

L. V. SÁNCHEZ FERNÁNDEZ\*, R. NERI VELA\*\*, J. C. COBO BARQUÍN\*\*\*, E. HERNÁNDEZ MARTÍN\*\*\*\*

\* Departamento de Medicina (Área: Historia de la Ciencia). Universidad de Oviedo

\*\* Departamento de Historia y Filosofía de la Medicina. Universidad Nacional Autónoma de México

\*\*\* Departamento de Medicina (Área: Historia de la Ciencia). Universidad de Oviedo

\*\*\*\* Hospital Universitario Gregorio Marañón. Unidad de Reanimación

## *Living conditions in the mining basins of Asturias during the expansive phase of the Industrial Asturian Revolution (1885-1907) through Medical Topographies*

Asturian coal mining has its origins in the Aviles region in 1593. Doctor Casal (1680-1759) also made reference to many places in the province which had the presence of coal. Despite this reality, the first regulated coal operations were established with the Royal Decree of the 4th of July of 1825, which set the stage for the expansion phase of the Asturian Industrial Revolution between 1885 and 1907. This period of time also coincides with the publication of two very important literary works: *La Regenta*, 1885, by Leopoldo García-Alas “Clarín” (1852-1901) and *La Aldea Perdida*, 1903, by Armando Palacio Valdés (1853-1938). These novels had contrasting views in their appreciation of the changing times; “Clarín” was in favor of this new period, meanwhile Palacio Valdés was against it due to the negative effects on the environment and the changes in the lifestyles of the inhabitants of the region.

We cover this period with an in-depth analysis of primary source documentation, which is none other than the *Topografías Médicas*, works of extraordinary value, since they were redacted by doctors of their respective regions; in this study, from Bimenes, Langreo, Lena and Mieres. This literature is very interesting for understanding the social and public health realities of the central part of the Principality of Asturias at the end of 19th and beginning of the 20th centuries. This is a moment of twofold change: the socio-economic shift brought on by the Asturian industrialization upheaval and the abandonment of the miasmatic theory in favor of the etiologic theory, along with an incipient medical-social perspective.

We consulted the publications of the Mining Engineer Francisco Gascué Murga (1848-1920) as well, a stellar first-hand account of the period we want to analyse.

Asturias had in 1901, 637,801 inhabitants across a sparsely populated area; only Oviedo and Gijón had a population over 20,000.

The key area we studied was completely rural and based their wealth on a style of agriculture, which was “ignorant and without capital”, even though the ownership of the land largely belonged to the privileged social classes: the clergy and nobility, who would give wages in exchange for this work. The surplus produced eggs, milk or butter, which were sold at markets; and wool, which was used to make simple clothing. Living conditions were very tough, which coupled with demographic growth, pushed many rural inhabitants to migrate. This industrializing process introduced developments from the previous era that resulted in a significant increase in population at the cost of generalised insalubrity. Unhygienic conditions spread from increasing overcrowding as shanty towns sprung up lacking in adequate basic services, which increased the real risk of infectious diseases.

The Asturian working class reached 35,609 workers of which 12,185 were miners (8,884 men [72.90%], 1,001 women [8.21%] and 2,300 children [18.87%]), and of that segment 1,719 were actively employed in extraction. This mining activity supplied between 55% and 64% of the coal needs of the State. The rural location of the mining valleys covered 576.65 km<sup>2</sup> with 51,798 inhabitants. This represented 7.68% of the population in

5.43 % of the province, while it also contained 44.85 % of provincial working class proletariat.

Between 1850 and 1910 the population of Bimenes increased only by a factor of 1.08, Lena by 1.66, Langreo by 5.10 and Mieres by 4.35. Since the Principality grew by a factor of 1.57, it leads us to believe that this increase occurred the expense of a massive rural exodus of the neighboring counties.

The medical-social variables with the source material we have are: character of the inhabitants, working environment, housing, diet, the saving of money and other social programs, company hospitals, common illnesses, mortality, and proletariat problems.

Their diet was insufficient and this caused very low productivity levels from the workers. This situation was unresolvable since these people did not have the capacity for saving money due to the scarcity of food and reductions in wages.

A workers usual abode was deficient in "health standards, comfort and security", since the distribution of the dwellings was divided into kitchen and living quarters with no chimney, resulting in everything covered soot. There were no latrines, chicken coops were located inside the house, pigsties were found at the entrance and dwellings were directly connected to stables. They would sleep on corn straw mattresses. In the front yards and their surroundings there were shacks under which garbage and vegetable compost heaps were kept for making fertilizer. Lacking in residential buildings, the miners from the surrounding areas, primarily single individuals, had no other choice than to stay as "boarders" in these dwellings. On other occasions, many families who wished to live in better conditions would band together to share rent in better environment.

The demographic data show the the average life expectancy was between 27.11 and 29.21 years. The most common cause of death was respiratory illness (17.86 %), followed by typhoid fever (7,45 %), followed by tuberculosis. Among the endemic diseases, goitre was very noteworthy. Others to be taken into account: scrofulas, rheumatism, heart conditions, aneurisms, intestinal vermis, tonsillitis, erysipelas, and pellagra. The most common pathologies in the mining environment were chest related afflictions (colds, pneumonia, asthma, anemia, anthracosis or "black lung") and the majority of accidents occurred were due to firedamp explosions.

The "washer" women often were in a state of hypochromic anemia and the miner children had "poor health" and were also short in stature and without education.

In regards to the health related institutions, we have record of the Mining Laws of 1859 and 1868, which made the oversight of the worker's health the purview of the State. These laws demanded that businesses take measures in this respect and not long after, the Law of Work-related accidents of 1900 established that employers had to be responsible for medical, surgical, and pharmaceutical care as well as a subsidy for injured or ill workers. Additionally, a doctor to be eligible to treat a worker had to be located within a ten-kilometer radius, while at the same time companies had to have first-aid supplies, a bed and a special room for the injured. "Hospitalillos" (little hospitals) were created by almost every company because of this legislation.

Asturian pick-axe miners worked six or seven hours a day, with a total of 285 working days, and for extracting half a ton of coal per day obtained 2.40 pesetas. The miners who set the wooden bracing in the shafts worked eight hours and earned 2.50 and 2.75 pesetas a day; lastly, wagon operators, generally young people, worked twelve hours a day, resting once for lunch and earned around 1.50 pesetas. There were also the coal fillers and cart draggers, task which was undertaken by children between eleven and fifteen years, the "guajes". Last but not least, the "washer" women, which depending on their shift could spend an entire night working on a job, received 1.25 to 1.50 pesetas a day.

Payment for this work barely covered food expenses, and in an attempt to improve these living conditions, companies took measures. Influenced by "paternalistic thinking", they started to give out privileges, like the foundation of savings banks, which also had the objective of providing medical-pharmaceutical aid for the workers and their families. Privileges also included a supplementary wage in the event of illness or retirement, schools for children, housing, etc. These aid measures helped quell the tensions among social classes, but they were not completely altruistic, as they seemed, since they sought to also create a submissive working class in order to reach higher economic productivity. As an example, one of the most important benefits consisted in that the labourers were issued an individual house and garden; an unachievable utopia since only between 10 % and 17 % of those interested could receive them. Regardless, these measures provided the backdrop for an attitude of social advancement and for the purposes of our study, also brought on a change in healthcare for the workers and their families. A tendency that was interrupted in part by the political changes that came after the end of World War I.

Notwithstanding all of these conditions, the Asturian worker was very conservative, and when the Internationale arrived in Spain in 1868, it did not take hold of the mining communities until the end of the 19th century. It was in this moment where the discontent and strikes began to manifest themselves. The Church also had a role to play in these improvements and established fraternities and Catholic centres. In Asturias, the clergyman Maximiliano Arboleya Martínez (1870-1951) advocated for and founded various workers unions, because he considered that the corporate culture treated subordinates as if they were slaves. He did however; consider the “industrial worker as our greatest enemy” in the reigning “apostasy” of the era.

The social situation was static for a time, motivated by low salaries and the scarcity of basic foodstuffs. According to national studies, for a family group to reach a decent standard of living, it was necessary for the head of the household to earn a 5 pesetas wage per day or at least 3.50 pesetas. This sum was unattainable for this working class, considering that they were only able to cover their most essential needs if the wife of the household and at least one child also worked.

We find that the upper class classified these day-laborers with terms such as “indolent” or as having “innate manias” to explain their low productivity in comparison with other European countries. We believe that for the “mixed worker” - who composed the majority of the

work force - the only certainty of survival long term was provided by their own small land holdings. They were not productive in these holdings, resulting in a low rate evolution in manufacturing and as such, class disputes were rare. As a result, we believe that these terms are not merited, considering that this collective demonstrated abundant bravery, and in an attempt for social betterment, risked an overseas migration.

The Laws of 1873 and 1897 that regulated mining activities of minors and women was not being enforced; once more a case of exploitation, in this case of the most vulnerable in the productive chain.

Despite the aforementioned poor living conditions, these enclaves had the lowest mining accident rates of all industrialized countries (0.50 in Mieres compared to 4.50 in England). Correspondingly, we highlight a new phenomenon of the times, the regular at the “chigre” (pub), a labourer who could spend his entire salary and descend into alcoholism. This pathology was related to the industrialization process and increased the likelihood of disease, both for the damaging qualities in itself as well as the weakening of the immune system. This could lead to the contraction of tuberculosis among other ailments, leading some to refer to the sinister synergy as a “social plague”.

Lastly, we present here that the hospital built by the company “Duro y Cía” in Langreo in 1856 could be considered the first of its kind erected in Spain for the care of coal miners and metallurgy labourers.