chose Apuan marble over other stone. As a result, new quarrying operations were begun, inactive quarries were reopened and operating quarries produced greater quantities of excavated stone.²² The construction of a major trunk rail line from Aulla to Lucca in 1912, for example, connected the previously underdeveloped Fivizzanese marble district to the

²¹Mario Germani, Attacchete al Tran: storia della tramvia Massese, (Massa: Centro Culturale Apuano, N.d.), 2-12; Fabbricotti, Alcuni Cenni, 83-84. Machinery and other industrial supplies such as drills, saws, pulleys, wires, chisels and hammers were carried by the tramline on special order, and this freight weighed, collectively, significantly less than the marble transported by the lines.

²²Fabbricotti, Alcuni Cenni, 73-74. The author recorded the following average yearly production: 151,748 tons between 1886 and 1895 as compared to 208,697 tons for the period 1896 to 1905.
national rail system. The Walton, Goody and Cripps company was now able to intensify its excavation efforts in Fivizzano's quarries because the rail line made its inland quarries more accessible, less costly to operate and more profitable to quarry. Thus the firm increased its workforce in the commune of Fivizzano from 158 in 1889 to 630 in 1914. Evidence pointing to the quantity or quality of marble shipped from the Fivizzano district does not exist because the district's quarry production was included in Carrarese production statistics. Yet it is clear from employment statistics that excavation was intensified in Fivizzano's quarries from 1889 to the outbreak of World War I. A similar pattern of growth in marble industry employment took place in the Carrarese and Massese marble districts proper. In Carrara, those employed in the marble industry rose, in number, some 50% between 1898 and 1913, while Massa's marble related employment increased by approximately 40%. Furthermore, the total number of productive quarries in the Apuan marble region increased from 365 in 1898 to 638 fifteen years later.\textsuperscript{23}

Increased production and employment was not, however, solely, the result of a rise in Italian demand for Apuan marble. Demand for Massa-Carrara's most precious natural

asset was not limited by national boundaries. Foreign demand continued to soar despite the ever present burden of protective tariffs.\textsuperscript{24} Of the 2,411,013 tons of rough unworked Apuan marble quarried between 1900 and 1914, 2,207,415 tons, or 91.5\% were exported. Statistics on sawed and worked marble are perhaps even more revealing. During the fifteen years before World War I, 2,257,664 tons of marble, or 48.3\% of Massa-Carrara's total marble production, had been worked or cut to size locally. Foreign demand for Apuan marble was so great during this period that the industry exported 72.6\% of its sawed and worked marble. The industry's continuing expansion was thus largely dependent on foreign demand.\textsuperscript{25}

\textsuperscript{24}Camera di Commercio, \textit{Cento Anni}, 57-58. To keep the clearest perspective, one should consider that this work was sponsored by the Camera di Commercio, a group whose interests, after all, were (and are) inextricably tied to the industry's unchecked growth. This monograph, in fact, was commissioned to celebrate over 100 years of industrial development and growth in the Massa-Carrarese marble industry. Nevertheless, this book remains an important source of information for any study of the marble industry in Massa-Carrara.

\textsuperscript{25}Walser, \textit{Les marbres}, 102-104; Gestri, \textit{Capitalismo}, 34-36. These two works do not always record the same marble production statistics. This is likely due to the fact that the numbers published by the Camera di Commercio di Massa-Carrara are different, at times, from those published by the Ministry of Agriculture, Commerce and Industry. While the reason for this discrepancy remains unclear, this author, generally, has followed more closely those figures cited by the Camera di Commercio in the belief that they present a more accurate account of local production. The statistics provided by Gestri also take note of production of rough-cut, sawed and worked marble. According to Gestri's calculations, the total Massa-Carrarese production of rough-cut marble for the period between 1900 and 1914 was 2,292,631 tons while total production of sawed and worked marble for the same period was 1,699,667 tons. Walser figured overall marble production for the Massa-Carrarese district to be approximately 500,000 tons.
<table>
<thead>
<tr>
<th>Year</th>
<th>Carrara</th>
<th>Massa</th>
<th>Total</th>
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<td>198,470</td>
<td>46,599</td>
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<td>241,442</td>
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Since unification of Italy, the Carrarese marble industry had experienced unparalleled growth. An entrepreneurial class had emerged ready to meet market demands by adopting technological innovations. These marble industrialists profited immeasurably by expanding the work-force and modern—greater in the period between 1900 and the outbreak of World War I than did Professor Gestri. Walser followed statistics (with some variation) presented in *Atti del Primo Convegno Nazionale dei Lavoratori del Marmo, Granito e Pietre Affini*, (Rome: F. Damasso, 1933), 90-91.
stone. In short, the increased exports of the late nineteenth century was the key to the marble entrepreneurs' wealth, power and status. Continued success in foreign markets was now needed more than ever by Massa-Carrara's industrial elite.

By the early twentieth century, domestic and international demand for Massa-Carrara's renowned marble enabled the marble industrialists to overcome both the high costs of transportation and the tariff barriers which had, since the nineteenth century, hindered exportation of the province's worked marble. Foreign marble may have had the benefit of protective duties but, in the long run, massa-Carrarese marble held a more decisive advantage. In short, rough-cut and worked Apuan marble remained the preferred stone within artistic circles and building industries despite protective tariffs in Europe, North America and South America. From Boston to Buenos Aires, artists, artisans and architects admired both worked and un-worked Apuan marble for its aesthetic qualities. The costly marble also appealed to collectors, consumers and clients from Hamburg to Hong Kong due to the prestige attached to owning such extravagantly luxurious stone. As a result, the new century seemed to offer Massa-Carrara's main industry an unfettered growth propelled by a skyrocketing global demand which enabled the local marble entrepreneurs to raise prices to new heights. During the ten year period before the start of World War I, the price of rough unworked marble blocks increased an average of 24% and
the price of sawed marble increased by 62%²⁶

²⁶MAIC-DGA-PCRM, Rivista del Servizio Minerario nel 1913, (Rome: L. Cecchini, 1914), 75-80; See also Atti del Primo Convegno, 90-92; Gestri, Capitalismo, 35; and for a general overview see Camera di Commercio, Cento Anni, 60.
CHAPTER IV
RESTRUCTURING OF THE MARBLE INDUSTRY

The increased production, prices and profits within the marble industry between the late 1880s and 1911 accelerated a long term process of concentration in which greater numbers of Carrarese quarries came under the control of fewer entrepreneurs. This tendency was evident as early as the middle of the sixteenth century when Carrarese marble merchants began to gain control over the excavation of marble from Carrara's most profitable quarries. Since merchants had recourse to greater capital resources and the networks of trade, the Dukes of Massa and Carrara increasingly favored granting them excavation privileges. In the succeeding centuries, local village communities called vicinanze, which historically had held the right to excavate nearby quarries, gradually lost control over ever greater numbers of quarries to marble entrepreneurs. Besides lacking the expanded trade connections required by the burgeoning international demand for Carrara marble, the vicinanze's lack of capital hampered their ability to excavate but the most accessible quarries. By the middle of the eighteenth century, a large number of Carrara's most profitable quarries was controlled by a relatively small number of
prominent local merchant families.\textsuperscript{1}

The latter half of the eighteenth century witnessed a continuation of the process wherein prominent local families gained control over a greater number of the richest marble quarries. During this period, there were 429 quarries in Carrara. Small producers controlled 171 of them. The remaining 258 quarries were held by 19 families. At the head of the most powerful entrepreneurial families during the late eighteenth and early nineteenth centuries were Andrea Del Medico (53 quarries), Ceccardo Lazzoni (41 quarries), Franco Del Medico (21 quarries), Santino Marchetti (17 quarries), Pietro Vacca (16 quarries), and Bernardo Manzoni (13 quarries). These powerful entrepreneurs had used the great profits generated from their rich holdings to obtain control greater numbers of quarries. While the majority of the marble region's quarries in 1700 had been worked by small quarry holders or vicinanze, by the end of the eighteenth century this was no longer true. The quarrying of Carrarese marble had been transformed; small quarry holders played a less

\textsuperscript{1}For an excellent analysis of the marble industry during periods of significant transformation see Klapisch-Zuber, \textit{Carrara e I Maestri}, 71-84, 194-96, 219-51; On the evolution of the rights and holdings of the vicinanze see Antonio Bernieri, \textit{Cento Anni di storia sociale a Carrara}, (Milan: Feltrinelli, 1961), 11-16; Bernieri, \textit{Storia di Carrara Moderna}, 6-8, 13-18; Offering a different view on the question of vicinanze rights is Gestri, \textit{Capitalismo}, 38-39; Caesare Piccioli, \textit{Gli agri marmiferi del Comune di Carrara}, (Carrara: Sanguinetti, 1956), 13-31, 43-56; For a detailed review of the most illustrious families in Carrara see Lazzoni, \textit{Carrara}, 326-76.
significant role in an industry which had come to be dominated by those who controlled large numbers of quarries. Among the small quarry holders who still excavated stone in 1800, only 9 held 4 quarries each, 11 controlled 3 quarries each, 21 worked 2 quarries each and 60 had but 1 quarry apiece.  

By the end of the nineteenth century another transformation had taken place. The oldest and most powerful clans who had become dominate in Carrara's quarrying region were now displaced by new entrepreneurial families such as the Fabbri-cottis, Derville, and Sarteschis. In the second half of the nineteenth century these new families controlled the largest number and most productive marble quarries in the Carrara marble district. The marble entrepreneurs who headed these prominent families played an important role in the political transformation of the region as well as in the modernization of quarrying and working marble.

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2 Gestri, Capitalismo, 39-41; See also "Elenco dei proprietari delle Cave, numero e qualita delle medesime," in Modula per le cave de' marmi della citta di Carrara, ASM, manoscritto 86, (N.d., but circa 1801). This manuscript is very difficult to read; it suffers from poor calligraphy and the passage of time. While Gestri concluded that the Elenco dates from the very end of the eighteenth century, Bruno Penucci, archivist at the Archivio di Stato di Massa, suggests that this document should be dated 1801. A precise date, therefore, is not possible, but the Elenco still provides an invaluable view of the structure of the marble industry in Carrara after the French Revolution. Because of the significance of the Elenco, Gestri's assessments regarding the number of quarries held by the various families have been reported herein.

3 Bernieri, Storia di Carrara Moderna, 31-44. Families such as the Fabbricottis and Dervilles were responsible for developing marble quarries in territories where the mountain-
As the marble industry continued to expand in the early nineteenth century, the Dukes of Massa and Carrara turned their attention towards the legal status of the marble quarries as well as to the issue of who held the rights of excavation. Since the early thirteenth century, the marble territories had been considered the property of the duchy. Moreover, as Massa and Carrara's legal system was greatly influenced by Roman law, mineral wealth, wherever it lay, was the property of the state. Therefore, those who wished to excavate marble could do so only with the approval of the rulers of Massa and Carrara. As the state profited by imposing a tax on marble excavated, the privilege of quarrying stone in Carrara had been freely given. But the growth of the marble industry in the early nineteenth century caused conflicts between rival marble excavators over the rights to quarry marble rich terrain. 4

In July of 1846, Duke Francesco V of Este promulgated a new law to regulate the marble industry. While reasserting the state's power over the quarries, the law established new rules governing the concession of excavation rights. Marble entrepreneurs still needed permission from the state to

4Klapisch-Zuber, Carrara e I Maestri, 72-85; Bernieri, Storia di Carrara Moderna, 13-29; Bernieri, Cento Anni, 12-21. For an detailed and insightful analysis of the respective laws relating to the quarrying of marble in the Carrara region see Piccioli, Gli Agri Marmiferi, 12-27.
excavate a quarry and had to pay a modest tax based on the tonnage of stone they had excavated. Every 29 years the marble entrepreneurs would have to renew their licenses in order to continue extracting marble from the quarries they had been working. If a marble entrepreneur had not paid tax on quarried stone or if he had not properly applied to renew his excavation license, the state could grant the concession to someone else. Furthermore, if an entrepreneur abandoned a quarry for more than five years, he would lose the right to mine it.\(^5\)

While the Este law of 1846 seems to have reaffirmed the powers of the state over the marble rich territories, in effect, it sanctioned the privileged position of the largest marble entrepreneurs. On its face, the 1846 law represented the state as a neutral broker whose purpose was to establish a uniform policy to decide who, among the competing excavators, was to quarry specific marble territories.\(^6\) Yet, in

\(^{5}\)Piccioli, Gli Agri Marmiferi, 55-110. Piccioli is a Carrarese attorney whose law practice deals largely with matters relating to the marble industry. Besides gaining a reputation as a skilled lawyer, Piccioli is an acknowledged expert on legal matters which concern the industry. Moreover, his monograph, published in 1965 by the Camera di Commercio di Carrara, was a seminal work dealing with property and quarrying rights in the industry. See also Bernieri, Cento Anni, 11-47.

\(^{6}\)Piccioli, Gli Agri Marmiferi, 56-71. Piccioli noted that the 1846 Este mining and quarrying law was based, partly, on the Napoleonic mining code of 1808. For a more critical analysis of the state's revision of the traditional privileges regarding the excavation of marble see Bernieri, Cento Anni, 33-35; and also Bernieri, Storia di Carrara Moderna, 34-37.
practice, government concerns with efficiency and productivity caused the state, in the end, to favor the large operators. A petitioner wishing to excavate a quarry, for example, had to demonstrate his ability to exploit the quarry. If the authorities were not fully convinced that the petitioner had sufficient skill, knowledge, experience and capital, his request could be denied. The government was above all concerned with increasing its tax revenues by encouraging the exploitation of the region's marble riches. Economic rationality, therefore, ensured that the law of 1846 would mean, in application, that large marble entrepreneurs would obtain concessions to excavate the best marble territories more easily than small-scale excavators. Moreover, once the large-scale marble entrepreneur was granted a concession to excavate specific terrain, under the terms of the 1846 law, he was allowed great flexibility in determining how to best exploit the quarry. Since the tax imposed by the state was only 3% of the value of the quarried stone, it was easily met. Should the large-scale entrepreneur be unwilling or unable to work the quarry, he could sub-lease it under the terms he wished to impose.\footnote{For specifics regarding legal rights and the excavation of marble quarries before 1851 see Piccioli, Gli Agri Marmifere, 101-12; See also Bernieri, Cento Anni, 11-35.} Thus, in application, the 1846 law not only favored the big entrepreneurs by granting their petitions to excavate marble territories more often than others, but it also increased their ability to add to their holdings areas which
they could sub-let to independent contractors. The large-scale marble entrepreneur, therefore, could focus his resources on the richest of his quarries while sub-contracting out less profitable quarries which held lower quality stone or those terrains which were more difficult to work. The revision of the mining law in 1846 created, in effect, a climate within which the large-scale marble entrepreneur could maximize his profits by rationalizing his quarrying activities through the use of sub-contractors. At the same time, he could increase the percentage of Massa-Carrara's marble territory under his control.\(^8\)

The process whereby marble production became increasingly dominated by a small circle of marble entrepreneurs continued to accelerate in the second half of the nineteenth century.\(^9\) By 1889 Carrara's active quarries were controlled by no more than thirty families. But the oldest and most powerful families involved in the marble business had been largely replaced, by the end of the nineteenth century, with families

\(^8\)Bernieri, *Cento Anni*, 33-35. Bernieri noted that, in theory, the Este mining law of 1846 confirmed the authority of the state to revoke the right to excavate marble out of a particular quarry if later the grantee did not exercise his rights. The author added that once the commune granted excavation rights over a quarry, it seldom revoked those rights. Since the unification of the Italy under the House of Savoy to the very end of the nineteenth century, the communal government of Carrara remained in the hands of leading marble entrepreneurs. Bernieri suggested that this fact alone helps explain why late nineteenth century political struggles over control of the communal government were so hard fought and bitter.

headed by a new breed of marble industrialists. The most important of these new marble entrepreneurs were the Fabbricotti family with interests in 112 quarries, Derville with 97 quarries, the Sarteschi family controlling 11, Binelli holding 9 quarries, the Peghinis with 32, and the Lazzoni family with interests in 9 quarries.\(^\text{10}\)

The old marble entrepreneurs clearly had been supplanted by a new breed of industrialists. These new marble industrialists were commonly more diversified in their interests and holdings. The source of power and new-found prominence for many of these industrialists resulted from the fact that they, individually, managed to combined their respective quarry, 

\(^{10}\)MAIC-DA-AA, *Rivista del Servizio Minerario nel 1889*, (Florence: G. Barbera, 1890), IX-XLVI; Gestri, *Capitalismo*, 41-42. Gestri's citation of the *Rivista del Servizio Minerario* records the year of the MAIC-DA-AA report as 1889, but this, apparently, refers to when the statistics were compiled. The correct publication date should be cited as 1990. Professor Gestri's calculations regarding the number of quarries in which the Fabbricottis held an interest seems, to this author, incorrect. While Gestri noted that the Fabbricottis held an interest in a total of 69 quarries, a recalculation has revealed that, in fact, this family was involved in 112 quarries in the Massa-Carrara marble district as well as working three more quarries in the province of Lucca. Perhaps Professor Gestri's calculations only noted the "active" quarries. Nevertheless, even though many of the Fabbricotti quarries were "inactive," this was the normal state of affairs in the quarry region. Quarries which were classified as "inactive" may have been so at the time of the publication of this government document. It was not unusual for work in quarries which were being excavated to stop once orders had been met (thus becoming "inactive"), and a short time later these same quarries could once again be worked to meet new demands. Therefore, a more precise determination of the Fabbricottis' position in the industry should consider quarries in which they had interests. Similar corrections have been made, where necessary, with regard to other holdings.
transport systems, sawmill and workshop operations. Aside from a few families, the old marble entrepreneurs had not sufficiently expanded their enterprises to include control over sawmill and workshop operations in Carrara. They were, by and large, content with the traditional profits provided by the quarrying of rough-cut and un-worked stone.¹¹ This proved to be a serious shortcoming because the purchase cost of worked marble was, of course, higher than the price of rough unworked stone. Hidden in the price of worked marble, therefore, were greater profits for those marble industrialists who also became proprietors of Carrara's sawmills and workshops. The families who combined the ownership of sawmills and workshops with the quarrying and transportation processes were thus able to make much greater profits from the sale of their quarried and finely worked marble. The key to making these higher profits in the marble mills and shops was modernization. As we have seen, the introduction of new technology in the sawmills and workshops began as early as the 1840s. Technological innovations had greatly increased the ability to cut and work marble at greater speed and with more precision. Continued improvements in the ability to cut and polish stone meant that greater quantities of Apuan marble

¹¹While the available evidence does not provide any definitive answers as to why most of the oldest marble entrepreneurial families did not seek to combine the quarrying operations with sawmill and workshops, it is clear that these families did not expand into this arena even though new entrepreneurial families were making greater profits by moving into the finishing sector of the industry.
were worked in Carrara and Massa. The industry's Italian and foreign customers were willing to pay dearly for such prized and finely worked stone.

The families who owned both quarries and sawmills used the handsome profits made in the cutting and working of marble to expand their sawmills operations by constructing more modern sawmills and, also, to slowly gain control of even more quarries. In 1889 a government study noted that there were 112 sawmills in the Massa-Carrarese mining district. The largest number, most productive and biggest were held by the Fabbricotti family, Walton Company, and Binelli group. This report also showed that there were 510 cutting-frames and 53 sifting-machines in Massa-Carrara. The Fabbricottis, with 39 cutting-frames and 5 sifting-machines, held by far the single largest number of sophisticated marble finishing equipment in the province. Their closest competition was the Walton Company which owned 23 cutting-frames (one of which used a helicoidal system) and 1 sifting-machine, followed by the Binellis with 1 sifting-machine and 24 cutting-frames.

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12 Tenderini, Della Segatura, 51-57; Magenta, L'Industria dei Marmi, 34-45; For a good description of the impact made by the new technology which was introduced into the marble industry see Gestri, Capitalismo, 6-38; A more brief overview is provided in Bernieri, Cento Anni, 30-31; See also the synopsis found in Antonio Bernieri, 50 anni di lotte operaie in Apuania: 1901-1951, (Rome: dell' Orso, 1952), 7-8.

13 MAIC-DGA-AA, Rivista del Servizio Minerario nel 1889, (Florence: G. Barbera, 1890), LVI-LX. This report also records the sawmills and marble finishing machinery in the province of Lucca; See also Gestri, Capitalismo, 42. Although Gestri cited this same document, he noted that there were 314
Moreover, what was becoming more evident by the end of the 1880s was that the profits made by those families who owned the greatest number of sawmills and marble finishing machinery were being used to obtain control over more marble quarries.

This industrial integration process is best seen in the rise of the Fabbricotti family. The Fabbricotti clan had been involved in the marble industry since the middle of the eighteenth century, but this period in the early history of the Fabbricottis remains obscure. The historical record, however, offers a clearer picture of this family in the following century. In the early nineteenth century, Domenico Andrea Fabbricotti quarried stone in the Miseglia district for marble merchants in nearby Carrara. Domenico Andrea was responsible for laying the foundation for the industrial prominence his son, Carlo Francesco, would establish for the Fabbricotti in the Carrarese marble industry. As early as 1815, the 27 year old Domenico Andrea had already established himself as one of the most active marble excavators in the region.  

Gaining control over productive quarries, he used cutting-frames in 1884 with the Fabbricottis owning 67, the Walton Company controlling 21 and the Binellis with 16. In light of the government report, these statistics are, this author suggests, incorrect. Perhaps, the source of this error was the result of a simple mistake in Professor Gestri's tabulation of each family's specific holdings as cited in the government publication.

On Domenico Andrea see Maria Teresa Fabbricotti Mazzei, Album di Memorie, (Florence: Giunti, 1989), 7-8, 71. This is an invaluable and touching work, written by the wife of Carlo Andrea Fabbricotti. Included in this book is a short family history which colorfully describes the lives of Domenico
the profits they generated to increase his quarry holdings and to build a number of modern sawmills.

Domenico Andrea Fabbriotti's third son, Carlo Francesco, began to direct the family business long before his father's death. Born in 1818, Carlo Francesco, nick-named "Carlaz," had been introduced to the family business as a young boy by his father who brought him along on inspection tours of the family's quarries. By the time Domenico Andrea's poor health had begun to restrict his activities, "Carlaz" had already mastered the family's quarry and marble-finishing operations. Carlo Francesco's ten brothers also became involved in the family business. Ceccardo established the firm, Fabbriotti Brothers, in New York City. In 1854 Ceccardo died when the ship which was returning him to the United States sank in the Atlantic. At Ceccardo's death, his two brothers, Giuseppe and Ottaviano, took over the New York office. After Ottaviano restructured the family business in Manhattan under the name Otto Fabbriotti, Giuseppe returned to Italy where he pursued a successful political career in which he was elected five separate times Carrara's representative to the lower house of

Andrea, "Carlaz" (Carrarese dialect for Carlaccio, which was meant as an affectionate and respectful nick-name by his family, but was said with disdain and scorn by many of the employees of the "king of marble") and his other sons. The author, who lived from 1893 until 1977, not only records the family's good years and personal tragedies, but she also relates how the Fabbriotti fell into bad times in the twentieth century. Noteworthy as well are the many family photographs and reproductions of Maria Teresa Fabbriotti's watercolors of family members, marble workers and family friends during various stages of their lives.
parliament. Domenico Andrea's youngest son, Bernardo, in turn, promoted the family's business in the British Empire by opening an office in London under the name Bernardo Fabbricotti. Living the life of an English gentleman, Bernardo set up house with his Scottish wife, Helen Murray, in a mansion he named "Lorano House." In this opulent setting, Bernardo prominently displayed art objects made of the finest Carrara marble while he entertained potential customers such as Queen Victoria. By the time Domenico Andrea died in 1877, his sons had established a business network whose agents in London, New York, Paris and Bombay sold marble from Fabbricotti quarries throughout the globe. Their success resulted from of a strategy which integrated excavation, finishing, transportation and sale of marble into one enterprise.

By the turn of the century, the most powerful quarry holders were also owners of the largest and most modern marble sawmills and workshops. Fabbricotti, Walton, Binelli, Peghini and Sarteschi were all family-owned firms that perfected a business strategy which fully integrated the various operational stages of the marble industry under one roof. Monies made in quarrying stone were invested in marble sawmills and workshops. The profits made in the cutting and working of marble were, in turn, reinvested in the purchase of new quarries, mills and shops. These firms also used their

profits to revolutionize the marble industry with the introduction of the newest technology available. At the quarries and in the sawmills and workshops modernization meant that greater quantities of marble were quarried, cut and polished. The old marble entrepreneurs, such as Andrea Del Medico, who did not diversify their holdings by expanding from the simple quarrying of marble to the large scale working of stone either left the business completely or were reduced to minor status by the end of the 1880s. They were simply unable to compete with the fully integrated industrial operations which had been built by the more energetic and insightful industrialists such as Carlo Fabbbricotti and William Walton. This process of industrial integration accelerated during the first decade of the twentieth century, and by 1914 the province's largest quarry holders all had extensive interests in sawmills, workshops and marble transport systems.16

An analysis of the development of the Apuan marble industry must also consider the phenomenon wherein a growing number of small-scale industrialists and entrepreneurial quarrymen17 worked quarries leased from large industrial


17Small-scale industrialists refers to those individuals who were in the business of employing workers to labor in quarries which had been leased from large industrialists. Entrepreneurial quarrymen, on the other hand, were either quarry foremen or groups of quarry workers who contracted to work specific grades or quantities of stone on a job to job basis.
firms. As has been shown, the leasing and sub-contracting of quarries by individuals who meant to work them was not new.\textsuperscript{18} Carrara's quarries had often been leased\textsuperscript{19} by large marble industrialists to particularly enterprising marble quarry foremen who provided necessary workmen or to groups of quarry men who lived in villages (vicinanze) near unworked quarries. The lessee traditionally gave the marble industrialist 1/7th of the quarried marble or, less commonly, an equivalent percentage of the value of the excavated stone in currency.\textsuperscript{20} In the late eighteenth century most independent contractors had been quarry foremen. But profits were limited by their inability regularly to sell directly to buyers the marble they had excavated. While these quarry foremen had expertise in quarrying stone, they lacked the network of relationships and business contacts needed to market large quantities of marble.\textsuperscript{21}

The major marble industrialists of the late nineteenth century began their rise to prominence in the early part of the century. By the end of the nineteenth century, these

\textsuperscript{18}See Klapisch-Zuber, \textit{Carrara e I Maestri}, 141-42, 165-68, 188-218.

\textsuperscript{19}The term "leased" is used in this study to signify those quarries which were leased for a long period of time from large-scale entrepreneurs and also those quarries which were "sub-contracted" for a specific quantity or quality of marble to be excavated.


marble entrepreneurial excavators had managed to establish direct and regular business relations with buyers who ordered rough-cut stone and worked marble from their quarries and shops. The successes these marble entrepreneurs had achieved were the result of a number of factors. In the 1830s and 1840s the development of a global market greatly increased demand which resulted in greater profits. Families such as the Fabbricottis found ready buyers for their excavated stone. At the same time, the introduction of foreign capital brought technological innovations which resulted in increased quarry and sawmills production. Quick to seize opportunity, Fabbricotti, Walton and other marble industrialists began to build modern sawmills and workshops and to excavated new quarries on their own. By mid-century these families had firmly established themselves both at the quarries and in the finishing operations.

At the end of the nineteenth century, it was very common for small and marginally profitable quarries held by Fabbricotti, Walton and other marble industrialists to be rented out to aggressive quarry foremen or to groups of quarry workers.

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22 Bernieri, *Carrara nella storia*, 190-220; Tenderini, *Della Segatura*, 29-32, 47-55, 89-93. Tenderini's monograph presents a good picture of the structural changes which took place in the early history of the Carrarese marble industry. His book is filled with important statistical information regarding the years of expansion and growth. Bernieri, Gestri and Walser relied heavily on Tenderini's monograph for information related to the industry's formative years.

23 Lazzoni, *Carrara*, 289-92. The author listed the names of families who owned sawmills and workshops.
for short or long periods of time. Some quarries were often worked under lease agreements until specific types and quantities of marble were excavated. When a large industrial firm (such as Fratelli Fabbricotti) received an order for a specific grade and quantity of stone that was only available in one of its currently unworked quarries, it was often more profitable to lease out the quarry to a small independent contractor. Rather than divert men, machinery and energy away from more lucrative quarries currently being worked, a good number of large companies such as Derville as well as the important firm Walton, Goody and Cripps, simply contracted out a significant portion of their respective small orders. Accordingly, the more productive quarries continued to be worked with the company's full resources while the less profitable or unworked quarries were excavated by small independent contractors who used their own initiative, energy and resources. Since the leasing of quarries often depended on sporadic job orders for specific types and quantities of marble, it was not uncommon for some quarries to be opened, closed, reopened and abandoned all in the same year. Market demand may have been unstable, but, overall, it was high enough to warrant the leasing of quarries in large number. In 1889, for example, while 56% of the active quarries were

\[\text{MAIC-DGA-AA, Rivista Servizio Minerario nel 1889, IX-XLVI. These conclusions, while tentative, are based on the quarry list of 1889 which indicates that quarries held by firms such as Fabbricotti were commonly leased out to be worked by independent contractors.}\]
leased, only 44% were worked by quarry owners. Considering that the industry was still suffering from a recession in the 1880s, the percentage of leased quarries during this period suggests that lease holders played a very important role in the marble industry even during hard times.

The large marble industrialists such as the Fabbricotti family benefitted from leasing arrangements in four ways. Typically, the salaries and working conditions of the quarry workers were the responsibility of the quarry foremen or the team of skilled quarry men who leased the quarry as independent contractors. As lessors, the large industrialists were thus partially insulated from difficulties which could arise between the lessees and the workmen they needed to hire. Any complaint about working conditions or pay scales had to be put to the specific lessee who had taken on the responsibilities of an employer. The large industrialists also benefitted by turning unworked quarries into productive ones since the lease agreements typically awarded the lessor with at least 7% of the marble extracted. The lessors profited as well by buying the worked quarried stone from the lessees and then selling this marble at a profit to buyers they had solicited.

25 Ibid. In compiling these statistics, quarry owners who were worked their respective quarries with the aid of other excavators were included in the percentage of quarries worked by lease holders. The highest percentage of leased quarries occurred in the Massese district. It is noteworthy that some of the largest firms, such as Derville and Walton, commonly used sub-contractors to excavate the quarries which they owned. Large firms, such as Fabbricotti, often would work the quarries held by other companies.
Finally, as the means of transportation and the sawmills and workshops were mainly owned by the large marble industrialists, they benefitted by charging buyers of worked marble the costs of transporting and finishing the stone.\textsuperscript{26} In short, under a typical late nineteenth century lease agreement, the quarry foreman who rented a quarry was paid by the lessor for the blocks his men excavated. The lessor, as a large marble industrialist, increased his profits above his simple 7\% share of the marble quarried by selling the stone to buyers and charging them for transportation and when appropriate, finishing costs.

During the nineteenth century, the excavation of Carrarese marble had been transformed into the province's most significant industry. Early foreign investment had resulted in greater production and industrial modernization. By the end of the century, the industry was controlled from quarries to sawmills and workshops by a small group of large marble industrialists. Thousands of workers now labored in quarries, sawmills and workshops and on rail lines, docks and ships for companies started by men such as Carlo Fabbribotti and William Walton. The Apuan mountains' marble riches could not have been exploited but for the efforts of these countless numbers of quarry men, lizzatori, sawyers and scultori. The success of the industry and of the marble "barons" radically altered these workers' lives and, at the same time, radicalized the

\textsuperscript{26}Fabbribotti, Alcuni Cenni, 93-96
marble worker.
CHAPTER V

CONDITIONS OF LIFE FOR PROVINCIAL LABOR

For five centuries the quarries of Carrara had been worked by men who lived in the surrounding mountain towns. The inherent limitations of subsistence agriculture and a history of continued demographic growth in the marble district provided conditions which had compelled the Apuan peasants to turn to the arduous task of quarrying stone whenever the market permitted.\(^1\) From the Middle Ages through the Renaissance, the towns of Torano, Bedizzano, Colonnata, Codena and Miseglia were centers of marble production whose villagers periodically left their poderi to quarry marble.\(^2\) The tradition of agricultural workers leaving their farmers to excavate marble and then returning to the fields when orders were met or when demand for marble no longer existed is well known. The quarrying of marble in Carrara had thus been largely a supplemental activity undertaken by peasant-quarrymen whose quarrying skills and proximity to the source of the precious stone offered a valuable supplement to their agricultural incomes. When restrictions in the market reduced demand

\(^1\) Repetti, *Dizionario*, 1: 481-90.

\(^2\) Klapisch-Zuber, *Carrara e I Maestri*, 17-21.
for Carrara marble, these peasant-quarrymen were forced to return to their small villages and towns which dotted the mountainous landscape. Emanuele Repetti provided the first modern account of the relationship between local peasants and the region's marble industry. Repetti was born in Carrara in 1776. Although he had been formally trained as a pharmacist, he spent most of his professional life as a naturalist, geographer and historian. After years of research, Repetti published, in 1820, one of the first serious studies of the marble regions in Massa-Carrara. In this monograph, he noted that the end of the Napoleonic wars had inaugurated an increase in industrial activity in the quarries of Carrara. He observed that this post-war rebirth of the marble industry resulted in a migration of peasants from villages other than those which had traditionally provided workers to the industry. No longer did vicinanze such as Torano and Miseglia supply the vast majority of marble workers, but now the more distant hillside villages of Carrara's commune also provided labor for the marble industry. As quarrying marble became the province's biggest industry, more workers were needed to

3 Klapisch-Zuber, *Carrara e I Maestri*, 25-31; See also Repetti, *Dizionario*, 1: 481-90.


5 Repetti, *Cenni*, 11-12, 33-64. See Magenta, *L' Industria*, 23, 33-34, 38. Magenta notes that while the marble industry employed 3,000 Carrarese by 1866, only 800 were similarly employed in Massa and 2,000 in the province of Lucca. See also Fabbricotti, *Alcuni Cenni*, 41-45.
quarry, transport, saw and work the excavated stone.

One after another, peasants from every major village near Carrara and Massa would become employed in the marble industry. Less than twenty years after Repetti first noted these trends, he observed that whole areas whose economies were limited to artisan crafts, agriculture and shepherding now provided the marble industry with quarry men, marble-cutters, stone-chiselers and teamsters. The marble industry clearly had begun to act as a magnet drawing mountain peasants out of over populated villages and away from their vineyards, chestnut trees and olive groves to the sun-bleached marble quarries of Carrara and Massa.⁶

During the economic expansion of the 1860s and 1870s employment opportunities in the Carrarese marble industry rapidly increased.⁷ More and more peasants from outside the immediate municipal boundaries of Carrara were attracted to the industry. In the decade after national unification, the Carrarese experienced a 68.42% increase in the number of men employed in the quarries. At first, the peasants from the nearby communes such as Garfagnana and Fivizzano sought work in the marble industry. But the hurried industrial growth

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⁶On Carrara see Repetti, Dizionario, 1: 481-90; For Massa see Repetti, Dizionario, 3: 115-38. Repetti suggested that an increase in local population along with the nature of subsistence farming made the prospect of working in the growing marble industry attractive for many peasants.

⁷Lazzoni, Carrara, 287-89, 297. Lazzoni noted that the Carrarese marble industry employed 4,045 workers in 1879.
which followed national unification required even more men to work the Carrarese and Massese quarries. While precise population records were not kept in the nineteenth century, available sources do note significant migrations of peasant-workers to the marble quarry districts. 8

By the early 1880s peasants were emigrating great distances, most often on foot, to Carrara from villages and hamlets in Liguria and Reggio-Emilia as well as from the provinces of Lucca and Pisa. These people too were attracted to Carrara by abundant employment opportunities in the marble industry and driven by the meager livelihoods offered them in the rural mountain economy of central and northern Italy. 9

The clearest indication of this migration of peasants seeking employment in the marble industry can be found in the population statistics of Carrara and Massa. While the population of Carrara grew 64% between 1861 and 1881, Massa experienced a 38% increase. By the turn of the century Carrara's population grew another 39%, while the number of

8 Mori, La Lotta Sociale, 71; Magenta, L' Industria, 84. Magenta lamented the fact thousands of people from the province of Lucca, and the Lunigiana and Garfagnana regions emigrated seasonally to work in Corsica rather than confront the hard labor and dangers inherent to working in the marble industry. See also Gestri, Capitalismo, 46.

inhabitants in Massa increased by 32%. The population of the provincial capital was easily out paced by Carrara, the economic capital of the province. Throughout the latter half of the nineteenth century, Carrara's more numerous and richer quarries produced more marble than Massa's marble district. As Massa remained mainly a bureaucratic and agricultural center that offered only limited employment opportunities, those who sought work were naturally attracted to Carrara's robust marble industry. Since the excavation and working of marble was the largest and most dynamic enterprise in the province, it is clear that Carrara's rapid population increase during the second half of the nineteenth century was in good part the result of accelerated industrial activity. If work could not be found in the quarries themselves, it could be found in activities related to the extraction of stone. In short, Carrara's industrial growth also offered the less skilled jobs in road and rail construction and maintenance, on docks, in workshops and sawmills, and in moving stone by cart and wagon.

From Italian unification to the outbreak of World War I, a diverse group of workers labored in the Apuan marble industry. The industry employed workers who came from various

10 Annuario Statistico Italiano, vol. 3, (Rome: N.p., 1913), 14-16; Raffaelli, Monografia Storica ed Agraria, 30, 58; Magenta, L' Industria, 33; Mori, La Lotta Sociale, 169. See also Gestri, Capitalismo, 46.

11 See Gestri, Capitalismo, 44-48; Bernieri, Storia di Carrara Moderna, 159-171.
regions, economic backgrounds and social levels. As early as 1880 many of the industry's workers had migrated (or were the children of recent migrants) from different villages and towns, provinces and regions. While some had been mezzadri and landless agricultural workers, many had been piccoli proprietari who left behind their small plots of land to be cared for by family members or worked by sharecroppers. Indeed, the most common characteristic of Carrara's marble workers was that they originated primarily from the foothills and valleys of the Apuan and Apennine mountains where small peasant proprietors were dominant. 12

Once the migrants left behind the agricultural hamlets and villages in which they had been born for employment in the marble territories, they were put to work at a variety of new tasks and occupations. The least skilled workers did manual labor in the quarries, transported marble out of the quarries, worked on road and rail construction projects and loaded the stone on trains and cargo ships. Men with more specialized skills found employment in sawmills and workshops or else as teamsters transporting rough-cut and finished stone. The industry's "aristocrats of labor" were its most skilled workers. They often belonged to families who for generations

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12 While the evidence is limited, it is clear that the increase in the number of workers in the marble industry as well as the growth of both Carrara and Massa occurred at the same time as large numbers of mountain peasants left their farms. Gestri, Capitalismo, 46-48, 64-66; See also Sarti, Long Live, 80, 90, 119, 144-45.
had worked with marble. These men, therefore, would likely have come from Carrara or Massa proper as well as from the villages within the marble districts. Among this group of elite workers were the lizzatori who jealously guarded the ancient art of moving newly quarried block down from the mountain quarries; capicavi who ran quarrying operations; foremen who directed daily operations in the sawmills and workshops and oversaw the men who transported and loaded marble onto carts, ships and trains; and scultori who worked the newly quarried stone in workshops and studios. There the scultori used their considerable skills to make marble tables, busts, statues, vases, porticoes, columns and altars both for a growing mass consumption market and for more discriminating buyers.  

The marble workers of Massa-Carrara thus belonged to a number of different occupational categories. This occupational stratification helped create divisions within the industrial work force that discouraged collective action or the growth of class consciousness in the decades after 1861. The very nature of the Massa-Carrarese marble industry exacerbated the

13 Fabbricotti, Alcuni Cenni, 95-96. In this monograph, Carlo Andrea Fabbricotti noted the Carrarese tradition which allowed the sons of quarrymen the right to enter their fathers' profession whether they had the manual skills and were physically qualified or not. Fabbricotti offered suggestions which would have eliminated these rights through the establishment of technical institutes and trade schools which would assess a particular applicant's abilities, direct him towards a particular trade, train him and, eventually, place him in a job.
recently formed group of marble workers' inability to identify themselves as belonging to a single body of laboring men. To begin with, marble workers were dispersed among hundreds of quarries throughout the Apuan mining district. The development of relations was difficult if not impossible among workers employed from sunrise to day's end in quarries separated by great distances and rugged terrain. The sawmills and workshops created a similar sense of isolation. While often clustered in the province's two main urban centers or in nearby hamlets, the work force in the sawmills and workshops of Carrara and Massa was dispersed into small groups employed to cut and polish quarried stone in dozens of separate plants.

Throughout the second half of the nineteenth century, the new marble workers' sense of identity was still rooted in their rural origins. Many had been peasants who migrated from the various provinces and regions of north-central Italy. Psychologically and, partly, economically they were still tied

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14 For an description of the industry's structure during the Middle Ages and early Renaissance see Kaplisch-Zuber, *Carrara e I Maestri*, 82, 153-218, 241-51. On the marble industry's structure and the location of individual quarries in the early nineteenth century see Repetti, *Dizionario*, 1: 486-98; For the late nineteenth century see Lazzoni, *Carrara*, 269-92.

15 Tenderini, *Della Segatura*, 32-39, 51-59. This work provides a detailed description of the province's sawmills and workshops which includes the number and quality of the plants' sawing and cutting machinery. The monograph also includes information on the state of the marble industry's operations in the nearby province of Lucca.
to agriculture. Since many marble workers had been *piccoli proprietari* who retained legal title in their farms, which were now worked by family or *mezzadri*, their focus of identity remained primarily rural. Uncertain of continued employment in the industry and just as unsure of the duration of their good health while employed, peasant-workers quarrying, working and transporting stone held on to the hope of returning to the land they had farmed. Wages earned in the industry were thus often seen as providing an opportunity to buy farm land once worked for hire or to add to family holdings by purchasing more *poderi*.  

The very process of working in the industry, nevertheless, meant that the marble workers would develop, if only slowly, a new sense of identity. The industry's harsh and dangerous working conditions were, in the end, the main factors which both undermined the traditional peasant mentality of the marble workers and, at the same time, helped cultivate in them a collective sense of identity as industrial workers. The industry's workers had to endure daily hardships whose severity eventually generated a feeling of solidarity.

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16 While exact statistics are not available, the documentary evidence does strongly suggest the predominance of small proprietors among the marble workers. See *Inchiesta Agraria*, 579-81. This government report also described the living conditions of the Massa-Carrarese peasantry. On the relationship between the local agricultural economy, peasants and marble workers see Raffaelli, *Monografia Storica ed Agraria*, 231-42. For an analysis of Apennine agriculture and peasant attitudes in the nineteenth century see Sarti, *Long Live*, 77-114.
within the labor force. The quarrymen's life, for example, was particularly hard. Those who quarried stone may have been separated by the location of the individual quarries and by rugged topography, but they had in common an especially harsh lifestyle. The quarrymen's workday started long before the heavy task of extracting marble from the mountains began. Since the quarries themselves were located on the Apuan slopes, quarrymen had to walk up the steep mountainsides before they could begin their day's labor. As most quarrymen lived in Carrara, Massa or in nearby villages, a 1 to 3 hour 800 meter march up to the quarries was not uncommon.\footnote{Bernieri, Cento Anni, 94-96; Bernieri, Storia di Carrara Moderna, 90-93. In both monographs the author took note of the conditions of labor in the quarries. Bernieri cited a document titled Petizione dei carratori, cavatori e lizzatori carraresi. This document was issued in 1872 by marble workers who sought to gain official acknowledgement of the industry's harsh working conditions. Of particular interest is the document Dichiarazione degli operai lavoratori di marmi a Carrara. Here, Bernieri explained, the marble workers reiterated their demands and declared a general strike. This short strike ended after the Prefect intervened and used his influence to convince certain leading marble industrialists to increase wages. For an insightful description of stone quarrying in the Carrara region from Roman times through the Renaissance see Klapisch-Zuber, Carrara e I Maestri, 65-71, 81-85, 87-110, 126-51, 166-218.} Leaving their homes just before sunrise and often not returning till after sunset, quarrymen spent little time with their families. Worn by arduous treks to and from the quarries and by back-breaking and perilous labor in the high sun-baked mountain quarries, the quarrymen's nights were devoted to much needed rest.
As an occupation, quarrymen found work in the quarries especially perilous. During the 1860s the widespread use of dynamite to separate marble from its mountainous base in the Carrarese quarries ensured that an average of 20 deaths and 54 serious injuries occurred annually in Carrara alone. In other words, for every 20,000 tons of Carrarese marble quarried, the human cost was 4 deaths and 11 serious injuries. On a single workday in 1864, for example, an incident occurred which was all too common. Workers using dynamite in the Ravaccione quarry loosened tons of stone which resulted in a massive landslide which killed 11 workmen and permanently injured 3 others.18 Between 1857 and 1879 an average of 25 deaths and 80 serious injuries were reported annually in a work-force that numbered about 4,000. These figures are best understood when compared to contemporary conditions in the Sicilian sulphur mines. Long considered among the most oppressed workers in Italy's mining industry, Sicilian sulphur miners were killed and seriously injured at a rate of 45 deaths and 20 incapacitating injuries per year. Considering that there were 40,000 sulphur miners in Sicily and only 4,000 Carrarese quarrymen during this period, it is clear that mortality and serious injury rates were much higher in Tuscany. Employment in the marble industry remained so dangerous to workers' health that by 1883 Carrara experienced a yearly average of the 54 seriously injured workers, and 20 deaths. Of the 231

18 Mori, La Lotta Sociale, 42.
accidents which occurred in the Carrarese marble industry between 1890 and 1893, 46 workers died and 205 were classified in government reports as being seriously injured. Many other workers were classified by government officials as having suffered solely minor injuries because they had broken only arms and legs, hands, feet and ribs. This was the heavy tribute the marble industry demanded of its workers and their families.

The great risk and arduous labor which marble workers came to expect were compensated by 1880 with daily wages which were higher than average for the province's work-force. The highest wage was generally to be found in the Carrara marble district. The Carrara quarries were the most productive and profitable quarries in the province. In Carrara, marble workers could expect to find more work and greater pay. A Carrarese lizzatore could earn between 2 to 3.50 lire per day, while quarrymen were paid 2.50 to 3.25 for a day's labor. The teamsters who drove the oxen pulled carts which transported massive blocks from quarries to mills, workshops and seaside docks were paid from 2.50 to 3.75 lire for a day's work. At Carrara's marina, dock workers made a daily wage of 4 lire while Carrarese artisans who sculpted common busts, figurines and other consumer goods earned up to 6 lire daily. Mean-

19Mori, La Lotta Sociale, 41-42; See also Gestri, Capitalismo, 52. For statistics on the period between 1890 and 1893 see Ludovico Milani, "Sui Lavoratori dei Marmi di Carrara," Giornale della Reale Società Italiana d' Igiene, 1894, 21.
while, in the less productive Massese marble district workers were paid, on average, 10% less than their counterparts in Carrara. Nevertheless, both the Carrarese and Massese marble workers were paid a higher daily wage than many Italians who worked in other industries. Florentine weavers, in the 1870s, for example, were paid from 1 to 2 lire per day.  

**TABLE 6**

**MARBLE INDUSTRY'S AVERAGE DAILY WAGE RATES (1874-1894)**

<table>
<thead>
<tr>
<th>Workers</th>
<th>Lira(e) per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children</td>
<td>0.80 to 0.90</td>
</tr>
<tr>
<td>Women</td>
<td>1.00</td>
</tr>
<tr>
<td>Scalzatori</td>
<td>1.80 to 2.80</td>
</tr>
<tr>
<td>Lizzatori, Frulloni and Sawyers</td>
<td>2.00 to 3.50</td>
</tr>
<tr>
<td>Quarrymen</td>
<td>2.50 to 3.25</td>
</tr>
<tr>
<td>Quarry foremen</td>
<td>3.00 to 4.00</td>
</tr>
</tbody>
</table>


A greater daily wage, however, did not translate into a high annual salary. Since much of the work involving marble

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20 For comparison of conditions faced by Carrarese and Sicilian workers see Gestri, *Capitalismo*, 51-53. Gestri maintained that the marble industry's wage rates in 1900 were generally the same as the rates paid workers in 1870. This conclusion seems consistent with the rate of inflation and the cost of living in Massa-Carrara during the last three decades of the nineteenth century. See also Mori, *La Lotta Sociale*, 41-46, 47. Mori reported that pay for a braccianti in Massa seldom was more than 1 lira per day. Note that Carrarese quarry foreman's pay could have varied according to the productivity of their individual quarries.
was done outdoors, the industry's work force was subject to climatic changes which, in the mountains, came suddenly and often. Thus the industry could expect, on average, only 230 work days per year. In order to work so many days per year, industrialists expected their marble workers to endure all but the most severe rains, winds and cold. The coldest winter months practically brought outdoor work to a stop, but inclement weather could appear suddenly, throughout the year, in the mountains' numerous glens and valleys. The mountain climate was especially unpredictable in the late fall and early spring. An unexpected cold front or torrential rain could make work more difficult and dangerous or stop it altogether. Yet warm weather was, ironically, both welcomed and lamented. Men could chisel, cut and blast marble from its mountainous bed, but much of this heavy labor was done under a hot sun whose brilliant rays were magnified into a blinding light by the reflective qualities of the white marble quarry walls and floors. Marble workers thus commonly had to accept oppressive heat and cold, noise and dust, blinding sunlight and treacherous darkness, high winds and ice, as well as the risk of being crushed to death by falling stone or killed in a fall.21

In marble sawmills and workshops employees worked 12

21Milani, "Sui Lavoratori," 7-12; Inchiesta Agraria, 583; Mori, La Lotta Sociale, 42-44; Gestri, Capitalismo, 51-52. Gestri stated that the number of productive work days in a given year were seldom more than 250.
hours days, alternating shifts every other week. Sawing, grinding and polishing marble required the use of large quantities of silica sand and a constant flow of water. Working in the sawmills and shops thus meant that men labored day and night in wet and damp shops with powerful machines which sawed and worked the rough stone at high speeds. The process of working stone to order produced fine marble dust which permeated the work place, blanketing machinery and men. This white marble dust was a serious irritant to workers' eyes, noses and throats, but, more importantly, it also produced even greater damage to the lungs. Long-term exposure eventually caused severe health problems which included bronchitis, emphysema, pleurisy, silicosis and, generally, pneumoconiosis.²²

While the dust produced in the quarrying and working of stone insidiously damaged workers' health, the danger presented by the lizzatura was more readily apparent. Until the very end of the nineteenth century, marble workers in the quarries of Massa-Carrara still relied upon muscle power to excavate and transport marble. Only after the marble had been cut by

²²Marco Mazzitelli, La lavorazione del marmo in rapporto alla salute degli operai, (Carrara: E. Bassani, 1934), 3-16. Mazzitelli's monograph, published by a local fascist press, attempted to prove that the harmful effects of marble and silica sand dust had been exaggerated. His analysis of statistical evidence concerning lung diseases among local workers was incomplete as he looked at a very small number of workers who manifested some level of illness. See also Benjamin Miller and Claire Brockman Keane, Encyclopedia and Dictionary of Medicine, Nursing and Allied Health, (Philadelphia: W. Saunders Company, 1978), 152, 336, 794, 796, 919-20.
hand from its bed and then sawed, again by hand, to a more manageable size at the foot of the quarry, could the rough-cut stone be transported down the steep mountainside to the motorized sawmills in Carrara and Massa. Moving the marble blocks from the mountain quarries to the workshops in the two towns was done by the lizzatura method. The lizzatura had its origins in ancient Roman times and was used well into the twentieth century as the primary method of bringing the large quarried blocks to the urban sawmills, shops and studios. During the lizza process, a newly quarried block was secured by huge ropes which were managed by men and firmly anchored to poles. With the help of oxen, the workers then maneuvered the marble block onto large oak logs. As the men pushed the marble block (aided by the pull of gravity), the logs just ahead of the moving stone were soaked with soap to reduce friction. As soon as the stone had passed onto the logs laid before it, the logs left behind were quickly removed and hurriedly placed immediately in front of the downward sliding marble block. This difficult and extremely dangerous journey of men and stone from up in the quarries down to the workshops required skilled and disciplined teamwork, and no little courage.23

23 One of the first descriptions of the lizza is found in Repetti, Sopra L' Alpe Apuana, 95-96. Repetti, a native of Carrara, was particularly interested in the marble industry. See also Fabbriotti, Alcuni Cenni, 37-39; Luciana Mannoni and Tiziano Mannoni, Marble: the history of a culture, trans. Penelope J. Hammond-Smith (Genoa: Sagep, 1984), 230-43. The hemp ropes used since Roman times were replaced by steel
Discipline, skill and courage notwithstanding, the danger to the lazzatori was still great, and the many recorded accounts of death and serious injury among lizzatori confirm this. Yet in the absence of roads the lizza was the preferred method of moving stone. Should the mountain slope have too severe a pitch for roads or the employment of the lizzatura, marble blocks would simply be shoved down the mountainside. This primitive method of moving blocks from the hard to reach quarries was especially costly. Aside from the damages caused to the quarried blocks themselves, workers were often seriously injured or killed by the resulting avalanches of boulders, rocks and rubble.24

The perils and hardships which the marble industry's workers confronted were severe and unrelenting. Each work day promised backbreaking labor as well as the very real threat of serious injury or death. In the fifty years which followed the unification of Italy, many of those who quarried, transported and worked Carrara marble eventually responded to the harsh realities of the marble industry by turning to an ideology which denied both the legitimacy of the state and of the marble industrialists' hold over the quarries. During the

cables and chains by the turn of the twentieth century.

24 The blocks moved by lizzatura weighed anywhere from 1 to 30 tons. Ettore Magni, Industria e Commercio dei Marmi Apuani, (Rome: Damasso, 1934), 81; Michelangelo Buonarroti narrowly escaped being crushed during a lizzatura. He visited Carrara eight times between 1505 and 1525. See Klapisch-Zuber, Carrara e I Maestri, 90-101; Magenta, L' Industria, 8, 73-75.
late nineteenth and early twentieth centuries, the Carrarese anarchist movement would become famous in Italy, Europe and the Americas. Anarchist denunciations of marble industrialists and the state which supported them were not solely based on the harsh exploitation of the Carrarese working class. The radicals' verbal and physical assaults against the political and economic ruling order found an organic justification in the local tradition which taught that historically quarrymen of the vicinanze had been those primarily responsible for extracting and working Carrara marble. Armed with an alternative, if romanticized, vision for the exploitation of the region's marble riches, the anarchist movement gained a wide and deep sympathy among those who worked Carrara stone. From 1880 to World War I, the province's marble districts experienced fierce struggles between a radicalized working class and an economic elite composed of marble industrialists who were firmly wedded to the political order.
GOVERNMENT DOCUMENTS


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**Archivio di Stato di Massa**

Gabinetto di Prefettura, Rapporto al prefetto di Massa, October, 1865.

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**Modula per le cave de' marmi della città di Carrara, "Elenco dei proprietari delle Cave, numero e qualita delle medesime," N.d., but circa 1801.**

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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

4/10/94
Date

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