

ACCOUNT BY JOSEPH DUBOIS OF ASTRONOMICAL WORK UNDER JAI
SINGH SAWĀ'Ī

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ABSTRACT

The astronomical tables in the *Zij-i Muhammad Shāhī* compiled under the Mahārāja Jai Singh Sawā'ī are in all essentials a transcription of those compiled by de la Hire in 1727. In the Palace Library in Jaipur there is a manuscript copy of de la Hire's Latin work, prefaced by a short account by Joseph Dubois of the work of Jai Singh, also in Latin. The transcription of this preface is given here, along with a translation and a brief commentary. Dubois refers to some of the very large masonry instruments, and from the details of the dimensions it is clear that he refers to those in Delhi, not Jaipur. However, by no means all of his remarks about the instruments can be matched with what is now to be seen in the observatories. He goes on to indicate briefly how the work of de la Hire was brought from Portugal to India by a Jesuit, and subsequently transcribed for Indian use. Nothing is known of the identity of Dubois except what can be learned from these remarks. He was a member of a small French community in Delhi, and he found employment as a physician there. He was a friend of the sons of Jacques Martin, known from other sources to have been employed as physician to the Emperor Faruckhsiya.

INTRODUCTION

Among many items of interest to the history of Indian astronomy, the Library in the Maharaja Sawai Man Singh II Museum in the Palace in Jaipur possesses a manuscript copy of the edition of 1727 of the astronomical tables of Philippe de Lahire, with the shelf mark MJM 7832. The copy opens with two pages of examples for the years 1732-33, followed by three pages in Latin by Joseph Dubois, giving a brief account of events leading up to the adoption of these tables by Jai Singh Sawā'ī, and noting the Persian transcription which he had made of them. Throughout the volume there are many notes and comments bearing directly on the work done at the observatory by the people employed by Jai Singh. In this article, the text of Dubois' account is given, with notes on obscure readings, a translation, and a few remarks about its content. The Library possesses an anonymous typewritten transcription of this [shelf mark MJM 690 (ii)], but it has many errors, some of them very odd indeed. I made the transcription on a visit to the Library in November 1985.

The three pages in question are not numbered originally, and will be referred to here simply as A, B and C.

1. THE TEXT

A^r: Tabulae Astronomicae

In quibus solis lunae reliquorum Planetarum Motus ex ipsis observationibus nulla adhibita Hypotesi traduntur habenturque praecipuarum Fixarum in nostro Horizonte conspicuarum positiones. Ineundi Calculi Methodus cum Geometrica ratione computandarum eclipsium sola triangulorum rectilineorum Analyti exponitur.

Ad meridianum Observatorij Regis Parisiensis in quo habitae sunt observationes ab ipso¹ autore PHILIPO de la Hire Regio Matheseos Professore et Regio Scientiarum Academiae Socio.

Conscriptae ex libro Parisiis impresso anno 1727.

In Sauaipolis vel Sauai issaPour². Regia Curia Magni Reguli Sauaiyassang omnium Regulorum³ indiae Sire MahaRaja⁴ seu Primario in imperio Mogolensi a me⁵ pauperculo H.R. alias Joseph du BOIS anno 1732 die 10 Septembris Gentilicium vero in quorum urbe habito 6 Mensis Koar anni 1789.

A^v is blank

B^r: Lector benigne

Que facto nescio, an fortuna impellente divinaque providentia disponente, post annos ferme 15 peregrinationum in diversis mundi Partibus; tandem in Vastissimo Indiae Orientalis Imperio quam Mogol dicunt⁶ perveni; ubi postquam Majoris consequentiae urbes⁷ peragravi⁸ in eius Metropoli cui nomen et Dehlij et Sciajanabad est appulli; et cum Urbs ista Imperatorum Curia et totius Imperij Centrum sit, simul et peregrinantium⁹ refugium et extraneorum concurrentium est assylus. Ibi ergo in Domo¹⁰ cuiusdam europeii filij cui nomen Alexander Martin cuius Pater olim ex Gallia advenierat¹¹ natus in Urbe Toulon in provincia Provinciae. cuius nomen erat Jacob Martin Kan (hoc est Princeps) iam defunctus¹². filii eius duo superstites, scilicet supramemoratus minor natu et Alius eo Major Ludovicus Martin nomine, etiam et¹³ ipsi a Imperatore pari honore et deliciis habiti sunt et post Mortem Patris Ludovicus Imperatore imperante Patris defuncti nomen acceperat scilicet Monsieur Martin Kan minor et iam eiusdem Praecepto¹⁴ franghi¹⁵ Kan, id est Europeus Princeps. hoc est clare dicendo inter Principes eos numeravit Imperator cum stipendiis honorabilibus necnon etiam Primarij chirurgij Oficio; igitur ergo apud dictum Alexandrum manens per aliquos¹⁶ menses, inveni apud ipsum in eodem loco seu prope morantem Europeum alium Sabaudum cui nomen Theodorus forestij et ipse Magnus ingenians¹⁷ apud Imperatorem honoratissimo stypendio 200 rupiarum singulis mensibus; isti ergo duo astronomiae non ignari quotidie in Matheseos problematibus¹⁸ tempus superfluum expendebant, ex quorum exercitio

mihi cupiditas valde fuit etiam addiscere Astronomiam quam antea (B^V) Cum astrologia eam confundentem abhorrebam¹⁹ Sed cum principium fundamentale istius Coelicae Scientiae Arithmetica sit in primis in eam istis viris²⁰ discendam ingenium applicavi²¹. Alexander vero aut ex natura sua vel occupationum suorum Causa parum vel nihil doctrinae suppeditabat. Theodorus vero libera et bona voluntate et Astronomiae et Euclides Elementa Arabic idiomate et Gallico subministravit. inter ea propter aliquas rationes oportuit mihi domocilium mutare et apud quemdam principem minoris sphaerae cui nomen Seid ferfaras Kan²² pro Medico eius servitum accepi²³ cum stipendio valde moderato necessitate id postulante ubi ferme per annum sum Moratus. interim Deus ter optimus Maximus. per vias mihi ex toto ignotas duxit inservitium Cuiusdam Maximi Reguli Gentilis cui nomen SAWA YASSANG. qui Astronomorum Princeps, sicut²⁴ uti Alphonsus Castellae in Asruae²⁵ dotem et astronomorum alimentis 400000 millia aureorum expendit, ipse in eisdem stypendis singulis mensibus jam a sex annis 4000 rupiarum quae aequivalent Venetis aureis vel hollandicis vel Ungaris 1000. et in diebus augentur²⁶ ipse etiam in diversis Urbibus istius Imperij observatoria Magnifica cum Machinis Maximis suo ingenio et si liceat dicere ferme suis Manibus fabricata, de qua re sum ego, Deus est testis; ocularis²⁷ testis non semel nec bis, Machinae istae (C^r) sunt²⁸ tam maximae exempli gratia turris in trianguli anguli recti forma, cum linea aequinoctia in medio divisa usque ad minuta tertia et ad sensum divisibilis usque ad dena facta fuit ipse vero ex Cera molle suis manibus prototypum feci²⁹ et artificibus tradidit omnes enim ab eo sunt edocti turris vero erit alta 73 pedum romanorum et modo astrolabum 12 ulnarum seu 36 Pedum romanorum modo sphaera planae fecit dum ista scribo et modo incipitur aliud 108 pedum ei simile et multa alia & Iste ergo Regulus inveniens almagestum P P Riccioli vidit ut³¹ antea Cognoverat multam differentiam esse in suis Tabulis gentilium unde Persicas³² SciaYahan olim Totius³³ Indiae Orientalis Imperatoris jussu tabulas in indorum lingua converti feci Cum expensis 100000 rupiarum in quibus etiam aliqua differentia ferme ad gradum usque invenit unde quidam Pater Societatis Iesu natione Lusitanus Rector Collegij Agrae in eodem³⁴ Imperio, ab eo missus fuit Europae proquaerendo astronomo perito qui Pater ivit et redivit secumque istas quas ego descripsi tabulas Cum aliis instrumentis Mathematicis attulit donarium a Lusitanorum Rege et quidam Puer a patre educatus India. Oriundus maximo ingenio Preditus³⁵ nomine Petrus da Silva etiam lusitaniae apud Riet Clarissimum³⁶ Patrem Joannem Baptistam³⁷ Carbone Astronomiae operam dedit, ad regulum venit Regulus valde laetus Tabulas suis Characteribus transcribi jussit et omnes suos astronomos calcula per eas facere jussit (C^v) modo vero exoptet³⁸ ut aliquis Parisios vel Londinum Pergat³⁹ et ex fonte Astronomiam hauriat Unde ergo. O peritissimi⁴⁰ Caeli inspectores et Phenomenon eius observatores videte quo modo⁴¹ Usque⁴² inter Barbaros (si sic liceat vocare Pandectas istas.) et nomen et hospitium doctrina vestra habeat unde credo certe non dissonare veritate si Clarissimae et Amplissimae Academiae Scientiarum Parisiensi Cum Poeta possimus dicere.

Semper honos nomenque tuum laudesque Manebunt. Non pigeat ergo o mi lector non pigeat inquam⁴³ in fragili Charta studiis meis Aeternum et tibi

Comparare nomen; et ab occidente in ultimis orientis partibus sicut D.f.⁴⁴ lahirra sectatores et laudatores habere. Roga ergo Syderum Mundique totius Conditorem Cuius armoniae est Contemplator⁴⁵ ut ipse Caelorum Civem et te et me Facere Dignetur Valve.

Sawaineopolis

Sawai issapour die 10 Septembris Stilo novo anni Xristi 1732 Gentilium vero in quorum urbi habito 6 Mensis Koar anni 1789.

Tuus dum vivam

J. Dubois

Manuscript Readings

The MS readings are as follows. Obscure letters are marked *.

(1) abipso; (2) issa pour; (3) reguloru; (4) Mah Raja; (5) ame; (6) dic**nt; (7) urbis;(8) peragra***; (9) peregrinatum; (10) Domu; (11) advenerat; (12) de functus; (13) ex; (14) Praeceptio; (15) franghi/frankjhi; (16) perati quos; (17) ingeni***ans; (18) 'quotidie' inserted after problematibus, scored through; (19) abhorrebum; (20) viribus; (21) aplicavi; (22) Kam; (23) acceppi; (24) seut; (25) not fully clear; (26) augetur; (27) ** ***laris; (28) sum; (29) emendation not certain; (31) et; (32) Persicus; (33) Totus; (34) ineodem; (35) -ay/-aey; (36) claris^m; (37) Joannē Baptistā; (38) exoptat; (39) Pergut; (40) Operitissimi; (41) quomodo; (42) Unsqe; (43) in quam; (44) perhaps 'Deo faventé; (45) Comtemplator.

2. TRANSLATION

Astronomical Tables

In which the motions of the Sun, Moon and other planets are taken from observations without the use of any hypothesis, and in which are given the positions of the fixed stars most conspicuous above our horizon. The steps of the calculus are expounded, with geometrical arguments, for the calculation of eclipses, purely by means of the analysis of rectilinear triangles.

At the meridian of the Royal Observatory of Paris, where the observations were made by the author Philip de la Hire, Royal Professor of Mathematics and Fellow of the Royal Academy of Sciences.

Copied from the book printed at Paris in the year 1727.

In Sawaipolis, or Issapour, in the Royal Court of Sawai Yassang, the great Ruler of all the rulers of India, by me the humble H.R. alias Joseph du Bois, AD 1732, September 10, or according to the Gentiles in whose city I live, the year 1789, 6th of the month K̄var.

Gentle Reader

Brought by what I know not, whether by fortune or by Divine Providence, after a full fifteen years wandering in various parts of the world, at length I arrived in the vast empire of east India which they call Mogol, where after I had travelled around the cities of major importance, I landed in its metropolis, named both Dehly and Shahjahanabad. And as this city is the court of the emperors and centre of the whole empire, it is at once the refuge of travellers and the sanctuary of foreigners. There, in the house of a European's son called Alexandre Martin, whose father formerly arrived from France, born in the city of Toulon in the region of Provence, and named Jacques [Latin: Jacobus] Martin Kan (that is Prince), now dead – were his two surviving sons, namely the younger above named, and another older one named Louis [Latin: Ludovicus] Martin, who were also equally provided with honours and comfort by the Emperor. After the death of the father, Louis, by command of the Emperor, took the title of the deceased father, viz., also Monsieur Martin Kan junior, presently by his command also the Frankish Kan, that is European 'Prince'. That was by way of saying that the Emperor counted them as princes, with honorary stipends as well as the office of Principal Surgeon. So thus having passed some months with the said Alexandre, I found staying in the same place, or near by, another European Subadar [Latin: Sabaudus], whose name was Theodore Forest, and he was a great engineer of the emperor, with an honorary stipend of 200 rupees per month. These two not untutored astronomers daily used their time in solving mathematical problems, and from whose expertise I formed a great desire to learn astronomy, which I formerly used to abhor, as confused with astrology. But as the basis of the principles of this heavenly science is arithmetic, I applied my mind at first in learning with these men. Alexandre, however, either from his nature, or on account of his occupation, supplied little or no theory. Theodore however with a free and good will furnished astronomy and Euclid's Elements in the Arabic idiom and in French. Meanwhile for various reasons, I was obliged to change my residence, and I accepted service as a physician with a certain Prince of a lesser level, by name Seid Farfaras Kan, with a very moderate stipend, which I was required to take out of necessity, and where I was resident for fully a year. Eventually God, thrice best, by ways unknown to me, led me to the service of a certain great native Ruler by name Sawai Yassang, Prince of Astronomers, who just as Alphonso of Castille provided an endowment of Asrua (?) and spent 400,000 thousand gold pieces for the provision of astronomers, so also this man gives the same stipend each month, for six years now, 4,000 rupees, which equals 1000 gold pieces of Venice, Holland or Hungary. Growing daily, in the various cities of this Empire, are magnificent Observatories with great structures of his own invention and, if one

may say it, certainly made by his own hands. The truth is, as God is witness, I am an eyewitness not once nor twice. Such great structures are, for example, a tower in the form of a right-angled triangle, with the equinoctial line in the middle, divided up to the third minute, and divisible by the senses to tenths. Moreover, he made the prototype by his own hands from soft wax, and then gave it over to artisans; for he instructed them all. The tower will be 73 Roman feet in height. Next an astrolabe of 12 cubits (ulna) or 36 Roman feet. As I write this, he has made a planisphere, and another is begun of 108 feet similar to it, and many others. Then this Ruler, discovering the *Almagest* of Father P. [*recte* G.B.] Riccioli, saw as he had known previously, that there was a great discordance in his native tables, so that I had translated into the language of the Indians the Persian tables ordered by Shahjahan, formerly the Emperor of the whole of East India, which cost 100,000 rupees. Here he found a discordance of up to one degree. As a result a certain Father of the Society of Jesus, of the Portuguese nation, and Rector of the College in Agra of the same Empire, was sent by him (the Ruler) to seek an expert astronomer in Europe. The Father went and returned, and brought with him the tables which I have described, along with other mathematical aids, as a gift from the King of Portugal. A certain young man, educated by the Father in India, and born endowed with great ability, by name Petrus da Silva, also Portuguese, studied astronomy at Riet Clarissima with Father John Baptist Carbone, and came to the Ruler. The Ruler very happily ordered the tables to be transcribed into his script, and ordered all his astronomers to make calculations by them. Now he longs for someone to go to Paris and London to drink of astronomy at the source.

Thus, O most expert searchers of the heavens and observers of its phenomenon, see how far among barbarians (if one may so call these pandits) there is both fame and a welcome for your teaching, which I believe certainly not to clash with the truth, if we may speak with the poet of the most illustrious and splendid Academy of Science of Paris:

“Your honour and name and praise will always endure.”

Might I not grow weary, O my reader; might I not grow weary, I say, to bring to you by my studies an eternal name in this frail document, and have like Lahire (whom God protect) adherents and admirers from the West to the furthest Eastern parts. Ask therefore that the Maker of the stars and the whole world, of whose harmony he is the contemplator, that he deem it fitting to make you and me a citizen of the heavens. Farewell.

Sawaineopolis

Sawai Issapour, 10th day of September, N. S., A.D. 1732; for the natives in whose city I live, 6th of the month Kvar, of the year 1789.

Yours as long as I live

J. Dubois

3. SUMMARY

Joseph Dubois arrived in Delhi, the capital of the Moghul Empire, and took up residence in the house of Alexandre Martin. Alexandre's father Jacques who had come earlier from Toulon in France was dead in 1727. There was also an older son Louis. All three were given the title Khan by the Emperor, Muhammed Shāh (1719-1748) or one of his predecessors. The two sons were appointed as Principal Surgeon, and awarded stipends. Nearby he found another Eutopean Theodore Forest, whom he refers to as another Subadar who was paid as an engineer to the Emperor. Alexandre and Theodore were actively interested in mathematics and astronomy, and induced Joseph Dubois to take up astronomy. Theodore was more helpful, giving him Euclid in Arabic and in French. At this point he moved away, becoming first a physician working for Sayyid Farfaras Khan during a year, and then to Jaipur to serve Jai Singh. He praises Jai Singh's patronage of astronomy, and explains that he was in the course of building observatories in many cities, with instruments such as the Samrāt Yantra, and great planispheres, including one erected in 1727 when Dubois wrote his preface. Jai Singh made models of these using soft wax. He came upon the *Almagestum Novum* of the Jesuit G.B. Riccioli, which showed him that there were great discrepancies in the Indian or Islamic tables which he knew. Dubois accordingly translated into the 'Indian Language' the Persian Zij-i Shāh Jahānī. These were found to have a discordance of one degree. The next step led to the acquisition of De La Hire's tables from Portugal, which were brought back by a Jesuit, whom we know to be Father Emmanuel Figueredo. Figueredo was accompanied by a young Portuguese Pedro da Silva, born in India, and who studied with the Jesuit astronomer Carbone during the visit to Portugal. Jai Singh ordered the tables to be transcribed into 'his script', that is into Persian, and proceeded to have them used by his astronomers.

4. COMMENT

The term Subadar, as applied to Martin and Forest, is transferred from its primary sense of Prince, the ruler of a province; see Yule (1903, p. 856).

Dubois gives the dimensions of instruments in cubits and Roman feet, but there are difficulties here, caused in the first place by our ignorance of the length of the cubit. The Latin term *ulna* here presumably translates the Hindi *hasta*, or the Persian *gaz* or *dhirā*. His equivalent 1 cubit = 3 Roman feet makes the cubit 0.891 m, from the known value of the Roman foot, although Dubois' notion of the Roman foot was not just the same as ours, as we shall see. For, Jai Singh, in the preface to the Zij-i Muḥammad Shāh gives the radius of the quadrant arcs of the Samrāt Yantra as 18 cubits, a dimension which we know to be 15.09 m at Jaipur, and 15.19 m at Delhi, making the cubit 0.838 or 0.844 m, respectively. There is uncertainty as to whether Jai Singh's information applied to Jaipur or to Delhi. However, Akbar's cubit, the *gaz*, was eventually standardized by the British as 33", 0.8382 m, (Yule, 1902, p.261), and this

accurate agreement suggests that Jai Singh was referring to the Samrāt at Delhi. This 'cubit' is substantially greater than that used in Islamic astronomical work in the Middle East, 0.493 m; Mercier (1992). The height of the Samrāt Yantra according to Dubois, 73 Roman feet, must have been about $(73/3) \times 0.84 = 20.4$ m. At Jaipur this instrument has an overall height of 27.36 m, while at Delhi the overall height is 20.73 m. It would seem that Dubois must be referring to the instrument at Delhi. He then tells us that Jai Singh has made an astrolabe of 12 cubits, or 36 Roman feet, that is approximately 10.0 m. This does not equal the principal dimension of any of the other instruments of masonry or metal at either Delhi or Jaipur. Dubois' last dimension, 108 Roman feet, approximately 30 m, far exceeds anything known at either site; the reading '108' is however quite clear. In conclusion, only his reference to the Samrāt Yantra is understood. For the information about the dimensions one may refer to Kaye (1918).

The Jesuit Father Jean-Baptiste Carbone (1694-1750) was based in Lisbon as the Royal Mathematician; see the note in Sommervogel (1890). There he carried out a number of observations, including for example, observations made in 1724-27 of Jupiter's satellites; see Carbone (1726). In that work he determined the difference in longitude between St. Petersburg and Lisbon to be 39;31, 45 (modern value 39;33). The place in Portugal in which Carbone instructed Pedro da Silva, which appears to be 'Riet Clarissima' is not at all clear to me. Perhaps the word which I tentatively read as *Asruae*, was meant to be *Astutiae*, so that Alphonso of Castille (fl. 1250), is praised as 'endowed with wisdom'; in fact he was always referred to as El Sabio.

It has already been established by detailed comparison between the Zij-i Muḥammad Shāh (as known in manuscripts) and the Tables of La Hire, that the tables in the Zij are essentially a transcription from the latter, the only notable change being that the radices of the mean motions have been recalculated for the meridian of Delhi; see Mercier (1984). This is fully confirmed by Dubois' account, who adds the interesting fact that Riccioli's *Almagestum Novum* of 1651 had earlier been tried. As far as I know there is no copy of that work in the Palace Library. The Persian Zij-i Shāh Jahānī (A.D. 1628), by Farīd Dihlāwī, is known from various manuscripts, including one in the same library, MJM 12; Storey (1972), p.89. The rates of motion there are taken from the Zij of Ulugh Beg.

Dubois refers to the Pandits as 'pandects', which, of course, should not be understood as the Latin word meaning 'encyclopaedia', but as a mispronunciation of 'Pandit'. The occurrence of this form is illustrated by Yule (1903, p. 740-1) from another 18th century French text.

The dates of the text, A.D. 10 Sept 1732 and 6 Kvār 1789 Vikram, would not be equivalent according to Pillai (1982, p.116), who gives 3 Kvār (Skt. Āśvina) as equivalent to 10 September in that year. However the Full Moon

occurs on 1732 September 4, 10.00 p.m. Central Indian time, and 1 Kvār is equivalent to the next day according to Dubois. Thus the Indian calendar known to him was in exact agreement with the lunar phase. This should be a warning against an easy reliance on published tables calculated from the Sūrya Siddhānta or other classical sources.

Nothing is known of Joseph Dubois apart from what can be learned from the above. He cannot have been a Jesuit, and Sharma (1984, p.105) is certainly wrong to claim that he was. That much is obvious from his need to find money, work and accommodation by his own efforts and from the fact that he does not describe himself as such; nor is he listed in any Jesuit survey of their members. There is no reason to suppose that he was a priest or a missionary in any other sense. The significance of the initials H.R. is lost on me.

One would like to have learned more of Dubois' own contribution from this account. He admits only to have 'had translated' the Zij of Shāh Jahān into the language of the Indians, a rather odd remark: was this Persian work rendered into Sanskrit, or perhaps Hindi? In what way was Dubois actually involved in the process? No such version is known, but probably something of interest would be learned from the Zij Nityānandī Śāhjahānī, a Sanskrit work by Nityānanda, a copy of which is kept in the Palace Library (MJM 23). Nityānandi (fl. A.D. 1639), is known mainly through his Sarva Siddhāntarāja. As to the work of Lahire Dubois claims nothing, and says only that Jai Singh had it copied into Persian. When I made my transcription I failed to notice whether the rest of the volume, that is this manuscript copy of Lahire's work, was in the same hand as these remarks by Dubois.

Jacques Martin of Toulon, mentioned as the father of Dubois' friends Louis and Alexandre Martin, is known from documents preserved at Pondichery, the centre of French administration at the time. There is extant, at least, a letter written by 'J. Martin' from the Court at Shahjahanabad, dated 22 May 1718, addressed to Mr d'Ardancourt, Director of the French Company in Bengal, a letter which served as a covering note accompanying a Firman sent by the Emperor Faruckhsīya granting certain trading rights to the French; Martineau (1914), pp. 15-17. In the edition of this correspondence, Martin is described as a 'French physician in the service of the Moghul'. In another volume of correspondence, including official communication sent from Pondichery to Chandernagore (just north of Calcutta), the other principal centre of French activity, there is a remark in a letter dated 19 May 1734, to the effect that "It is well that you should have paid to the heirs of Mr. Martin, Physician to the Moghul, the balance of that which the Company owed to his succession."; Martineau (1915), p. 255. We know from Dubois' account that Jacques Martin was dead by 1727. Finally, in a letter sent from Pondichery to Chandernagore, dated 22 May 1730, the officials remark, "We do not have an astronomer who can be sent to the Moghul; it would doubtless be a good thing for us to have a person free for the Court of that Prince, who is good and capable. We would

derive thereby many advantages, but he must be brought from France. This would moreover be difficult to find.''; Martineau (1915), p. 71. At this time the Moghul Emperor was Muḥammad Shāh. Elsewhere in this volume there are numerous references to the Jesuits (including Father Pons) and it is clear that they were a thorn in the side of the civil power, who wanted nothing more than obedient chaplains, while the Jesuits were forever demanding money for the purchase of book, etc.; Martineau (1915), pp. 103-4, 112, 119, 135.

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