



Article

¿Por qué los Hombres tienen diversas Maneras de Ojos? Curiosities about the Eyes in Juan de Jarava's *Problemas o Preguntas problemáticas* (1544)

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Abstract: The so-called ‘problem books’ of the 15th and 16th centuries originate from the pseudo-Aristotelian *Problemata*, which were rediscovered around 1300. Their authors were often physicians who prepared medical information for a broad public and combined it with highly heterogeneous pools of knowledge. This article deals with different questions in regards to the eye and the sense of sight in Juan de Jarava's *Problemas o Preguntas Problemáticas*, published in 1544. The physician, a man with Erasmist inclinations whose existence remains a mystery, divides his work into three parts, with each relating to love, natural phenomena, and wine. In all three parts, questions related to the eyes are raised. These issues are contextualized in the scholarly discourse of the time in order to determine to what extent Jarava is representative of knowledge about the eyes in the early modern period. The example of vision and the eyes can be used to show how early modern medical writers such as Juan de Jarava and Agustín de Ruescas tackled the complexity of the world in their problem books.

Keywords: problem books; Juan de Jarava; anatomy of the eye; vision



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1. Early Modern ‘Problem Books’ in Context

In the 21st century, it is second nature to simply Google all sorts of questions that may arise during the course of the day. In the 16th century, any and all possible queries were collected in so-called problem books, which, like modern search engines, also held the appropriate solution at the ready. These books originated from the pseudo-Aristotelian *Problemata*, which were rediscovered around 1300.¹ Their authors were often physicians who prepared medical information for a broad public and combined it with highly heterogeneous pools of knowledge. The thematic field of the eye and vision is wide ranging in these works, not only in terms of content, but also in terms of architecture. Oikonomopoulou, who has studied the structure of medical books of the pseudo-Aristotelian collection, notes that “the authors of the *Problemata* took care to organise medical problems into books according to topic”, but “far from offering an orderly exposition of their respective topics, [they] give the impression of disjointed assemblies of heterogeneous causal enquiries” (Oikonomopoulou 2015, p. 61). The quoted scholar's reflections on ‘meandering sequences’ are extremely stimulating and of heuristic value for the discussion of later problem books. She proposes that they “might be tied to the cognitive processes and patterns of scientific research that were adopted by the different authors who gave input to the *Problemata*'s medical books: free to take up, develop in different directions, or re-consider various lines of enquiry, they left a vast record of overlapping sets of problems and solutions on select medical topics” (Oikonomopoulou 2015, p. 65). As far as vision is concerned, the 31st book is dedicated to the eyes, but the 3rd book, concerning wine-drinking and drunkenness, also deals with phenomena relating to seeing.² In the book about the eyes, some issues are treated twice, a point to be returned to in the comparison with Juan de Jarava.

In the following years, a number of different problem books significant with regard to Jarava's work were written. One of them, attributed to Alexander of Aphrodisias,

was translated several times from Greek into Latin. The versions by Giorgio Valla and Theodorus Gaza circulated in printed editions.³ Worthy of mention in our context is also a group of Greek *problemata* ascribed to Cassius the Iatrosophist and printed in Paris by Christian Wechel in 1541 in a Latin translation by the Dutch physician Adriaen de Jonghe.⁴

Of the Latin problem books written partly on the basis of the forementioned material, two are of relevance in our context; firstly the *Quæstiones Quædam Naturales cum Amatoriis Problematis* XX, by Niccolò Leonico Tomeo (1525), hellenist and translator of Aristotle (Fortuna 2010), who was also much appreciated by Erasmus (Russo 2005).⁵ The second is the *Aristotelis ac Philosophorum Medicorumque Complurium Problemata* of Marco Antonio Zimara, a very popular work that has seen 26 editions since the 1536 *princeps* and has been translated into various vernacular languages (Celati 2020).⁶

The first vernacular problem book was written by a physician from Bologna.⁷ The structure of this work is different from that of the several authors of the pseudo-Aristotelian *Problemata*. While the latter proceeded accumulatively, the Italian doctor organized the parts more consciously.⁸ As Nada Patrone (1988, pp. 29–30) has shown, Girolamo Manfredi draws from the pseudo-Aristotelian *Problemata*, but he is in general, more wordy, often repeating, albeit in different chapters and with expository variations, the same questions without respecting the arrangements of his model. Manfredi divides his *Liber de homine* or *Il perché* into two books. The first one is about the preservation of health, following the traditional pattern of the *sex res non naturales*. The second book deals with the parts of the body and thus, also with the eyes, to which 54 questions are dedicated.⁹ In Aristotle, including repetitions, there are only 29 questions related to this issue. This increase can mainly be ascribed to the great interest that the Italian shows in physiognomics.

The first book of problems written in Spanish by a physician is the *Libro Intitulado los Problemas*, by Francisco López de Villalobos (1543).¹⁰ He says nothing regarding the eyes or vision here, although he deals intensively with ophthalmology in the *Sumario de la Medicina* (López de Villalobos 1498). Another medical doctor, Agustín de Ruescas, published a versified problem book in dialogue form a little later (*Dialogo en verso Intitulado Centiloquio de Problemas*, Ruescas 1546), in which we find a number of questions concerning the eyes, to which we will return in more detail later.

2. Problemas o Preguntas Problemáticas by Juan de Jarava

Juan de Jarava, the author of the *Problemas o Preguntas Problemáticas*, the object of our study, was also likely a medical doctor (Sanz Hermida 1998, p. 629). The confirmed biographical data about him, however, are so sparse that some researchers have even assumed that the name was merely a pseudonym of Francisco de Enzinas.¹¹ Most of his books were published in the Low Countries. The printer of his problem book, published in 1544 in Louvain, was Rutger Rescius, a friend of Erasmus who usually specialized in Latin and Greek works (Bietenholz and Deutscher 2003, III, pp. 142–44). Jarava's work must have been quite successful because it prompted a new edition two years later in Alcalá de Henares with Juan de Brocar (Jarava 1546).

Jarava has primarily emerged as a translator. He rendered works by Lucian¹², Erasmus, and the Protestant botanist Leonhard Fuchs (López Piñero and López Terrada 1994) into Spanish. Even *Problemas o Preguntas Problemáticas*, thought for a long time to be an original work by the author, is actually—at least in part—a translation. As recently noted by Sanz Hermida (2017, p. 221, note 9), the work is largely based on Leonico Tomeo's *Quæstiones*. *Problemas o Preguntas Problemáticas*, which is divided into three parts, each dealing with love, natural phenomena, and wine.¹³ 19 of the 20 questions on love¹⁴ and 79 of the 226 “*Demandas Naturales*” can be traced back to the Italian Erasmist. One of the few *quaestiones* by Leonico Tomeo that Jarava does not translate is interestingly the one on the basilisk, the mythical creature that is equal to no other regarding the poisoning power of its gaze (Sanz Hermida 2001, pp. 22–23).

2.1. Love and Vision in Problemas o Preguntas Problemáticas

Despite the subdivision into three thematic areas, the topics of *Problemas o Preguntas Problemáticas* are jumbled up in a haphazard way, as often occurs in problem books. In the first part, there are four quite different questions that have to do with the eyes. The first of these, which also opens the collection, asks: “¿Por qué los que aman se prenden y toman del amor por los ojos de las que aman mas que por otra parte ninguna del cuerpo?” [Why do those who love take hold of love through the eyes of those they love more than through any other part of the body?] (Jarava 1544, f. A7v). Following Leonico Tomeo, different solutions are proposed. Initially, the eyes are identified as the organs that, like no other, reveal the emotions¹⁵ and are capable of attracting lovers with a ‘bond of passion’ (“lazo de deseo”, f. A7v). In the second part of the answer, the eyes are referred to as the domicile of the soul, as well as its messenger (“morada y aposento del alma”, “mensajeros de ella”), whereas love is designated as “afeción del alma” [affection of the soul]. The longing for the soul of the beloved thus explains the joy that lovers feel when they gaze at each other. In the third part, the argumentation changes fundamentally, and with recourse to Lycophronides, modesty is described as a woman’s most beautiful adornment. And Aristotle is quoted as a source for locating modesty in the eyes.¹⁶ The poorly consistent argumentation, which goes back to Leonico Tomeo, may be explained by the latter’s recourse to *The Deipnosophists*, or *Banquet of the Learned*, of Athenaeus of Naucratis.¹⁷ This has no discernible connection with the following reference to the poets’ depiction of Cupid:

Quamobrem & poetae qui ex amatorum oculis Cupidinem spicula in amantes iaculari cecinerunt, aut inde faces accendere quibus illos exureret, haud absurde rei ipsius naturam expressisse uidentur. [This is why one should not despise the way this matter was depicted by the poets, as they portrayed Cupid shooting arrows from the beloved-ones’ eyes against the lovers, or setting trusses of straw alight in order to burn them up]. (Leonico Tomeo 1525, f. LVIr)

As a connoisseur of Greek literature, the Italian was possibly thinking of texts such as Heliodorus’s novel *Aethiopica*. Here, Kalasiris explains to the father of the lovesick Chariclea how this form of evil eye is transmitted:

Conclusive proof of my point is furnished by the genesis of love, which originates from visually perceived objects, which, if you will excuse the metaphor, shoot arrows of passion, swifter than the wind, into the soul by way of the eyes. This is perfectly logical, because, of all our channels of perception, sight is the least static and contains the most heat, and so is more receptive of such emanations; for the spirit which animates it is akin to fire, and so it is well suited to absorb the transient and unstable impressions of love. (Heliodorus 1989, p. 25)¹⁸

The passage in which Leonico Tomeo speaks of “Cupidinem spicula” has been slightly modified by Jarava, who writes:

Por lo cual también los poetas que dijeron que Cupido, dios de amor, echaba de los ojos de las enamoradas en los ojos de los amadores unas como saetas, parecen haber declarado que se encendían de allí hachas que los quemaban como fuego. [For this reason the poets who said that Cupid, god of love, threw from the eyes of the lovers into the eyes of the lovers, some like arrows, seem to have declared that torches were lit from there that burned them like fire]. (Jarava 1544, f. A8r)

The agency of the god of love and the use of his arrows could have been familiar to Jarava from Spanish texts such as Luis de Lucena’s *Repetición de amores* – “Este mozo es muy poderoso en llamas y saetas” [This young man is very powerful in flames and arrows] (Lucena 2001, p. 109); “Resta agora declarar las cosas que los poetas atribuyen a Cupido, e son que es mozo, con alas, con arco e saetas, con hachas ardientes, con corazones atados en la cinta e con la venda de paño atada sobre los ojos” [Now it remains to declare the things that the poets attribute to Cupid, and they are that he is handsome, with wings, with a bow and arrows, with burning torches, with hearts tied in a ribbon and with a band of cloth tied

over his eyes] (Lucena 2001, pp. 117–18)—or the *Celestina* (“aquella ardiente llaga que la cruel frecha de Cupido me ha causado” [that burning wound that Cupid’s cruel arrow has inflicted on me], Rojas [1499] 2000, p. 90) to name but a few.

The much-discussed subject of the origin of love is dealt with in both texts in just a few lines and accompanied by a terse reference to “the poets”. It is worth stressing that Marsilio Ficino’s widely received Neoplatonic theory of the origin of love through the rays of the eyes is not taken into consideration.¹⁹ Even though Leonico Tomeo, who published an annotated translation of the *Parva naturalia* in 1523, was perhaps closer to Aristotelian ideas, scholarship has highlighted his attempt to reconcile Aristotelianism and Platonism (De Bellis 1975, pp. 73–74; Russo 2005; Holland 2020). It can be assumed that Leonico Tomeo is alluding here to the Platonic concept of perception. As Lindberg has shown in his still relevant study on vision, “the theory of intraocular fire reached its full development with Plato”, who elaborated on it, for instance, in *Timaeus* (Lindberg 1976, p. 5).²⁰ However, this does not happen in the context of notions of love. A much-discussed precursor of the Platonic theoretical framework was a poem by Empedocles (perhaps an explanation for the “poets” mentioned by Tomeo) in which Aphrodite is named as the creator of the eyes (Lindberg 1976, p. 4).²¹ We are concerned here with a reflection on which Aristotle also took a critical stance. It could be conceivable as well that Leonico Tomeo was reminded of the theory of love in Guido Cavalcanti’s complex canzone “*Donna me prega*”, discussed by two physicians, Dino del Garbo and Marsilio Ficino.²² In any case, it seems to me that Jarava, through his free translation, has suppressed the theoretical subtleties of his Latin model and, through the reference to Eros and his arrows, has invoked a far more concrete realm of imagination. There is no evidence in the *Preguntas Problemáticas* that Jarava was aware of the tension between Platonic and Aristotelian thought inherent in the work of his Italian model.

The seventh question, which seeks the reasons for the frequent weeping of lovers (“¿Por qué los enamorados suelen ser inclinados a llorar?”, Jarava 1544, [7], f. B4v) is explained quite simply by humoral theory and the natural moisture of the eyes from which the tears originate. Most likely Leonico Tomeo is guided by Aristotelian ideas, according to which the eyes are primarily made of water.²³

The answer to the quite peculiar question about the swelling of the eyes during coitus is far more complex.²⁴ Here, as with the first question, three possible reasons are given that call different authorities into play. The first part operates with the heating of the body, which would fill the pulse and the arteries, what is first and most clearly recognizable through the eyes as the “doors of the soul”. With quotations from Homer²⁵ and Democritus, Leonico Tomeo proves himself to be a fine maven of Greek antiquity. Aristotle endorses the presocratic philosopher’s theory that the eyes are made of water.

In another *quaestio*, Leonico Tomeo, followed by Jarava, is primarily oriented towards Plato. Investigating the problem of why lovers do not see the vices and defects in the body and soul of the ones they love, it is argued, with recourse to Platonic doctrine, that the very great movement of the spirit hinders the senses, and the person in love is blinded by the thing they love. This also explains why the poets considered Cupid, god of love, to be blind.

By drawing on Leonico Tomeo, Jarava has reworked and vulgarized ancient Greek reflections on the connection between physical and spiritual love and vision for a broader Spanish audience.²⁶

2.2. Vision in Juan de Jarava’s Questions on Nature

The natural questions concerning the eye and vision, 16 in total, cover different issues, such as the anatomy of the eye (94), the visual perception (59, 60, 131, 141, 177, 201, 213), and tears and crying (123, 132, 137, 159), among several others. They are hard to categorize.²⁷ Two of these *quaestiones*, like those on love, stem from Leonico Tomeo (59 and 60), while two others are taken from another modern author, Marco Antonio Zimara (94, 95), who also

dealt with the issues of the aforementioned problems 59 and 60. The lion's share, however, harkens back to ancient sources, namely the pseudo-Aristotelian *Problemata* (123, 130, 131, 132, 133, 141, 159, 213) and those of the pseudo-Alexander Aphrodisias (169, 172, 177).²⁸

An interesting example of the imitation of Leonico Tomeo is the 59th question on photopic and scotopic vision related to the color of the eyes: *¿Por qué los que tienen los ojos garzos no ven bien entre día, y de noche ven mejor y por el contrario, los que tienen los ojos negros, de día ven bien, y de noche mal?* [Why is it that those with black eyes do not see well during the day and see better at night, while those with black eyes see well during the day and poorly at night?].²⁹ It is once again a presocratic that the Italian hellenist incorporates into his argumentation and which thus gains entry into the Spanish text:

La causa es: porque –como dice Empédocles– en los ojos garzos hay mucho fuego y en los negros mucha agua, por lo cual los ojos garzos, por falta del humor de agua, no pueden bien ver de día y de noche ven mejor los ojos negros por el contrario por la falta del fuego ven mejor de día que de noche. [The reasons are: because—as Empedocles says—in blue eyes there is much fire and in black eyes much water, so that blue eyes, for lack of the humour of water, cannot see well by day and black eyes, on the contrary, for lack of fire, see better by day than by night]. (Jarava 1544, ff. F8v-G1r)

The source may have been Empedocles himself, or more likely Aristotle discussing his theses in *On the Generation of Animals*.³⁰ A very similar reasoning is also found in the pseudo-Aristotelian *Problemata*.³¹

¿Por qué los hombres tienen diversas maneras de ojos? [Why men have different eyes] So reads one of the various questions about the eyes posed by Juan de Jarava, that goes back to Zimara's *Aristotelis ac Philosophorum Medicorumque Complurium Problemata*, that are translated almost literally:

Respuesta. La causa es –como dice Aristóteles– la diversidad de humores, porque en los ojos hay cuatro telas y tres maneras de humores. Y la primera tela se dice consolidativa; la segunda cornea, a semejanza del cuerno y es clara; la tercera uvea a semejanza de una uva grande; la cuarta se dice tela de araña. Así el humor primero se dice albugineus blanco a semejanza de clara del huevo; el segundo glacialis a semejanza del hielo; el tercero vitreus a semejanza del vidrio claro. Esta diversidad pues de humores causa diversidad de ojos. [Answer. The cause is, as Aristotle says, the diversity of humours, because in the eyes there are four tunics and three kinds of humours. And the first tunic is called sclera; the second cornea, in the likeness of the horn and is clear; the third uvea in the likeness of a large grape; the fourth is called spider's web. Thus the first humour is called albugineus white in the likeness of egg white; the second glacialis in the likeness of ice; the third vitreus in the likeness of clear glass. This diversity of humours causes diversity of eyes]³².

Jarava, like Zimara,³³ explicitly quotes the Stagirite as authority, although he had no such specialized knowledge. Kalderon refers to the Aristotelian anatomy of the eye as “crude, even by ancient standards” (Kalderon 2015, p. 163). As Lloyd details, “there is no mention of the membrane enveloping the vitreous humour (retina, choroid, sclera), nor of the lens, nor of the anterior chamber between the cornea and the lens” (Lloyd 1978, p. 221).³⁴ Zimara's description of the eye, however, goes back to Galen or to Alhacen (ca. 965–ca. 1040), who built on the former's teachings.³⁵ The Islamic scholar played a leading role in the further advancement of the knowledge of the eye,³⁶ although the extensive work was slow to become known in Europe.³⁷ Alhacen's theories were popularized by widely read and often printed books such as *De Proprietatibus Rerum* by Bartholomaeus Anglicus.³⁸ The fifth book, which deals with the human body, contains several chapters on the eyes. The fifth chapter provides a description of the *humores* and *tunicae*, which resembles the conception of the Islamic scholar.³⁹ The condensed account of the medieval encyclopedia is

closer to Zimara's text than the detailed expositions of Galen and Alhacen.⁴⁰ It is worth noting that Bartholomew also mentions Alhacen in the third book in the chapter "De Virtute Visibili".⁴¹ Interestingly, he refers to him as "a philosopher"⁴², possibly as an explanation for the fact that his ideas were attributed in 16th century problem books to the Stagirite, who is often just called "the philosopher". This long digression has shown the complex ways in which knowledge about the eye found its way into the works of authors such as Juan de Jarava. At this point, we can state that the use of specialised terminology is present in those 'problems' that can be traced back to contemporary authors like Zimara, or they are nested in the translations of ancient authors, as will be shown below.

With reference to the pseudo-Aristotelian *Problemata*, the following questions are discussed: Why do onions make you cry?⁴³ Why does anger redden the eyes and shame the ears?⁴⁴ Why are tears hot when you cry and cold when you have an eye infection?⁴⁵ Why do you see better against the light with the hand in front of the eyes?⁴⁶ Why does eye disease make you see sharper?⁴⁷ And why do we stop sneezing by rubbing our eyes?⁴⁸ Two of the questions also raised in the *Problemata* concern the interaction of the two eyes. They ask: Why do you see better with one eye closed⁴⁹, and why can't we move one eye without the other?⁵⁰ The pseudo-Aristotelian text is, in these two cases, very freely adopted and heavily altered. In the modifications, interestingly, technical vocabulary is introduced to describe the structure of the eye, which is not contained in the model. In the first case, the question is the same as in *Problemata* XXXI, 2 ("Why do we see more accurately with one eye than with two?"), where the following argument is made: "Is it because more movements occur in two eyes, as in those who suffer from strabismus? Therefore the movement (of the two eyes) is not one, but that of the one eye is simple. So they do see less clearly" (Aristotle 2011, II, p. 317). The answer to the same question is quite different in Jarava:

La causa es: porque entramos los ojos proceden de un mismo principio, por lo cual, cuando se mueve el uno de los ojos, se mueve también aquel principio, el cual movido es necesario que haga mover el otro ojo, pues cerrando el uno de los ojos se pasa toda la virtud del ver de aquel al otro que está abierto, y como el principio no mueva más del un ojo, es necesario que aquel vea más y más cierto siendo la virtud mayor. [The cause is: because we enter the eyes proceed from the same source, therefore, when the one eye is moved, that source is also moved, which, when moved, must move the other eye, for when the one eye is closed, all the virtue of seeing is passed from the one to the other which is open, and since the source does not move more than one eye, it is necessary for the other to see more and more, the virtue being greater]. (Jarava 1544, [131], ff. L4v-L5r)

The Spaniard is much closer to Manfredi than to Aristotle in this answer.⁵¹ Both early modern physicians are quite obviously under the influence of Galenic doctrine, as confirmed by Siegel's presentation of the issue at stake:

Galen thought that after the loss of one eye the vision of the remaining eye was enhanced, since under normal conditions the cerebral pneuma was flowing from the brain to both eyes through the interconnection of both optic nerves at their crossing, the chiasma [. . .]. He drew from observation the faulty conclusion that we can see better with one eye when we close the other eye, since pneuma flows in larger quantities via the chiasma to the active eye. (Siegel 1970, p. 64)⁵²

Galen dedicates the tenth book of *The Usefulness of the Parts of the Body* to the eyes.⁵³ Here, the physician from Pergamon also sets out his idea of the intersecting optic tracts to which Jarava refers in question 213 (Why can't we move one eye without the other?):

La causa es: porque los nervios ópticos que causan la vista y que llevan el espíritu y aire luciente a los ojos proceden de un mismo principio del cerebro y cuando se juntan hacen una figura como la X y después apartándose va cada uno a cada niña de los ojos. Por lo cual viene que cerrando el uno de los ojos que todo el espíritu animal se pasa al otro ojo y que resplandece y centella con mucha luz

y este es buen remedio para que salga la paja o polvo que por el viento se ha entrado en alguno de los ojos. [The reason is: because the optic nerves that cause sight and that carry the spirit and bright air to the eyes come from the same source of the brain and when they come together they make a figure like an X and then moving apart each one goes to each pupil. Therefore it comes that by closing one of the eyes that all the spirit is passed to the other eye and that it shines and sparkles with much light and this is a good remedy so that the straw or dust that has entered one of the eyes through the wind can come out]. (Jarava 1544, [213], ff. Qr-v)

Without excluding the possibility that Jarava is referring to an author who himself modified Pseudo-Aristotle, it is important to highlight his understanding of the Galenic theory of optic nerves and the *Chiasma opticum*.⁵⁴

Some of the questions going back to Pseudo-Alexander were also popular in other problem books. Early modern readers were obviously preoccupied with issues such as “Why do we have five senses?”⁵⁵ Why do you see a strike earlier than you hear the sound it makes?⁵⁶ or Why don’t we see anything when we go from dark to light or from light to dark?⁵⁷ The influence of light conditions on the eyesight had aroused Galen’s interest as well. In the tenth book of *On the Usefulness of the Parts of the Body*, he elucidates the issue with a historical account:

And I dare say you have never heard that Dionysius, tyrant of Sicily, built a chamber above his prison, a chamber that was completely covered with shining chalk and very bright in other respects too; that he brought his prisoners up into this chamber after a protracted stay below; and that they, coming into bright light from deep, long-continued gloom would of course gladly look up to the light and as they did so, would be blinded, unable to endure the sudden, instantaneous onslaught of brilliance. (Galenus 1968, II, p. 473)⁵⁸

The narrative example is not only indicative of the framing of the medical discourse, but it also shows in our concrete case that Manfredi in *Il Perché* bases his explanations on Galen and also adopts the tyrant’s light prison as an illustration (Manfredi [1474] 1988, I, ii, 15, p. 198).

2.3. The Influence of Alcohol on the Eyes

In the *Demandas del Vino*, two *quaestiones* deal with the influence of wine consumption on vision. These are questions that also intrigue today’s Google users, who frequently query the causes of alcohol-induced diplopia, a question already raised by the Pseudo-Aristotle authors (Aristotle 2011, III. 10, I, pp. 109–11) and by Agustín de Ruescas (1546, ff. XVr-v). Jarava, instead, wonders why in the inebriated state everything seems to revolve around the drunken viewer (Jarava 1544, [14], f. S2r). The same puzzle also engaged the Pseudo-Aristotle⁵⁹ and the Pseudo-Alexander (Alexander of Aphrodisias 1513, II, 67, f. 270r) authors. The Spanish doctors distance themselves from the Aristotelian *Problemata* in their explanations of drink-related visual disorders and integrate their knowledge of the Galenic theory. Jarava, whose answer is mainly inspired by Alexander of Aphrodisias, refers to the optical nerve, which is not mentioned by his model.⁶⁰ For his part, Ruescas draws on the pneuma for his laconic explanations:

El fluctuoso movimiento
del visivo espíritu hace
tal se estime
que antes del apartamiento
de la una forma si os place
otra se imprime.
(f. XVv)⁶¹

3. Conclusions

Ruesca's attempt to popularize knowledge in verse deserves attention as such⁶². With regard to the knowledge about vision, the marginal notes are of outstanding importance. In this case, they refer not only to the Pseudo-Aristotelian *Problemata*, but to medieval medical literature, including that of Peter of Abano and the commentary of the *Canon* of Avicenna by Gentile da Foligno. It can thus be observed that two Spanish physicians, who published at almost the same time, took very different paths in their respective problem books, not only in terms of form, but also with regard to their sources. And also as far as the choice of topics is concerned, there are very different emphases, as will be shown in the conclusion by way of an example concerning vision. Unlike Ruescas, Jarava makes no mention of the evil eye⁶³, a topic that had been intensively discussed, not only by demonologists, but also by doctors⁶⁴. In his *Problema* LXXXVIII, Ruescas wonders why some people bewitch small children, horses, and crops. In his response, he attributes the blame to the poisonous spirits thrown from the irate eyes:

De grave odio concitados
o de lo bueno invidiosos
se aficionan,
lanzan con ojos airados
espíritus venenosos
que inficionan. (Ruescas 1546, f. XXIIIv)⁶⁵

The overly concise exposition is based on a large number of ancient and medieval authorities, most of which do not feature in Jarava's work, namely in this order: Aulus Gellius, Pliny the Elder, Gaius Julius Solinus, Alexander of Aphrodisias, Avicenna, Algazel, Albert the Great, and Thomas Aquinas. There are also two contemporaries quoted, namely Antonio de Cartagena, author of *Libellus de fascinatione*, published in 1530 (Salmón and Cabré 1998; Sanz Hermida 2001) and the Portuguese Antonio Luiz (Pérez Ibáñez 2015). The contrast of the simple patterned text with the extensive bibliographical references in the marginal gloss show how *problemata* literature attempted to cope with the complexity of the world. The problem books by almost forgotten authors such as Agustín de Ruescas and Juan de Jarava, which have been unfairly overlooked by scholarship, show not only what kind of knowledge about the human eye and vision was available in the early modern period, but also how this knowledge was processed and circulated.

It is striking that in the work of medical practitioners, there is a colourful mixture of scientifically sound theses with commonplaces and curiosities. It would certainly have surprised Juan de Jarava and Agustín de Ruescas that a 21st century reader would comb through their works in search of a particular topic such as the eye. Their concern was diametrically opposed to this way of reading, for they have quite deliberately not published one book on ophthalmology and another, say, on the theory of love. The blending of different topics and different approaches to one topic are the core of early modern problem books. This is what makes these books so compelling as a source of information about the variety of ideas circulating about the eye and vision during the 16th century.

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Notes

¹ See on this genre (Lawn 1963; Blair 1999; Cherchi 2001) and for Spain (Cuartero Sancho 1990; Carré and Cifuentes 2006; Benítez Prudencio 2016; and Sanz Hermida 2017).

² For the subject of wine in the Pseudo-Aristotelian *Problemata*, see Fortenbaugh (2015).

- 3 The translation by Peter of Abano was not printed; for the details of the transmission and the different printed editions, see (Lawn 1963, pp. 97–98). I quote in the following from the edition of Gaza's version of 1513. The recent study on the reception of Alexander of Aphrodisias by Robiglio and Di Giovanni (2021) does not address the *Problemata*. For Alexander's theory of vision, see Siegel (1970, p. 17).
- 4 See (Lawn 1963, p. 98) and the modern editions in Italian by Garzya and Masullo (Cassius 2004) and in German by Brodersen (Cassius 2023).
- 5 For Niccolò Leonico Tomeo (1456–1531), a disciple of the eminent scholar Demetrios Chalkokondyles and professor of Greek at Padua, see Russo (2005) and D'Ascia (1990), who focused on his Erasmist thought. The author of *Quaestiones* is not to be confused with Niccolò Leonicensino (1428–1524). For his problem book, see (Lawn 1963, p. 131).
- 6 See (Lawn 1963, p. 129). In this collection, we find one section dedicated to the eyes, *De oculis* (Zimara 1540, pp. 18–25).
- 7 The first edition dates from 1474 and was followed by a large number of reprints. A Spanish translation appeared in 1567; a modern edition was published in 2009.
- 8 See Oikonomopoulou (2015, p. 61): "[...] like the *Problemata* as a whole, the medical books are products of progressive accumulation, rely on different sources, and reflect the approaches of different scientists".
- 9 Nada Patrone (1988, p. 35) emphasizes that the second book is even more than the first "ricco di interrogativi curiosi e di annotazioni che sembrano non tanto dettati da interesse scientifico, quanto da una ricerca epistemologica per capire la natura nel suo complesso, quindi con frequenti riferimenti ai quesiti contenuti nei problemi aristotelici"; specifically about the chapter on the eyes, she notes: "Sullo stesso modello culturale è costruito il capitolo terzo *circa oculos*, comprendente cinquantaquattro quesiti, pur contenendo anche alcune questioni di natura strettamente medica" (Nada Patrone 1988, p. 36).
- 10 A few years earlier, *Secretos de Filosofía y Medicina Puestos a Manera de Perqué*, by López de Corella, 1539, was published, in which the questions presented in verse form are not answered. The answers appear in an enlarged edition, published in 1546. Also published before Villalobos were Hernán López de Yangua's *Cincuenta vivas Preguntas con otras Tantas Respuestas* (Medina del Campo, ca. 1540 and ca. 1543).
- 11 See Gilly (1985, pp. 343–44) and García Pinilla (1995). Bergua Caverio (2004) and González Bueno (2006) reject this thesis, drawing attention to the different translations of Lucian by the two authors.
- 12 For the renderings of Lucian, see (Vian 1988; Gernert 2017; Rodríguez López-Vázquez 2019).
- 13 For the structure of *Problemas o Preguntas Problemáticas*, see (Carré and Cifuentes 2006, p. 162), who characterize the content as "una elaborada mezcla de los temas característicos (filosofía e historia naturales, fisiognomía, etc.) de los libros de problemas de raíz aristotélica". Neither Lawn (1963) nor Cuartero Sancho (1990) mention Jarava.
- 14 Leonico Tomeo's tenth *quaestio*, in which a very clear description of an orgasm is given, is not adopted by Jarava, even though the Spaniard generally does not shy away from addressing physiological aspects of love, such as impotence.
- 15 With "afecciones de dentro" (Jarava 1544, f. A7v), Jarava translates Leonico Tomeo's "internasque animorum affectiones" (Leonico Tomeo 1525, f. LVIr).
- 16 The lyric poet Lycophronides has only survived in two fragments through Athenaeus, one of which deals precisely "with modesty that is the basis of beauty" (Robbins 2006). As Gamba (2014, pp. 335–36) has shown, Tomeo was in possession of a manuscript, partly by his own hand, of *Deipnosophista*, which is now kept in the French National Library in Paris (*Par. gr.* 1833).
- 17 "[...] Lycophronides is right to say: 'No male child, or unmarried girl/wearing gold, or deep-bosomed woman/has a pretty face, unless it expresses modesty/For a sense of decency sows beauty on a person'. Aristotle as well claimed that the only part of boyfriends' bodies that lovers pay attention to is the eyes, which is where the sense of decency resides" (Athenaeus 2010, pp. 269–72).
- 18 On the theory of vision in *An Ethiopian Story*, see (Goldhill 1996, p. 25): "In Heliodorus, seeing is not merely theory-laden but laden with the history of theory, as the narrative's scenes of viewing, and commentary on viewing, and manipulation of the language of viewing interrelate". See for "the role of the eyes in Greek ways of thinking about love" Cairns (2011), who also addresses the Greek novel and Heliodorus in detail.
- 19 See the fourth chapter of the seventh discourse of the Commentary on Plato (Ficino 2002, pp. 216–23). On the theory of seeing in Ficino, see Ebbersmeyer (1998).
- 20 For Plato's theory of vision see also Siegel (1970, pp. 23–27).
- 21 For Empedocles' theory of vision, see (Siegel 1959, 1970, pp. 16–17; O'Brien 1970; Sedley 1992).
- 22 Ardizzone (2002, p. 47) highlights that "the poem's primary structuring metaphor [...] is derived from the Aristotelian theory of vision as set forth in *De anima* II: VII, 418a27–19a". For the "dominant role of the eye in love imagery", see also Clark (2007, pp. 22–23). Toro Pascua and Vallín (2021) do not comment on any analogous examples in the medieval poetry of the Iberian Peninsula.
- 23 Aristotle (1984, p. 116), *On the Generation of Animals* 5.1, 779b14–779b33. See also (Lindberg 1976, p. 5). In his study of Aristotelian visual theory in 16th century Italy, Frangenberg (1991) only deals with authors who published after 1545.
- 24 "¿Dónde procede que en el acto venéreo y de lujuria aparecen los ojos más hinchados, llenos y húmedos que antes" (Jarava 1544, [8], f. B5r).

- 25 “[...] los ojos de los que están airados suelen estar colorados y encendidos, los cuales Homero no mal los hace semejantes a las hachas ardientes” (Jarava 1544, f. B5v). Possibly we are dealing with an allusion to the description of Agamemnon in the first book of the *Iliad*: “blazing with anger now, his eyes like searing fire” (Homer 1990, p. 81, v. 122).
- 26 Only the last *quaestio* on love is not modeled on the work of the Italian Graecist. It reads “¿Por qué cuentan y tienen el amor por una afeción y enfermedad de la cabeza?” (Jarava 1544, [20], f. C5v). The eyes have a key role in the response. On the one hand, they show the signs of being in love, namely, they are hollow and keep fluttering the eyelashes. On the other hand, it is stressed that the eyes alone change a lot, for which a medical justification is given: “El pulso de las arterias en ellos [i.e., en los ojos] es muy pequeño o ninguno, como muchos creyeron. Pero cuando les vienen al pensamiento la cosa que aman o que la oyen o la veen, principalmente súbitamente y sin pensar entonces con el ánimo turbado, se les muda el pulso y no guarda la natural igualdad ni orden que suele” (f. C6r).
- 27 The questions about the eyes of animals (55, 67, 110, 124, 210) will not be dealt with in this article.
- 28 It is not unlikely that the remaining question—Why do people cry for joy? (Jarava 1544, [137], ff. L8r-v)—is also based on a model text that needs to be determined. A much needed critical edition of *Problemas o Preguntas Problemáticas* ought to dissect this multifaceted network of relations in detail.
- 29 Jarava (1544, [59], f. F8v); compare with “LXVI. Cur glaucos habentes oculos interdum non acute cernunt, noctu autem melius: Contra autem qui nigros habent oculos, die quidem bene, noctu autem non bene cernunt?” (Leonico Tomeo 1525, f. LXIXv). See also Zimara (1540, pp. 18–19). Similarly, the 60th question of the *Demandas Naturales*, which deals with hyperopia, is based on the Italian; compare Jarava (1544, [60], ff. G1v-G2r) with Leonico Tomeo (1525, f. LXXr). For this issue, see also Zimara (1540, p. 21) and Manfredi ([1474] 1988, I, iii, 3, p. 193).
- 30 See O’Brien (1970) and Inwood (1992, p. 205) in his edition of *The Poem of Empedocles* and Aristotle (1984, p. 116), *On the Generation of Animals* 5.1, 779b15–20: “We must also gain a general notion about the difference in eyes, for what reason some are blue, some grey, some yellow and some dark. To suppose that the blue are fiery, as Empedocles says, while the dark have more water than fire in them, and that this is why the former, the blue, have not keen sight by day, viz. owing to deficiency of water in their composition, and the latter are in like condition by night, viz. owing to deficiency of fire—this is not well said if indeed we are to assume sight to be connected with water, not fire, in all cases”. See also Siegel (1959, p. 151), who observes that “Empedocles must have observed that dark pigmented have better vision during the bright daylight, but eyes with a blue have better performance at night”.
- 31 Aristotle, *Problemata* XIV, 14, (Aristotle 2011, I, p. 447): “Why do those who living in the south tend to have black eyes? Are eyes light-blue because of the excess of internal heat, and dark because of the absence of this, just as Empedocles says? Therefore, just as the eyes of those living in the north are light-blue through the internal heat being prevented from escaping because of the external cold, so the moisture (*in the eyes*) of those living in the south does not escape, because of the surrounding heat, whereas the heat escapes because there nothing obstructs it exit, and the moisture that remains produces the dark colour; for in the absence of light, what remains is dark. Or is the colour of the eye similar to the colour of the rest of the body? This is why, as those living in the north are fair-skinned, their eyes are light-blue (for this colour is akin to fair), and as those living in the south are dark, their eyes too are dark”.
- 32 Jarava (1544, [94], ff. I2r-v); compare with Zimara (1540, p. 19): “Quaeritur quare homines habent oculos diuersos?”. In the case of the following question—Why does man have two ears and two eyes and only one mouth? (Jarava 1544, [95], f. I2v), there is a rather loose reference to Zimara (1540, p. 18 “Quaeritur quare habemus unum nasum et duos oculos?”), who emphasizes the importance of the sense of sight over smell while Jarava subordinates seeing and hearing to talking.
- 33 See Zimara (1540, p. 19) who introduces his answer by saying: “Respondetur per Aristotelem”.
- 34 For Aristotle’s concepts of vision, see also Siegel (1970, pp. 27–32 and p. 50): “Aristotle based his still primitive idea of visual reception by water of the eye on the observation of a watery flow from an injured eye from which either the fluid of the chambers or, in more serious injuries, the vitreous can escape”.
- 35 Galen gives a very detailed description of the anatomy of the eye in *On Anatomical Procedures* (Galenus 1962, pp. 27–43). See hereto also Siegel (1970, pp. 42–45) and Münchow (1984, pp. 105–10). In her more recent study, Ierodiakonou (2014) does not address Galen’s ideas about the anatomy of the eye. On the influence of Galen on the Islamic scholar, see Lindberg (1976, p. 67) and in greater detail, Smith in his introduction to Alhacen (2001, I, pp. xxxvii–xliii and lvii–lix). On Alhacen’s anatomy and physiology of the eye (see Lindberg 1976, p. 67; Münchow 1984, pp. 144–46; Park 1997, pp. 79–80) and Smith in his introduction (Alhacen 2001, I, pp. lviii–lxix), where he states that: “[u]nlike Galen and Hunayn, Alhacen makes no mention of the retina” (Smith in Alhacen 2001, I, p. lviii), a part of the eye that is also not included in our text. Interesting on the significance of Alhacen for the Western theory of the gaze is Belting (2012).
- 36 See Siegel (1970, p. 12): “In spite of a rather extensive interest among scientists of late antiquity and the Middle Ages, no other comprehensive attempt was made before Alhazen to improve the traditional doctrine of vision which was still based on Galen’s concepts of anatomy, geometry and the pneumatic doctrine”.
- 37 See Park (1997, p. 77) on the transmission of *Kitab al-manazir* in the West: “Some time around 1200 it was translated into Latin as *De aspectibus*, *On Vision*, but manuscript copies spread slowly in Europe, partly because of the book’s bulk, 288 dense quarto

pages in the printed edition of 1572". Cf. also the more detailed account of the history of transmission in the preface to the edition by Smith (Alhacen 2001, I, pp. XIX–XXIII).

"The earliest incontestable evidence of its circulation is to be found in Bartholomeus Anglicus' *De proprietatibus rerum*, where the *De aspectibus* is cited several times", Smith in Alhacen (2001, I, p. XX).

About the eye, see Bartholomew's encyclopedia (Schleusener-Eichholz 1985, I, pp. 36–37).

Compare Bartholomaeus Anglicus (1492, ff. D2r-v). I quote the 15th century edition, since the corresponding second volume of the critical edition project at the publishing house Brepols has not yet been published.

See Smith in Alhacen (2001, I, pp. CXXIII, note 32).

"Still following the outline of Aristotle's *De anima*, Bartholomaeus includes a chapter on each of the five primary senses. Here, however, his authorities vary. His discussion of the sense of sight, for example, relies almost exclusively on the *Perspectiva* of Alhacen, to whom he refers simply as 'a philosopher'". Long in Bartholomaeus Anglicus (2007, p. 140 and the annotation p. 168).

See Jarava (1544, [123], ff. K8r-v) and Aristotle (2011, *Problemata* XX, 22: II, pp. 21–23).

See Jarava (1544, [130], ff. L4r-v) and Aristotle (2011, *Problemata* XXXI, 3: II, pp. 317–19).

See Jarava (1544, [132], ff. L5r-v) and Aristotle (2011, *Problemata* XXXI, 23: II, p. 335). See also Manfredi ([1474] 1988, II, iii, 51, pp. 205–6).

See Jarava (1544, [133], f. L5v) and Aristotle (2011, *Problemata* XXXI, 28: II, p. 339). See also Manfredi ([1474] 1988, II, iii, 46, p. 204).

See Jarava (1544, [141], ff. M2r-v) and Aristotle (2011, *Problemata* XXXI, 15: II, pp. 325–27). In this case, the answer to the same question deviates considerably from the Pseudo-Aristotelian material and is closer to Cassius in the translation of Junius (Cassius 1541, p. 19) (N^o 18 "Cur nonnulli quos lippitudo torsit, acutius videant?").

See Jarava (1544, [159], f. N1r) and Aristotle (2011, *Problemata* XXXI, 1: II, p. 317). See also Junius (Cassius 1541, p. 32 (N^o 45)).

See Jarava (1544, [131], ff. L4v-L5r).

See Jarava (1544, [213], ff. Q3r-v) and Aristotle (2011, *Problemata* XXXI, 7: II, pp. 321–25), in which, unlike in Jarava, an unusually long answer is given.

Manfredi ([1474] 1988, II, iii, 41, pp. 203–4). In formulating his question, the Italian doctor goes into more detail and explains that the gaze is like that of those who are agitated.

On Galen's pneuma theory, see in detail Ierodiakonou (2014).

Here, he mentions his treatise entitled *On Vision*, which has not come down to us.

(Galenus 1968, II, p. 491). On Galen's theory of the optic nerves, see Siegel (1970, pp. 59–64) and Reeves and Taylor (2004, p. 1097): "In Galen's model of the eye, the retina was formed by the optic nerve as it broke up and spread out; the retina's rich supply of blood vessels performed a nutritive function since the crystalline humour (lens) was the organ of vision. The optic nerves came together at the chiasma (from the Greek letter x -chi) in order to produce a single impression in binocular vision but did not interchange." On Galen's instructions for dissecting the eye in *De anatomicis administrationibus* and its reception see Koelbing (1967, p. 28).

See Jarava (1544, [169], ff. N6r-v) and Alexander of Aphrodisias (1513, II, 58, f. 270r). On the primacy of the sense of sight, see Jütte (2007).

See Jarava (1544, [172], ff. N7r-v) and Alexander of Aphrodisias (1513, I, 36, f. 258v) and Ruescas (1546, ff. IIv-IIIr).

Jarava (1544, [177], ff. O1r-v) and Alexander of Aphrodisias (1513, II, 34, f. 267v). Compare with Manfredi ([1474] 1988, I, ii, 15, p. 198) and Ruescas (1546, ff. IIr-v). See also Aristotle (1984, p. 116), *On the Generation of Animals* 5.1, 779b15–20.

As the editor Tallmadge May observes, "[t]here seems to be no other source for this story." (Galenus 1968, p. 473, note 21).

The question is dealt with twice in the *Problemata*: III, 9 and III, 20 (Aristotle 2011, I, pp. 107–9 and pp. 119–21).

"Y ansí revueltos salen al encuentro a las cosas que están delante por el nervio que se causa la vista y por la niña de los ojos, las cuales cosas torna tales como ellos son". Jarava (1544, [14], f. S2v).

"The fluctuating movement/of the visual spirit makes/such that it is estimated/that before the turning away/of the one form if it pleases you/another is imprinted".

As in the case of Jarava's problem book, a modern edition of this interesting text is a desideratum.

Reeves and Taylor (2004, pp. 1097–98): "The phenomenon of the 'evil eye' worked in a similar manner. A glance from an individual of a 'distempered' disposition was harmful because that person sent forth a 'distempered beam' [...]. The evil eye became embedded into folklore and survives as a superstitious belief in communities today".

Interesting examples are Diego Álvarez Chanca and Antonio de Cartagena, who have been studied by Salmón and Cabré (1998) and Sanz Hermida (2001). Crucial is also the French physician Jacques Grévin, who took up the topic in his book on poisons and antidotes. See Petry (2012, p. 463): "Furthermore, it was also logical to assume that poisons could infiltrate various types of *pneumata*, including those that made possible the sense of sight. As belief in and fear of witches increased in the general population over the course of the sixteenth century, the question of fascination, or bewitchment through the eyes, began to receive

medical attention. It was commonly thought that a woman could bewitch a man with her eyes to make him fall in love, or that the evil glance of an old woman could cause illness in children”.

- ⁶⁵ “Of grave hatred conceived/or of the beautiful invidious/they are fond of,/they hurl with angry eyes/poisonous spirits/that infect”.

References

- Alexander of Aphrodisias (Attributed). 1513. *Problemata*. Translated by Theodoros Gaza. Venezia: Aldus.
- Alhacen. 2001. *Alhacen's Theory of Visual Perception*. Translated and Edited by A. Mark Smith. 2 vols. Philadelphia: American Philosophical Society.
- Ardizzone, Maria Luisa. 2002. *Guido Cavalcanti. The Other Middle Ages*. Toronto: University of Toronto Press.
- Aristotle (Attributed). 2011. *Problems*. Translated and Edited by Robert Mayhew. Cambridge: Harvard University Press.
- Aristotle. 1984. *Complete Works*. Edited by Jonathan Barnes. Princeton: Princeton University Press.
- Athenaeus. 2010. *The Learned Banqueters. Books 12-13.594b*. Translated and Edited by S. Douglas Olson. Cambridge: Harvard University Press.
- Bartholomaeus Anglicus. 1492. *De proprietatibus rerum*. Nürnberg: Anton Koburger.
- Bartholomaeus Anglicus. 2007. *De proprietatibus rerum. Vol. 1*. Edited by Heinz Meyer, Michael W. Twoney, Bernd Roling and R. James Long. Turnhout: Brepols.
- Belting, Hans. 2012. *Florenz und Bagdad. Eine westöstliche Geschichte des Blicks*. München: Beck.
- Benítez Prudencio, José Javier. 2016. Aristotelismo y literatura de problemas en castellano: Ketham, López de Corella y Ferrer de Valdecebro. In *Traducción y transmisión doctrinal de la medicina grecolatina desde la antigüedad hasta el mundo moderno*. Edited by María Teresa Santamaría Hernández. Cuenca: Ediciones de la Universidad de Castilla-La Mancha, pp. 183–206.
- Bergua Caverio, Jorge. 2004. De nuevo sobre Francisco de Enzinas y Juan de Jarava. *Bibliothèque d'Humanisme et Renaissance* 66: 387–401.
- Bietenholz, Peter G., and Thomas B. Deutscher. 2003. *Contemporaries of Erasmus. A Biographical Register of the Renaissance and Reformation*. 3 vols. Toronto: University of Toronto Press.
- Blair, Ann. 1999. The Problemata as a natural philosophical genre. In *Natural particulars. Nature and the Disciplines in Renaissance Europe*. Edited by Anthony Grafton and Nancy G. Siraisi. Cambridge: MIT Press, pp. 171–204.
- Cairns, Douglas L. 2011. Looks of Love and Loathing: Cultural Models of Vision and Emotion in Ancient Greek Culture. In *Dossier. Émotions Mêtis*. Paris and Athens: Éditions de l'École des hautes études en sciences sociales/Daedalus.
- Carré, Antònia, and Lluís Cifuentes. 2006. Éxito y difusión de la literatura de problemas en la Castilla del siglo XVI: La traducción castellana de *Il perché* de Girolamo Manfredi (Zaragoza, 1567). *Asclepio* 58: 149–96. [CrossRef]
- Cassius, Iatrosophista. 1541. *De animalibus medicae quaestiones*. Translated by Hadrianus Junius. Paris: Christian Wechel.
- Cassius, Iatrosophista. 2004. *I problemi di Cassio Iatrosophista*. Edited and Translated by Antonio Garzya and Rita Masullo. Naples: Accademia Pontaniana.
- Cassius, Iatrosophista. 2023. *Fragen und Antworten zur Medizin*. Translated and Edited by Kai Brodersen. Speyer: Kartoffeldruck-Verlag.
- Celati, Alessandra. 2020. Zimara, Marco Antonio. In *Dizionario Biografico degli Italiani*. Vol. 100. Roma: Istituto della Enciclopedia Italiana. Available online: <https://www.treccani.it> (accessed on 9 April 2023).
- Cherchi, Paolo. 2001. Il quotidiano, i *Problemata* e la meraviglia. Microstoria di un microgenere. *Intersezioni* 21: 243–75.
- Clark, Stuart. 2007. *Vanities of the Eye. Vision in Early Modern European Culture*. Oxford: Oxford University Press.
- Cuartero Sancho, Pilar. 1990. Las colecciones de problemas en el Siglo de oro. *Bulletin hispanique* 92: 213–35. [CrossRef]
- D'Ascia, Luca. 1990. Un erasmiano italiano? Note sulla filosofia della religione di Niccolò Leonico Tomeo. *Rivista di storia e letteratura religiosa* 26: 242–64.
- De Bellis, Daniela. 1975. Niccolò Leonico Tomeo interprete di Aristotele naturalista. *Physis. Rivista internazionale di storia della scienza* 17: 71–93.
- Ebbesmeyer, Sabrina. 1998. Die Blicke der Liebenden—Zur Theorie, Magie und Metaphorik des Sehens in De amore von Marsilio Ficino. In *Blick und Bild im Spannungsfeld von Sehen, Metaphern und Verstehen*. Edited by Tilmann Borsche, Johann Kreuzer and Christian Strub. München: Fink, pp. 197–211.
- Ficino, Marsilio. 2002. *Commentaire sur le Banquet de Platon. De l'Amour/Commentarium in Convivium Platonis*. Translated and Edited by Pierre Laurens. Paris: Les Belles Lettres.
- Fortenbaugh, William W. 2015. On Problemata 3: Wine-Drinking and Drunkenness. In *The Aristotelian Problemata Physica: Philosophical and Scientific Investigations*. Edited by Robert Mayhew. Leiden: Brill, pp. 100–23.
- Fortuna, Stefania. 2010. Niccolò Leonico Tomeo e Galeno: Manoscritti, edizioni e traduzioni. In *Storia della tradizione e edizione dei medici greci*. Edited by Véronique Boudon-Millot, Antonio Garzya, Jacques Jouanna and Amneris Roselli. Napoli: D'Auria, pp. 323–36.
- Frangenberg, Thomas. 1991. Perspectivist Aristotelianism: Three Case-Studies of Cinquecento Visual Theory. *Journal of the Warburg and Courtauld Institutes* 54: 137–58. [CrossRef]
- Galenus. 1962. *Galen on Anatomical Procedures*. Translated by Wynfrid Laurence Henry Duckworth. Edited by Malcolm Cameron Lyons and Bernard Towers. Cambridge: Cambridge University Press.
- Galenus. 1968. *On the Usefulness of the Parts of the Body*. Translated by Margaret Tallmadge May. Ithaca: Cornell University Press.
- Gamba, Eleonora. 2014. Un nuovo manoscritto copiato da Niccolò Leonico Tomeo (Par. gr. 1833). Appunti per la ricostruzione della sua biblioteca. *Eikasmós* 25: 329–59.
- García Pinilla, Ignacio Javier. 1995. On the identity of 'Juan Jarava' medico y phylosopho. *Bibliothèque d'Humanisme et Renaissance* 57: 45–66. [PubMed]

- Gernert, Folke. 2017. Erasmo, Luciano y algunos médicos humanistas de la primera mitad del siglo XVI (Andrés Laguna y Juan de Jarava). In *Sátira menipea y renovación narrativa en España*. Edited by Pierre Darnis, Elvezio Canonica, Pedro Ruiz and Ana Vian. Bordeaux: Presses Universitaires de Bordeaux, pp. 145–60.
- Gilly, Carlos. 1985. *Spanien und der Basler Buchdruck bis 1600*. Basel: Helbing und Lichtenhahn.
- Goldhill, Simon. 1996. Refracting Classical Vision: Changing Cultures of Viewing. In *Vision in Context. Historical and Contemporary Perspectives on Sight*. Edited by Teresa Brennan and Martin Jay. New York: Routledge, pp. 15–28.
- González Bueno, Antonio. 2006. Enzinas vel Jarava: Algunas reflexiones sobre la autoría de un tratado de Botánica renacentista conservado en la Biblioteca Marqués de Valdecilla. *Pecia Complutense* 3: 11–20.
- Heliodorus. 1989. An Ethiopian Story. In *Collected Ancient Greek Novels*. Edited by Bryan P. Reardon. Translated by John R. Morgan. Berkeley: University of California Press, pp. 349–588.
- Holland, Nicholas. 2020. Niccolò Leonico Tomeo's Accounts of Veridical Dreams and the Idola of Synesius. In *Platonism: Ficino to Foucault*. Edited by Valery Rees, Anna Corrias, Francesca M. Crasta, Laura Follesa and Guido Giglioni. Leiden: Brill, pp. 123–48.
- Homer. 1990. *The Iliad*. Translated by Robert Fagles. New York: Penguin.
- Ierodiakonou, Katerina. 2014. On Galen's theory of vision. *Bulletin of the Institute of Classical Studies. Supplement* 114: 235–47.
- Inwood, Brad. 1992. *The Poem of Empedocles. A Text and Translation*. Toronto: University of Toronto Press.
- Jarava, Juan de. 1544. *Problemas y preguntas problemáticas*. Leuven: Rutger Rescius.
- Jarava, Juan de. 1546. *Problemas y preguntas problemáticas*. Alcalá de Henares: Juan de Brocar.
- Jütte, Robert. 2007. Augenlob-oder die (Neu-)Bewertung des Sehsinnes in der Frühen Neuzeit. In *Evidentia. Reichweiten visueller Wahrnehmung in der Frühen Neuzeit*. Edited by Gabriele Wimböck and Frank Büttner. Berlin: Lit-Verlag, pp. 39–56.
- Kalderon, Mark Eli. 2015. *Form without Matter. Empedocles and Aristotle on Color Perception*. Oxford: Oxford University Press.
- Koelbing, Huldrych M. 1967. *Renaissance der Augenheilkunde 1540–1630*. Bern: Huber.
- Lawn, Brian. 1963. *The Salernitan Questions. An Introduction to the History of Medieval and Renaissance Problem Literature*. Oxford: Clarendon Press.
- Leonico Tomeo, Niccolò. 1525. *Quæstiones quædam naturales cum amatoriis problematibus XX*. Venice: Bernardino dei Vitali.
- Lindberg, David C. 1976. *Theories of Vision from Al-Kindi to Kepler*. Chicago: University of Chicago Press.
- Lloyd, Geoffrey Ernest Richard. 1978. The Empirical Basis of the Physiology of the Parva Naturalia. In *Aristotle on the Mind and the Senses*. Edited by Geoffrey Ernest Richard Lloyd and Gwilym Ellis Lane Owen. London: Cambridge University Press, pp. 215–40.
- López de Villalobos, Francisco. 1498. *El sumario de la medicina*. Salamanca: Juan de Porras.
- López de Villalobos, Francisco. 1543. *Libro intitulado los problemas*. Zamora: Juan Picardo.
- López Piñero, José María, and María Luz López Terrada. 1994. *La traducción por Juan de Jarava de Leonhart Fuchs y la terminología botánica castellana del siglo XVI*. Valencia: Instituto de Estudios Documentales e Históricos sobre la Ciencia.
- Lucena, Luis de. 2001. *Repetición de amores*. Edited by Miguel M. García-Bermejo Giner. In *Tratados de amor en el entorno de "Celestina" (siglos XV-XVI)*. Edited by Pedro M. Cátedra. Madrid: Sociedad Estatal España Nuevo Milenio, pp. 93–160.
- Manfredi, Girolamo. 1988. *Liber de homine. Il perché*. Edited by Anna Laura Trombetti Budriesi and Fabio Foresti. Bologna: Luigi Parma. First published 1474.
- Münchow, Wolfgang. 1984. *Geschichte der Augenheilkunde*. Stuttgart: Enke.
- Nada Patrone, Anna Maria. 1988. Girolamo Manfredi nella cultura medica e astrologica d'età umanistica. In *Girolamo Manfredi. Liber de homine. Il perché*. Edited by Anna Laura Trombetti Budriesi and Fabio Foresti. Bologna: Luigi Parma, pp. 25–40.
- O'Brien, Denis. 1970. The Effect of a Simile: Empedocles' Theories of Seeing and Breathing. *The Journal of Hellenic Studies* 90: 140–79. [CrossRef]
- Oikonomopoulou, Katerina. 2015. The Problemata's Medical Books: Structural and Methodological Aspects. In *The Aristotelian Problemata Physica: Philosophical and Scientific Investigations*. Edited by Robert Mayhew. Leiden: Brill, pp. 61–78.
- Park, David Allen. 1997. *The Fire within the Eye. A Historical Essay on the Nature and Meaning of Light*. Princeton: Princeton University Press.
- Pérez Ibáñez, María Jesús. 2015. António Luiz, aproximación a un médico humanista. In *Humanismo y pervivencia del mundo clásico. V: Homenaje al profesor Juan Gil*. Edited by José María Maestre Maestre, Sandra Inés Ramos Maldonado, Manuel Antonio Díaz Gito, María Violeta Pérez Custodio, Bartolomé Pozuelo Calero and Antonio Serrano Cueto. Cádiz: Instituto de Estudios Humanísticos, vol. 4, pp. 2009–22.
- Petry, Yvonne. 2012. Vision, Medicine, and Magic: Bewitchment and Lovesickness in Jacques Grevin's Deux livres des venins (1568). In *Religion and the Senses in Early Modern Europe*. Edited by Wietse de Boer and Christine Göttler. Leiden: Brill, pp. 455–72.
- Reeves, Carole, and David Taylor. 2004. A History of the Optic Nerve and its Diseases. *Eye* 18: 1096–109. [CrossRef] [PubMed]
- Robbins, Emmet. 2006. Lykophronides. In *Der Neue Pauly*. Edited by Hubert Cancik, Helmuth Schneider and Manfred Landfester. Leiden: Brill. Available online: http://dx.doi.org/10.1163/1574-9347_dnp_e713780 (accessed on 2 April 2023). [CrossRef]
- Robiglio, Andrea A., and Matteo Di Giovanni. 2021. *Alexander of Aphrodisias in the Middle Ages and the Renaissance*. Turnhout: Brepols.
- Rodríguez López-Vázquez, Alfredo. 2019. Enzinas, Jarava y Aguilar: Tres estilos de traducción del Icaromenipo de Luciano. In *La memoria de un hombre: El burgalés Francisco de Enzinas*. Edited by Cristina Borreguero and Asunción Retortillo. Burgos: Universidad de Burgos, pp. 379–90.
- Rojas, Fernando de (y antiguo autor). 2000. *La Celestina*. Edited by Francisco J. Lobera, Guillermo Serés, Paloma Díaz-Mas, Carlos Mota, Íñigo Ruiz Arzálluz and Francisco Rico. Barcelona: Crítica. First published 1499.
- Ruescas, Agustín de. 1546. *Diálogo en verso intitulado Centiloquio de problemas*. Alcalá de Henares: Juan de Brocar.

- Russo, Emilio. 2005. Leonico Tomeo, Niccolò. In *Dizionario Biografico degli Italiani*. Roma: Istituto della Enciclopedia Italiana, vol. 64. Available online: <https://www.treccani.it> (accessed on 28 March 2023).
- Salmón, Fernando, and Montserrat Cabré. 1998. Fascinating Women: The Evil Eye in Medieval Scholasticism. In *Medicine from the Black Death to the French Disease*. Edited by Jon Arrizabalaga Valbuena, Roger French, Andrew Cunningham and Luis García Ballester. Aldershot: Ashgate, pp. 53–84.
- Sanz Hermida, Jacobo. 1998. Porque no pareciesse contar vejezes. El concepto de traducción en Juan de Jarava. In *Edición y anotación de textos*. A Coruña: Univerisdad.
- Sanz Hermida, Jacobo. 2001. *Cuatro tratados médicos renacentistas sobre el mal de ojo*. Valladolid: Junta de Castilla y León.
- Sanz Hermida, Jacobo. 2017. Les Problemata aristotéliens et leur diffusion dans la littérature espagnole du Siècle d'Or. In *Aristote dans l'Europe des XVI^e et XVII^e siècles. Transmissions et ruptures*. Edited by Mary-Nelly Fouligny and Marie Roig Miranda. Nancy: Université de Lorraine, pp. 217–32.
- Schleusener-Eichholz, Gudrun. 1985. *Das Auge im Mittelalter*. München: Fink, 2 vols.
- Sedley, David N. 1992. Empedocles' Theory of Vision and Theophrastus' De sensibus. In *Theophrastus: His Psychological, Doxographical and Scientific Writings*. Edited by William W. Fortenbaugh and Dimitri Gutas. New Brunswick: Rutgers, pp. 20–31.
- Siegel, Rudolph E. 1959. Theories of Vision and Color Perception of Empedocles and Democritus. *Bulletin of the History of Medicine* 33: 145–59.
- Siegel, Rudolph E. 1970. *Galen on Sense Perception*. Basel: Karger.
- Toro Pascua, María Isabel, and Gema Vallín. 2021. Modelos gallego-portugueses de uso retórico: La personificación de los ojos en la escuela castellana. *Revista de filología española* 101: 489–508. [[CrossRef](#)]
- Vian, Ana. 1988. Fábula y diálogo en el Renacimiento: Confluencia de géneros en el *Coloquio de la mosca y la hormiga* de Juan de Jarava. *Dicenda* 7: 449–94.
- Zimara, Marco Antonio. 1540. *Aristotelis ac Philosophorum Medicorumque complurium Problemata*. Basel: Robert Winter.

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