



# Notes for a History of Radiology in Matanzas (I): Precursors and Supplementary Notes

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**Abstract:** Radiology is one of the most developed specialties in the medical sciences. The objectives of this work were to rescue and share elements of the history of radiology in the province of Matanzas. Methods such as analytic-synthetic and deductive-inductive were used, as well as chronological and geographical sub-methods. Nine supplementary notes and eleven cards were presented with a synthetic characterization of precursor figures and institutions. In 1907, the first X-ray equipment was installed in Matanzas, but the initiative did not bear fruit. Doctors Juan Francisco Tamargo, Enrique Sáez and Federico Escoto were the first in the territory to use such rays for medical purposes in the second decade of the twentieth century, but it was Dr. Mario E. Dihigo Llanos, at the beginning of the following decade, who established the time limit between how radiology was done and how it should be done.

**Key words:** radiology; history of radiology; history of medicine; Matanzas; Cuba

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## 1. Introduction

In the history of radiology in Matanzas, in addition to the most recognized personalities, such as Doctors Mario E. Dihigo Llanos, Mario Muñoz Monroy, Manuel V. García Suárez and Orlando Valls Pérez - to whom we must add Dr. Francisco Domínguez Roldán (Havana 1864-1942) - the precursors stand out, beyond any philosophical debate, simply the first, the pioneers, the introducers and those who should not be interpreted through those who continued and developed. These first ones constitute, undoubtedly, emblematic figures and institutions for having had the capacity to establish the new.

Radiology, including the new ways of obtaining medical images for diagnosis and guidance of therapeutic procedures, is one of the specialties that has experienced more scientific-technological development throughout the history of medical sciences. In Matanzas, its application began at the beginning of the second decade of the 20th century. A group of pioneering figures and institutions established it during that decade, although its real social impact began to be achieved in the sixties, and its technological impact, together with the development of a specialized and inclusive scientific education, in the seventies.

While the story of Wilhelm Conrad Röntgen, the discoverer of X-rays, is widely known, most Cuban health professionals have little more than a superficial notion about the beginnings of radiology in Cuba, and the men who helped

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establish it in the country remain anonymous. That is also the reality in Matanzas.

The objectives of this work are to rescue and socialize elements of the history of radiology in the province of Matanzas, related to its precursor figures and institutions. A documentary review was carried out covering 72 sources, 80% of which were primary sources. Twelve interviews were made to personalities related to medicine and radiology, as well as to relatives and descendants of the protagonists. Historical research methods were used, such as the analytical-synthetic for the handling of written and oral sources and their explanation- and the deductive-inductive. Among the sub-methods used are chronological and geographical. It also intends to be an invitation to complement, improve and pay homage to the 125th anniversary of the birth of radiology as a medical specialty.

## **2. Development**

### 2.1 Two determining aspects in the history of radiology in Cuba

Any attempt to write a history of radiology in the country must take into account two defining elements: the War of Independence, which began in 1895, and the service of Dr. Francisco Domínguez Roldán.

When radiology was born, in November 1895, Cuba was in the ninth month of the definitive war, and the first years of its growth were spent in war, followed by the catastrophic post-war situation and the indefinite work of the birth of the Cuban State. None of the countries advanced in its use, and more than that, no country in Europe or America was in the situation that Cuba was in during the early infancy of radiology.

Secondly, it was Dr. Francisco Domínguez Roldán who definitively established the first radiology department in the country at the Nuestra Señora de las Mercedes Hospital, and with whom the study and practice of radiology in Cuba began in a systematic way. His medical, educational, political, administrative, and patriotic activities closely linked him to Matanzas. [1]

In the first semester of 1905, Domínguez Roldán, who since his return to the university after the War of Independence, had studied Röntgen rays and radium, with old and defective equipment, some of which he had installed himself at the Mercedes Hospital - had expressed to Dr. Gabriel Casuso Roque, dean of the Faculty of Medicine, his conviction about the great value that these techniques would have for the diagnosis and treatment of surgical conditions, as well as his intention to travel to Europe with the support of the institution, in order to investigate its possibilities in more detail, since he considered the transcendental place reserved for radiology and the need to establish it in Cuba.

Exchanges and negotiations continued between Dr. Domínguez and Dr. Guiteras, when the latter replaced Casuso; in short, both deans supported his ideas. [1] The first conversations to establish the definitive gestation of radiology in Cuba took place between Matanzas and a quasi-Matanzas. The concept of an X-ray department, with enough machines to study different regions, was not established in Cuba until Dr. Domínguez Roldán set up the department at the Mercedes Hospital, inaugurated on May 1, 1907. [2]

### 2.2 Complementary notes

The first reference to radiology found in the Matanzas press appeared in the Aurora del Yumurí newspaper of May 6, 1898, not as something new, but as something established. It alluded to the increasingly numerous applications of X-rays, referring to their application to the army recruitment and replacement service in relation to a specific case in France. [3]

The first use of radiology for medical purposes, by a descendant of Matanzas (between February and March 1896), was performed by Dr. Ramon Guiteras, successor of a family of founders of the Cuban nationality, cousin of Dr. Juan Guiteras Gener and founder of the American Urological Association. He was a surgeon and, guided by the image, he extracted a needle reduced to small parts, located between a tendon and near a nerve - in the midst of extremely inflamed tissues - from a patient who had been suffering for years. [4]

The first native of Matanzas who used it was Dr. Oscar Amoedo Valdés (Matanzas, 1863-Toulouse, 1945), father of Forensic Odontology and president of the Odontological Society of France: *Sur la radiographie en art dentaire* in 1897 [5].

The first thesis to obtain the degree of doctor was defended in October 1900 by Francisco P. Hernández ("Roentgen's Rays"), and published by La Habanera Printing House in 1901. [6] This must have been one of the first works of this type in the country, if not the first.

The first of the equipment that should have been installed in Matanzas was an initiative conceived by Dr. Domínguez Roldán, seconded by Dean Dr. Guiteras Gener and supported by the faculty of the School of Medicine of the University of Havana; but the rector yielded to the pressure of Dr. Rafael Pérez Vento - later an important figure in Cuban neuroscience - in his interest that the equipment be incorporated to the Physics Laboratory of the School of Medicine. In 1907, it was a device that had been acquired in 1904 by the University and that, after the installation of the equipment of the first department in the Mercedes hospital, was not in use.

In June 1922, Dr. Solano Ramos published "El espasmo pil ó rico en el adulto" in the first anniversary issue of *Médica*, which was the first article published in Matanzas in a scientific journal that directly alluded to radiology but did not publish X-rays. [8] And the first published with X-rays was "Cuerpo extraño en el estómago", by doctors Oscar Forest and Braulio Rodríguez Bustillo, in the August issue of the same journal the following year. [9]

The first characterization of Dr. Domínguez Roldán in a medical journal was made by Dr. Mario Dihigo. [10]

The father of Cuban pediatrics, Angel Arturo Aballí Arellano (Matanzas, 1880-Havana, 1952), in the mid-1920s had his own facility in Havana. [11]

Dr. Tonert, mentioned by Dr. Alfredo Domínguez Roldán in his acceptance speech as a member of the Academy of Sciences of Havana, together with Tamargo and Escoto, is one of the advanced in Matanzas, although at this point of the investigation, the authors have not found other data on his person. [11]

### 2.3 Precursors

Dr. Juan Francisco Tamargo y Bautista (Matanzas, 1880-1949). Director and owner of the Dr. Tamargo Clinic. He studied at the University of Havana and graduated in Medicine and Surgery in June 1904. In 1910, together with Dr. Vicente Gómez, he founded the Dr. Tamargo Clinic. In 1912, during a tour made by the Society of Clinical Studies of the Island of Cuba, [12] Dr. Varela Zequeira affirmed that it was simply a special clinic that belonged to Dr. Juan F. Tamargo. [13]

The clinic's departments included an X-ray department, with a Victor apparatus for radiography and radioscopy. [12, 13] This clinic was located in the former Spanish Bank building on Tello Lamar (Río) Street, at the corner of Jovellanos Street. Dr. José Varela Zequeira (Camagüey, 1854, Havana, 1939) was a great anatomist and humanitarian, and an honorary professor at the Faculty of Medicine of Havana University. He was the first to praise the heroic efforts of this individual initiative, which were not for profit or exploitation of patients, but were built on a solid moral and scientific foundation. He said then, and repeated, that it was an institution worthy of imitation. [12]

Dr. Enrique Sáez Bringuier (Key West, 1871, Cárdenas, 1949). Colonel of the Liberation Army, Chief of Health of the First Division of the V Corps, Chief Physician of the first Cuban Gynecological Clinic - founded in Cárdenas by Dr. Fernando Méndez Capote, the first radiologist of Cárdenas and undoubtedly one of the first in Cuba. Along with him, the specialty began in that territory, inaugurating in 1913, the department of the Santa Isabel Charity Hospital in Cardenas. [14]

Dr. Luis D. Diaz. In 1918, Dollero [15] visited several clinics and scientific cabinets in the province of Matanzas and remembered, particularly in the capital, the surgical clinic of the distinguished surgeon Luis D. Díaz and that of Dr. Federico Escoto, both equipped with surgical instruments and modern scientific apparatus. He used this expression to

equate these two institutions and knew that Dr. Escoto already had X-ray equipment at the time, which suggests that Dr. Diaz also had these devices, especially since it is well known that he was the first radiologist in a Spanish colonial sanatorium. [16]

Dr. Federico Escoto y Cabada (Matanzas, 1865-1945). He launched himself into the redemptive jungle as soon as he crossed the threshold of puberty. He studied medicine in the University of Havana and graduated in 1888. He later studied in Paris with Dr. Joaquín Albarrán Domínguez, with whom he established a solid friendship and from whom he received, dedicated, several of the more than three thousand books in his library. [12, 13] He was a doctor for the returnees during the War of 1995, and an active auxiliary of the helpless Cuban soldiers, to whom he provided all kinds of resources from the city with the means made available to him by his profession. [17] He was a precursor of the Red Cross in the country and the first chief and medical colonel of the original Cuban Red Cross. [18] He and his family suffered and heroically resisted persecutions, searches and other excesses. He reached the rank of commander of the Liberation Army and was a friend and collaborator of General Clemente Gómez. Due to his actions, he was forced into exile. Although he was eventually expelled to Europe, he utilized this trip for new research, particularly dedicated to the study of radium. Later, he introduced radium to Matanzas. His time at the provincial Health Department revealed his professional zeal. He set up a clinic with all the latest advances in X-rays and medical electricity, for which he imported large and excellent models from the Campbell and Fisher companies.

In the middle of the tenth decade of the last century, he had set up his X-ray and electrotherapy practice at the present 113 Independencia Street (Medio). He had up to 200 mg of radium. At the time of the journalistic work from which this data was obtained, he had cured more than four hundred skin cancer patients, and had also ventured into deep therapy. [12, 17]

Dr. Oscar Forest. He was a surgeon of the then Civil Hospital (Santa Isabel) and of the Sanatorium of the Spanish Colony in Matanzas. He was co-founder, co-director and director (editor-in-chief) of *Médica*, predecessor of the current *Revista Médica Electrónica*. In the early 1920s, he had an X-ray machine at the Delivery and Surgery Clinic at Paseo de Martí and Santa Cecilia, in Versailles. [17] After the death of Dr. Luis Díaz, Dr. Oscar Forest took over his position at the Sanatorium of the Spanish Colony and also attended the radiology office. [16]

Dr. Eduardo S. Catá Prats. He lived at Máximo Gómez no. 1, in Jovellanos. In 1914, he graduated in Medicine from the University College of Medicine, Virginia, and he was admitted to the University of Havana in 1915. His intelligence would have led him to excel in philosophy or literature, but the social environment and necessity led him to the path of medicine, a profession to which he brought the immense wealth of his culture and thirst for knowledge. Thanks to his science and his diligence, he was placed in a preponderant position. The people of Jovellanos, whom he served for a long time, knew how to do full justice to his merits. [17] He installed one of the first X-ray and electrotherapy cabinets in the province, which began to provide services in the early 1920s.

Dr. Mario Emilio Dihigo Llanos (Matanzas, 1895-1978). Eminent physician and educator. Multifaceted professional: physician, radiologist, writer, journalist, pedagogue and founder of the magazine *Médica*. He was exalted as an educator of the 20th century in Cuba, and included among the hundred figures of science in Cuba. [19] The field of radiology was his preferred medical dedication during the last thirty years of his professional practice. In 1923, Dr. Tamargo acquired a very efficient radiological facility for the time and offered him the position of radiologist in his clinic. To prepare himself, he spent some time in Havana with his classmate and excellent friend Dr. Pedro Fariñas, one of the greatest authorities of Cuban radiology of all times. Proof of the friendship and respect they had for each other is the fact that Dr. Fariñas, in his capacity as president of the Congress of the Interamerican College of Radiology (Havana, 1946), entrusted him with the

closing ceremony. The opening had been in charge of the President of the Republic. In the mornings, he visited with him the office of the Dependents' Center that was under his charge, and in the afternoons he spent in his private practice. He then spent, in Chicago, a course in radiological technique in the laboratories of General Electric and a course in radiological interpretation with Professor Beilin of Augustana Hospital. [20]

In 1926, he won the first radiologist position in the Sanatorio de la Colonia Española through a competitive process. In 1937, he installed his own radiological office in house no. 98½ of Byrne Street (Contreras). He continued attending the Tamargo Clinic until it was acquired by the group that founded the Medical Center. For his political ideas, he was imprisoned during the Machado government, during which time his employment and salary were suspended. In 1940, he was elected to the Cuban Constituent Convention, to which he brought three very advanced proposals for the time. He was a member of the Academy of Medical, Physical and Natural Sciences of Havana, of the Society of Clinical Studies of Havana, president of the Society of Medicine and Surgery of Matanzas, as well as of different radiological societies and foreign organizations. In August 1945, he moved his practice to the house marked 85 Byrne Street. He remained there until July 1953, when he was forced to retire early due to a retinal detachment. His relatives, Dr. Isaac García Hernández and Dr. Rodolfo Beguiristain Rivero, and temporarily Dr. Orlando Valls y Pérez, worked in this Radiology and Radiotherapy Office. In 1961, at the age of 66, Dr. Dihigo participated in the Literacy Campaign. Among his greatest contributions are the fact that he marked a before and after in relation to how radiology should be assumed, studied and practiced, as well as the textbooks he wrote, related to the teaching of health education, natural sciences and human biology, which were part of the educational program of several countries. [21]

#### 2.4 Forerunner institutions

Santa Isabel Charity Hospital of Cardenas, which was located where the Red Square is located today. It had an Electrotherapy Department with X-ray apparatus since 1913. In 1918, they had acquired an ultramodern apparatus, which cost almost 6,000 pesos. [14, 15]

Sanatorium of the Spanish Colony, of Matanzas. In February 1914, the Electrotherapy Gallery of that health center was blessed, but there was no reference to a department or X-ray equipment, not even in a later description of the institution. [13] However, Dollero [14] does refer to the existence of an X-ray apparatus in 1918, in the same Electrotherapy Department. In 1923, the sanatorium had a Snook-Victor apparatus for radioscopy, radiography and radiotherapy. In 1924, this service performed 155 X-rays, 12 fluoroscopies and 15 radiotherapies, data attested by Dr. Oscar Forest. [22] In November 1926, the center decided to expand the medical staff of its sanatorium with a radiologist position (previously it was assumed by physicians dedicated to other specialties). [16]

Sanitary Station (House of Socorros) of the Fire Brigade of Commerce. Located in the Plaza de la Vigía, in the city of Matanzas. Without specifying when the use of the X-rays began in it, it is evidenced that it happened in a date previous to 1918, because from its foundation and until that year 47,469 injured had received medical attention in it, the ambulances gave service 5,847 times, and 1,096 radiographies and 2,829 applications of X-rays were made. [15]

Dispensary for Poor Children, annexed to the Sanitary Station, also founded by the meritorious Commerce Fire Department. The dispensary had, at least in 1918, an X-ray department. [15] Around 1927, a reconstruction of the building was imposed, which included the rooms for X-rays, and one for radiotherapy was added. [23]

### 3. Conclusions

The first descendant of Matanzas in using X-rays was Dr. Ramón Guiteras in the first months of 1896, in the United States. The first native of Matanzas to use them was Dr. Oscar Amoedo Valdés in 1897, in Paris. The first thesis by a native of Matanzas was by Dr. Francisco P. Hernández, in 1900, in Havana - one of the first works published in Cuba on the

subject and possibly the first of that type.

The first of the equipment that should have been installed in Matanzas, was an initiative that did not come to fruition of Dr. Domínguez Roldán, seconded by Dr. Juan Guiteras.

The first to use X-rays for medical purposes in Matanzas were doctors Tamargo Bautista, Sáez Bringuier and Escoto Cabada, the last ones in a direct way, in the second decade of the 20th century. But it was definitely Dr. Dihigo Llanos who established the time limit between how radiology was done and how it should be done.

The first private institution to have these rays was the Dr. Tamargo Clinic, and the first public institution was the Santa Isabel Charity Hospital in Cárdenas.

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### **Conflicts of Interest**

The author declares no conflicts of interest regarding the publication of this paper.

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