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## HISTORY OF OPHTHALMOLOGY IN MEXICO

### The birth of ophthalmology as a profession

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#### Introduction

This historical study intends to establish the events that shaped the medical-surgical specialty of ophthalmology and analyse how this caused the specialty to become a profession in and of itself.

By reviewing secondary sources, detailing significant events and establishing a timeline of these events, we seek to establish the elements that make up a profession.

A historic discourse could be traced through which we accumulate a body of our own knowledge, specialised publications, a series of educational establishments, and especially, trade or professional groups, with shared values, with the result that, by the end of the 19th century, all the elements of being a profession were in place.

Given the highly specialised nature of the knowledge of eye diseases, surgical techniques different from the rest, and the itinerant background of the first practitioners, this medical-surgical specialty was one of the first to become established as such. Its high degree of organisation and the founding of this profession in and of itself create the risk of separating from the rest of the specialties.

We could start this study by asking ourselves: What is a profession and what functions does it fulfil in society? Who are professionals and what can be expected of them? Etymologically, the word profession already alludes to a distinctive rank of professionals, specifically its public commitment. In Latin, *professio* was the public declaration of something. The open manifestation of what one is and the intentions one has. With this, the individual proclaimed and assumed a commitment before the public. For example, profess faith, profess vows.

So we asked ourselves, when did they arise? What characteristics do they have? We currently call a large number of work activities professions that in former times were called trades. Many new activities have also organised themselves as professions. However, it is worth recalling the disciplines that were traditionally considered professions. In this sense, the most typical professions are: the priesthood, law and medicine. These have provided the model for all others.

The three typical professions possess the following distinctive features:

- They standardise the life of the people: they establish, respectively, what is and is not sin, what is legal and illegal, and what is healthy and unhealthy.
- They define their own missions.
- They self-regulate their activity. They self-impose ethical standards that hold up an ideal of service to society.
- They control affiliation: they fight against usurpation and aspire to a monopoly in their activity.
- They create rituals and become uniform.
- They use a special language.
- They acquire great authority: by being related with the most significant aspects of being human, disease and death, religious damnation and legal condemnation.

When did ophthalmology arise as a medical profession? We could place its start in Classical Antiquity. The Hippocratic writings already include ophthalmological knowledge, particularly about cataracts and external afflictions; however, they all represent a very basic, speculative medicine.

The assumption that the lens was the main organ of vision, according to what was said by Aristotle, was held as true for 15 centuries. The Romans translated *hipoquima* as *suffusio*;

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the Arabs called it “waterfall”, which was translated back into Latin as *gutta opacta* or cataract. The method used by the Hindus was somewhat safer than the one used by the Alexandrian Greeks and the Romans (Fig. 1).

During the Middle Ages, in Western Europe the knowledge of ophthalmology - anatomical, physiological or therapeutic - neither changed nor increased. The practice of ophthalmology was mostly left to travelling practitioners (Fig. 2).

In the 17th century (Baroque), the morphological and physiological knowledge improved. The great astronomer and mathematician Johannes Kepler (1571-1630) determined, based on simple experiments and calculations, that the retina was the organ of visual perception. It took 100 years for

doctors to accept it. Ophthalmological surgery continued in the hands of travelling practitioners. The most important procedure was cataract surgery. The appearance of books, such as *Ophthalmographia, sive tractatio de oculi fabrica* (1632), followed.

In the 16th century, during the Renaissance, it appears the book *Ophthalmodouleia das ist augendiest*, published in 1583 by Georg Bartisch (1553-1606), of Königsbrück, who was an empiricist. This is the first book concerning the eyes and that gives the name to the specialty (Fig. 3).

In the 18th century, during the Enlightenment, four topics dominated ophthalmology, which consolidated its technical and professional independence: cataract treatment, iridectomy, lacrimal fistula and *the appearance of the first courses in ophthalmology*.

The first to clearly recognise the lens as the site of cataracts was Pierre Brisseau (1631-1717), who in 1705 reported the results of his dissections to the Académie Royale des Sciences (Fig. 4). Antoine Maitre-Jan (1650-1725) proved experimentally that animals could see without the lens. These findings were approved by the French Academy of Sciences in 1708. But the task of inaugurating eye surgery as a specialty of general surgery fell to Daviel, removing it from the itinerant barbers and making it a respectable occupation. Lamartiniere, who was the First Surgeon of the

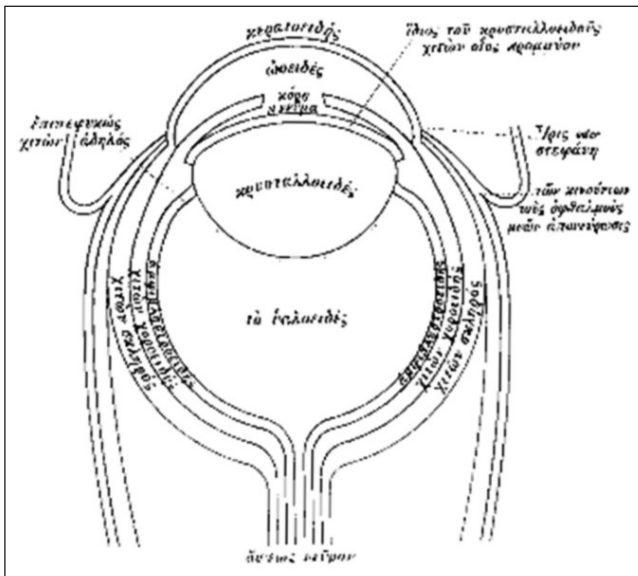


Figure 1 Diagram of the eye attributed to Galen.



Figure 2 Eye treatment in the Middle Ages.



Figure 3 *Ophthalmodouleia*, of Georg Bartisch.

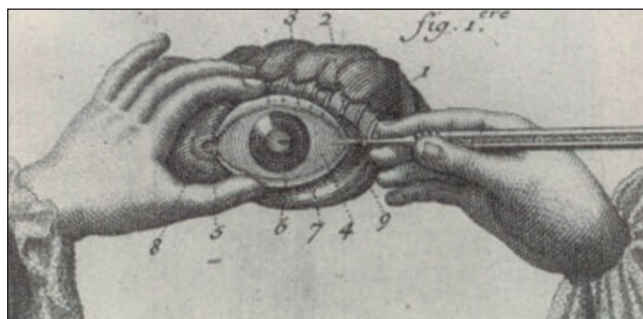


Figure 4 Illustration of the dissections of Pierre Brisseu.

King, founded a *chaire d'ophthalmoïatre* in Saint Come. It was already in the 18th century that the Montpellier College of Surgery created the first official ophthalmology course in 1768.

During the Romantic period, in the 19th century, what we call the pre-ophthalmoscopic period, the first university teaching centres were established: Paris 1765; Vienna 1773; London 1808 (Saunders); in 1810 in Berlin, a clinical institute of surgery and ophthalmology was founded under the direction of Karl F. von Graefe; Breslau 1812 (Benedict); Pest 1817 (Fabin); Heidelberg 1819 (Chelius); Naples 1815 (Quadri).

The first specialised journals appeared: *Ophthalmologische Bibliothek* in 1802, by Himly Schmidt, *Journal der Chirurgie und Augenheilkunde* in 1820, by Graefe and Ammon, *Monatschrift für Medicin Atungeheikunde und Chirurgie* in 1830 and *Annales d'Oculistique en Belgic*, *Annali di Oftalmologia* in 1835.

The anatomical-clinical basics of modern eye pathology were conquered. And it was during the second half of the 19th century when new anatomical ideas appeared thanks to the surgical and technical advances, such as the discovery of the ophthalmoscope by Hermann von Helmholtz (1831-1894), who on 6 December 1850 reported his discovery to the Physics Society of Berlin. The ophthalmometer, the tonometer and the slit lamp, invented in 1911 by Allvar Gullstrand (1862-1930), who received the Nobel Prize in Medicine for his work in physiological optics, also appeared.

It took more than 100 years before the cataract extraction techniques were introduced. Due to jealousy between people, institutions and countries, this process was slow. It was the Vienna school, with Georg Joseph Beer, that definitively introduced this technique (intracapsular) in the 19th century. Intracapsular cataract extraction was introduced in 1753 by Samuel Sharp. Friedrich Jaeger (1825) and Rosas (1830) made the incision in the superior limbus. Sutures were used for the first time in 1867 by Henry W. Williams in New England. The first to use local anaesthesia, with cocaine, was Karl Koller, from Vienna, in 1884. Its extension as a regional retrobulbar anaesthesia was proposed by Elsching in 1928.

The creation of an ophthalmology specialty took a historic path in which sufficient knowledge was initially accumulated to generate a robust body of contents. Institutions that regulate academic and professional life were created, that are also capable of transmitting this knowledge. They generated professionals capable of understanding what this implies, systematising their knowledge, in addition to creating technical advances that increased the breadth and depth of ophthalmological knowledge.