

## FR. MARCOS LAÍNEZ HERNANDO, O.P.: EVOLUTION AND THE NEW CHEMICAL THEORIES IN THE PHILIPPINES

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“Three friars! There were three friars, and although they evangelised in the Philippine Islands, they did not lose their affection to Calamocha (Teruel, Spain), their hometown. They demonstrated it by sending the image of the Virgin of the Rosary which can be found at the second altar on the right in the church. Today, seventy years later, I still remember my father (may he rest in peace), pulling it out of the drawer, with its rosaries and crown too. The head and hands were carefully placed in another little drawer. The cloak had a great quantity of gold and the hands were made of ivory.”

We found this brief note in an old country newspaper dated 1957. It speaks about the three *Calamochinos* Dominican friars who developed pedagogical and spiritual activities in the Philippine Islands. During the time they lived far from their country, they wanted to show the affection they felt to the village where they were born and to their countrymen. For that reason, the friars sent a present as expression of remembrance, a beautiful image of the Virgin of the Rosary which today can be seen in one of the side altars of the church of this town. The most important of the three was fray Marcos Láinez, whose scientific journey we will speak about today.

### **Humanist and scientist**

Marcos Láinez Hernando was born on April 24, 1851 in the village of Calamocha in a humble family. He lived in his hometown until he entered the order of Santo Domingo in 1866 at the school of Ocaña. He was studying theology when he accepted to be a missionary to the province of the *Santísimo Rosario* in the Philippine Islands.

In March 1872, he left the convent and embarked Barcelona in a steamer called “Emiliano” arriving in Manila on May 25. The change of climate, environment and colleagues did not affect his studies. Not long after, he concluded his academic courses brilliantly. He was then prepared to receive the order of priesthood, after which, he began teaching and doing religious activities.

In 1878, he returned to the Península. He was the Chair of Philosophy in the Dominican school of Ávila. While he was teaching, he achieved the highest degree in Science from Madrid University. He came back to Manila in August 1884, being assigned to the University of Santo Tomás as Professor of Chemistry at the Faculties of Medicine and Pharmacy.

In 1902, he went back to Spain as Vice-chancellor of Ávila College and headmaster of the new School of Santa María de Nieva, Segovia. After a few years, he became the superior of the Convent of Rosarville, in New Orleans, South of the United States.

Finally, in 1913, fray Marcos Laínez returned to the Philippine Islands for the last time. He remained in Manila, alternating his work in the Dominican College and his chemistry lectures at the University until his death, which occurred on April 18, 1916.

As a result of all this intellectual activities, we find several of his articles published in the Philippine journals *Correo Español* and *Libertas*. He focused his work on current affairs wherein he wrote some Religious books, English grammars and the inaugural *discurso* on "Combination and chemical compound."

### **Science and ideology: the Darwinism in Spain at the end of the 19<sup>th</sup> century**

Fray Marcos Laínez wrote the speech for the opening of the academic year of 1896 at the University of Santo Tomás. The intellectual environment in which he wrote his speech was hardly influenced by the scientific atmosphere at that time. The Theory of Evolution, which he certainly studied at the University, was the most discussed topic of the time.

The theories on the Evolution of living beings appeared in Spain shortly after the publication of Charles Darwin's book *The Origin of the species by natural selection* in 1859, with little impact though. From the start of the revolutionary six-year period (1868-1874), works that supported this position began to appear. During this period, as a result of liberalism, the Law of Freedom of Education (1868) was enacted. Consequently, the naturalists did not encounter any trouble in their research as the Elizabethan period did.

Later, the monarchical restoration in 1875 stopped this freethinking by forbidding it in dissertations and in university lectures. For that reason, such a polemic issue as the Theory of Evolution was not published explicitly and was never discussed openly.

As a consequence, at the end of the 19<sup>th</sup> century, the Spanish scientific community had a clearly conservative thought. During the reign of Elizabeth II, a generation of naturalists who carefully assimilated the new ideas, allowing the influence of the French scientists, and who did not completely support Darwin's ideas were related to Lamarck's Transformism.

At the beginning of the discussion of Darwinism, the more widespread position was to comment on the theory with a kind of eclecticism, trying to make compatible the favorable postulates to the conformity between *Genesis* and the natural sciences with the ideas of Darwin.

Among the naturalists that critically accepted the ideas of Darwin, we find the supporters of the organic evolution as general law of nature, generally linked to the Free Institution of Education since 1877. In spite of these and other favorable manifestations of the Spanish naturalists on the evolutionist theory of Darwin, the major trend during the final part of the 19<sup>th</sup> century was to reject Darwinism and to highlight the harmony between natural sciences and religion.

There were also authors that accepted the transformation of species, but not of those systematic groups of greater range, such as the large classes. This was the case of the Dominican Fr. Juan González Arintero who was in favor of a certain "Christian Evolutionism," who was willing to accept a limited or nuanced evolution. Whereas in the Biblical account, there was a progression in the emergence of the large groups or classes—fish, birds, mammals—cited specifically as groups created by God, and yet there was no reference to species that constituted the genres that in turn were integrated in the classes.

Following the paleontologist of the Museum of Natural History in Paris, A. Gaudry, these authors accepted the Transformism among species, but leaving out large classes that were going back to the immediate and direct work of God. Thus the evolution remained limited to the species contained in each of the classes. Apart from the reviews that the Evolutionism of Darwin received from all these

paleontologists, there were other exclusively ideological reviews done by ecclesiastics and laymen authors.

Roughly speaking, this is the intellectual context of the evolutionist thought in Spain when Fr. Marcos Laínez composed his masterful lesson for the opening of the academic year in the University of Santo Tomás in 1896. He intended to provide his personal view on the Theory of Evolution while he worked on the origin of matter and chemical compounds. With this, he tried to directly intervene in the overall contrast of opinions in science and in the Spanish society in 1896.

### **Regarding the scientific, the conservative and the anti-evolutionist**

With the *Discourse read at the annual opening of the Royal and Pontifical University of Santo Tomas studies on 2 July 1886* and that of Fr. Marcos Laínez's *Reflections on the combination and the chemical compound*, an interesting autobiographical reference appears at the beginning of the masterful prayer, when he said that the Chair of Geology in the Central University of Madrid during 1883-1884 observed under the microscope the famous *Eozoon Canadense*, foraminifer in which many scientists saw the origin of the animal. This opinion of Moebius, later supported by Laínez, for whom was just a simple mineralogical accident which may have resulted by mixing calcite with the serpentine or the pyroxene. "Say what they should want those who support the evolutionary system."

With this significant quote, we get to the central issue of the scientific thought of Fr. Marcos, who was a firm opponent of the modern evolutionary theories that were ideologically discussed in Spain and in the rest of Europe at that time. Indeed, when he referred to these new trends of thought, he used pejorative terms:

*"And hence also the strange and inconceivable twist that affects Science nowadays because nobody is a good teacher nor occupies his job with dignity, but there is a repetition of delusions of Naquet, Paye, Lubbock and Feuerbach; no one attends the chairs of the Wallace's, Hoocher's, Schaafhausen's and Darwin's utopias are not broadcasted and spread, no one reads any book if Huxley's, Gleisberg's and Hückel's follies are not echoed. Here you have gentlemen: anarchy and absolute freedom."*

Undoubtedly today, more than a hundred years later, these words can be shocking; however, they were not mere assertions. Láñez supported them by conveying the opinion of the most prestigious scientists of the time.

The paragraphs which pointed out Henry Deville are even stronger and harder, as in this context, recalled Láñez: *“A portion of vague ideas that may be harmful to their development are introduced in Chemistry by using the name of theories, and if we do not compromise ourselves to use well-defined principles, we may get lost in the way of a scientific mysticism, and we may agree with an encouraging but indecisive ideal, instead of following clear and rigorously proven principles.”*

According to Fr. Marcos, we must also admit that the nineteenth century Spanish studies, did not progress due to constant civil conflicts; it remained quite apart from the discoveries and the new scientific theories which were developing in Europe.

Remember that the atomic theory of matter criticized by Láñez achieved its more powerful victory in 1869 when Mendeleieff proposed the famous table under his name, with a synoptic ordering of the elements in which the weight and their chemical properties are related. This will even allow foretelling the existence of new items that would eventually confirm Mendeleieff's predictions.

In Spain and in the Philippines, science had been left apart from all these developments and these new doctrines were seen with suspicion. That is why Fr. Marcos Láñez, steeped in the conservative Spanish science era and endowed with a strong academic training, devoted himself to carefully reviewing the atomic theory of matter and the kinetic theory of gases in order to demonstrate the broad gaps they had, indicating that many established laws needed to be refined.

Taking into account the vulnerability that, according to him, most of the physico-chemical doctrines had, it led him to raise the questions of stability, strength and universality of the principles where chemistry is based. And thus we reach part VI of the speech in which, after examining the laws and principles of chemistry according to the modern ideas, we conclude:

1. They lack the precision and accuracy that characterize the principles of true science.

2. They do not have the universality of scientific principles.
3. They depend on the accuracy of a large number of hypotheses that are far from becoming the genuine expression of truth.
4. There is no unanimity among the authors on the meaning and development of those hypotheses.
5. A very marked deference to the authority of the learned is frequently observed.

Fray Marcos based his opinion on many prestigious scientists and philosophers like: Würtz, Naquet, Berzelius, Bacon and Sáez Palacios. Considering the infinite hypotheses and theories about chemistry, Laínez concluded, “*there is only mood to write as Boyle did, a work titled Sceptical quimist.*” And so, society will remember a cruel aphotegm of Quevedo: “*El mentir de las estrellas es muy seguro mentir, porque ninguno ha de ir a preguntárselo a ellas.*” The translation of which is: “It is very easy and safe to interpret the stars and say whatever you want, because no one will go to ask them.”

### **Arguments justifying Laínez anti evolutionism**

It is evident that Fr. Marcos, due to his religious training or his personal opinion, joined this broad school of thought that for many years in Spain opposed the new scientific ideas arriving from Europe. It was a kind of prophylactic measure against Darwin's Evolution Theory, the real polemic issue.

Nowadays, it is easy to demolish the friar's subtle arguments. We can also say he magnified some small exceptions, or put ideas out of context or even committed obvious contradictions. However, we must also recognize that he always showed himself as a scholar who knew perfectly the ideas of his opponents. He also had an excellent chemical knowledge that allowed him to use a selective and modern scientific and philosophical bibliography to argue with scientific rigor and wit.

In conclusion, it is a very interesting book that reflects perfectly the opinion of a significant part of the Spanish or Philippines Scientists at the end of the 19<sup>th</sup> century. These anti-evolutionists ideas were shared by many accredited European scholars such as Owen in

England, Von Baer, Kölliker and Virchow in Germany, Claude Bernard and Wuatrefages in France. On the other hand, this work provides us excellent information about the chemical and philosophical knowledge fray Marcos had; the reason this friar deserves all our scientific and professional respect.

### **Quoted authors in the *Meditations on the combination and chemical compound***

As we have seen so far, the quotations and references Laínez included in his *Discurso* are abundant. The mentioned authors add up to 162, distributed in 528 quotes on which the speech was based.

The references cover the period from the Classical Times, like Aristotle and Pythagoras, to the Contemporary Age, whose authors are the most abundant. There are High Middle Ages authors like Boethius, late Middle Ages like Albertus Magnus and Thomas Aquinas, Renaissance authors as Francis Bacon or Luis Vives. The New Baroque Science is represented by Robert Boyle or Borelli, and Lavoissier is one of the many Enlightenment scientists mentioned.

The most abundant sources quoted, however, as expected, were the Romanticism and Positivism period scientists. These men of science characterized the 19<sup>th</sup> century and represent three quarters of the authors mentioned.

About the nationalities of the quoted authors, there is a clear dominance of French (53), followed by German (32) and English (20). Behind those we find the Spaniards (16) and Italian scientists (12). This piece of information confirms that scientific power in the field of chemistry and general science at the end of the 19<sup>th</sup> century belonged to the three first cited nations.

We consider this *Discurso* as a work of great interest to know what discussions rose in the Philippine Islands late in the 19<sup>th</sup> century about the Theory of Evolution and new ideas of Chemistry. Therefore, Centro de Estudios del Jiloca considers appropriate reprinting this work of fray Marcos Laínez, born in Calamocha (Teruel, Spain) and Professor of the University of Santo Tomás in Manila.

## The gift of the Calamocha Dominican to his fellow countrymen

Finally, we would like to highlight the affection that these missionaries always had towards their hometown. Fray Marcos Laínez and the other Calamocha Dominican who were with him in the Philippine Islands, Fathers Santiago Roy Jordan, Manuel Moreno Sebastián and Joaquín López Fortea, all four religious men donated the beautiful image of the Virgin of the Rosary, to whom a great devotion is professed in the Jiloca Shrine. This Virgin of the Rosary is the patron saint of the Dominican province where these good friars developed most of their apostolic and academic work.

It is best to finish this brief account with another description done by the Professor of Art history, Santiago Sebastián:

*“The late baroque shows an eclectic character. So it should be mentioned the altarpiece known as the Virgin of the Rosary. Under its main niche, saved under glass, there is a fine Philippine image of the so-called devanaderas. It is utterly impressing the image itself, along with the Child head and hands, which are made of ivory.”*

### References:

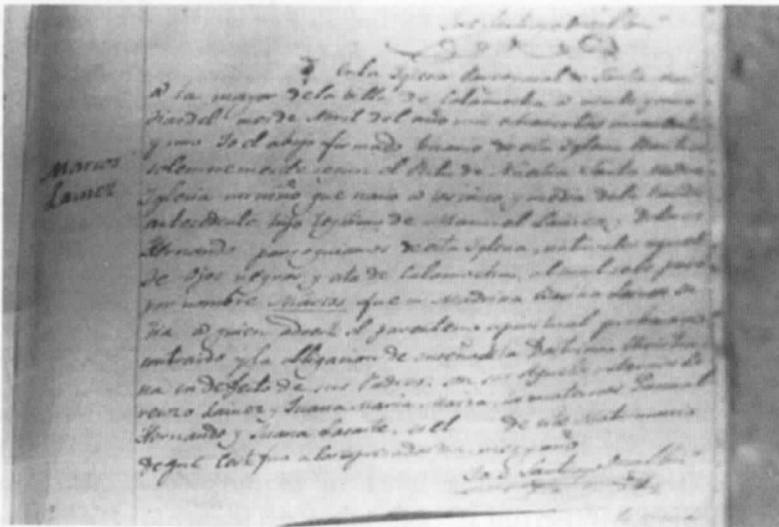
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**Fig. 25.** Portrait of Our Lady of the Holy Rosary  
donated by Dominicans from Calamocha

FR. MARCOS LAINEZ HERNANDO (1851-1916)



Reproducción de la partida de bautismo de Fr. Marcos que se encuentra  
en el Archivo Parroquial de Calamocha.

**Fig. 26.** Baptismal Certificate of Fr. Marcos Láinez,  
Parochial Archives, Calamocha

DISCURSO  
LEIDO EN LA  
**APERTURA ANUAL DE LOS ESTUDIOS**  
DE LA  
REAL Y PONTIFICIA UNIVERSIDAD DE S<sup>TO</sup>. TOMÁS DE MANILA  
EL DÍA 2 DE JULIO DE 1886  
POR EL  
**D. D. Sr. Marcos Lainez Hernando**  
DEL ORDEN DE PREDICADORES  
PROFESOR EN LA MISMA UNIVERSIDAD.



IMPRESION OFICIAL.

MANILA  
ESTABLECIMIENTO TIPOGRAFICO DEL COLEJO DE S<sup>TO</sup>. TOMAS  
A CARGO DE S. CRISTOBAL MERRIC  
1886

Portada de la polémica Lección Inaugural del Curso en la Universidad de Manila del P. Lainez (Bib. U. de Manila).

Fig. 27. Title page of *Discurso de Apertura*

**GRAMÁTICA INGLESA**  
SEGÚN EL SISTEMA (MODIFICADO) DE ROBERTSON  
PARA USO DE LOS  
Colegios, Institutos y Escuelas profesionales  
POR EL  
**R. P. MARCOS LAINEZ HERNANDO**  
DE LA ORDEN DE PREDICADORES  
PROLOGO DE D. MIGUEL MORENO ARTIAGA  
DE LA REAL ACADEMIA DE LENGUAS EXTRANJERAS  
"The difficulty in learning english language arises not so much from the difficulty of grammar, as from the difficulty of methods generally employed."  
MARCOS LAINEZ HERNANDO  
TIPOGRAFIA Y ENCUADERNACION DE M. J. JIMENEZ  
1909

Fig. 28. Title page of *Gramática Inglesa*