INSTRUMENTS OF VETERINARY SURGERY IN XVIIIth AND XIXth CENTURIES

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INTRODUCTION

It is interesting to begin this work with a brief historical introduction about the evolution of animal Medicine.

Veterinary Sciences has its antiquity in the middle Ages. An animal medicine has existed from a very early age. It was known and practised by the Greeks and the Romans. Similarly, it was studied from the Byzantine hippiators to the Arabian authors of treatises in human Medicine. In Greece, animal medicine was used for human medical purposes, while the Latins classified it as an agricultural work.

In the Middle Ages, Farriery was born, the veterinary surgery, which the Arabians introduced in Europe through Spain. Its arrival was concurrent with both the development of sciences in general and veterinary surgery in particular, which was dedicated mainly to the cure of the horse (very important animal for the war).

Society needed men dedicated to the cure of the horse, but knowledge and scientists were scarce. In the fifteenth century, the discovery of printing facilitated the development and diffusion for Sciences. Spanish farriers published important works, which soon became well known in other countries.

Alfonso V, king of Aragon, the so-called "The Magnanimous" great protector of Arts and Sciences in the fifteenth century, was very interested in Farriery, perhaps due to war against Naples and so he ordered his the deputy, Manuel Diaz, to gather the best Farriers and to write a book. The "incunabula" book, written by Manual Diaz, was called "Libro de Albevertía", whose first edition was dated in Zaragoza, in 1495. It was written in Catalan language and its first printed editions, published in the Spanish language, translated by Martinez de Ampiés. The catalan editions were translated from the Spanish text.

Cesareo Sanz Egaña, a historian of Spanish Veterinary Science, has pointed out that the Manuel Diaz's work (his manuscript and the Spanish printed translation) have to be considered as documents of the fifteenth century. The bibliography of the veterinary surgeon began with this work.

In 1500, King Fernando V and Queen Isabel I created the "Tribunal of Protalbeitarato", the so-called "Tribunal de Castilla" (board for Sevilla and known as pragmatic of the Catholic King and Queen. After this pragmatic was enforced, only the degrees, granted by the Examining Board, were valid. This pragmatic did not point out the matters, which were required in the examination. On the contrary, there were rules about
the control of granted degrees and sanctions for professionals who became of less competence in their profession, and intruders, in order to assure professional competence.

Ramón Llorente y Lázaro, a well-known veterinary professor of the 19th century and professor of History of Veterinary wrote the following paragraph: "There were veterinary surgeons with similar attributions to 'Tribunal de Castilla', in Navarra and provinces of the ancient Aragón Kingdom, but their licences only served to practice in a specified district. After the creation of Tribunal of Protoalbeitarato, the monarchs, who inherited the United Kingdom of Aragón and Castilla, despatched pragmatics, decrees and resolutions, which granted privileges to the veterinary surgeon. The degrees usually despatched were for veterinary surgeons–farriers. In Aragón, some of them, were given out to veterinary surgeons and, note near it, as simple Farries.

In 1539, Carlos and Juana respected what was legislated by the Catholic King and Queen and created the "Novisima Recopilación", a set of regulations for encouraging the test for new veterinary surgeons and so increasing their social prestige. King Felipe V made a difference between the farrier (horse-shoeer) and the upper category and aptitude of veterinary surgeon, arranging the profession, legally, between Liberal and Scientific Arts. The Edict of the 22nd of December, 1739, recognized this consideration (I,19,31): "I order them to be considered as professor of Liberal and Scientific Art, and (as such) their exemptions and liberties must be observed and kept, but these attributions not applies to Farriers."

Fernando VI considered that the Institution of Protoalbeitarato was in force. He respected the jurisdiction of its professors in the examination in the provinces. This monarch granted to them similar guaranties which doctors had got. In 1749 Protomedicato (Tribunal of King's physicians) verified afore-mentioned guaranties and exigences in examinations of doctors, surgeons and apothecaries.

The Catholic King and Queen created the Tribunal of Protoalbeitarato, responsible for verifying the examinations and giving degrees, however they did not create any institution responsible for teaching the matters. Therefore the Veterinary Surgery missed any official instruction. This instruction was realized with other veterinary surgeon, following the system of "learning the job practice". After practising the work of farmers, they studied the theory in some books of Veterinary Surgery. These works intended to prepare the examination, because they were written with dialogues (questions and answers). Others had a collection of questionaires with a similar aim.

It is easy to deduce that the establishment of the veterinary surgeon was: office (laboratory), clinic and school, thus the instruction of the veterinary surgeon had got reputation and this educational level was as complete and select as that one imparted in colleges and other universities.

Before the examination, the pupil had to present his certificate of Baptism and a reference proving his training with a master (with degree). The tests, which they had to surpass, were: oral, about Pathology and Therapeutics of horses, and a practical part, which consisted in iron-work. When the examination was passed, they received the degree, which allowed them to practice the profession.
The work of the veterinary surgeon was to deal only with horses, and they had to forget the other animal species, which although they were of less utility, offered great profits. This professional behavior was transferred from the Arabians, as distinguished from the Latins who were dedicated to the other species, stating rules for their exploration.

The bibliography of veterinary surgeons demonstrates their level of knowledge and the majority of these works are very useful. They treated mainly upon horses illnesses and some authors dedicated some articles to the other species.

Part I

The books of veterinary surgery, published during the 18th century up to the year 1792, are studied in this part. In 1792 the Veterinary Education was founded in Spain.

We have analysed ten works (the most famous ones of this century) and we have investigated the articles, dedicated to the surgery. They are chronologically sorted:

- **Compendio de Albeyeria**, Madrid 1717, by Ferdinando Sande y Lago. He mentions the syringe, the fleam, the periosteotome and the cautery.

- **Templador Veterinario**, Madrid 1727, by Francisco Garcia Cabero. He does not mention any instrument at all, but considers the surgery as very usual in the human and animal medicine.

- **Llave de Albeyeria**, Zaragoza 1734, by Domingo Royo. He goes round the wipples and the periosteotome.

- **Principios compendiosos de Albeyeria**, Madrid 1735, by José Pérez Zamora who mentions the scissors.

- **Instituciones de Albeyeria**, Madrid 1740, by Francisco Garcia Cabero. He mentions the periosteotome, the trepan and the pliers.

- **Sanidad del Caballo**, Valencia 1742, by Salvador Montó y Roca. He does not name any instrument.

- **Observaciones prácticas de Albeyeria**, Valencia 1744, by Sebastián Robredo y Villarroya. He mentions the clasp–knife and the knife.

- **Ilustración veterinaria**, Zaragoza 1781, by Miguel Pedro Lapuerta y Chequet. He mentions the syringe, the hock needle, the clasp–knife, the lancet (histoury) —in order to operate varix—.

- **Guía veterinaria original**, Madrid 1786–1792, 4 volumes, by Alonso y Francisco Rus Garcia. They do not point out any instrument.

All these books do not contain any illustration because their authors considered the scarce ones, which they had got, were known, and so, frequently, they mention this expression: "...make use of the convenient instruments". But, in the 17th century, some
work has illustrations of veterinary surgery. (*Verdadera Alberteria*, Madrid 1685, by Pedro García Conde).

Part II

The foundation of the first School of Veterinary Science in Spain (23rd February 1792) meant the implementation of the Education and professionalism of veterinary surgery.

For the organization and management of the new Veterinary Centre were appointed the Marshals of the Army (actual military veterinaries) Segismundo Malats and Hipólito Estevez, who had studied veterinary science with outstanding professors, in France (Paris), England (London) and Italy (Turin). They published several books for the Education, some of them were translated form the ones they utilised in France.

The consulted works belonging to the 19th century are, in chronological order:

- *Elementos de Veterinaria que se han de enseñar a los alumnos de la Real Escuela de Veterinaria de Madrid*, Madrid 1800, Pathology, Volume III, by Segismundo Malats. It is devoted to veterinary surgery. He mentions: lancet, fleam, cautery, wippers, syringe, stoff, catheter, pliers, tracheotomo, scalpel, barter, cannula, hock needee, safe, periostotome, scissors, surgical instrument (erina), bistoury, lime, butteris, farrier tenail and muzzle. This book has a higher scientific level than the one studied before, and for some operations such as: cataracts, he describes, perfectly, the instruments: flat and obtuse needle, convex and curved scissors, fluted sounder, *especulum oculi* and double obtuse surgical instrument (erina).

- *Elementos de patologia Veterinaria general y Especial*, Madrid 1834, Volume I–II, By Carlos Risueño. He points out: curved scissor over the plain, cautery, bistoury with obtuse point, tenail. It is not especific surgery work, therefore, it describes few operations.

- *Elementos de Terapeutica Mecánica, o sea de Cirugía Veterinaria, operaciones, vendajes y arte ostetricia*, Madrid 1835, By Antonio Santos. At the beginning, he points out the most usual instruments for the cures such as: the spatula, wripper circlet, straight and curved scissors, bistoury curved or straight. He mentions: lancet, fleam, needles, cautery, scalpel, trepan, elevator, scraper, wripper to disset, curved needle (de Scarpa), stylet simple and tricuspid, needle lanceolate, ceratomo (extraction of crystalline lens of the eye, he describes it), double surgical speculum oris, sounder, tracheotomo, (he describes it), double surgical instrument (erina), syringe, catheter, lithotomo (he describes it), tenail, elastic cinet of silver (for Cystotomy, he describes it), bistoury, muzzle of iron, needle, saw, hoof–parer (buteris), periostotome, leaf of sage, rasp (file), punch (he describes it), paring–knife (small knife). The second edition was published in 1852.

The following books, which we point out, have already got illustrations of instruments and several material, which have a higher technical value. These (ones) are:

- *Cirugia Veterinaria*, Madrid 1860, By Gerónimo Darder, Volume II, 1862. He points out more usual instruments: bistouries, leaf of sage, periostotome and nipper, scissors, needle, pack–thread,..., and the other ones, which each specific operation needs. The Volume I has got 53 plates, with very valuable illustrations, which represent various
instruments and their types. The illustrations : XXV, XXXIV, XXXVII, and L are included in this communication. The aforementioned points out plates of the instruments of historical interest.

RESUME

On a réalisé une étude des instruments de chirurgie vétérinaire ayant paru dans les livres publiés par ceux qui exerçaient la médecine animale au XVIIIe siècle, à partir de la création de l'enseignement vétérinaire en Espagne. De plus, on s'est proposé de réviser, pour le XIXe siècle, les écrits des enseignants et des chirurgiens vétérinaires ainsi que les listes du matériel vétérinaire utilisé, en 1861 et 1862, pour les cours de la Chaire de chirurgie vétérinaire de Saragosse.

Cette communication apporte une intéressante contribution à un sujet peu recherché par les historiens de la santé vétérinaire espagnole.
PLATE I – Instruments from Darder's book (1860). It contains operating scissors and forceps:

171 – Operating scissors curved on the flat.
172 – Straight operating scissors
173 – Torsion forceps
174 – Artery forceps
PLATE II – Instruments for the notchs. Illustrations from Darder’s book (1860) with:

Scalpels =
267 simple
268 with spring
269/270 with metal tip
271/272 with sliding button
273 straight
274 convex
275 concave

Leaf of salvia =
276 in the opposite direction
277 with button
278 hidden
279 double
280 simple
281 of right sheet
282 of left sheet
PLATE III – Different types of lancets and scalpels from Darder's book (1860):

316 Lancet with grain of barley
317 with grain of cats
318 in tongue of snake
319 fixed handle
320 à manche fixe
321 exploring trocar

322 cannule of trocar
323 with beak of pitches
324 with grips
325 curved
326/327/328/329 scalpels
PLATE IV – Forceps of resection more commons: figures from Darder’s book (1860).
PRINTE'S ERROR - ERRATA


Nuevo Tratado de Cirugía General Veterinaria. Zaragoza 1.867, by D. Juan Antonio Sainz y Rozas. It has 59 draws that represents instruments for surgery and instruments for attachment bandages, etc.

Nuevo Tratado de Cirugía Especial Veterinaria. Zaragoza 1.870, of D. Juan Antonio Sainz y Rozas. It has 70 draws.