Science, progress, and livestock engineering in twentieth century veterinary medicine in Spain

An awareness of the scientific and technological backwardness in Spain relative to other countries following the “Desastre” (military defeat by the United States of America in 1898 and the subsequent loss of Cuba, the Philippines, Puerto Rico, and Guam) made possible the dissemination and acceptance of modernizing ideas that characterized Spanish social life during the first few decades of the twentieth century. The demand for regeneration of the country that was manifested at the time gave rise to the need to design and carry out a policy of scientific and cultural modernization. In that project lie many of the keys to the transformation of Spanish society that took place in the first thirty years of the twentieth century. Veterinary medicine did not escape the pressure for modernization and reforms were undertaken which emphasized the scientific character of veterinary medicine, to replace the traditional image that it had acquired over the preceding centuries.1

We would rather become engineers than carry on as veterinarians

Because veterinary medicine was not a new discipline, and in order to avoid any kind of comparison with its past, the reformers launched an active press campaign to change the name of the profession. However, apart from purely semantic questions, a profession was being developed which could undertake new forms of practice that were not traditionally associated with it. In the midst of growing and diversified social division of work, the term engineer was not just a casual choice, given that it referred to a profession with high social esteem and with which veterinary medicine wished to compete on an even playing field. In this process of professional reorganization and sociological redefinition, the debate revolved around whether it was a good idea to modify the name of the profession. It is difficult to choose among the many pronouncements and initiatives that were carried out in favor of a name change, but some examples can be mentioned. They show that a change of name was defended by the leading veterinarians of the time and that the campaign, far from being a one-off, remained solidly in the veterinary press for over three decades.

Cesáreo Sanz Egaña, Inspector of Livestock Hygiene and Veterinary Health in Malaga, illustrated this point by examining the words ‘veterinario’ and ‘pecuario’. Citing the dictionary, especially that of the acknowledged authority, the Royal Academy, he pointed out that the word pecuario, from the Latin pecus, refers to livestock, while the term veterinario, from the Latin veterinarius, refers to beasts of burden. Egaña, a strong supporter of the name change, reviewed the classical tasks of Spanish veterinarians, centered on horses and mules, i.e., beasts of burden. He added that there were signs of change in the growing interest in bovine and porcine livestock, which had surpassed equine livestock in economic importance. He justified his argument with the predictable demise of the horse as an engine, considering its “death warrant” to have been signed by the automobile and electricity, and he predicted that horses had an uncertain future, limited to rural environments.2

The author presents a very interesting dilemma for veterinarians, to choose between being clinical practitioners and sanitary agents (preferring the term doctor preceded by an adjective referring to animals), or being able to take the leap into the agricultural and rural world (preferring the term livestock engineer).3 Egaña maintained that the term doctor, together with the epithet zootechnical or zootecnic, presupposes an education qualification with little future, characterized by the decline of clinical practice and a dwindling number of subjects requiring treatment. On the other hand, he considered that the “happy association of words” in the term engineer, qualified by livestock, met the goal of reformist aspirations, which leaned more toward optimal economic use of animals than toward purely clinical questions. In the last paragraph of his article he announced that the Revista Veterinaria de España (one of the main professional publications of the time) had found this designation to be perfect and would work to defend it, even if it reflected all the options in its columns.4 The approval by the Revista is not surprising, given that Sanz Egaña was on its editorial staff.

The emphasis on including the term engineer took on great importance, since engineer evoked the concept of higher education equivalent to university studies. The Moyano Act of 1857 divided non-university studies into two categories: “professional” education for veterinary medicine, commerce, navigation, quantity surveying, and teaching, with lower social recognition. The academic and professional curriculum shared by different specialist areas of engineering (mines, roads, canals, ports, etc.) had features which provided a strong corporate identity and great social prestige. These included six-year study plans based on physics and mathematics, which supposedly impart unformity, precision, and self-discipline; and to lead employment as State officials; openings for membership of the civil service, etc. The status acquired by civil engineers in the first half of the nineteenth century was decisive in forming and consolidating the elitist image that would shortly thereafter be enjoyed by graduates of the new profession of “agricultural engineer”. Course in agricultural engineering were created in 1855 to provide a type of expert in the field capable of correcting the technological backwardness of agriculture in a land that was predominantly rural.

Agricultural engineers therefore became responsible for re- weaving Spanish agricultural activity and, by extension, taking on the transformation of rural society. Along the same lines, many veterinarians saw themselves as agents with a calling to carry out an analogous function, but exercised through the modernization of livestock farming which, along with agriculture, constituted the main economic activities in rural areas. In 1911, José Fontela, a student at the School of Veterinary Medicine in Santiago de Compostela, commented in an article on the educational reform project that had just been presented by a group of university professors. The desired reform maintained that the academic duration of five years but also introduced modifications in the system of student admission. The “Regulations Project for the teaching and creation of a special degree for Livestock Engineers in Spain (now veterinary medicine)” not only changed the name of the profession, but also the method of student admission. As for other engineering degrees, students had to possess the higher secondary education qualification and have previously passed a certain number of subjects in the Faculty of Science. Fontela urged other students in Santiago to coordinate initiatives and exert as much pressure as possible so that the new school would have the same standards as other degree courses and, from the first day of its existence, would be called the “SPECIAL SCHOOL FOR LIVESTOCK ENGINEERS” (author’s capital). An anonymous notice that appeared shortly afterwards extended the desire for the new building planned for the school of Aragon, which should satisfy two conditions: it should be hygienically beautiful and carry the inscription of a school for livestock engineers.

The idea of maintaining the duration of the degree course, with the addition of tougher entry conditions, was an attempt to create a filter to ensure that the courses were only accessible to a minority of students from wealthy families. This trend to regulate not only the “quality” of the students but also the “quantity” is especially clear in the article by José Barceló, municipal veterinarian of Barcelona, published in 1911. Barceló considered that at that time there were too many schools (there were five) and that the need for veterinarians would be covered...
Los ingenieros pecuarios

The Comité central directivo of the Asociación Nacional de Veterinarios has urged the publication of a book on livestock engineering by a single center that taught “true science.”

Indeed, restrictions on the numbers of students had already produced the desired results in the elitist engineering schools. The only agricultural engineering school in Spain, located in Madrid, therefore tightened up its entry requirements in 1874 with the aim of increasing the number of students with illustrious surnames, winning political support and obtaining prestige on the same level as other engineering schools that were not linked to the rural world.

These reformers also placed livestock engineering in a privileged position compared with veterinary medicine. This is the only way to understand the heavy demands that the aforementioned base project imposed on those who wanted to obtain an equivalent qualification. According to Regulation 19, the purpose of the party was to enable those veterinarians who had not done so to pass higher secondary level education, to take the stipulated preparatory science subjects, and to pass the new subjects included in the Livestock Engineering course. Similarly, Regulation 20 indicated that those holding the new qualification would have more legal rights than the veterinarians, as well as preference for appointment to official posts.

Consequently, it proposed to supply the State with a small body of civil servants who were experts in livestock farming, following the practice governing the field of engineering as a whole. It is also interesting to analyze the mechanisms used to popularize the new name and the attempts to bring this to the attention of veterinarians. Right from the beginning, as noted above, the use of the word engineer evoked an image of higher education that provided a wide range of experts with high social status. Consequently, those who defended a professional project with leanings toward those disciplines considered animals to be like machines. Their use was the same in physical and mathematical principles as the use of falling water to drive a turbine, the effect of heat on the expansion of metals, the working of a dynamo, or the explosive force of dynamite.

Conversely, the use of these terms, even within the same article, to avoid the use of the terms veterinary medicine and veterinarian. As José Orensanz, Inspector of Livestock Hygiene of Orense, recognized in 1910, the hoped-for conquest of animal husbandry was still to be decided at that time.

Fig. 3. The veterinarian and politician Félix Górdon Ordás was very active during the Second Spanish Republic (1931-1939) in trying to convert veterinary medicine into livestock engineering. His political career continued in exile after the Spanish Civil War (1936-1939). On the left: Górdon and Fidel Castro (Cuba 1959), on the right: Górdon and Marshall Tito (Yugoslavia 1952). Photos taken from the book Félix Górdon Ordás y sus circunstancias. Apúntes para su biografía, pages 70 and 273.

Livestock engineering during the Republic

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