Austrian Missionaries in 17th and 18th Century Philippines: The Story of Fr. Paul Klein, S.J. and Bro. Georg Joseph Kamel, S.J.

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Abstract: Austrians comprised some of the religious missionaries who came to the Philippines during the early part of Spanish colonization. A decree by King Philip II of Spain who was also the emperor of the Holy Roman Empire ruled that non-Spaniards belonging to the Habsburg Empire may serve as missionaries in the colonies of Spain. Already the Spanish missions of exploration including that of Ferdinand Magellan was composed of many European nationalities, including German and Austrian. At that time it was difficult to distinguish between Germany and Austria because both belong to the German-speaking homeland. Historians call both countries "the First Germany." Some missionaries come from the region that later became part of Austria, (although some of those regions became part of Czechoslovakia after the Second World War). Among the Austrian religious who came to the Philippines were Fr. Paul Klein, S.J. and Bro. Georg Joseph Kamel, S.J. Fr. Klein would be known for his scholarship and religious devotion. He would be the guiding light in the formation of the saintly life of Mother Ignacia del Espiritu Santo, the founder of the Philippines' first religious congregation for women, La Cofradia de Hermanas de Religiosa de la Virgen Maria, which is better known as the Religious of the Virgin Mary (RVM). Bro. Kamel, on the other hand, would be a giant in the botanical and pharmaceutical world. He established the first apothecary in the Philippines. But his more important role was in the documentation of Philippine flora, their medicinal uses as well as the traditional practices

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by native herb doctors or herbolarios. He shared his findings to the pharmaceutical and botanical world and received international recognition and acclaim for his research. The camellia flower was named in his honor.

Keywords: *Austrian Missionaries, , Achievements, Recognition*

To know the history of Austria and its relationship with the Philippines, one must understand the history of the German-speaking nations. According to Christopher Dawson in his book, *Understanding Europe*, the German nation applied to the people inhabiting the three Germanies.[1] These were the Germany of Goethe and Schiller, of Weimar and Göttingen and Heidelberg, the homeland of statesmen and men of action like Stein and Metternich and Hardenberg and Scharnhorst, who played leading roles in leading both Austria and Prussia during the early 19th century.

According to renowned Filipino historian and expert on Philippine-German relations, Fr. Hermogenes E. Bacareza, SVD, the first Germany was the heart of the medieval empire but which long lost all semblance of political unity. There was no clear distinction between the first Germany and the great imperial state of Austria. This imperial state was considered as the second Germany. This second Germany kept the prestige and tradition of the Holy Roman Empire. The first Germany and the Austrian empire were linked by history and tradition in spite of the fact that Austria expanded in the course of the centuries to include six nations and racial groups such as the Czechs, Magyars, Italians, the Poles, Croats, and Romanians. The dominion of Austria extended to the Carpathians in Central Europe and the Mediterranean. Though it expanded substantially, it kept its links with old Germany. Even so, German Catholics sought protection and leadership from Vienna rather than Berlin. [2]

The third Germany according to Dawson was Prussia which was described as a self-made power which had risen from its humble beginnings within just a century to become one of the great powers of Europe.[3] It became a rival of Austria in the leadership of the German Confederation.[4]

[1] Christopher Dawson, *Understanding Europe*. (New Jersey: Garden City, 1960) 69-70.

[2] Hermogenes, E. Bacareza, Fr. SVD. *Philippine-German Relations 1871-1974*. Unpublished Ph.D. Dissertation. University of Santo Tomas, 1974, p. 9.

[3] Dawson, ibid., p. 70.

[4] Taylor, A.J.P., *The Struggle or Mastery In Europe* (Oxford: Clarendon Press), pp. 142-147.

Early links of the Philippines and Austria

It is quite difficult to distinguish between Germany and Austria at this time of history since both nations were part of the "First Germany." The first known relationship between the German-speaking world and the Philippines would be during the Magellan expedition. Magellan's crew did not just include Spaniards and Portuguese but also other nationalities such as the Basque, Genoese, English, Sicilians, Flemish, Neapolitans, Greeks, Canarians, Negroes, and Germans. From the list of Magellan's crew there were at least three Germans– Jorge Aleman, the chief gunner on the *Victoria,* a certain Hans who was identified as German and was probably with Jorge Aleman on the *Victoria,* and Hans Vargue, the chief gunner on the *Concepcion*.[5] Not one of these three men returned alive when the remnants of the expedition returned to Spain on September 8, 1522, as all of them died during the voyage.

However the first man to record and report this voyage was a German student named Maximillianus Transylvanus who was known by his German name, Max Oberwald. Oberwald was with his teacher in Cadiz when the *Victoria* arrived from its voyage around the world on September 6, 1522. Transylvanus interviewed the surviving crewmen of the Magellan expedition and made a report in Latin about Magellan's voyage. Later, he sent this report to the Roman Catholic Cardinal in Salzburg during the same year. Transylvanus' work antedated the one written by Antonio de Pigafetta by three years. Pigafetta, the expedition's official chronicler, published his accounts of the voyage in 1525.

The Religious and the Royal Patrons

Following Magellan's expedition, other voyages to the Philippines were sent from Spain. The fabulous profits from the trade in spices as well as other Oriental goods presented a strong motivation to conduct those long and dangerous voyages of exploration and discovery. Catholic missionaries accompanied Spanish as well as Portuguese explorers. The practice of having religious aboard the exploring ships emanated from the arrangement of the European kings and the Pope in which the kings representing political authority would help the religious authority exemplified by the Pope to help in protecting and promoting the Catholic religion. The practice had its roots in the early medieval period. The political authorities helped build churches in Europe and supported the Catholic Church's activities. The kings, therefore, became royal patrons of the Church. In return for this relationship, the

[5] Bacareza, *ibid*., 62.

political rulers such as the Kings were allowed to appoint bishops, parish priests, abbots and other church officials within their domains. Royal patronage or *Patronato Real* actually began in Portugal in 1319 when the Order of Christ which replaced the Order of the Temple and the members of the first Order were also members of the Portuguese royalty. The religious orders then enjoyed the patronage of state officials. Thus, Church and State officials governed both the religious and political realms.[6]

With the coming of the Age of Exploration and Discovery in the 15th and 16th centuries, Catholic missionaries, representing the Cross, accompanied the Sword, representing the Conquistadores. The need for greater Church-State cooperation became more pronounced following the Council of Trent in 1545 as the Catholic Church needed strong political allies to stem Protestant heresy being spread by enemies of Catholic and to spread Catholicism to the lands that will be explored and colonized. The Council supported this State-Church relations. The King or the Royal Patron was assigned two rights, the *jurasprasentandi* and the *jura honorifica*. The first right gave the right to the political authority the right to appoint the person of his choice to an ecclesiastical office such as those of the bishop, abbot, or priest. The other right provided him with legal titles. The patronage of the king was highly advantageous as he can project political power into the Church as well as to avail himself of its revenues.[7]

Though there are many misuses and abuses of this patronage, it was effective in aiding the establishment of colonies in Africa, India, Brazil, Japan, and the Philippines as churchmen were crucial in convincing the natives to accept foreign rule. In the colonization of the Philippines, religious orders, namely the Augustinians, the Franciscans, the Dominicans, the Augustinian Recollects, and the Jesuits, played an important part in the colonization efforts.

These men of cloth were genuinely fired up by the significance of their mission and zealously spread the Gospel to the natives. As they believed that they were doing God's work, it was inevitable that a clash of cultures and religions would happen in their proselytizing efforts. The missionaries, especially the Jesuits, preached that the native religions were created by the Devil and took energetic steps to wipe them out. Thus, the old religious traditions of the natives were destroyed. The natives, on the other hand, tried to protect the religion of their ancestors and fought back. These

[6] Rego A. Da Silva and W.M. Porras. Patronato Real, *Encyclopedia of Latin American History and Culture*. The Gale Group, 2003 , http://www.encyclopedia.com/article-1G2-3407708535/patronato-real.html (Accessed September 5, 2016)

[7] Ibid.

resulted in actions such as the Chamorro Wars in the Marianas from 1668 to 1695,[8] the revolts by Bankaw in Limasawa in the 17th century, and the Tamblot revolt in Bohol during the same century.

As Spain took control of the Philippine Islands, the government still retained elements of the old *Patronato*. The union of Church and State would last until the end of Spanish colonization: the Spanish Governor General represented the King while the Archbishop of Manila represented the Church in the country. This arrangement would be repeated in the local level with the local politico-military leader such as the *alferez* of the civil guard for the pacified areas or the *governador politico-militar* representing the King and the local *cura* or parish priest represented the Church. Eventually, Church officials would wield wide political powers. They even influenced political decisions and even recommended the appointment and removal of royal officials. Since they stayed longer in the areas they were assigned, their powers would be entrenched even to the extent of gaining economic power.

Like in the Magellan expedition, non-Spaniards participated in the colonization of the Philippines and the christianization of the natives. King Philip II issued a decree allowing non-Spaniards belonging to the Habsburg Empire to serve as missionaries.[9] Therefore, the missionary as well as colonization efforts in the name of Spain was achieved not by Spaniards alone but by people of other nationalities such as such as Germans, Moravians, Czechs, Italians, and Flemish as well as people born in the colonies such as those from Peru and New Spain.

Since the missionaries were white, the natives of the Philippines could not distinguish between a missionary from Spain or a missionary from other parts of Europe. Thus, all white missionaries were considered as Spanish missionaries.

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[8] See Archivium Romanum Societas Iesu (ARSI) Phil 13, fol. 95-110 *History of the Mariana Islands for 1667-1673* period cited as Document 1673L1 in in Rodrigue Levesque, Ed. History of Micronesia. (Hereinafter referred to as HM) Vol. 5, (Dufresene: Editions Levesque, 1997), pp. 28-68 ;

Archivo General de Indias 562 Ultramar, Coleccion Simancas, fol 37-46, Composite Report for Period of 1681-1684 edited by Fr. Luis Morales, cited as Document '684A in HM 8.(Dufresene: Editions Levesque, 1997), pp. 66-78;

Real Archivo de la Historia (RAH) 9/4/4797, Jesuit Annual Report 1682-1683, Written by Fr. Manuel Solorzano, cited as Document 1683L in HM 8, (Dufresene: Editions Levesque, 1997), pp. 28-68; and

ARSI PHIL 13 folios 306-325v, *Relacion de la Conquista y Restauracion de las Islas Marianas* cited as Document 1696F in HM Vol. 9, 665-678.

[9] *Archivo General de Indias (AGI) Filipinas* 81. Ramo 61. Doc. 288. The King Accepts that Some Foreign Missionaries may Join Spanish Missions. Cited as Document 1664 in Levesque, Rodrigue, Ed. History of Micronesia. Vol. 4. (Dufresene: Editions Levesque, 1997), 403-432.

Austrian Jesuits in the Philippines: Fr. Paul Klein and Bro. Georg Josef Kamel

Between 1673 and 1729, German Jesuits, including those from Austria and present-day Czech Republic, began arriving in the Philippines.[10] The Filipino Jesuit historian Fr. Horacio de la Costa listed in his book on the history of the Jesuit order in the Philippines some Austrian priests who came to the Philippines during the 17th and 18th century. These were:

Georg Josef Kamel – brother, born in Brůnn, Moravia, 21 April 1661; left the province of Bohemia 12 November 1682; arrived in the Philippines 1687; temporary coadjutor 15 August 1696; died Manila 2 May 1706;

Paul Klein – priest, born in Eger, Bohemia, 25 January 1652; left the province of Bohemia, 16 September 1669; arrived in the Philippines 1678; professed 2 February 1685; died 30 August 1717;

Johannn Lorenz – priest, born in Leschen, Bohemia, 10 August 1691; left Bohemia 21 October 1710; arrived in the Philippines 1723; died 1772;

Adolf Steinhäusser – priest, born in Laibach, Austria, 29 November 1613; left the province of Austria, 17 November 1630: arrived in the Philippines 1643; died in Dapitan, Zamboanga 1648

Josef Wilhelm – priest, born in Linz am Rhein, 20 March 1710, left lower Rhine province October 19, 1729; killed by Muslims in Jolo, Sulu 1748.

Among these, Fr. Paul Klein and Bro. Georg Josef Kamel would become significant in Philippine history. Fr. Klein was a confessor and an author of writings about the Philippines. When he joined the Spanish Jesuits, he adopted the Spanish name Pablo Clain. Fr. Klein was described as "man of outstanding intellectual ability." From the Archivium Romanium Iesu (ARSI) the Jesuit records in Rome:[11]

> He is a German by birth; forty years old more or less health fair; intellectual ability, outstanding; capacity for work, vast; and with no small fund of information in a wide variety of fields. This Father knows the native language as well; has seen service in a native parish; he is present teaching theology: for one whole year he presented the solution in a moral conference to the satisfaction of everyone.

Fr. Klein was born on January 26, 1652 in Eger, Bohemia. He joined the Society of Jesus in the Bohemia province on September 16, 1669. When he joined the Spanish missions, he changed his name to Pablo Clain.

[10] Bacareza, *ibid*., Appendix 25, Timeline of Philippine-Austrian Relations.
[11] *Ibid*., p. 80.

Fr. Klein devoted his life to the service of God and served as a professor of theology at a college in Manila, most probably Colegio de San Jose, in 1687 to 1696 where he became the Prefect of Studies in 1690 to 1696. He became its Vice Rector in 1701. Apparently, he served as Provincial of the Jesuits in the Philippines in 1708 and returned to being a professor of theology until 1716.

In 1712, Fr. Klein published a book entitled *Remedios Faciles para Diferencias Enfermedades* in which he described the various illnesses which afflicted the community in the Philippines and prescribed their treatment. For the treatment of leprosy, Fr.Klein prescribed thorough washing of the patient with water followed by treating the affected areas with effusions of herbs and leaves such as *salag-salag*, *malunggay*, *macabuhay*, *mulawin* bark, *apolla*. Saltpeter and lizards (*tabili*, *boutique*) were listed among his ingredients for the treatment of the disease. Fr. Klein's treatment description of the treatment of the disease was described in the *Encyclopaedia of the Philippines* which was published in 1926.[12]

Trinidad Pardo de Tavera, who was himself a physician and author, quoted Fr. Klein's work in his own book, entitled *Plantas Medicinales de Filipinas.* The book was still very much in demand that the University of Santo Tomas produced a second edition in 1857. Fr. Klein published a second book, this time in Tagalog entitled *Ang Infiernong Nabubucsan sa Tauong Christiano, at nang Hoag Masoc Doon* (Hell Laid Open to the Christian, that he may be Advised not to Enter Therein). It was a book of meditations on what was described as an unpleasant but salutary subject.[13]

In 1714, Fr. Klein published a book of meditations by the French Jesuit Dominic Bohours entitled *Pensamientos Christianos* which was published in Tagalog as *Sa Macatouid mga Panimdimin nang Tauong Christiano* (Christian Thoughts). A second edition appeared in 1748.[14]

Fr. Klein published other books, such as *Historia Lauretana* (200 pages), the *Beneficios y Favores Singulares Hechos por el Glorioso Archangel San Rafael el Santo Patriarcha Tobias y su Familia* and two volumes of the *Compedio Historico de la Religion en Tagalog*.[15]

[12] Encyclopedia of the Philippines. Vol. XI, (Manila: 1926), p. 167.

Fr. Klein's treatment of leprosy was written as follows:

Lavala con agua en que haya estado relajandose algun cuerpo muerto, como sucede hallarse algun definito en agun rio, o estero. Densele banos con abstersivos, como son: apolla, salag-salag, saloquiqui, casanghan, malongay, macabuhay, marungal, tactang, lamparahan balocas, barong tongo, pagnguson, capanatolot, corteza de molauin. Untura de agufre, salitre, o tartaro con zumo de limon, en que la corteza de limon se haya remojado; o untura de aceite de lagartijas, tabili, butique. Gaste cangelon de venado raspado, tomando manaña y tarde peso un real.

[13] Bacareza, *ibid*., p. 82.

[14] *Ibid.*

[15] *Ibid.*

Fr. Klein's writings made him popular during his time. However, Fr.Klein was best remembered for his role in the formation of the saintly life of Mother Ignacia del Espiritu Santo, the founder of the Philippines' first religious congregation for women.

Mother Ignacia was believed to have been born in 1663, which was the year of her baptism. According to historian Marcelino Foronda, the date of her birth was February 1, 1663.[16] In 1684, Ignacia, then a twenty-one year old Chinese *mestiza* from Binondo, decided to form a religious congregation that would help mestizas like herself as well as pure-blooded women to become eligible for the religious life. The original congregation consisted of Mother Ignacia, her niece, Cristina Gonzalez and two others, Teodora de Jesus and Ana Margarita. They left their families and friends to form the nucleus of what would eventually become the Beatas de la Compania de Jesus. Through Fr. Klein's wise counsel, Ignacia and her companions drew up their rule of life, the spiritual exercises, and the constitution of her congregation. By the time of Mother Ignacia's death in 1748, the group numbered fifty members.

The rules and the spiritual activities of the congregation were patterned after those of the Jesuits though there was no official or administrative relations between Mother Ignacia's beatas and the Society of Jesus. The institute of the Jesuits expressly forbade its members from assuming permanent direction of religious women. Yet the Jesuit fathers provided support to the best of their spiritual and material abilities that allowed the Beatas de la Compania de Jesus to survive and grow.

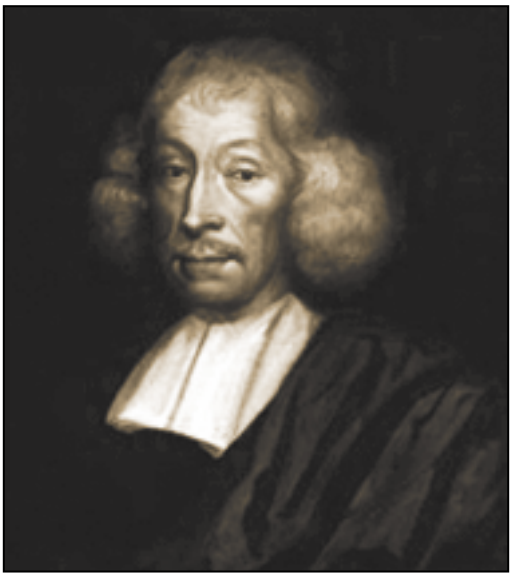
By 1740, the Beatas de la Compania de Jesus attracted many adherents who were inspired by the piety and religiosity of Mother Ignacia and her companions. The Beatas were in charge of the religious training of girls from different races, the natives or indias, mestizas, and Spaniards. They were brought up in the fear and love of God and they were trained in reading as well as the domestic arts such as sewing and embroidery. The beatas also handled closed retreats for women and helped the Jesuit fathers in the holding of such retreats. They did not limit their activities in Manila but went out to the provinces to do their apostolic work. Between 1872 and 1900 they established missions in Mindanao. These were in Tamontaka in the Cotabato region in 1874; Dapitan, 1880; Dipolog, 1882; Zamboanga, 1894; and Surigao, Butuan, and Lubungan in 1896. [17]

Eventually, the Beatas de la Compania de Jesus became known as the *La Cofradía de Hermanas de Religiosa de la Virgen María.* The congregation is better known as the Religious of the Virgin Mary (RVM). Today, the RVM sisters work throughout the Philippines. They manage 57 schools and 16 houses from Luzon

[16] Marcelino A. Foronda. Jr. *Mother Ignacia and Her Beaterio*. (Makati: 1964), p. 4.
[17] History of the Religious of the Virgin Mary. uic.edu.ph (Retrieved August 30, 2016)

to Mindanao. There were also schools in Hawaii and in California.[18] The apostolate also includes seven dormitories and a hospital. The Congregation also established an overseas house in Sacramento, California in the United States and a convent at our Lady of Mary parish in Daly City in California, USA. The RVM received various praises for its tireless service for the Filipino people.

Fr. Klein who was the greatest influence in the life of Mother Ignacia del Espiritu Santo died on August 30, 1717.[19] The foundress of the congregation, Mother Ignacia de Espiritu Santo, died on September 10, 1748. In 2007, Pope Benedict XVI declared her a venerable of the Roman Catholic Church, the first step towards attaining sainthood. [20]



Bro. Georg Josef Kamel Source: Rudi Polt.
(Photo supplied by Angelo Brian Castro)

Another important Austrian religious was Georg Josef Kamel, pioneer pharmacist, infirmarian, and botanist in the Philippines. Kamel was born in Brunn, Moravia on April 21,1661. Brother Kamel became interested in medicine and pharmacy at an early age while studying in a gymnasium in Brünn. It was here where he received his training as a *botanicus et apothecaries* (botanist and pharmacist). He

[18] Ibid. Also: http://www.rvmonline.net/welcome.php (Accessed August 30, 2016) http://www.uic.edu.ph/uic/rvmhistory.asp (Accessed August 30, 2016)

[19] *Ibid*., p. 106.

[20] Mother Ignacia del Espíritu Santo, History of the Religious of the Virgin Mary, UIC.edu.ph (Accessed August 30, 2016).

entered the Novitiate of the Society of Jesus in November 1682, and three years later, he worked as an infirmarian at the Jesuit College in Neuhaus, Bohemia. In 1686, he moved to another Jesuit college in Krummau, South Bohemia, where he continued his work as a pharmacist and infirmarian. It was while working in this capacity that he received his appointment to the Philippines. On July 9, 1687, Kamel with 40 other Jesuits left for the Philippines aboard the galleon *Santisima Trinidad* which sailed from Cadiz, Spain.

Kamel, who trained as a botanist and pharmacist in the Jesuit College in Brünn, Moravia (now Brno, the Czech Republic), was one of the first medical practitioners to use science in the treatment and management of disease.[21] Upon arriving in Manila in 1688, Bro. Kamel established his own apothecary in the Colegio de San José inside the walled city of Manila. In establishing his pharmacy, he patterned it after a European model. Nevertheless, he studied and made use of the medicinal plants of the Philippines.

Like any European, Bro. Kamel had to contend with which native plants can be used to cure unfamiliar tropical Asian diseases. He experimented on new formulations using such plants and determined the right doses for his patients through observation and experiment. His success in treating diseases and his concern for the poor gained the respect and admiration of the native people.

Bro. Kamel welcomed the sick especially the poor and provided them with medical treatment and advice. The poor received free medicine and his work with the common people was reciprocated by their friendship. They helped their new friend in collecting more medicinal plants. Bro. Kamel was especially interested in the medicinal herbs of the Philippines. He personally examined and experimented with them as to their usefulness and effectiveness. He also listened and noted how native herb doctors called *herbolarios* treated various diseases in the country. Because of his successful experiments, the importation of European medicine was minimized or no longer became necessary.[22]

Kamel's reputation as an excellent infirmarian, physician, pharmacist, and botanist spread far and wide. His friends and acquaintances helped him in collecting

[21] Benjamin Vallejo, Jr., Ph.D. Georg Joseph Kamel, SJ (1661-1706): First biodiversity scientist in RP, STAR SCIENCE By STAR SCIENCE Benjamin Vallejo Jr., PhD | Updated January 4, 2007 - 12:00) in http://www.philstar.com/science-and-technology/378180/georg-joseph-kamel-sj-1661-1706-first-biodiversity-scientist-rp (accessed September 6, 2016).

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[22] Bacareza, *ibid.*, p. 73.

previously unknown plants throughout the Philippines. He even received samples of plants from the Moluccas and the Mariana Islands.

In 1690, Bro. Kamel was acquainted with Dr. Samuel Brown, an English physician working for the British East India Company in Madras, India. Through English merchants trading in Manila, Dr. Brown heard about Bro. Kamel, his collection of medicinal plants and his experiments involving medicinal herbs. He wrote Bro. Kamel inquiring about his scientific investigations. Soon, an exchange of correspondence developed between the two. Dr. Brown was also an enthusiastic collector of medicinal herbs.

From his compilation describing the taxonomy and systematics about work about Philippine plants, Kamel published a book entitled *Herbarium Aliarumrque stirpium in insula Luzon e Philippinarum* from 1697 to 1698. It was a three-volume book and copies were sent to English naturalist John Ray in 1698 through an English physician based in Madras, India. This book was lost along with Kamel's botanical specimens which should have been sent to London. The following year, Bro. Kamel sent another volume of his book and this one was published in John Ray's work, which became the *Historia Plantarum* in 1704. This was how Bro. Kamel became an internationally known scientist.[23]

Bro. Kamel's *Herbarium* was his major contribution to science. Parts of this work were published in the *Philosophical Transactions* of the Royal Society by John Petiver, another eminent English scientist and naturalist. Aside from botany, Bro. Kamel wrote papers on birds, corals, crustaceans. Among these was a work on large animals which he called *Monstris et Monstruosis*; quadrupeds, Turbinid mollusks, *Bivalvus et Univalvus;* insects, and fossils. These works showed that Kamel had a deep interest in biodiversity.[24]

One of Bro. Kamel's curious findings was about the St. Ignatius bean of which he was the first to describe the tree and the fruit that produces the bean. The findings were among the papers published in the *Transactions*. St. Ignatius bean was named after St. Ignatius, the religious order where Kamel belonged. Kamel's paper was paper entitled *De Igasur seu Nox Vomica Legitima Serapionis* with a subtitle translated describing the virtues of the St. Ignatius bean (*Strychnos ignatii).* He said that the St. Ignatius bean comes from a fruit which is about the size of a pear. The plant that produces this bean is absent in Luzon but is plentiful in Samar especially in the town of Catbalogan. Locally it is known as *aguwason* or *dankkag*i in the Visayan i.e. Waray

[23] Vallejo, *ibid.*
[24] *Ibid.*

language or *igasud* in Cebuano. It is known in China as Lu Song Guo (Luzon seed?)[25] The tree was also found in some areas of Southern China. The fruit of the St. Ignatius bean has seeds. This has poisons which are very toxic to humans and animals. The first poison in the seeds is strychnine which was used as rat poison. A gram of this poison can kill a man and lesser doses can kill smaller mammals. However, in low doses, the poison has medicinal properties. The natives of the Philiippines, according to Kamel, drink the extract of the bean to prevent people from fainting. And despite safety concerns, it was used as a bitter tonic to invigorate, refresh, and restore body functions.[26] Another toxic chemical found in St. Ignatius bean is brucine which can cause muscle spasms that may resemble heart attacks. Other effects include acute renal failure and muscle destruction. Modern medicine uses it to kill tumors and to denature alcohol to render it unfit for drinking. Both strychnine and brucine affect the transmission of nerve impulses to muscles.[27]

Ignatius Plant, Fruit and Bean

Aside from making correspondences with Dr. Samuel Brown, Bro. Kamel exchanged letters and ideas with Dr. Willem ten Rhyne, a Dutch physician and botanist residing in Batavia in the East Indies. It was after Dr. Brown's death when

[25] *Bisset, N. G. Bisset, "Alkaloids of Strychnos ignatii". Planta Medica. 56* (1), 1990.: 133. *doi:10.1055/s-2006-960910. PMID 17221391.* (Accessed September 3, 2016).

[26] http://www.webmd.com/vitamins-supplements/ingredientmono-134-ignatius%20bean.aspx?activeingredientid=134&activeingredientname=ignatius%20bean (Accessed September 4, 2016).

[27] Ibid.

Bro. Kamel began to correspond with his successor, Dr. Edward Bulkey. Dr. Bulkey encouraged Kamel to send his collection of plants and herbs to John Ray, an English scientist. Ray would later become known as the Father of English Botany. Ray owes a significant part of his work to the contributions of Bro. Kamel. In 1686-1704, Ray published the *Historia Plantarum.* It was in the third volume of his work Bro. Kamel's contributions can be found. A tribute to Bro. Kamel can be found in an appendix of the work mentioning his name. Kamel's work in the appendix was *Historia stirpium insula Luzonis et reliquarum Philippinarum*.[28] The tribute describes Bro. Kamel as the one responsible for setting up a botanical garden in the Philippines and has made observations and descriptions of medicinal plants and their uses. It also mentioned that he shared his findings with Dr. Ray. [29]

Aside from Dr. John Ray, Bro. Kamel corresponded with another famous English scientist, James Petiver. The correspondences between Bro. Kamel and Petiver lasted until Kamel's death in 1706. Kamel was again mentioned in the *Historia Plantarum* for having shared his work on the fruits and trees of Luzon with Dr. Petiver. This tribute to Kamel appears in the second part of the appendix of the Historia Plantarum which consisted of 53 pages. [30]

Bro. Kamel made major scientific investigations about the medicinal plants of the Philippines. Brown and Petiver recommended their publication. However, the publication of all of his works would have incurred too many expenses during his time. Nevertheless, both English scientists acknowledged Bro. Kamel's work in their own published works. Petiver and Ray published Bro. Kamel's works in the Philosophical Transactions of the Royal Society of London which was a publication of the organization of the same name. The Philosophical Transactions was published for the improvement of natural knowledge. It became the world's first scientific journal which began publication after King Charles II granted a royal charter in 1662.[31] The Philosophical Transactions began its first publication under the editorship of Henry Oldenberg, the Secretary of the Royal Society of London. The first issue of the Philosophical Transactions was printed in 1665. This was highly

[28] This can be accessed omn John Ray, *Historia plantarum*, vol. 3, London 1704, pp. 1–96 (online)

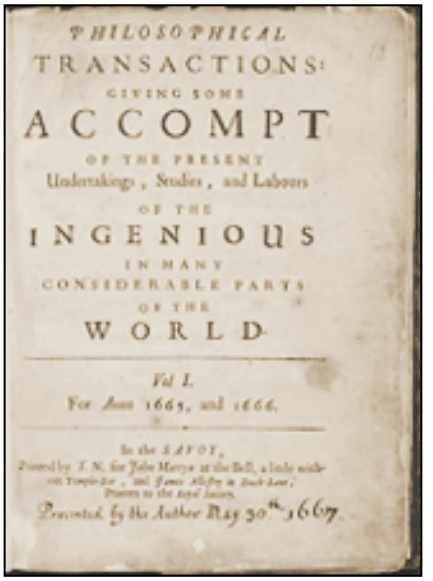
[29] Fredrich Kochwasser, "Georg Joseph Kamel – der erste Botaniker auf den Philippinen." Zeitschrift fur Kulturaustauch, Institut fur Auslandsbeziehungen Stuttgart, Heft 2/3. Jahrgang 16, 1966, S.154-157.

Herbarium aliarumque stirpum in insula Luzone, Philippinarium primaria, nascentium a ***Reverendo Patre Georgio Josepho Camello, S.J.*** *observatarum et descriptarum Syllabys: ad Joannem Raium Transmissus; additis etiam pluriarium Iconibus ab Auctore propria a manu ad vivum delinatis; qua sob sumptuum in Chalcographos ergogandoru defectum impraestiaru emitterre non licuit.*

[30] *Ibid*., p. 156.

[31] *Philosophical Transactions* – the world's first science journal in http://rstl.royalsocietypublishing.org/ (accessed September 8, 2016).

auspicious for Kamel who was already doing his investigations at the time. Among Kamel's contributions began appearing in the Philosophical transactions in 1699. These were:


PHILOSOPHICAL
TRANSACTIONS:
GIVING SOME
ACCOMPT
OF THE PRESENT
Undertakings, Studies, and Labours
OF THE
INGENIOUS
IN MANY
CONSIDERABLE PARTS
OF THE
WORLD.
Vol. I.
For Anno 1665, and 1666.
In the SAVOY,
Printed by T. N. for John Martyn at the Bell, a little without Temple-Bar, and James Allestry in Duck-Lane;
Printers to the Royal Society.
Presented by the Author May 30th 1667.

Cover page of the first issue of the Philosophical Transactions (http://rstl.royalsocietypublishing.org/)

A description and figure of the True Amomum, or Tugus (1699), 21 (248): 2–4;

An account of the vertues of Faba Sancti Ignatii, mentioned last Transaction (1699), 21 (250): 87 ;

A further and more exact account of the same, sent in a letter from Father Camelli to Mr. John Ray and Mr. James Petiver, Fellows of the Royal Society (1699), 21 (250): 88–94;

An account of Mr. Samuel Brown, his sixth book of East India Plants, with their names, vertues, description etc. By James Petiver, apothecary, and fellow of the Royal Society. To these are added some animals etc. which the reverend Father George Joseph Camel very lately sent him from the Philippine Isles (1702), 23 (277): 1055–1068;

Georgii Josephi Cameli observationes de avibus Philippensibus, communicatae a Jacobo Petiver, S. R. S. (1702), 23 (285): 1394–1399;

A description of some coralls and other curious submarines lately sent to James Petiver, apothecary and fellow of the Royal Society, from the Philippine Isles by the reverend George Joseph Camel; as also an account of some plants from Chusan, an island on the coast of China, collected by Mr James Cuninghame, chyrurgeon & F.R.S. (1702), 23 (286): 1419–1429;

Tractatulus de ambaro, a reverendo domino domino Georgio Josepho Camello, communicatus domino Jacobo Petiverio Societatis Regiae socio (1704), 24 (291): 1591–1596;

Reverendi Patris Georgii Josephi Camelli tractatus de plantis Philippensibus scandentibus, ad Jacobum Petiver, S.R.S. missus (1704), 24 (293): 1707–1722;

Georgii Josephi Camelli de plantis Philippensibus scandentibus; pars secunda. Ad Jacobum Petiver, S.R.S. nuper transmissa (1704), 24 (294): 1763–1773;

Georgii Josephi Camelli de plantis Philippensibus scandentibus; pars tertia. Ad Jacobum Petiver, S.R.S. nuper transmissa (1704), 24 (295): 1809;

Reverendi Patris Georgii Josephi Camelli de plantis Philippensibus scandentibus; pars quarta. Ad dominum Jacobum Petiver, S.R.S. nuper transmissa (1704), 24 (296): 1816–1842;

De piscibus, moluscis at crustaceis Philippensibus, ex manuscriptis reverendi Patris Georgii Josephi Camelli ad dominum Jacobum Petiver, S.R.S. transmissis (1704), 24 (301): 2043–2080;

De quadrupedibus Philippensibus tractatus a reverendo Georgio Josepho Camello transmissus Jacobo Petiver, pharmacopolae et Societatis Regiae socio Londini (1706), 25 (305): 2197–2204;

De monstris, quasi monstris et monstrosis; item de serpentibus, etc. Philippensibus ex manuscripto reverendi Patris Georgii Josephi Camelli communicavit dominus Jacobus Petiver, pharmacopola Londini et S.R.S. (1706), 25 (307): 2266–2276;

De conchyliis turbinatis, bivalvibus et univalvibus; item de mineralibus, fossilibus et thermis Philippensibus, ex manuscriptis reverendi Patris Georgii Josephi Camelli communicavit dominus Jacobus Petiver, pharmacopola Londini et S.R.S. (1706), 25 (311): 2397–2408;

De variis animalibus Philippensibus, ex manuscriptis reverendi Patris Georgii Josephi Camelli communicavit dominus Jacobus Petiver, pharmacopola Londini et S.R.S. (1708), 26 (318): 241–248;

De araneis et scarabaeis Philippensibus, ex manuscriptis reverendi Patris Georgii Josephi Camelli communicavit dominus Jacobus Petiver, pharmacopola Londini et S.R.S. (1711), 27 (331): 310–315.

Bro. Kamel's botanical garden in Manila was planted with numerous herbs obtained from various parts of the Philippines. Other pharmacists from the city obtained their herbs from his garden for their own needs. A great part of the contents of this botanical garden found its way to John Ray in London. At that time, it was quite difficult to transport collections of herbs as the ships of the British East India

Company took as long as six months to reach their destination in Europe. Many were lost on the way.

Aside from his work in the field of botany, Bro. Kamel collected samples of insects such as butterflies, beetles, spiders, and fishes which he sent to Europe. He also collected fruits, leaves, flowers, and samples from trees and mosses. He made sketches and described them scientifically. He sent his work to England for publication in scientific journals. Bro. Kamel was the first to describe the mosses, ferns, and orchids of the Philippines and compared them to those found in Mexico where his compatriot and confrere Fr. Johannes Steinhoffer was serving as a missionary. Bro. Kamel's original drawings of plants and animals are found today in the British Museum in London and at the Jesuit College in Louvain, Belgium. Presently, the British Museum holds 575 of Bro. Kamel's drawings which were rendered in colored ink. These are accompanied by detailed descriptions and information about their external appearances, characteristics, properties, curative powers, and pharmaceutical properties.[32]

Bro. Kamel died apparently of dysentery in Colegio de San Ignacio near his beloved botanical garden on May 2, 1706. He was 45 years old. When Bro. Kamel died, his contemporaries hailed him for his pioneering work. His achievements were described as no way inferior to their own works. Dr. James Petiver wrote in 1706:

> On the person of Brother Kamel, a learned Jesuit has passed away. To Mr. Ray and myself the drawings of such rare medicinal herbs with a detailed report about their effectiveness and need to transmit, as he had tested and had found them growing in the Philippines, he lives on them. Some of the already published and we hope that in not a long time the world will be benefitted with still more from him.

Another Englishman James Britten also wrote about Bro. Kamel and his works in his book, *The Sloan Herbarium.* He wrote:[33]

> It cannot be doubted that some future historians of Philippine botany will do tardy justice to Kamel's work by the correlation of his drawings and specimens with his published descriptions. Kamel was forgotten after his death except for some few slight references.

Similarly the Jesuit historian and cartographer Fr. Pedro Murillo Velarde paid tribute to Bro. Kamel in his book, *Historia de las Provincias de la Compania de Jesus, thus:*[34]

[32] Bacareza, *ibid*., p. 75.

[33] *Ibid*.,p. 79.

Descriptiones fruticum et arborum Luzonis Reverendo ***Padre Georgio Josepho Camello, S.J****., ad Jacobum Petivarium, Parmac. Londinens missae anno 1701.*

[34] Kochwasser, *ibid*., p. 157.

Brother Kamel… worked hard in his profession as a pharmacist and strove with great zeal to found in our College in Manila a drug store for our confreres. This meant a great convenience for the people of Manila and also of the Islands as a result of a big crowd and choice of medicine against all kinds of diseases. Soon the city people and still many others came to him when they recognized the ability of the brother, for he altered oftentimes receipts which either had some mistakes in prescription, or he reduced the measured dose when they came from native doctors of which there were many without sufficient knowledge or ability. About this, there were many more and well-founded reports of successful results. He strove very much to know many medicinal herbs, which were found in these islands, about which he wrote two comprehensive volumes in which he noted down the roots, leaves, fruits, viewed them with their names which they bear in different languages, so that they could be made of use by all people. His work gave him fame in foreign lands. John Ray and James Petiver used them and made special mention in their published works. Because of Kamel's knowledge of medicine, many influential men came to be healed by him and gave themselves to him for operation. Many a time the Brother had to perform such operation, except with the superior's approval, which in such cases was done with great caution and reserve. However the doors of the apothecary were always open to the poor, toward whom the Brother proved his charity in the most generous way, for he gave them not only medicine but also cured their wounds and diseases. During the epidemic which broke out in those days his care for the sick was unique. He saw Christ present in his poor and strove with such conscientiousness to care for them? of that one could recognize that God was the predominant motivating power of his care.

Kamel also had his share of critics. Leon Ma. Guerrero who became one of the country's eminent scientists said he would not think much of Kamel's works for three reasons. Firstly, he gave native names to plants and these names have different meanings in other places. Secondly, he gave no description of his samples of plants and if there were, it was hard to interpret them. Thirdly, Guerrero said that Kamel accepted the testimony of quack doctors. [35]

In his defense, Jesuit historian Fr. Leo Cullum, S. J. wrote, "It is Kamel's accomplishment that he set himself to study carefully the natural life of Philippine and European science. There are mistakes in his works but these are errors of the science of his time. Actually it is to his credit that he rose above the contemporary level in so many things and discarded so many contemporary mistakes."[36]

Bro. Kamel's scepticism fuelled his zeal for science. In a time of myths, he used this scepticism to disprove old beliefs and biases. It was recorded in the Philippines during the late 1600s that praying mantises were believed to have come from leaves

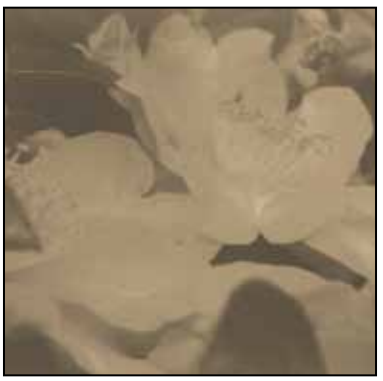
[35] *Ibid*., p. 79.

[36] Leo Cullum, S.J. *Georg Joseph Kamel: Philippine Botanist, Physician, Pharmacist.* Philippine Studies. Manila: 1956, pp. 338.

and trees before becoming worms. Kamel said, "I do not accept this because I have observed that the sexes are distinguished and the young are born from eggs."[37]

Though credit for being the first to document Philippine plants belong to the Spaniards such as the Franciscan friar Fr. Blas de la Madre de Dios who did a work on Philippine flora in 1611 and the Augustinian Fr. Manuel Blanco who did his monumental work *Flora de Filipinas* in 1837, Bro. Georg Josef Kamel is singled out to have contributed greatly to Philippine-Austrian relations. Bro. Kamel's work broadened scientific knowledge with his descriptions and experiments with Philippine medicinal herbs. He was the first non-Filipino to describe Philippine plants in the Tagalog dialect aside from describing them in Latin and Spanish. Tagalog would later become the basis of the national language of the Philippines around two and a half century later. [38]

In recognition of his work, the camellia flower was named after Bro. Kamel. Camellias are native to Japan and China and there was no historical record of Kamel having gone to those countries. There is also no record about Jesuit missionaries in Japan or China having sent samples of the flower to Kamel. The Swedish botanist Carl Linnaeus renamed the genus of the flower from the original *Thea* to Camellia in honor of Kamel. [39]



Camellia Flower

[37] Vallejo, *Ibid.*

[38] Bacareza, *ibid*., p. 71b.

[39] *Sebestian Kroupa. "Ex epistulis Philippinensibus: Georg Joseph Kamel SJ (1661–1706) and His Correspondence Network". Centaurus. (Nov 2015),* **57** (4): 246, 255. *ISSN 1600-0498.* (Accessed September 8, 2016).

Various species of camellia exist. The more popular ones are the camellia sinensis or Chinese camellia and the camellia japonica or the Japanese camellia. Aside from used as garden ornamentation, the leaves of both flowers are prized for making tea. Through selective breeding, many variations of the camellia plant were created.

Linnaeus did not receive a specimen of camellia from Bro. Kamel because he was born a year before Bro. Kamel's death. His renaming of the genus Thea was simply in recognition of Kamel's contribution to botany.

The apothecary which Bro. Kamel established became the first regular drugstore in the islands. This apothecary ceased to exist as the College and Church of San Ignacio where it was located was taken over by the Spanish government after the Spanish empire expelled the Jesuits from its realm in 1767. The site fell into ruin and it is now the site of the Pamantasan ng Lungod ng Maynia, a city college managed by the city of Manila.[40]

Neverthless, Bro. Kamel's apotechary was followed by other historic drug store such as the Botica Boie which was established by Dr. Lorenzo Negrao, a Spanish physician in 1858. Later, this drugstore was taken over by two Germans, Heinrich Schmidt and Fredrich Steck, who later established another drugstore, the Botica Santa Cruz.[41]

What accounted for Bro. Kamel's success in his work as a botanist, pharmacist, and infirmarian was his rapport with the native people. He was so interested in the culture of the natives of the Philippines that in a short time, he mastered the Tagalog language. He showed a great passion in learning and understanding the native customs and ways of life. Perhaps Bro. Kamel was way ahead of his time. It was noteworthy that the Second Vatican Council in the 20th century enjoined all religious to develop a great interest in the people they serve.

Also, Kamel was a shining example of a Christian scientist doing his work. He followed within his religious vocation and placed his scientific work within his apostolate aside from exercising the Christian virtues of humility and charity. Historian Leo Cullum wrote: "Even the science he had loved without loving himself in it, playing an obscure role of unselfish charity with the poor at his door and the English savants of the Royal Society."[42]

We can also learn from Kamel that science is essentially a communication and collaborative activity that transcends nationality and religion. While it was true that Kamel had to collaborate with other scientists, it was perhaps within the context of his missionary work.[43] In a time when Spain and England were commercial, religious, and ideological rivals, Kamel corresponded with scientists on the other side of this divide. This was the reason why Kamel corresponded with the leading

[40] The actual expulsion of the Jesuits in the Philippines actually took place in 1768.

[41] Rosario Capistrano, *History of Pharmacy in the Philippines,* Philippine Educational Forum. Vol. XIX, No. 3, p. 43.

Also: Bacareza, *ibid*., p. 71b.

Bacareza also writes that Steck and his nephew Paul Sartorious successfully distilled ilang-ilang and won awards at the Madrid exposition in 1887 and at the St. Luis Fair in 1914.

[42] Vallejo, *Ibid.*

[43] *Ibid.*

scientists of his time. Sharing and consultation on scientific findings help validate discoveries. This is important not just in the realm of the natural sciences but in the social sciences as well.

Another thing we can learn from Kamel was the value of proper documentation and international publication. These practices are the basis of research and international publication adds credibility to ones' work. Kamel was not discouraged by the loss of his papers and his specimens but he continued writing and he rewrote his old work, added new improvements, and sent them again to his friends in Europe. Kamel teaches us the value of perseverance as a key scientific virtue. During his time, he challenged myths about medical and scientific history through experimentation and research.[44] It is also admirable that his European friends recognized and cited his works even they never had any physical contact with him. They praised him for his contributions. This also shows the value of intellectual honesty and giving credit to where it is due.

In his time, Kamel documented the plants and other living things in the Philippines and its neighbors and by doing so, contemporary scientists and historians hail Kamel as the first biodiversity scientist in the Philippines. As a scientist, Kamel expanded not just knowledge about the Philippine plants and animals but also enriched scientific knowledge globally. He advocated systematic scientific research and the development of pharmacy as a science. In May 2, 2006, the 300th anniversary of Bro. Kamel's death, the Czech Republic, the UNESCO, and his hometown of Brno remembered Bro. Kamel for his contributions to science.

Since Kamel did his work while working as a missionary and a scientist in the Philippines, knowing his life and achievements make the Filipinos proud that a world-famous person made a name for himself while doing work in the Philippines. He was a man centuries ahead of his time. He appreciated the rich biodiversity of the Philippines and its importance to man. Kamel was a giant of botany and pharmacy who once walked and worked with the ordinary people of the Philippines, helped improve their lives through the attainment of better health, and was a significant contributor to man's scientific knowledge. **PS**

[44] *Ibid.*

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