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Scholastic manuscripts of the physician Peter of Spain (13th century)

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ABSTRACT. This paper discusses the education of physicians in the Schools of Medicine of the urban *Studia Generalia* in the 13th century. The Education methodology was the same for all four fields of knowledge: Arts, Theology, Roman and Canon Law and Medicine. It included reading by the scholars and scholastic commentaries and questions elaborated by the masters, The manuscript sources and print editions of the writings of the Portuguese physician Petrus Hispanus (?1220-1277), when he taught at Siena (1246-1252) are in the National Libraries of France and Spain and the Vatican Apostolic Library.

Keywords: *Studia Generalia*; *Articella*, Medicine, physician; Paris; Siena.

Manuscritos escolásticos do físico Pedro Hispano (século XIII)

RESUMO. O presente texto busca problematizar a educação e a formação dos físicos nas faculdades de Medicina dos *Estudos Gerais* urbanos, no século XIII. A metodologia de ensino era comum à todas as quatro áreas do conhecimento universitário, Artes, Teologia, Direito Canônico e Romano e Medicina. Consistia em leitura pelos escolares e comentários e questões pelos mestres acerca dos textos das autoridades antigas e medievais. Em três bibliotecas nacionais europeias encontram-se as fontes manuscritas e edições impressas dos comentários e questões escritos pelo físico português Pedro Hispano (?1220-1277), quando atuou como mestre na Faculdade de Medicina de Siena entre 1246-1252. São elas: a da França, a de Espanha e a do Vaticano.

Palavras-chave: *Estudos Gerais*; *Articella;* Medicina; físico; Paris; Siena.

Manuscritos de la Escolástica del físico Pedro Hispano (siglo XIII)

RESUMEN: El artículo trata de investigar, em lo siglo XIII, la educación de los físicos em las Escuelas de Medicina en los Studia Generalia, localizados en los centros urbanos. La metodologia llamada escolástica era um razgo común a las quatro áreas del conocimiento, Artes, Teologia, Derecho Canonico y Romano. El método incluya la lectura (lectio), los comentários y las quaestiones de los textos de las autoridades antiguas y medievales por los maestros. Hay fuentes manuscritas de los comentários y quaestiones escolásticas del físico Pedro Hispano em tres bibliotecas europeas: Biblioteca Apostólica Vaticana, Biblioteca Nacional de España y Biblioteca Nacional de Francia.

Palabras clave: Studia Generalia, Articella, Medicina, físico, Paris, Siena.

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> The sign of understanding lies in the ability to transform knowledge into teaching (Aristotle, *Metaphysics*[1]).

Introduction[2]

With the advent of the *Studia Generalia* (General Studies), urban teaching institutions established in the Latin occident in the 12th and 13th centuries, there was a break with the preceding period in regard to medical education. Formerly there had been centers for the study of medicine in Benedictine monasteries and in

[1] *Signum enim scientis possa docere*.

[2] The production of this article was supported by Public Calls for Proposals issued by the CNPq in 2012 and 2016 that made it possible to spend short periods in the Vatican Apostolic Library (VAL) and in the National Library of France (NLF) to research original manuscripts of the medical works of Peter of Spain not available in digital form.

monasteries of Augustinian canons where there were libraries with medical treatises of Antiquity and of the Early Middle Ages. There were also internal therapeutic spaces, the infirmaries (*domus infirmorum)*, pharmacies and gardens with medicinal plants. In external areas, the charity hospitals were places where the region's poor, underprivileged and infirm were taken in. Often the monks and canons in such places would provide care for the population living in the areas surrounding the religious community in addition to being called on to act as physicians in the royal courts and kingdoms of Europe or in the pontifical court. On the other hand, there was the more informal education of 'practical' professions, (barber-surgeons, blood letters, healers etc.), which usually occurred in the family ambit from father to son or mother to daughter in the case of midwives.

The first step towards individualizing Medicine as a field of knowledge with its own specificities occurred in the 11th century when Constantine the African, originally from North Africa and a translator from Arabic to Latin, established himself as a monk in the Benedictine monastery of Monte Cassino in southern Italy. The monastery was near to the Salerno school of Medicine, which was the first center for teaching Medicine in Europe and was to influence the later *Studia Generalia*. Constantine translated Greek and Arab medical works from Arabic into Latin, making it possible, through that intermediation, to track the legacy of Ancient Greece in regard to Medicine. Those translations actually constituted the birth of Medicine's individuality in Western Europe due to the establishment of a teaching *corpus* that would form the doctrinal basis for the founding and development of 13th century Scholastic Medicine. Prior to that, at the end of the 12th century, Bernardine of Salerno had been one of the first to implant the genre of commentaries on texts in medical education.

The second step in regard to a change in teaching took place when Medicine became one of the four distinct areas of knowledge contemplated by the structuring of faculties in the *Studia Generalia*. Those areas were: Arts, Theology, Canonical and Roman Law and Medicine. At that time, the word *universitas,* which gave rise to the modern term 'university', was the legal term used in documents to designate a body of teachers and students pertaining to the recently founded *Studia Generalia* institutions. The scholars themselves were from all over Europe and they came in search of knowledge in those four areas. The institutional body had direct links with the Pope because the Pontiff established the teaching doctrine that the university masters would have to follow. Those fundaments ensured internal cohesion among such schools and faculties, although each of them adopted the scholastic teaching method in its own way. The Faculty of Arts took responsibility for the methodological unity of the Scholastic education because to continue with professional studies – to become a theologian, a physician or a legalist –, it was imperative that students should first take the course of that faculty which embraced the predominant philosophical knowledge. That methodology consisted in establishing the curricula made up of the canonical texts associated to each area of knowledge so, in the case of Medicine, that meant the Greek works of the classical antiquity period and Late Antiquity and Early Medieval Byzantine works, which the students would read and for which the masters would elaborate their commentaries. The aim of the commentaries was to conserve, transmit and analyze the canonical texts of the respective authorities (*auctoritates)*. The commentary technique itself conformed to logical-linguistic standards delimited by the formal logic works compiled in Aristotle's *Organon* (Instruments) of which a Latin version translated from the Greek by Boethius (420-526) circulated in the occident. Accordingly, irrespective of the faculty in which a master did his teaching, his commentaries should follow the same formula as that followed by the other courses so, in that sense, the scholastics actually became a body of commentators. Up until the mid-14th century, Paris, Montpellier and Bologna were the main poles for teaching scholastic medicine, qualifying scholars from various regions of Europe as graduates or doctors. Siena was also an outstanding center and, for a while so, was Padua, after 1350 (Crisciani, 1999; Alessio, 2002).

That transformation in the education made it possible for university Medicine to consolidate itself as a theoretical-speculative study, although in Salerno it began as an association between Medicine and scientific knowledge. In his work *Didaskalion,* theologian Hugh of Saint Victor (1096-1141) separated '*Physics'* and Medicine considering them as two branches, the former a form of Philosophy or theoretical science and the latter, a mechanical art mainly focusing on surgical practice. Thus the classical question arose as to whether that area of knowledge was a science or an art; an unending discussion that made a science of the theory and an art of the practice. According to Aristotle, Medicine was more akin to a *tékhne* (or art) because even though it was science founded on universal principles, its object was the uncertain, the particular, and that conferred on it the status of an art in its know-how and execution. On the other hand could be taken as being a science, insofar as it involves rationality, causal explanation, observation, induction and deduction, predictions and hypotheses. One could understand *tékhne* as being a practical science based on experience and *episteme,* in turn, as being theoretical knowledge based on universal principles. Accordingly, what was in play in that debate was the

question of reason and experience in Medicine, that is, the part played by theory and the part payed by practice in the education and qualification of the physicians (Jacquart, 1995).

The school manual: the *Articella*

In the Medical course, especially in Paris and Sienna there was a study manual, that is, a collection of treatises and texts by ancient and medieval authorities that the students were to read and for which the masters were to elaborate their commentaries. Generally speaking, according to Monica Green (2019), that anthology, *Ars Medicinae* (the Art of Medicine) was first structured at the Benedictine monastery of Monte Cassino at the end of the 11th century, by the abbot Desiderio. Following that, based on the first manuscript copies of it found in the National Library of France, the Salerno School of Medicine seems to have used it too. The number of titles grew over time and eventually the set became known as the *Articella*. Faith Wallis (2010) states that at Salerno the four version consisted of five works by Greco-Byzantine authorities and that it was Bartholomew of Salerno who composed the commentaries on all of them:

1. Aphorisms and Prognosis (*Aphorisni e*t *Prognostica)*, of Hippocrates 460-377 CE, which had been in circulation since the times of classical antiquity. There is a 7th century manuscript in Latin in Ravenna but the work was re-translated in the 11th century, first from Greek and second from Arabic, probably by Constantine. That fact reinforced interest in Greek culture at the time.
2. On Pulses *(De pulsibus)* of Filareto (7th century), Byzantine diagnosis manual translated directly from Greek to Latin.
3. On Urines (*De urinis*) of Theophilus (7th century), a Byzantine diagnosis manual.
4. Introduction to the Art of Galen *(Isagoge ad artem parvem Galeni),* of Hunayn Ibn Isahq. He was a Nestorian Christian who, in Baghdad at the beginning of the 9th century, made a considerable contribution to the translations from Greek to Arabic and Syrian of 129 of Galen's works. The aim of his endeavors was to facilitate reading of Galen's work The Art of Medicine. Constantine the African made the translation into Latin with adaptations and nicknamed Hunayn Ibn Isahq with the Latinized name of Johannitus. The work became the model text for the teaching of Medicine

Later additions:

5. The Art *(Ars parva* or *Tegni)* of Galen (2nd century), the shortest text of the Art of Medicine.
6. On acute diseases *(De regimine acutorum)* of Hippocrates.
7. The *Viaticum* or Provisions for the Traveler and the Nourishment of the Settled, of Abu Jazzar Ahmad translated from Arabic to Latin by Constantine the African in the 11th century[3] at the monastery of Monte Cassino. The full Latin title was *Viaticum peregrinantis*.
8. On Universal Diets *(De Dietis universalibus),* On particular diets *(De Dietis particularibus)*and On Urines *(De Urinis)* of Ishaq Al Israili, known as Isaac the Jew, or the Israelite.
9. *Antidotarium* of Nicholas of Salerno (1110-1150), a set of medical prescriptions with 115 formulas organized in alphabetical order.

Arab encyclopedic works were introduced after 1270 although the masters already knew them and had integrated them to their reading lists

10. *Canon* of Avicena (980-1037)
11. Book of Compilation *(Liber Continens)* of Razhes (865-925)
12. Corrections *(Colliget* or *Correctiorum)* of Averroes (1126-1198)

That set of writings generated a large number of commentaries and questions on the part of the masters who maintained dialogues with one another insofar as each one, when elaborating a lesson, would refer to earlier commentaries. The corresponding manuscripts are in libraries in various parts of Europe.

The scholars requested copies of the texts from the 'stationers' (*stationarius*), that is booksellers (merchants) who rented out texts (*exemplária*) by parts (*pecia*) to the copyists (artesans). That meant there was a change in the conception of the book insofar as it stopped being a luxury object, a treasure, and instead became considered as a teaching instrument, dedicated to the multiplication and reading of copies for study purposes (Asúa, 1996).

The lesson itself (*lectio*) was essentially oral. It began with the reading and interpretation of the texts of authorities, avoiding any interjection of opinion on the part of the master. The idea was to remove any trace

[3] It is a handbook dedicated to travelers containing systematic, comprehensive information. The work consists of seven books presenting the treatments for various diseases in order from head to toe (*a capite ad calcem*).

of subjectivity from the analysis in order to foster a methodically disciplined reflection. Another teaching mode directly associated to the lesson was the 'question' genre (*quaestio*). It was a method divided into six stages: in the first, the master (who at that juncture took on the condition of author) elaborated a series of questions that would put in check all the maxims the commentators that had preceded him had elaborated. In the second stage, this time taking on the role of an imaginary interlocutor, the master was expected to present a list of arguments or objections (*objectiones*), contradicting his previous arguments; In the third stage, the master presented his thesis (*sententia mahistralis*); in the fourth stage he defended his thesis from the objections; in the fifth he developed the arguments to support his thesis and in the sixth and last stage he refuted the objections made by the imaginary interlocutor and responded to them (*responsio ad objectiones*). The aim of the method was to present and resolve all the possible contradictory arguments that the interpretation of the texts could give rise to (Alessio, 2002; Jacquart, 1995; Solère, 2002).

In general, the Medicine courses took four years with ordinary lessons in the morning period given by the more experienced masters and extraordinary lessons in the afternoon, given by the younger masters. In Bologna, the Faculty of Arts was associated with the Faculty of Medicine; Padua and Florence adopted the same model and probably Sienna did as well.

That teaching genre of masters' commentaries on the canonic texts actually began in the medical centers of Alexandria in the ancient world but it only arrived on the scene in western philosophical schools in the 12th and 13th centuries, especially in the case of the medieval Arab Aristotelianism. That teaching method via the commentaries allowed for a large degree of flexibility, insofar as it made it possible to introduce the new Galenic and Arabic material and expand the considerations. Although such texts were produced to meet a specific demand, the fact that so many manuscript copies exist to this day could be taken as an indication that they circulated in the university milieu. As for the medical students, they acquired the skill of facing and dealing with particular situations in medical practice through the intermediation of a vision of scientific knowledge based on the authorities and interpreted by reason (Salmón, 2000).

The first contact with Aristotelian natural philosophy took place in the Faculty of Arts. The relations between Medicine and that philosophy date back to Ancient Greece, but in the university teaching they became much closer through the intermediation of the reading and the commentaries of the Aristotelian 'natural books' (*libri naturales*). Access to those ancient sources came via the Arab reading of them, which in turn gave rise to the so-called medieval Aristotelianism. Initially, when the physicians subordinated Medicine to Natural Philosophy, it was an attempt to understand the functioning of the human body based on the theories and principles of Antiquity. On the one hand, the philosophers demanded their right to treat medical problems while on the other, the physicians claimed the problems related to health and disease as their own and as being situated in an intellectual field that was specific but shared with other fields. In addition, they called for a rational treatment of life and death processes and diseases based on the Arab Galenism of their day. The two lines of thinking nurtured one another.

The Philosopher perceived the connection between the two fields because the physical base of human nature could be corrupted. Aristotelian 'physics' or philosophy of nature explained the general bases of natural changes or movements showing that the general principles become effective in a series of actual situations ranging from cosmology to the behavior of the four elements (water, air, fire and earth) and their mixtures. According to the theory of the four elements, they are the origin of all things. The sub-lunar world is divided into four spheres and each one is related to one of those elements. They emerge from a primordial material that can only be perceived when it is associated to certain qualities, namely, heat, cold, dryness and humidity. The sub-lunar world is susceptible to both generation and corruption, that is to say it is susceptible to changes in the material. That applies to all living beings which are, accordingly, susceptible to decomposition. In that light, health and sickness became viewed as natural processes.

On turning its attention to classical culture, the Renaissance of the 16th century disqualified the entire production of the preceding period, that is the Middle Ages. The commentaries, in their aspect as a text genre, were held to be mere exercises in rhetoric. That concept, or prejudice persisted for a long time, right into the 20th century when Americans Lynn Thorndike and Pear Kibre (1937-1963) promoted a survey and mapping of all the *incipits,* that is, the first words of the scientific texts in Latin produced in medieval Europe. The Medieval Academy of America financed their efforts. That listing made it possible to attribute authorships insofar as authors did not repeat one another's *incipits*. That methodology for managing the sources belongs to the History of medieval scientific knowledge. Following that, in 1934, Thorndike composed his monumental work in eight volumes entitled 'A History of magic and experimental science', a

methodical study of all the authors from Antiquity right through to contemporary times. That systematization of the documental bases enabled the emergence of an interdisciplinary area of research into the History of sciences and later, the History of Medicine, which, having first been practiced by chemists, physicians, doctors and pharmacists, could, from then on, count on qualified historians. It also favored the resignification of theoretical and experimental scientific knowledge production in the Middle Ages in various domains: astrology/astronomy, alchemy, botany, medicine, zoology etc. Nowadays the Internet has opened the way for other forms of communication among medievalists in the global world. A fortunate initiative in that vein was launched by Green (1990; 2019), a professor of the History of Medicine and researcher of the Center for Medieval and Renaissance Studies (ACMRS) at the Arizona State University, USA. She is the author of a series of works on the mapping of medical manuscripts in Latin in the collections of libraries of two great writers, Trota of Salerno and Constantine the African. She has structured and now manages the communication forum MEDMED-L. With a list of over 800 History of Medieval and Renaissance Medicine researchers and students in institutions in various regions of the world, the forum enables exchanges of valuable information on the state of the art, that is, about on line databases of documental collections. Other information includes forum participants' academic biographies, recent publications, electronic texts and information on international meetings and congresses. Furthermore, the forum promotes contacts and academic exchanges among the listed members with mutual thematic affinities (Santos, 2010).

The Richelieu site of the National Library of France (NLF) has one of the largest collections of medical manuscript codices in Medieval Latin and many of those documents have been digitalized and are in the library's Gallica database (https://gallica.BnF.fr*).*

The manuscripts of Peter of Spain's medical commentaries and questions

There are two ways to gain access to the manuscripts of medical treatises attributed to Peter of Spain. The first is the way taken by Meirinhos (2011) when for his doctoral thesis defended before the Faculty of Language and Literature (Philosophy) at the University of Oporto in 2002, he made an inventory of hundreds of manuscripts attributed to Peter, residing in the libraries of European cities. That production attributed to Peter of Spain includes texts that mainly concern Medicine or Philosophy. The second way consists of doing just the reverse. In their mapping processes, historians of the History of Medicine have favored identifying the titles of the respective works and their *incipits* and the lists of libraries where the manuscript are to be found. The latter trajectory was first followed by Thorndike and Kibre (1937-1967), mentioned above, and later followed by other researchers like Schuba (1981) and Kristeller (1986).

Peter of Spain was one of a group of scholastic physicians who associated scientific knowledge with teaching and that was the most notable feature of medical scholasticism of the period. The group was not only part of the royal and pontifical courts but also met the demands for qualified medical care. Furthermore, at that time, medical issues were occupying space in the encyclopedias or *sumas* such as those of Albertus Magnus and Thomas Aquinas. Born in Lisbon (1215-1220), Peter circulated in the political and cultural spaces of the 13th century, namely: the *Studia Generalia* of Paris where he studied and the one in Sienna where he was a master; the imperial court of Frederick the Second, of the German Holy Roman Empire and the kingdom of Sicily, a court frequented by many learned men; the court of Alphonse the 3rd, king of Portugal, and the Papal court at Viterbo where he had access to a rich library of medical manuscripts. His trajectory culminated with his election to the papacy as Pope John the 21st (1276-1277). At that time, being qualified by the Paris *Studia Generalia* was a prerequisite for any candidature to the papacy and various Popes in that condition were elected. His pontificate, however, was brief due to an accident during the construction of his office in the place of Viterbo (Paravicini-Bagliani, 1995). He was a man of knowledge, active on many fronts but our interest here is in his production as a scholastic educator (D'Ors, 1997; Meirinhos, 1996 and 2005; Tugwell, 1999).

In his aspect as a physician, an interpreter of nature, Peter of Spain needed Aristotelian natural philosophy to help him to compose a university theory of medicine. On the other hand, he had recourse to the medieval authorities and those of antiquity to help him respond to the challenges of his day. That relationship between author and authority in the field of Medicine is evidence of his endeavors to fill the gaps in the explanations of the ancient authorities. In that regard, Peter of Spain directed all his efforts at appropriating the Aristotelian natural books to the benefit of medical theory. On the other hand, he adopted Galen's notion of the qualities (heat, cold, humidity, and dryness) and of the four Hippocratic humors

(blood, yellow bile, black bile and phlegm) which he revised and of their mixtures which he referred to as *complexio* or temperament.

Given his extensive medical scholastic production, he must have been a highly active teacher. The main collection of his manuscripts, commentaries and questions in Latin is Manuscript 1877 in the National Library of Spain; M. Grabman was the one who discovered it in 1927. The originality of that 13th century *corpus* lies in the fact that it is an organized anthology of the works of a single author, albeit incomplete with some pages missing and others damaged. There are manuscripts for ten titles of the preliminary list and some additions from the *Articella*, They are: Hippocrates (2), Constantine (1), Johannitius (1), Galen (2), Isaac, the Jew (3) and Filareto (1). The exception is the absence of the commentaries or questions of Theophilus regarding *De Urinis* from the first list, which has been replaced by the text attributed to Isaac the Jew.

The same manuscript also collaborates in attributing the authorship to Peter of Spain. At the beginning of it there is an introductory Table of questions (*Tavola quaestiones librorum Petri Hispani*) (ff. 01ra-23ra) to facilitate the reader's use of it (see Figure 1 with an image of Folio 1). In other libraries, like the Vatican Apostolic Library (Palatina Lat.), the manuscripts are dispersed among various codices with miscellanies of various medical texts. The same kind of dispersion occurs in the National Library of France (NLF, Lat.). They are evidence of his performance as a master in the Study of Medicine at Sienna (1245-1250?) and of the programs of lessons in courses designed to qualify physicians.

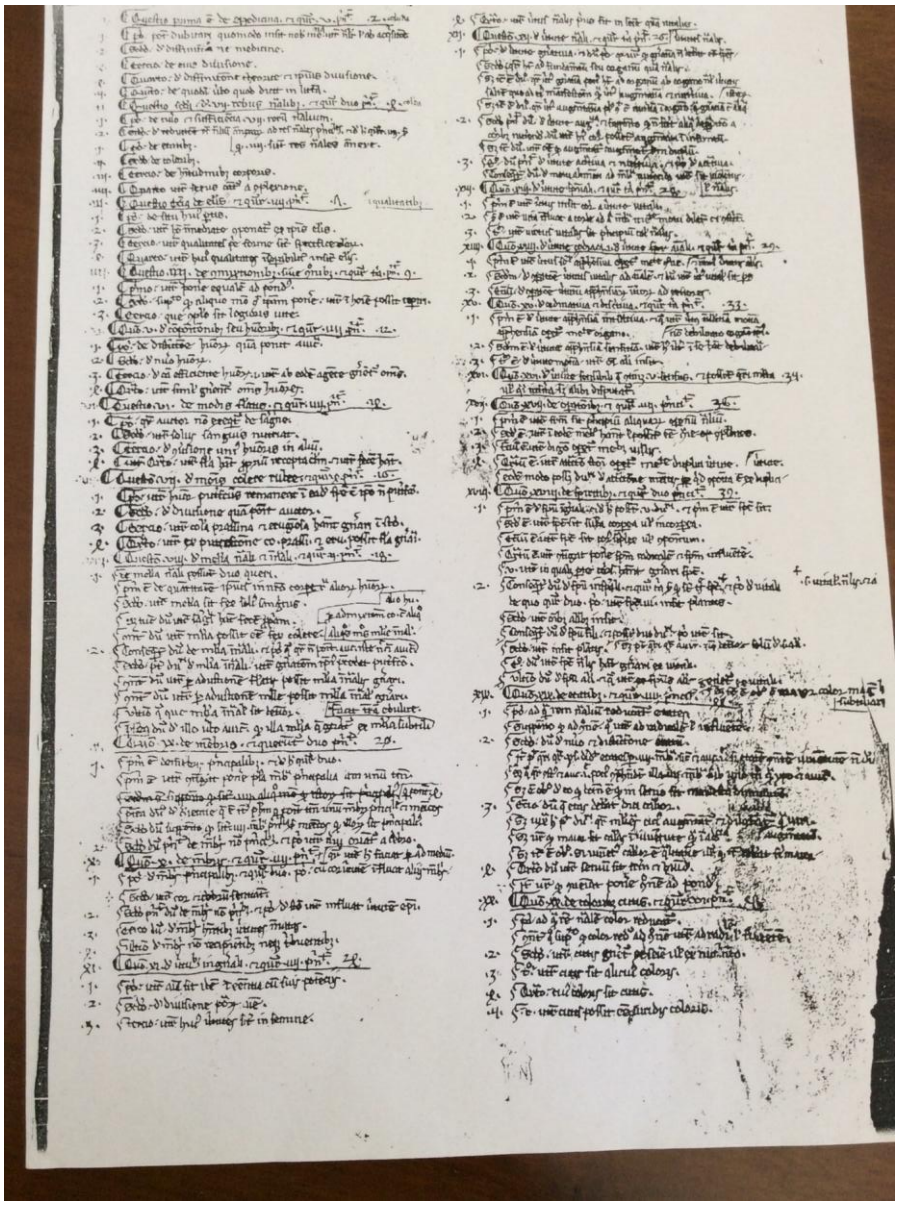

Figure 1. Copy of Folio 1 of manuscript 1877 in the National Library of France showing the *Tavola quaestionum librorum Petri Hispani*. Source: Photograph by the author.

The structure of each one of Peter of Spain's commentaries is: Division (*Divisio*), Summary (*Summa*), Exhibition (*Expositio*) and Questions (*Quaestiones*). Thus, each chapter of commentaries is the result of a lesson (*lectio*), because it ends with one or more of the principal or subsidiary questions. Each problem is part of an articulated (*quaeritut utrum*) question in which he demonstrates the position of the selected authority, whether it be the philosopher Aristotle or another (*ad auctoritatem philosophi*) being examined and then comes the contrary position (*ad oppositum dicendum est*) taken by Galen or some other medical authority. Following that, the master presents his own considerations (*nos autem dicimus*) step by step (*ad quartum, ad sextum*) before arriving at a solution for the originally posed problem, that is, his conclusion or a sentence offering conciliatory, rational solutions. For each question raised, the author had recourse to those authorities susceptible to dialogue according to the medical topic under discussion

Quite often, the manuscripts are of questions only, because in the second half of the 13th century that was the teaching method most adopted, although the lessons continued coexisting with them. It meant that instead of the complete texts of the Ancient and Medieval authorities, the masters tried to focus on the problematical aspects that students and masters discussed in the *disputatio*. They also served as preparatory exercises for the examinations (Teeuwen, 2003).

Many of the manuscripts of Questions present a formal attribution of authorship, sometimes in the *Incipit,* the opening words, and sometimes in the *Expliciunt*, the closing words. For example in manuscript Lat. 7798 of the NLF which is a collection of *Quaestiones naturales* of various masters, in the one pertaining to Peter of Spain (f. 80ra-82rb) the *incipit* states that there are CXXVIII questions according to the Spanish master[4] and the *Expliciunt* (f. 82v) repeats the same information. In most of the NLF manuscripts, the same form of attribution appears, especially at the end of the writing. However, in his other medical treatises, the attribution of authorship appears in the Prologue which precedes the main text and in it the author informs the reader about the structure of the text and its contents (Santos, 2018).

Up until now there has been no overall study made of the sets of commentaries and questions gathered together in manuscript 1877 of the NLF, unlike the situation of other works that have been attributed to him. In that respect, Salmón (1998) conducted the first systematic research with the support of the Wellcome Institute for the History of Medicine. He inventoried 1,417 questions in Latin of four initial commentaries of Peter of Spain regarding: the *Isagoge* of Johannitius (287 questions), *Tegni* of Galen (484), *Regimen Acutorum* (Regimes of acute diseases) (329) and *Prognosticos*[5] (314), with the last two being attributed to Hippocrates. Those questions address problems ranging from the field of natural philosophy to others more closely related to Medicine such as diagnosis, prognosis and therapeutics associated to a variety of infirmities[6].

The reference for the first commentary is Introduction to the Art of Galen (*Isagogue*) (NLF, 1877, ff. 24-47, VAB Palatina, f. 1251 of Johannitius. Its structure is typical of the first stage of the adoption of medical Scholasticism when the questions had not yet been separated from the lessons. The theme addressed is the controversy between physicians and philosophers hotly debated at the time. However, it does not establish any kind of hierarchy among the selected authorities. For example, the erudition is apparent in the selection of the philosophers Plato, Augustine, John of Damascus, Boethius, Isidore of Seville, Gregory of Nyssa and Averroes. However, many Arab philosophers such as Averroes, Avicenna and Rhazes were also physicians. The selected physicians are Hippocrates, Serapion, Galen, Theophilus, Filareto, Rhazes, Constantine the African, Bartholomew and Trota of Salerno. Although the Arab philosophers are present in the commentaries, that fact merely indicates their diffusion among the Masters, but at that time they were not yet part of the *Articella*. The text has 45 chapters each one with its corresponding theme (*lemma*) indicated at the beginning. They follow the same order as the original of Johannitius and each one corresponds to a lesson given (Asuá, 2000).

The longest manuscript, Questions on Constantine's Viaticum (*Quaestiones super Viaticum Constantini* I-VII), refers to a translation of the most widely diffused scientific writing of the monk of Monte Cassino and is composed of seven books. It is in the National Library of Spain identified as manuscript 1877 (ff. 142ra-205vb)[7] (See Figure 2, f. 142ra). It begins with an *incipit* concerning alopecia (hair loss). "Hair forms from the gross vapor [of the body] (...) regarding hair loss there are two questions"[8] " *"Capillus ex fumo"* [...]), That is because it follows the same sequence as Constantine's text, namely, from the head to the feet. In the

[4] *CXXVIII Quaestiones secundum magistrum de Yspania*, *Expliciunt CXXX [sic] questiones magistrum de Yspania*.

[5] *Comm. Hipocrates Prognostica* BNF, Lat. 6956, f. 41ra.

[6] Unfortunately that research was discontinued.

[7] VAL, Pal. Lat. 1085, ff. 68ra a 153vb,and excerpts VAL Pal. Lat. 1225, ff.292r-294v.

[8] Free translations from the Latin. *Capillus ex fumo. Circa allopiciam duo sunt inquirenda*.

Vatican Library, manuscript 1166[9], f. 2ra, the title at the top of the Folio is as follows: "Here begin the questions of Peter of Spain about the Viaticum of Constantine..." and immediately after it comes the *incipit*. Later, at the end, the *expliciunt* states, "[...] Here end the questions of Peter of Spain about the Viaticum of Constantine" (f.153vb). Thus, the authorship is clearly attributed to the Master Peter of Spain who is the subject of our analysis. It mostly consists of questions to be discussed (*disputatio*), with arguments and counter-arguments then solutions and answers to the initial questions.

The other writings in manuscript1877 have not yet been the object of the kind of research that would enable a critical edition to be established. They are: of Galeno, Commentaries on the Art of Galen (ff.8ra-109ra); Questions about the books of Galen, On Crises (*Dr crisi*) and on critical days (ff. 248ra-250vb)[10]. Of Hippocrates, Writings on the books of acute regimes, Writings on the books of Prognoses, or Commentaries on the Prognoses (ff.124ra-141vb)[11]; of Filareto, Commentaries on the pulses (ff.251ra-255ra)[12]. The three remaining commentaries and questions are the only ones referring to texts of Jewish origin, namely: Writings and questions concerning the books On Particular Diets, and On Universal diets (ff. 238ra-244vb)[13], and On Urines (*De Urinis*) all by Isaac the Jew or Israelite (Meirinhos, 2011).

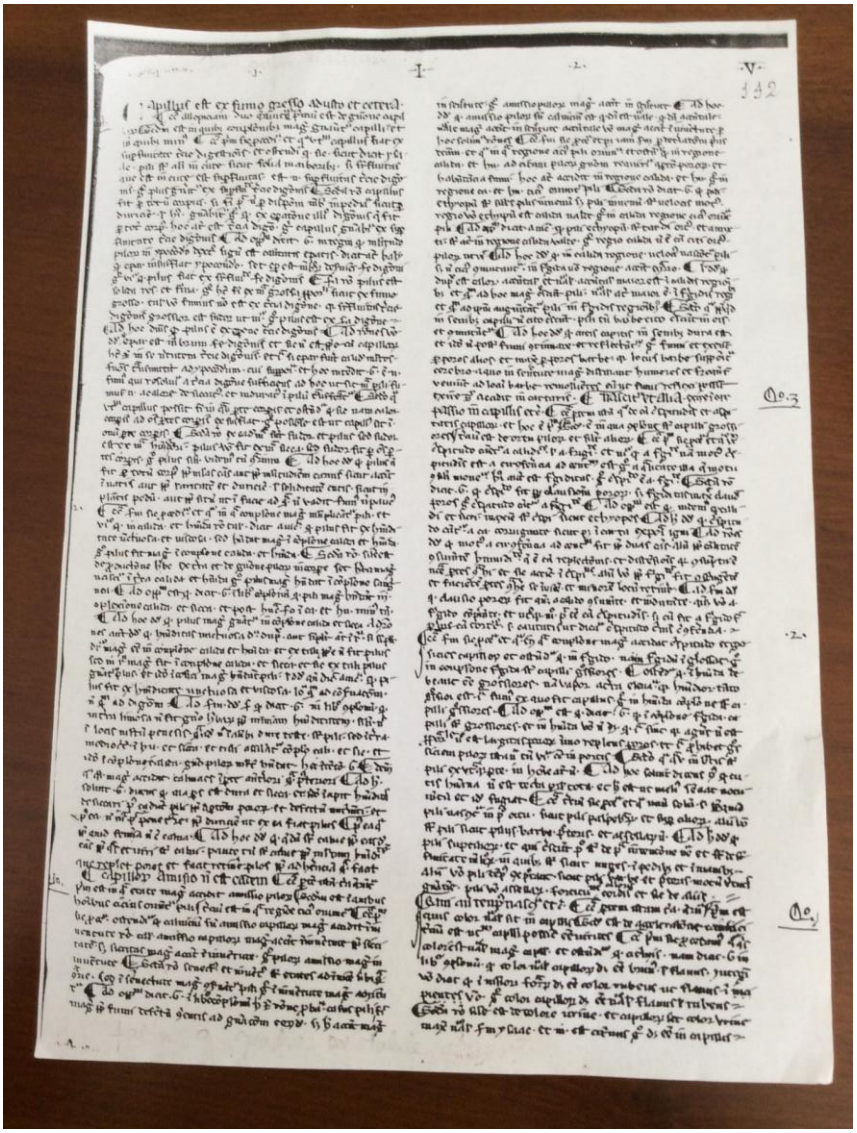

Figure 2. Copy of Folio 1 (142ra) of the manuscript Quaestiones super Viaticum Constantini, Book I, attributed to Peter of Spain. Ms 1877, National Library of Spain.
Source: Photograph by the author.

[9] "*Incipiunt quaestones petri hyspani Super Viaticum Constantini* " e [..] *finisciunt questiones petri hyspani super viaticum Constantini.*

[10] *Glosae super Tegni Galeni, Quaestiones super libros Galeni De crisi et supe librum de diebus decretoriis.*

[11] *Scriptum super librum regiminis acutorum* and *Scriptum super librum Prognosticarum vel Glosae supra prognostica.*

[12] *Glosae super de pulsibus Philaretum*, VAL, PAL. Lat. 1086, ff.25ra-28rb

[13] *Scriptum et Quaestiones super libro de dietis particularibus*, *Quaestiones super libro de dietis universalibus;* VAL, 4455, ff. 65ra-96ra.

Another part of the *corpus* of manuscript 1877 (ff. 256ra-290vb), often referred to as the zoological part, is the commentary on Aristotle's *De animalibus* (On the Animals). In 1931 Wingate located another copy of this commentary in the National Library of Florence, manuscript G.4853 of the *Fondo Conventi Soppressi*, which also had questions attributed to Peter of Spain. It seems to be an earlier copy than the one in Madrid and it contains notes for his lessons as a Master in Sienna[14]. The trajectory of that Aristotelian writing was not via Salerno because it was not part of the *Articella*. Instead it came from the Arab language works and then via the Toledo School of Translators. In the 9th century, Iahya Ibn el-Batric translated three of Aristotle's works from Greek into Arabic, namely On the History of Animals, On the parts of Animals and On the Generation of Animals[15]. Later, around the year 1220 in Toledo, Michael Scot made the first translation into Latin of those three treatises. The other two treatises of the original works, On the Movements of Animals and On the Progress of Animals[16], were translated directly from Greek into Latin in 1250 by William of Moerbeke at the request of Thomas Aquinas and they were part of the curriculum of the Paris Faculty of Arts. The existence of innumerable questions and commentaries of master philosophers and master physicians of the day reveals the widespread circulation of the Aristotelian *corpus* at that time.

The commentary is divided into 19 books or chapters. Once more, it reveals a high degree of erudition in source management in the way it relates the Aristotelian work to the questions discussed by the Masters of Medicine of that time, namely, localization, hierarchy, movement, functions and parts of the main organs, the five senses and other related topics[17]. Furthermore it constitutes an indication of his teaching performance as a master, whether in Paris or in Sienna. That commentary present in the Madrid manuscript has recently been the object of a first, fine critical edition published in the United Kingdom, edited by Navarro Sánchez (2015).

So far, none of the studies of medical commentaries and medical questions has investigated the entire set of works of a single author as it would be a monumental task given size of the *corpora*. Generally speaking, researchers have chosen to select a given infirmity and then track perceptions and therapeutics associated to it in the Scholastic texts. As an example, Wack (1990) chose to investigate the commentaries on Constantine's *Viaticum* of four 13th century masters: Gerard of Berry, Giles of Santarem, Peter of Spain and Bona Fortuna. She searched for and transcribed all the parts regarding lovesickness (*amor hereos*). The Arabs described that sentiment and the symptoms provoked by rejection of the loved one as a sickness and later it was incorporated and commentaries added based on the work of Constantine.

Final considerations

This article marks one of the first attempts to address a set of manuscripts that have hardly been researched to date, the manuscripts on Scholastic medicine of Peter of Spain in the collections of three European libraries: the National Library of Spain, the National Library of France and the Vatican Apostolic Library. The greatest attention has been drawn to Manuscript 1877 in the National Library of Spain as it brings together a whole set of commentaries and questions of the author in analysis. Research has investigated some of them in part and others entirely but in isolation, so there is still a lot of work to be done.

The new contemporary readings of those texts, devoid of earlier prejudices have enhanced understanding of medical scholasticism in the 13th century and defined its role in qualifying a new ascendant social group, the physicians qualified by the *Estudos Gerais*. In their day, those commentaries and questions formed the basis of a new scholastic medical knowledge.

Three institutional characteristics marked that medical Scholasticism. First, the importance attributed, not just to the oral lesson but also to the written text of commentaries and questions. Second, the role played by the texts of authorities in defining the scope and identity of a discipline and the need to confront acquired experience with those canonic texts and transform it all, in writing, into a valid and transmittable doctrine. In the case of the commentaries, the specific nature of medical knowledge is apparent in the relationship between theory and practice. In the vision of the masters who were the authors of the questions and commentaries, the disordered tradition of the texts and doctrines needed to be explained in depth and the works re-ordered in the light of the knowledge of their day.

[14] This text is also in a manuscript in the VAL Lat. 6758.

[15] *De historia animalium*, *De partibus animalium* and *De generatione animalium*.

[16] *De motu animalium* and *De progressu animalium*.

[17] VAL, Lat. 6758, ff.149ra-177rb.

Based, as it was, in a social perspective, that type of medical qualification opened the door for exercising the profession in the royal, episcopal and pontifical courts to serve not only the powerful but also patients belonging to the old and new elites. Thus, as has been delineated above, Peter of Spain performed important social roles, first as a Scholastic scholar and later as a Scholastic master.

References

Aristóteles. (2002). *Metafísica* (ed. de Giovanni Reali). São Paulo, SP: Loyola.

Aristóteles. (2006) *História dos animais* (ed. de A. L. Peck*)*. Lisboa, PT: Centro de Filosofia da Universidade de Lisboa / Imprensa Nacional- Casa da Moeda.

Alessio, F. (2002). Escolástica. In J. Le Goff, & J.-C. Schmitt (Ed.), *Dicionário temático do Ocidente medieval* (p. 367-382). São Paulo, SP: Imprensa Oficial; Bauru, SP: Edusc.

Asúa, M. (1996). Sete quaestiones del comentário ad *Isagoge* de Johannitius. *Patrística et Mediaevalia, 17*, 59-66.

Asúa, M. (2000). Peter of Spain's Handling of Authorities in his Commentary on the Isagoge de Johannitius. *Dynamis. Acta Hispanica at Medicinae Scientiarum que Historiam Illustrandam, 20*, 107-133.

Crisciani, C. (1999). Teachers and learners in scholastic Medecine. Some images and Metaphors. *History of Universities, 15*, 75-101.

D'Ors, A. (1997). *Petrus Hispanus O. P., Auctor Summularum*. *Vivarium, 35*(1), 21-71. doi: 10.1163/1568534972579423

Green, M. (1990). Constantinus Africanus and the conflict between religion and science. In G. R. Dunstan (Ed.), *The Human Embryo: Aristotle and the Arabic and European Traditions* (p. 47-69). Exeter, UK: Exeter University Press.

Green, M. (2019). *Articella. Earliest Copies*. Retrieved from: //www.academia.edu/39681292/Articella_-Earliest_Copies

Jacquart, D. (1995). La scolastique médicale. In M. D. Grmek (Ed.), *Histoire de la pensée médicale en Occident* (Vol. 1, p. 175-210). Paris, FR: Seuil.

Kristeller, P. O. (1986). *Iter italicum*. London, UK: Warburg Institute; Leiden, NL: Brill.

Meirinhos, J. (1996). *Petrus Hispanus Portugalensis*? Elementos para uma diferenciação de autores. *Revista Española de Filosofia Medieval, 3*, 51-76

Meirinhos, J. (2005). O papa João XXI e a ciência do seu tempo. In M. C. Matos (Ed.), *A apologia do latim* (p. 129-170). Lisboa, PT: Távola Redonda.

Meirinhos, J. (2011). *Bibliotheca Manuscripta Petri Hispani* (Os manuscritos das obras atribuídas a Pedro Hispano). Lisboa, PT: Fundação Calouste Gulbenkian & Fundação para Ciencia e a Tecnologia.

Navarro Sánchez, F. (Ed.). (2015). *Peter of Spain*. *Questiones super libro De animalibus*. London, UK: Routledge.

Pedro Hispano, Petrus Hispanus ou João XXI. [12--]. *Opera medica* (Antologia de *Comentários*. Manuscrito 1877 em pergaminho com mutilações - MSS. MICROFORMA /10 385, ff.1ra- 290rb). Fondos da Biblioteca Nacional de Espanha.

Pedro Hispano. [12--]. *Commentarii Hipocrates Prognostica; Comm. Philarertus, De pulsibus*; *Quaestiones naturales centum et viginti secundum* (Em pergaminho - Miscelanias, Latin 6956 (Ancien Fonds Latin), ff. 41ra-55va, 57ra-62ra; Latin, 7798, ff80ra-89rb.). Biblioteca Nacional da França, Department des manuscrits.

Pedro Hispano. [12--/13--]. *Quaestiones super Viaticum Constantini Africani (I-VII)*, *Scriptum et Quaestiones super libro de dietis particularibus*, *Quaestiones super libro de dietis universalibus, Glosae super de pulsibus Philaretum*, *Quaestiones super libro De animalibus Aristotelis* (Miscelaneas em pergaminho mutilado, Pal. Lat. 1166, ff. 2ra-94ra e Pal. Lat 1085, ff. 68ra- 153vb; Vat. Lat. 4455, ff.65ra-96ra; Pal. Lat. 1086, ff.25ra-28rb; Vat. Latina, 6758, s/n). Biblioteca Apostólica Vaticana, Manoscritti.

Paravicini Bagliani, A. (1995). *La cour des papes au XIIIe siècle*. Paris, FR: Hachette.

Salmón, F. (1998) *Medical classroom practice Petrus Hispanus' Questions on Isagoge, Tegni, Regimen Acutorum and Prognostica*. Papers of the *Articella* Project Meeting. Cambridge, MA: Cambridge Wellcome Unit for the history of Medicine-Csic; Barcelona, ES: Department of the History of Science (*Articella Studies*).

Salmón, F. (2000). Technologies of authority in the Medical Classroom in the Thirteenth and Fouteenth Centuries. *Dynamis. Acta Hispanica at Medicinae Scientiarum que Historiam Illustrandam, 20*, 135-157. PMID: 11640178

Santos, D. O. A. (2010) Velhas e novas relações entre os medievalistas e suas fontes. *Varia, 26*(43). Doi: 10.1590/ S0104-87752010000100002

Santos, D. O. A. (2018). A retórica nos prólogos da escrita científica ibérica (século XIII). In M. E. B. Ribeiro, & S. L. França (Org.), *A escrita da História de um lado a outro do Atlântico* (p. 20-38). São Paulo, SP: Cultura Acadêmica.

Schuba, L. (1981). *Dei medizinischen Handschriften der Codices Palatini Latini in der Vatikanischen Bibliothek*. Wiesbaden, DE: Dr. Ludwig Reichert Verlag.

Solère, J.-L. (2002). Scolastique. In C. Auvard, A. Libera, & M. Zink (Ed.), *Dictionnaire du Moyen Age* (p. 1299-1311). Paris, FR: Quadrige; PUF.

Teeuwen, M. (2003). *The vocabulary of intelectual life in the Middle Ages*. Turnhout, BE: Brepols.

Thorndike, L. (1934) *A history of magic and experimental science* (Vol 8.). New York, NY: Columbia University Press.

Thorndike, L., & Kibre, P. (1937-1967). *A catalogue of incipits of mediaeval scientific writings in Latin.* Cambridge, MA: The Medieval Academy of America.

Tugwell, S. 0. P. (1999). Petrus Hispanus: comments on some proposed identifications. *Vivarium,* 37(2), 103-113. Recuperado de http://www.jstor.org/stable/41963631

Wack, M. F. (1990*). Lovesickness in the Middle Ages*. *The Viaticum and It´s Commentaries*. Philadelphia, PA: University of Pennsylvania Press.

Wallis, F. (Ed.). (2010). *Medieval medicine. A reader*. Toronto, CA: University of Toronto Press.

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