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Social Structure in Le Chambon-Feugerolles

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THE LOGIC OF SOLIDARITY: SOCIAL STRUCTURE IN LE CHAMBON-FEUGEROLLES

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The years between 1870 and 1914 were years of increased strike activity in France as well as years of industrial expansion and urban growth. During this period heavy industry firmly established itself in France, villages of semi-rural artisans were transformed into industrial towns, and increasing numbers of artisanal and industrial workers became involved in strike actions. Industrialization and urbanization shaped mass strike action in a small Stephanois town, Le Chambon-Feugerolles, in three important ways. First, the advent of heavy industry in the Stephanois region centralized industry in the city which facilitated cooperation between artisanal and industrial workers. Second, technological change and local politics encouraged the formation of strike coalitions between artisanal and industrial workers. Finally, work structure and work related residential patterns enabled artisanal workers to build strong trade unions capable of enlisting, the more difficult to organize, industrial workers.¹

Chambonnaise strikes shared several important characteristics of national strike actions. First, the size of Chambonnaise strikes increased dramatically, particularly between 1890 and 1914. Second, participation in strike actions changed; while artisans continued to be involved in mass strikes, industrial workers began to play a predominant role. Changes in local strike patterns are well illustrated by the contrasts among the three large waves of mass strikes which occurred in the prewar years. In the earliest period of Chambonnaise strike militancy, during the years 1889 and 1890, when artisanal fileworkers initiated several militant confrontations, industrial workers played only a minor role in strike actions. In the next wave of strikes in 1906, industrial workers were more active but artisanal workers

continued to play the dominant role. In 1906 a strike wave broke out over an employer's attempts to punish his workers for observing May day. Initially, heavy metalworkers, beltworkers and fileworkers were all involved in the strike but the metalworkers and beltworkers, both industrial workers, soon went back to work while the artisanal fileworkers remained out on strike for several more weeks.²

The third and largest wave of strike activity in Le Chambon which occurred in 1910 and 1911 was a result of the concerted actions of artisanal and industrial workers. There were two large local strikes, the first in 1910 and the next in 1911, which were of sufficient size and duration to attract national attention. Industrial workers played the leading role in these strikes although they received substantial aid from artisanal workers.³

Historians have tended to concentrate on worker mobilization in large cities, neglecting small industrial towns as insignificant or exceptional. In fact, the small industrial town played an important role in the economic development of most industrializing countries. The small working class cities of the Staphenois valley belong to a type of nineteenth century industrial urbanization which has its parallels in the Ruhr valley in Germany, the Rhondda valleys in Great Britain, and the Monogahela and Allegheny valleys in the United States. A combination of mountainous terrain, coal deposits, the early use of water power, and railway transportation created spread out, small coalproducing or metalworking communities which were scattered over several intersecting valleys. In Germany where the Ruhr played a dominant role in national industrial development throughout the whole of the nineteenth century, the valley towns grew continuously and

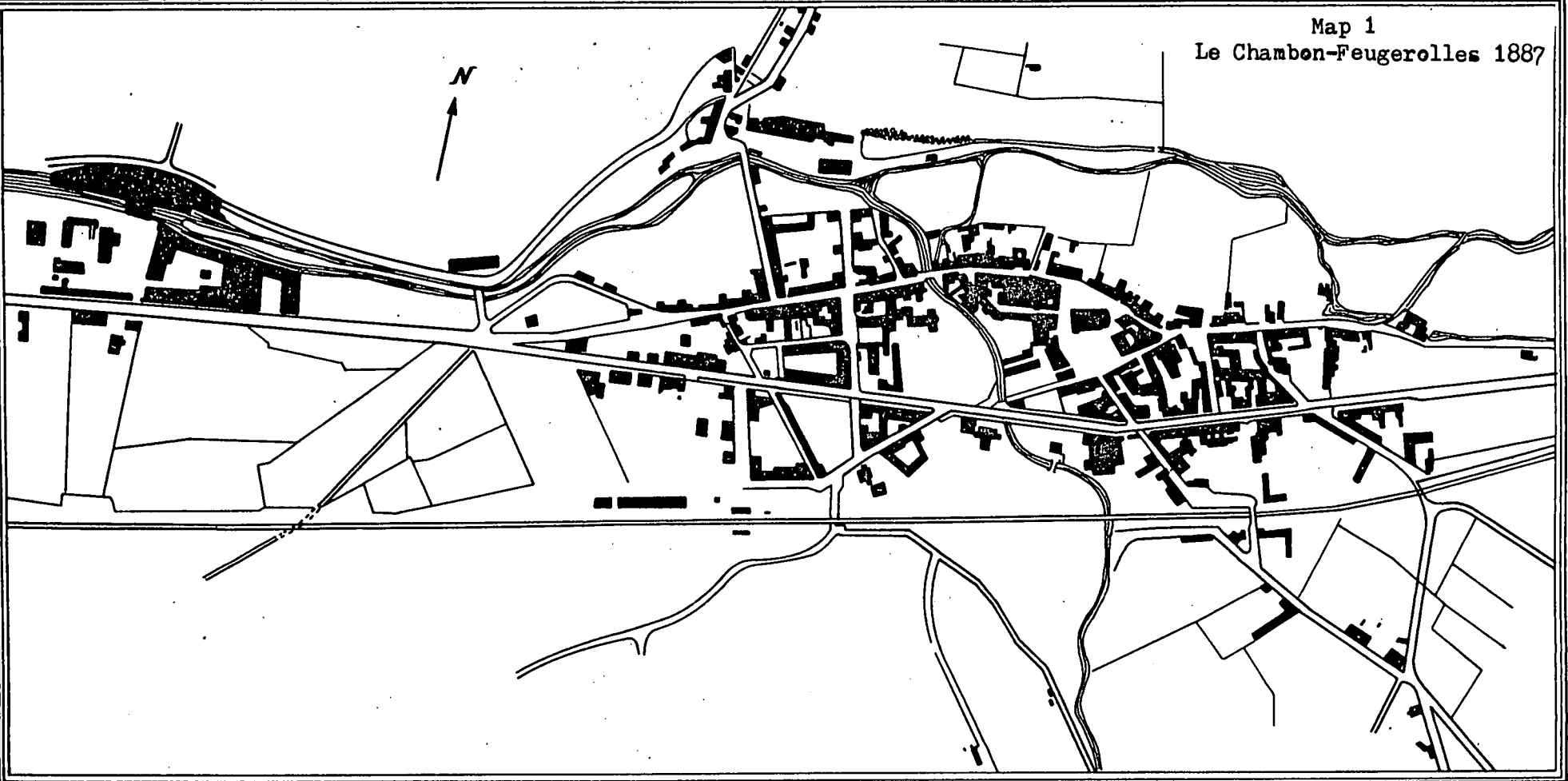
ultimately merged together into the great Duisburg-Essen-Dortmund conurbation of the inner Ruhr. In South Wales, heavy industry left the coalfields in the 1860's and no large regional center emerged. But in the United States and France, single large cities, Pittsburgh and Saint-Etienne, developed as centers of a network of coal and steel producing small communities.⁴

Le Chambon-Feugerolles is only one of a series of industrial towns lined along the two narrow valleys axed to the southwest and northeast of the city of Saint-Etienne. Along the valley floors coal towns like La Ricamerie, Grand-Croix, and Lerette alternate with metalworking towns like Rive-de-Gier, Saint-Chamond, and Le Chambon-Feugerolles. The spectacular growth of these cities during the nineteenth century drew on a densely populated mountain hinterland whose major source of income was destroyed by the growth of urban heavy industry. Before the nineteenth century most unskilled Stéphanois workers lived in the countryside and had no close contacts with urban artisanal workers. The location of heavy industry in the Stéphanois urban centers changed this. Earlier economic developments had been almost evenly divided between city and country. In the sixteenth century rural textile and metalworking industries spread across the slopes of the Monts du Lyonnais and the Monts du Forez. In the early nineteenth century when water power was the major source of industrial energy, metal and textile plants were established along the banks of the fast flowing Ondaine and Gier rivers. Much of this early industrial development was decentralized and plants were often established some distance from existing settlements. In the course of the nineteenth century, as heavy industry began to centralize, this less skilled rural working class was drawn towards the cities.⁵

Until the nineteenth century Stephanois urban centers had been the exclusive preserve of highly skilled artisanal workers. During the sixteenth century when rural industry spread throughout the region, the most highly skilled trades concentrated in urban centers. By the late sixteenth century, Le Chambon-Feugerolles had become a center of artisanal cutlery with all its associated forms of ancien regime, artisanal organization. In 1572 a confrerie of Saint-Eloi was founded in Le Chambon, Saint-Eloi was the patron saint of metallurgists and during the same period the village church was rededicated to that metalworking saint. In 1604 Henry IV granted Chambonnaire master cutlers the right to form a jurande to administer their trade. Compagnonnage institutions also existed in cutlery and linked Chambonnaire cutlers to skilled artisanal metalworkers throughout France. In the course of the nineteenth century Chambonnaire metalworkers abandoned cutlery to take up filemaking, a trade which demanded very similar skills.⁶

In 1901 Le Chambon-Feugerolles had the highest percentage of workers employed in artisanal industries of all the Stephanois towns; 43% of all metalworkers in the commune of Le Chambon were artisanal fileworkers. The important role that artisans continued to play in Le Chambon can be seen in its housing structure. Le Chambon had the largest number of single family dwellings and one or two story houses of any of the Stephanois valley towns.⁷ Unlike the neighboring towns of Saint-Chamond and Rive-de-Gier, there were few tenement buildings in Le Chambon. Coalminers owned homes on the edge of town with adjacent gardens which were almost small farms, and fileworkers owned homes in the city with small workshops attached. When the early morning whistle called the industrial worker to the factory these fileworkers engaged in domestic production had already begun work. A late nineteenth

Map 1
Le Chambon-Feugerolles 1887



5

century song written by a local fileworker began:

Tap, tap, seated from dawn, I cut and recut the file without a single wrinkle forming on my brow...each artisan begins his work to the gay refrain of my hammer...

One very dramatic aspect of the mid-nineteenth century growth of heavy industry was the linear form of urban development which accelerated the concentration of heavy industry in the towns (see map 1). Improvements in transportation and the growing scale of metallurgy tended to center previously dispersed industries into cities near developed railway centers and along the main highway cutting through the valley system. The development of a cheap valley wide tram system in the early nineties further accelerated this trend. Only the coalmining and purely agricultural populations were unaffected by the concentration of industry. The well known nineteenth century Lyonnais urban planner, Tony Garnier, argued that industrial "road towns" like Le Chambon-Feugerolles and Rive-de-Gier were particularly favorable for industrial development because they combined the large spaces necessary to heavy industry with access to transportation and facilitated industrial recruitment by shortening the journey to work.⁹

Thus, the urbanization of the Stéphanois region, the creation of the road town, set the stage for a new phase in the development of working class militancy. The advent of heavy industry brought semi-skilled or unskilled industrial workers into close physical contact with urban centered artisanal workers. In the course of the nineteenth century the jobs of semi-skilled workers or unskilled workers which formerly had been performed in the countryside or in isolated industrial settlements were concentrated in urban centers already inhabited by an artisanal workforce accustomed to preindustrial forms of work structure. The urbanization of the Stéphanois region increased the opportunities of artisans to exert influence on industrial workers.

Opportunities for alliances between artisanal and industrial workers were further encouraged by the absence of any commercial or agricultural classes which might have interposed themselves between the different work groups or provided alternatives to industrial development. Like all the other Stephanois valley towns, Le Chambon-Feugerolles was a working class community. The very linear shape of the city illustrates its historic lack of a middle class which would have built up a commercial core. The trip from Saint-Etienne through La Ricamerie to Le Chambon still reveals the basic pattern of mid-nineteenth century industrial development. The main road is lined with houses, mostly residential housing, which forms an almost continual "main street," interrupted only by stretches of land divided into small garden plots, tilled by workers from the nearby towns, and the slag heaps, waste lands created by the coal companies. Here and there a side road leaves the main highway and several houses and a few, abandoned factory buildings, mark the path of the road through the countryside until it meets the hills where it disappears as a barely marked footpath. It is only when it enters the cities of Firminy, Le Chambon or La Ricamerie that the main road takes on any depth and other roads, lined with houses, break off to return later to the main road. For several centuries the majority of the inhabitants of the Stephanois region, engaged, at least part time, in industrial occupations, and almost every facet of human residence in the region bears the mark of industrial development.

In 1891 43.4% of the population of Le Chambon was employed in industry or transport, 25.2% in Rive-de-Gier, and 30.2% in Saint-Chamond, as opposed to 18.0% for the whole of France in the nearest comparable year, 1896. This is an extraordinarily large proportion of an urban population concentrated in any one sector of the economy. Over 70% of all employed men and women in each of these towns were engaged in industrial occupations. All of these

towns were small with populations between 10,000 and 20,000 in 1901.¹⁰

When artisanal and industrial workers were united the small number of middle class shopkeepers had little alternative but to support the workers on whom their shops depended. In 1906 and 1910 shopkeepers formed open support groups for the striking workers.

The increased participation of industrial workers in local strike activity was in large part made possible by the formation of a coalition between militant artisans and industrial workers. The proximity of artisanal and industrial workplaces was a prerequisite for workers' coalitions but it is by no means sufficient to explain them. Artisans played a leading role in initiating and maintaining worker coalitions because they felt their own corporate and family interests were at stake.

The goals of artisanal fileworkers were strongly influenced by the gradual technical transformation of their trade. The fear of mechanization gave the fileworkers organization a new interest in the condition of all local workers because it forced the fileworkers to regard the other local metal trades either as sources of competition or as alternative opportunities for employment. Also, the rise of industrialization generated among the fileworkers a new interest in the politics of the local trade union movement.

Historians too often assume that cataclysmic technological change rapidly transformed artisanal occupations, leading to confrontation between artisanal and industrial workers. But in the nineteenth century at least, much technological change occurred haltingly; this was the case in the file trade.¹¹ The chief advantage of mechanization, the production of an endless quantity of products of a uniform quality, was of doubtful advantage in an industry which had not yet agreed on standardized measurement and whose

chief product, the file, came in a wide variety of shapes and sizes. Also, until a scientific method for the production of alloy steel was developed, it was impossible to produce a consistent quality steel and so machine cutting produced many reject files. Thus, Chambonnaire filecutting was not completely mechanized until after 1919.

Furthermore, mid-nineteenth century technology created a new urban industrial group, the semi-skilled, adult male industrial workers, with which artisans could ally. The fileworkers acquired an interest in the condition of their fellow workers because coalitions with industrial workers brought real collective benefits. The coalition strategy which artisans adopted had two sides; it helped them to defend their skills and it facilitated their gradual passage out of the threatened trade. If artisans helped local industrial workers to raise their wages, they thereby eased the financial sacrifice involved in their own transition from artisanal to industrial work. At the same time, a rise in the pay of industrial workers might also further slow down the pace of industrial change.

During the decades between 1889 and 1919 when mechanization was only gradually advancing, artisans had time to maneuver. For example, in 1899 when a mechanized file factory was opened at Trablaine near Le Chambon, the immediate response of the fileworkers' union was to appeal to all workers, including those in the belt industry and heavy metallurgy, to boycott the factory. This "boycott" was actually nothing but the extension of the old artisanal tactic of "putting an employer on the index" to include industrial workers. While the mechanized file factory needed a certain number of artisanal filecutters it needed a larger number of semi-skilled metallurgists, a type of worker who existed in each of the branches of Chambonnaire metallurgy. Although the fileworkers' union failed to maintain its boycott, the three-year struggle of the union forced the mechanized file manufacturer

to pay higher wages for both artisanal and semi-skilled industrial workers than in the other Chambonnaire industries. In these circumstances mechanization in Le Chambon could make no headway. In 1901 when the fileworkers' union withdrew its boycott, it admitted the workers in the mechanized file factory into the industrial union of all the metal trades which was formed during the struggle against mechanization. It was this campaign against mechanization which first enrolled the majority of fileworkers in the union and gave the industrial union its mass base.¹²

The metallurgical workers resistance helped to preserve fileworkers' skills intact for nearly two decades; sufficient time for an older generation to pass through the trade and a younger generation to train themselves for other occupations. A closer look at other artisanal resistance to technological change elsewhere in the industrializing world will probably reveal other successful holding actions. Incidentally, there was a penalty for this delay in Le Chambon. Prior to 1899, the town had been the center of French filecutting; after this date rapid expansion took place elsewhere.¹³

The distribution of occupations within the family also helps explain the alacrity with which fileworkers merged their organization into a metallurgical workers' industrial union. The development of mechanization in the file industry placed limits on the opportunities for fileworker economic development and members of artisanal families moved or married into other aspects of the local metallurgical industry. There were many families which contained both artisanal filecutters and skilled industrial workers. These artisanal workers had a stake in the development of a strong industrial workers' movement. And so many members of artisanal filemaking families moved into the skilled industrial branches of the file industry, generally as forgers, stampers, and grinders; women filecutters married these skilled

industrial workers. In 1901, 19 percent of the artisanal filecutters in Le Chambon lived in the same household with a skilled industrial worker employed in the file trade. Three percent of artisanal fileworkers lived in the same household as skilled industrial workers in the belt trade, and another 4.9 percent lived in the same household as unskilled boltworkers.¹⁴ Thus, many members of artisanal families had a direct interest in the outcome of the boltworkers' strikes.

Although only 7.9 percent of fileworkers lived in the same households with beltworkers, a substantially larger number of the small town's fileworkers were related to boltworkers. In 1910 and 1911 when the boltworkers went out on extended strikes, the pressure on fileworkers to go beyond contributions grew. In both strikes the boltworkers had their own strike kitchen in their own union hall and week after week whole families trudged down the city's streets to get their daily meals. The sight of sons and daughters, sisters and brothers, nephews and cousins on their way to the strike kitchen must have been a powerful incentive to fileworkers' solidarity. Also pressure grew as the strikes became more militant. In the course of both strikes relatives were involved in skirmishes with non-strikers and arrested by the police. In 1910 the fileworkers actually went out on a solidarity strike for three weeks with the beltworkers and their strike helped to bring that strike to a successful conclusion. In 1911 many fileworkers wanted to go out on strike again in solidarity with the beltworkers but fileworkers union leaders argued that poor business conditions in their trade would doom the solidarity strike to failure.¹⁵

Finally, fileworkers supported the boltworkers strike for political reasons. Chambonnaire fileworkers came to feel that the boltworkers strikes were only the opening shots in a campaign against Chambonnaire unionism. There was good reason for the fileworkers' suspicions. Besson, the manufacturer at whose plant the 1910 strike originated, was an old opponent of the union; in

1901 a strike at his plant had lasted 137 days. The 1910 strike began with the firing of a trade union militant and very quickly turned into a battle over the existence of the union in the Besson plant. The stated goals of the belt employers in 1911 were to withdraw the limited form of union recognition granted in 1910.¹⁶

Even more disturbing to fileworkers was the unaccustomed solidarity of employers in both strikes and the growing power of employer organization. The strikes revealed the existence of a newly united and aggressive patronat. In 1906 Chambonnaire belt and file employers who had always been organized separately, formed a united organization--the Chambre syndicale de la petite métallurgie et quincaillerie--this organization began to establish relations between the local heavy metallurgical employers and their organization, the Comité des forges. Fileworkers feared that if the employers' organizations could defeat the industrial union of metallurgists, it would turn next to the file trade.¹⁷

From its earliest beginnings, Chambonnaire strike activity was tied to the evolution of the trade union movement. Those historians who picture disgruntled French workers suddenly throwing down their tools and spontaneously going out on strike will find little evidence for their theories in Le Chambon. In that city trade union organizations mobilized workers to carry out strikes. During the years between 1870 and 1914 industrial change and urban growth promoted strike activity chiefly in so far as they increased workers opportunities and motivations for organization. Relatively well-off, highly urbanized, artisanal workers threatened by technological change were motivated to organize and encouraged to form alliances with industrial workers. Through their trade union organizations, threatened artisans stimulated the spread of organization among the poorer, less urbanized industrial workers

who were more difficult to organize. Let us now examine the development of trade union organization among the different working class groups in Le Chambon-Feugerolles and explore how work structure and work related residential patterns help explain differences in the ability of artisanal and industrial workers to organize.

Fileworkers played the dominant role in the Chambonnaire trade union movement during the whole of the pre-war period. The first trade union organization in the city was a fileworkers' union which was established in 1888. It was in continuous existence from 1888 until it was merged to form a metallurgists' industrial union in 1901. Fileworkers formed the core of the industrial union of all metallurgical workers which was formed in 1901. In 1910 they were still the vast majority of union members, in that year Leon de Seilhac estimated that 90 percent of factory-based fileworkers were unionized while only 20 percent of the beltworkers were unionized.¹⁸

Trade union organization among boltworkers and workers in heavy metallurgy was more erratic and less extensive than that of the fileworkers. A beltworkers trade union organization was established in 1889 but collapsed the next year; a small beltworkers' trade union was again established in 1899, but it was not until it was merged into the industrial union of metallurgists in 1901 that it acquired a really solid foundation. Only a small number of beltworkers ever formally belonged to a trade union organization although the majority of beltworkers usually responded to a strike call. Throughout the whole period, workers in heavy metallurgy were only incompletely organized; the 80 percent of heavy metallurgists who worked in the large Claudinon plant were untouched by unionism. Union organization was confined to the four small plants on the periphery of the heavy metallurgical industry.¹⁹

Trade unionism increased the fileworkers' ability to participate in strike actions. Unions were always at the forefront of fileworkers strikes,

their leaders presented demands, rallied members and frequently negotiated with employers. Also, through their trade union organization fileworkers exerted great influence on the development of boltworkers militancy. Without the organizational support of fileworkers, provided through the metallurgical workers union, the 1910 boltworkers strike would have never been able to endure several months. Experienced leaders of the fileworkers union gave the boltworkers valuable advice and the union helped to mobilize the fileworkers engaged in homework to swell the ranks of mass demonstrations against non-striking boltworkers and individual employers. In the opinion of one student of Chambonnaire unionism:

...the fileworker militants were at the bottom of all the attempts made at Le Chambon to spread the (trade union) movement to other groups; there is an excellent probability that without them and their always active solidarity the level of worker organization among the boltworkers or tool workers would have been much lower or even non-existent...the fileworkers continually led along (effect d'entrainement) the other trades...²⁰

Perhaps the most important aspect of fileworkers support of boltworkers was financial. Typically, French nation unions did not possess strikes funds but local unions often did. Although strike pay fluctuated wildly, the Chambonnaire metallurgical union provided an average of 40 percent of weekly wages in strike benefits to workers involved in routine strikes and 6 and 7 percent to the workers involved in the long general strikes that occurred in 1910 and 1911. In 1910 the metallurgical workers union raised around 30,000 francs, much of it contributed by fileworkers even before they themselves had entered into the strike.²¹

Why were the fileworkers able to play an important role in local trade union organizations? It is because unlike other Chambonnaire metalworkers, fileworkers, as artisans, engaged in work that was highly skilled, which possessed an apprenticeship program controlled by the workers, and in which

each fileworker participated in the manufacture of the whole product. Fileworkers earned a relatively high family income and belonged to a strong informal work group; high income and a strong work group provided the basis for the creation of a strong fileworkers' trade union organization.

Filemaking paid wages that enabled worker to support a union organization and enabled them to acquire personal savings necessary to maintain a long strike. Filemaking required many different metalworking skills, but the heart of the trade was filecutting; 80 percent of fileworkers were filecutters; the remaining 20 percent were skilled industrial workers who performed jobs that were roughly similar to these in beltmaking and heavy metallurgy. Filecutting did not pay high individual wages, but it did pay a high family income. Male filecutters received lower wages than many other skilled workers but, unlike many other skilled workers, they could bring their wives and daughters into the trade. In 1906 an adult male forger, a semi-skilled industrial worker, received 5.50 francs a day while a male filecutter received about 5.00 francs, but the family income of a young filemaking couple was about 8.00 while that of the forger remained 5.50.²² Filecutting offered several advantages to working class women. Women fileworkers could perform skilled labor in a town where there was almost no other employment for adult women and women fileworkers could work at home while minding their children; all other employment involved factory work which meant leaving the child at home alone or with a neighbor.

In some skilled trades, employers were able to play off the workers who labored in the workshops against those involved in domestic production; this could not be done in Le Chambon because domestic fileworkers had close personal ties with shop workers. For technical reasons it was not practical for employers to "put out" filecutting far into the countryside. Filecutting was only one step in a complicated technical process which depended on one

step quickly following another; over the entire process hung the fear of rust. After the filecutter had cut the file the manufacturer immediately applied a whole series of chemical treatments. Homeworkers were expected to pick up uncut files from the workshop every day and return the files the same day or the next morning. Also, family ties often bound together homeworkers and shopworkers. A man or woman who worked in a file shop might have relatives, usually women and children, who worked at home cutting files.²³

Close relationships between domestic workers and shopworkers were further encouraged by the scale of the city. Le Chambon was a small town and everyone went to the same marketplace and assembled in the same public square. The "line" shape of the city facilitated contact among the city's residents. Fileworkers' residences, file factories, and artisanal file workshops were distributed all over the city although the eastern portion of the town stands out because it was inhabited almost exclusively by artisanal fileworkers and many small workshops were concentrated there.²⁴

The small shop was indeed the pivot of fileworkers trade union organization, for it was there that resistance to the employer usually began, and spread back to the homemaker. Much of this opposition depended on a cohesive work group bound together by personal ties. The layout of work in these shops, the majority of which employed between 15 and 35 workers, seems to have favored worker contact. Filecutters usually sat together facing a window, often the street window; shops were invariably poorly lighted and cutters depended heavily on natural light.²⁵ Filecutting involved frequent breaks. Workers often needed to sharpen their chisels and it was difficult to maintain the body in the filecutting position. According to the time study expert, Charles Fremont, the pace of filecutting could vary tremendously and the most rapid pace was never continued for long.²⁶ Thus, it was necessary for worker to take long breaks which could be made up by an intense effort later in the day.

Regardless of whether their jobs were in the city or the countryside, shared artisanal skills drew fileworkers together inside the city. There were eighteen major filemaking plants scattered over the town of Le Chambon and several plants on the outskirts of town, yet a breakdown of the 1901 census shows that, in this semi-rural commune where half of the population lived in the countryside, 73.5% of the fileworkers lived in the city of Le Chambon. Even the majority of workers in the Trablaine file plant, several kilometers from Le Chambon, lived inside the built up city area.²⁷

Along with the small shop which encouraged on-the-job friendships and centralized urban residential patterns of fileworkers, the working class cafe contributed to the maintenance of relations with workmates outside the job. Chambonnaire fileworkers spent a great deal of their time in cafes, and, when workmates were near, cafe conversations might often turn to occupational interests. The fileworkers' union was founded during a series of secret meetings in a local cafe. One of the most important syndicalist leaders was a cafe owner; his wife tended bar while he worked as a filecutter. Anarchist, syndicalist, and socialist workers all had their own particular cafes, and fileworkers were active in every variety of radical politics.²⁸

On the contrary, the work structure, residential patterns, and leisure life of beltworkers and workers in heavy metallurgy all worked to undermine rather than facilitate union organization. Beltmaking in particular provides a contrast to filemaking. Unlike filecutters, beltworkers and workers in heavy metallurgy were mostly industrial workers; they neither earned fileworker wages nor had the opportunity to form close on-the-job friendships. The technical transformation of beltmaking in the Staphenois region was already complete in 1876 when Zola's l'Assomoir, which described the decline of artisanal beltmaking in Paris, appeared. A majority of beltworkers were young women and children. One-third of the belt workforce was composed

of skilled industrial workers who received 5.00 francs a day, another third were completely unskilled young men who received 2.25 francs, and the remaining third were women and girls who received 1.75 francs.²⁹

In contrast to the camaraderie of the small filemaking workshop, belt manufacture discouraged the formation of informal work groups by tying the individual worker to a large noisy machine. Using tongs, young boys carried a piece of hot metal from the furnace to the stamping machine where the stamper fitted the hot metal into the machine which loudly stamped it into screw and bolt shapes. The next step was "threading" where young women inserted the screws and bolts into cutting machines which cut four screws simultaneously and demanded constant feeding. The threader who allowed herself to be diverted from her work by casual conversation risked serious accident.³⁰

The location of workers residences in the belt trade discouraged workers from maintaining friendships outside the factory. The majority of leaders of the Chambonnaire beltworkers strike were drawn from the group of adult male semi-skilled workers who resided in the city. No women were prominent in the strike and only a couple of young unskilled workers. Although all eight bolt factories were located in the center of Le Chambon a large part of the workforce was recruited from outside the city. Almost all the skilled fitters and maintenance men lived in Le Chambon while many unskilled young women and children had to walk three or four kilometers to work every morning. Both Petrus Faure and the Bonneffs, men familiar with the bolt trade, claimed that the majority of young beltworkers were recruited from the sons and daughters of miners in neighboring La Ricamerie or surrounding coal settlements. Miners were less well paid than metallurgists and their families more in need of supplementary incomes.³¹

It was difficult to carry out strike actions when workers seldom saw one

another outside the job. Many of the younger workers expected to work in the belt industry for only a brief period, for a few years before marriage or descending into the mines. These workers had no long term interest in the trade. It was difficult to organize women employed outside the family. Young working women lived with their families and were often forbidden to enter the cafes which were centers of male trade unionism. In addition, they often lacked the leisure time necessary for participation in union activities; when they returned home from work they had chores to do. Most young male workers had no expectation of permanent employment in the belt trade either. According to the Benneffs, young teenage boys worked as "heaters" until they were old enough to join their fathers in the mine.³² Assuming that the official estimates of the belt workforce are correct, there may have been as many as 280 of these children working in Le Chambon, composing 35.2% of the total workforce. The well known Communist leader Benoit Frachon provides a good example of the typical young beltworker. The son of a miner, when he was twelve, Frachone became a heater at a local boltworks. It was during the 1910 boltworkers strike, when he was seventeen, that he first became actively involved in the workers movement.³³

The organization of work in the belt industry represents one important nineteenth century alternative to domestic industry; the organization of work in heavy metallurgy represents another alternative. The heavy metallurgy workforce, although predominantly unskilled, contained a small number of highly skilled industrial workers. Even semi-skilled work in metallurgy was relatively well paid; forgers who composed a jaerity of the workforce received 5.50 francs a day. Adult men were employed almost exclusively in heavy metallurgy.³⁴ Unlike in filecutting families, male workers in heavy metallurgy were responsible for the complete financial support of their families.

The Claudinon plant, which employed 80 percent of the workers in heavy

metallurgy, gives some idea of the variety of work structures found in one large-scale industrial organization. In different shops within this factory there were skilled industrial workers who were members of strong informal work groups and semi-skilled workers who worked in almost total isolation. In the puddling mill there was a foreman, a master puddler, several assistant puddlers, a roller or "third assistant," as well as hammerers and machinists, and all of these men were skilled workers. In the several forging shops the work hierarchy was simpler and less skilled. There was a foreman who served as "chief-forging" and directed unskilled workers carrying large pieces of metal towards the different forging machines and their operators.³⁵

The large company could not prevent informal social groups from developing among highly skilled workers, but it could isolate and severely repress them. The separation of skilled and unskilled workers was an inherent part of the new industrial work system. Highly skilled workers in the Claudinon plant were not integrated into a job hierarchy with less skilled workers. Most skilled workers were in separate workshops, apart from the majority of workers. Moreover, even the skills of the most highly skilled workers were extremely specialized; they were trained to use machines which existed in few other plants in the Stephanois valley. If these workers left their employer, their skills were useless unless they were prepared to leave the area. Employers usually tried to tie these workers down even more firmly. The Claudinon company forced its workers to contribute to a pension fund; no money was refunded if an employer was dismissed. The company also tried to persuade its skilled workers to live in a company owned housing project.³⁶

Unlike the homes of fileworkers the homes of metalworkers were scattered all over the countryside. Because heavy metallurgy plants required large amounts of space, Chambennaire metal plants were situated on the edge of town.

The Claudinen plant itself was located a couple of kilometers west of Le Chambon. This location made it as convenient for many rural workers to work at the plant as for urban workers. In 1901 56.9% of all metalworkers lived in the countryside. Although workers in heavy metallurgy were more dispersed than other metalworkers, the same tendency for skilled workers to reside in the city which was found among fileworkers and boltworkers can be found among workers in heavy metallurgy. In 1901 60.0% of all puddlers and foundrymen lived in the built up area of Le Chambon, 52.3% of all forgers and turners, and 43.7% of all unskilled workers. This pattern would probably be even clearer if the occupations of the large number of workers who identified themselves simply as "metallurgists" were known. These workers were most likely less skilled workers who did not identify themselves with any particular skill group; only 18.8% of these workers lived in Le Chambon.³⁷

The great majority of semi-skilled or unskilled metalworkers had little in common once they left the plant. Because it was necessary for metal employers to reach far into the countryside in order to find a sufficient supply of adult men, workers in the same shop might well live on opposite sides of the commune. While 30.9% of Claudinen workers lived on the west side of Le Chambon where the plant was located, 18.4% lived in the area south of the city, and 7.6% lived on the east side of the city four or five kilometers from their workplace.³⁸ Friendships formed on the job could not be reinforced when workers returned to an agrarian world or a close knit coal community.

Because they were dispersed and did not have the advantages of an urban environment industrial workers were more difficult to organize than artisanal workers. A commonly shared urban environment allowed artisanal workers to

participate in small town life and to maintain work centered leisure time activities that industrial workers lacked. For these reasons the militancy and solidarity of urban artisans was a prerequisite for the mobilization of the less urban industrial workers.

In conclusion, industrial change and urban growth in Le Chambon-Feugerolles in the years between 1870 and 1914 transformed the participants in strike actions and their goals. Industrial change created a new semi-skilled working class and located its workshops in the city next to those of technologically threatened artisanal workers. The exceptional militancy of Chambonnaire strikes is explained by the willingness of highly skilled, urbanized, artisanal workers to open their trade union organizations to less highly skilled and less urbanized, industrial workers. The formation of this trade union coalition of artisanal and industrial workers and the growing resistance of metal employers produced the great mass strikes which occurred in Le Chambon-Feugerolles in the years which immediately preceded the First World War.

FOOTNOTES

1. I would like to thank for their help, Ron Aminzade, John Bowditch Miriam Cohen, Raymond Grew, William Rosenberg, Jean Scott, Charles Tilly, and Olivier Zunz.

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2. Among the most important studies of artisanal militancy in small towns are Jean Scott, The Glassworkers of Carmaux (Cambridge, Harvard University Press, 1974), Herbert G. Gutman, "The Workers' Search for Power," in The Gilded Age, edited by H. Wayne Morgan (Syracuse, Syracuse University Press, 1963), Sam Bass Warner, Jr., The Private City (Philadelphia, University of Pennsylvania Press, 1968), and Yves Lequin, "Classe ouvrière et idéologie dans la région Lyonnais à la fin du XIXe siècle," Le Mouvement social, n. 6, Oct.-Dec., 1969, pp.3-20.

For an important theoretical and statistical analysis of French strike activity see Edward Shorter and Charles Tilly, Strikes in France 1830-1968, (Cambridge, Cambridge University Press, 1974).

3. Daily coverage of the 1910 and 1911 strikes can be found in La Tribune, a Stéphanois radical newspaper and there are detailed police reports in the departmental archives, ADL 92-M-171-178 and ADL 92-M-180-186.

Some secondary literature which discusses one or another aspects of these strikes: Leon de Seilhac, Les Grèves du Chambon (Paris, Arthur Rousseau, 1912), Petrus Faure, Le Chambon rouge (Le Chambon-Feugerolles, Federation de Metaux, 1929), Jean-Paul Martin, Le Syndicalisme révolutionnaire chez les métallurgistes de l'Ondaine 1906-1914 (unpublished memoir, Université de Saint-Etienne, c1972), and Janet Jacobs, A Community of French Workers, Social Life and Labour Conflicts in the Stéphanois Region 1890-1914 (unpublished dissertation, Saint-Anthonys College, Oxford, c1972).

In 1910 the commissaire de police estimated that there were 1,050 beltworkers, 27.2% of the workforce in the metal trades, 1,171 workers in heavy metallurgy, 30.3%, and 1,644 fileworkers, 42.5%, ADL 92-M-174. The only other substantial group of workers in the commune were miners, but the manuscript census of 1901 shows that 83.8% of the miners lived on the outskirts of town. These mining settlements were only the fringes of much larger mining communities centered in the neighboring towns of La Ricamerie and Firminy; miners' unions, clubs, and political activity were located in these towns and miners played little role in Le Chambon.

4. On the evolution of urban industrial networks outside France, Norman Pounds, The Ruhr (London, Faber and Faber, 1952), W.E. Minchinton, Industrial South Wales 1750-1914 (London, Frank Cass & Co., 1969), and Ann M. Jarez, The Rural Industries of England and Wales, vol. 3 (Oxford, Clarendon Press, 1927).

5. On the industrial development of the Stéphanois region, Maxim Perrin, Saint-Etienne et sa région économique (Tours, Arrault, 1937), L.J. Gras, Histoire économique de la métallurgie de la Loire (Saint-Etienne, Théolier, 1908) and Histoire de la Rubanerie et des industries de la Loire (Saint-Etienne, Théolier, 1906), and Jacques Schnetzler, "Un demi-siècle d'évolution démographique," Etudes Foréziennes, vol. 1, 1968, and, "l'Evolution démographique de la région de Saint-Etienne de 1876 à 1946," Etudes Foréziennes, vol. 4, 1971.

6. Petrus Faure, Histoire de la métallurgie au Chambon-Feugerolles (Le Chambon-Feugerolles, Fernand Jue, 1931), L.J. Gras, Essai sur l'histoire de la quincaillerie et métallurgie (Saint-Etienne, Théolier, 1904), and Camille Page, La Coutellerie, vol. 3 (Chattelrault, H. Rivière, 1898).

7. In 1891 89.0% of all Chambonnaire houses were one or two storeys, compared with 11.0% in Rive-de-Gier and 25.0% in Saint-Chamond, Manuscript census, ADL 47-M-20.
8. "Le Tailleur des lignes," Poésies et chansons de Jacques Vacher (Saint-Etienne, Imprimerie de la Loire républicaine, 1898) pp. 63-64.
9. See the introduction to Garnier's classic, Une Cité industrielle (Paris, Massin, nd).
10. An estimate of the industrial composition of the three cities may be found in the industrial census of 1891, ADL 54-M-8. In 1901 the population of Le Chambon-Feugerolles was 11,528, Saint-Chamond, 15,469 and Rive-de-Gier 16,087.
11. On the evolution of filecutting machines: Sheffield City Libraries, "Select Bibliography of File Cutting Machines," Research Bibliographies, New Series, n.49, April 1959. The most complete description of the gradual change in filecutting machines is Otto Dick, Die Feile und Ihre Entwicklungsgeschichte (Berlin, Julius Springer, nd), on the problems of early filecutting machines, Eric N. Simons, Steel Files, Their Manufacture and Application (London, Isaac Pitman & Sons, 1947), p.95, Henry Diston, The File in History (Philadelphia, Keystone Tool, Steel and File Works, 1920), p.23, W.T. Nicholson, A Treatise on Files and Rasps (Providence, Nicholson File Co., 1878), and C.L. Mateaux, The Wonderland of Work (New York, Cassel & Co., 1884).
On the very different history of English filemaking see Sidney Pollard, A History of Labour in Sheffield (Liverpool, Liverpool University Press, 1959), and G.I.H. Lloyd, The Cutlery Trades (London, Funt & Cass, 1913).
12. Faure, Le Chambon rouge and Le Drapeau rouge, n.9711, 1901.
13. The Loire's share of national file production dropped by 7 percent between 1901 and 1906, Résultats statistiques du recensement général de la population, (Paris, Imprimerie nationale, 1901 and 1906).
14. In 1901 38.2% of filecutters lived in a household with at least one other fileworker member. Twenty-four percent of the skilled industrial workers employed in the shops had family members who were filecutters, and 74 percent of these industrial workers were heads of households, 1901 manuscript census, ADL 49-M-132.
15. Report of Oct. 2, 1911, ADL 92-M-182.
16. On the 1901 Besson strike, Faure, Le Chambon rouge, pp. 38-41.
17. The growth of the employers' organizations can be traced in the yearly reports of the Chambre syndicale de la fabrique de la quincaillerie (Saint-Etienne, Theolier, 1907-13).
18. Membership figures for Chambonnaire unionism can be found in the Annuaire des syndicats (Paris, Office du travail, 1890-1914) and ADL 93-M-14. For de Seilhac's estimates see Les Grèves du Chambon p.33.
19. Ibid.
20. Jean-Paul Martin, Le syndicalisme révolutionnaire..., p.40.
21. Faure, Le Chambon rouge, passim., and ADL 92-M.

22. Manuscript census, ADL 47-M-20, for wages of fileworkers, ADL 92-M-140.
23. Faure, Histoire de la métallurgie au Chambon-Feugerolles, passim.
24. Manuscript census, ADL 47-M-20.
25. Leon and Maurice Bonneff, "La Fabrication meurtrière des limes," La Vie tragique des travailleurs (Paris, Marcel Riviere, 1914), pp. 182-198.
26. Charles Fremont, Files and Filemaking, translated from French by George Taylor (London, Sir Isaac Pitman & Sons, 1920), p. 106.
27. Manuscript census, ADL 47-M-20, "Rural" was defined as everything not physically continuous with the central built up area of Le Chambon which was located more than a kilometer from the built up area.
28. On cafe life: Faure, Le Chambon rouge, passim, Petrus Faure, Un terein raconté (Saint-Etienne, Imprimerie Dumas, 1962), pp. 23-24, and "Interview with Laurent Moulin," in Jean-Paul Martin, Le syndicalisme révolutionnaire.
29. ADL 92-M-140.
30. Bonneff, La Vie tragique, pp. 337-340.
31. For the location of belt and file factories see Faure, Histoire de la métallurgie, passim.
32. Bonneff, La Vie tragique, pp. 337-340.
33. Benoit Frachon, "Souvenirs de Benoit Frachon--Interview recueillie par Claude Willard," Institut Maurice Thorez--Cahiers, Paris, April-June, 1967, pp. 63-72.
34. ADL 92-M-140.
35. Charles Benoist, "Le travail dans la grande industrie--métallurgie--l'organisation du travail," Revue des deux mondes, vol. 12, December, 1902, p. 596. Benoist studied puddling in nearby Firminy.
36. Faure, Histoire de la métallurgie, passim.
37. Manuscript census, ADL 49-M-132. The Chambonnaire manuscript census for 1901 is particularly interesting because local census enumerators listed the factory where each worker was employed as well as his profession.
38. Ibid.