

ON THE TRAIL OF LOST INGREDIENTS

TRAS LA PISTA DE LOS INGREDIENTES PERDIDOS

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ABSTRACT

This paper addresses the question of translation as research. Using examples from Cennino Cennini's *Libro dell'arte* and the 15th century Bolognese Manuscript, written in Italian and Latin, the author uses case studies to exemplify the use of secondary literature, dictionaries and comparative evidence from within the manuscript itself for the identification of materials. The author concludes that translation imposes a very strict discipline, which constrains the translator to push lexical research to its limits.

KEYWORDS

Translation; medieval Italian; artists' materials; technical art History; alum.

RESUMEN

Este documento aborda la cuestión de la traducción como investigación. Utilizando ejemplos del *Libro dell'arte* de Cennino Cennini y el manuscrito boloñés del siglo XV, escritos en italiano y latín, el autor utiliza estudios de caso para ejemplificar el uso de literatura secundaria, diccionarios y evidencia comparativa del interior del propio manuscrito para la identificación de materiales. El autor concluye que la traducción impone una disciplina muy estricta, que obliga al traductor a llevar la investigación léxica a sus límites.

PALABRAS CLAVE

Traducción; italiano medieval; materiales para artistas; Historia técnica del Arte; alumbre.

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1. INTRODUCTION

This paper addresses the subject of translation as research, using examples from Cennino Cennini's *Il libro dell'arte*, dated to around 1400, and *The Bolognese Manuscript*, containing artists' recipes in Italian and Latin and dated to the first quarter of the fifteenth century. It is easy to assume that translation is a somewhat mechanical task, far removed from academic research. However, the process of translation imposes a strict discipline; in the course of a book, only a handful of words can be left in the original language as being 'untranslatable' before the reader may begin to question to what extent the work is a translation, as opposed to an edition. This constrains the translator to pursue words 'to the bitter end', through dictionaries commentaries and secondary literature, until a satisfactory meaning is discovered.

2. CARDARE

We begin with an example taken from the *Libro dell'arte*, concerning dictionaries. It may seem obvious that, if the translator does not know a word, she should simply look it up in the dictionary. However, it must be borne in mind that dictionaries are compiled by people and that those people, while experts in the field of lexicography, are unlikely to be experts in, for example, historical artists' techniques. For this reason, when looking up technical terms particular vigilance is required.

In chapter 175 (Broecke; Thompson 102), Cennino describes how you might use shell gold to *cardare* drapery «in the old-fashioned way». In chapter 163 (Thompson 95) he uses the same verb to explain how you might embellish painted fish with gold.

If we look up *cardare* in the *Voce Crusca* (a dictionary of the Tuscan dialect, first compiled in 1612 and then updated periodically), we are directed to *cardo*, which is defined as «thorny grasses»; we are then told that the verb *cardare* is derived from the use of the spiky cob of a plant to brush fabric; *cardare* is also listed as being equivalent to *dare il cardo* («to talk sharply about someone».)²

Turning to a modern dictionary, Battaglia's multi-volume work spanning 1961 – 2004, *cardare* is defined in a similarly and the derivation from the Latin *cardo*, *cardinis*, meaning «a line drawn from North to South» is also noted.³

All of these definitions, however, seem far less relevant to Cennino's usage than the final definition given by Battaglia: «to decorate with little touches of gold or silver». It could appear that there is no need to look further, but this would be a mistake. If we follow the reference for this definition (in a separate volume), we find that the only supporting passage offered is the fish passage from Cennino. It seems, then, that the lexicographer has simply surmised this meaning after reading Cennino and seeing no relevance in the existing definitions.

In fact, however, the existing definitions show themselves to be precisely relevant if we examine the case more closely. In the fish passage, Cennino goes on to say that the fish are to be decorated, specifically, with spines. This calls to mind the spiky cobs of plants and the vertical line on the compass in the

² *Lessicografia della Crusca*, Accademia della Crusca, 1612 (1st ed.).

³ Battaglia, S., *Grande dizionario della lingua italiana*, Unione Tipografico-Editrice Torinese, Turin, 1962, vol. 2, pp. 751-752.

dictionary definitions. In the case of the chapter on drapery, Cennino gives us the information that the drapery is to be decorated «*amodo anticho*» ('in the old-fashioned way'). By the end of the fourteenth century, artists had begun to paint realistic drapery folds rather than using the very stylised 'striation' typical of Byzantine art; this was characterised by very sharp, decorative lines of gold tracing the fall of the folds. Again, these sharp, pointed lines marry well with the spiky cobs and the compass line in the dictionary definitions of *cardare*.

There is no need, therefore, to invent a new definition of *cardare* to fit the context of Cennino. The existing definitions make it clear that *cardare* essentially refers to the use of sharp, straight, 'spiky' lines, and in both the instances where the word is used by Cennino, these fit the context perfectly.

3. CAP-

These terms *capitellum*, *capitello* and *ranno da capo* appears frequently throughout the Bolognese manuscript. The Italian *ranno* means 'lye', and is a Tuscan alternative to *liscivo* and the Latin *lexivium* or *lescivium*, also found frequently in the Bolognese Manuscript. In her translation of the Bolognese manuscript, Mrs. Merrifield does not make any consistent distinction between the terms containing the *cap-* root and *ranno-liscivo-lexivium*, although in two cases she does draw a distinction. In recipe 11, on refining ultramarine, she uses the term «soap ley», as opposed to just 'ley', for *capitello*, after an instruction that soap should be added to ultramarine before the *capitello*; and, in recipe 209, she uses «caustic ley» as a translation for *liscia per capitello*, as part of an instruction to make lye from quicklime and ash.⁴ These instances suggest that Merrifield senses a distinction between the substance denoted by the *cap-* terms and standard lyes. However, in other recipes employing the *cap-* terms this distinction is not acknowledged.⁵

The French physician, Guy de Chauliac, whose widely circulated and translated *Chirurgia Magna* was completed in 1363, gives a recipe for *capitellum* as a cleansing lotion for the head: «*Capitellum autem sit ex duabus partibus cinerum stipitum fabarum, & tertia calcis vivae: quae dissolutur aqua instar lixivij, & colentur: & quod distillabit, est capitellum*» («And *capitellum* is made from two parts ash of bean stalks and the third part quick lime: these are dissolved in water, in the same way as lye [*lixivij*], and strained: and that which is drained off is *capitellum*»).⁶ He is very clear here that *capitellum* is not basic lye, since he overtly contrasts lye with the material that he is synthesising.

Although de Chauliac's recipe may well have been known by the authors of the sources for the Bolognese Manuscript, we must still question whether his *capitellum* is the same as theirs. Furthermore, since the recipes derive from a variety of sources, we must also ask whether the *cap-* terms are used consistently throughout the Bolognese Manuscript.

⁴ For ease of reference, Mrs. Merrifield's numbering of the recipes within *the Bolognese Manuscript* will be used throughout this paper.

⁵ Merrifield, M. *Original Treatises, Dating From the XIIth to XVIIIth Centuries, on the Arts of Painting, in Oil, Miniature, Mosaic, and on Glass; of Gilding, Dyeing, and the Preparation of Colours and Artificial Gems; Preceded by a General Introduction; with Translations, Prefaces and Notes*, John Murray, London, 1849 (vol. 2), pp. 354, 358-359 & 490-491.

⁶ Chauliac, G. De, *Chirurgia Magna Guidonis de Gauliaco*, In off. Q. Philip Tinghi, Flor. Apud Simphorianum Beraud and Stephanum Michaëlem, Lugduni, 1585 (1st edition 1363), p. 283. All translations, unless otherwise stated, are by the author.

One indication of consistency is the fact that particular processes seem to require this specific material more than others. Of fourteen occurrences of the *cap-* terms in the Manuscript, four concern the refinement and preparation of azurite, while seven concern the preparation and use of lakes. Although ordinary lyes are also indicated in other recipes for these same processes, the authors of a variety of source texts seem to have agreed on the propitiousness of the *cap-* material for these procedures as opposed to others.

Some recipes within the Bolognese Manuscript confirm the similarity of the *cap-* terms there with the *capitellum* of de Chauliac. Recipe 209, on making lake pigments from coloured fabric clippings, begins, «*Pilglia calcina viva et cenera recocta tanto de luna q(uan)to de laltra et fa lisia p(er) capitello*» («Gather quicklime and twice-baked ashes, as much of the one as of the other, and make *lisia p(er) capitello*»). Recipe 221 gives instructions on making soap and begins with a description of a complex process for making very pure *capitello* by running rain water over «*doi parte de cenera de bagno et una parte de calcina viva*» («two parts bath ash and one part quicklime»⁷).

A possible third recipe has, until now, been obscured by editing. Chapter 111, on making kermes lake from fabric clippings, begins, «*Reccipe cenere ricotta et fa capitello et fanne ran(n)o la quale cenere usa li te(n)tor(e) et s(er)balonecto et chiaro et poi pone a bullir(e) el dicto ran(n)o i(n) una pignatta vitriat(a) et q(ua)n(do) el ditto ran(n)o bolle metice una zuppa de calcina viva*». Mrs. Merrifield assumes that *et fa capitello* and *et fanne ran(n)o* are repetitions of the same idea and translates the first phrase, «Take baked ashes, such as the dyers use, and make a caustic ley, and keep it clean and clear». Muzio, the most recent editor and translator into modern Italian of the Bolognese Manuscript, takes a similar approach.⁸

However, if we maintain that *capitello* and *ranno* are distinct materials, there is no repetition. The opening lines can be translated, «Take up twice-baked ashes and make *capitello*. And make *ranno* from them (the type of ashes that dyers use) and keep it clean and clear. And then put the *ranno* to boil in a glazed pot. And when the *ranno* boils, add a cup of quicklime to it.» This translation assumes that the *-ne* suffixed to *fanne* refers forward to «the type of ashes that dyers use». Usually, the *-ne* suffix refers backwards; however, if this were the case here, the phrase «the type of ashes that dyers use» would fit even less well into the text. Moreover, it would not make sense for the *-ne* suffix to refer back to the *capitello*, implying that the *ranno* should be made from *capitello*, when there are then no instructions for making the *capitello* itself. If the above interpretation is correct, then the author first states that the recipe is for *capitello* and that ash is required, and then goes on to explain how to make it, by making *ranno* from the ash and then converting it into *capitello* by adding quicklime.

⁷Baraldi, P., Untitled transcription of the Bolognese Manuscript, Biblioteca Universitaria de Bologna, <https://bub.unibo.it/it/collezioni-e-cataloghi/manoscritto-bolognese> [consulted: 23/08/2019], 2008, pp. 55-57. All quotations from the Bolognese Manuscript, unless otherwise indicated, are taken from Baraldi 2008. This recipe has some similarities with a soap recipe given in the Philipps-Corning manuscript of the *Mappae Clavicula*, a collection of (much, in some cases) earlier recipes, where *capitellum* is made, again, from two parts ash and one-part lime (Smith, C. and Hawthorne, J., «*Mappae Clavicula*. A Little Key to the World of Medieval Techniques», *Transactions of the American Philosophical Society* 64(4) (1974), pp. 73-115.

⁸Merrifield, M., *Original Treatises...*, vol. 2, p. 434; Muzio, F. *Un Trattato Universale dei Colori. Il MS. 2861 della Biblioteca Universitaria di Bologna*, Leo S. Olschki, Florence, 2012, p. 99.

It is clear from these recipes for the *cap*- material that the specific kind of ash needed to make it can vary, as can the ratio of ash to quicklime, but the distinctive feature of the *cap*- material, as contrasted with *ranno*, *liscivium*, etc., is the presence of quicklime.

There is a possible clue to this distinction in the *cap*- root. The Latin *caput*, *capitis* means ‘head’. It is tempting to think that de Chauillac’s head lotion might be relevant here, but as he proposes both ordinary lye and *capitellum* for the same purpose, this is probably a red herring. Rather, the connection may be to the use of *caput* to mean a ‘headland’, inherited in Italian as *capo* and entering English as ‘cape’. Quicklime derives from limestone, which is commonly found as cliffs (or capes) around the Italian coastline. Here, then, is a possible (although certainly not definitive) explanation for these hitherto obscure terms.

From the evidence above, it appears that in the late medieval European mind, the *cap*- material, made from ash and quicklime, was quite distinct from lye, made from ash alone. It served particular purposes and required its own specific technical term. This distinction has not been respected in translations, but we might now wish to respect it by coining a new term; perhaps, in view of the etymology proposed above, ‘cape lye’.

4. SUGAR ALUM

‘Sugar alum’ (*alumj zucharino* or similar), is mentioned in five different recipes in the Bolognese Manuscript: three for making lake pigments (115, 120 and 131) and two for making imitation gem stones (238 and 259).⁹ In this context, both Merrifield and Muzio cite a recipe in the *Ricettario Fiorentino*, a well-known collection of pharmaceutical recipes, first compiled in Florence in 1498. This states, «Dell’allume di Rocca pesto insieme con zucchero, e Chiara d’huovo, e acqua rosa si fa l’allume zuccherino» («Sugar alum is made from rock alum pounded together with sugar and egg white and rose water»)¹⁰ Sugar occurs periodically in recipes for artists’ materials, usually as a plasticiser or on account of its very hygroscopic nature. However, it is not obvious what its role would be in a lake recipe. The use of rose, as opposed to ordinary water, as suggested in the *Ricettario Fiorentino*, is also puzzling.

For comparison, within the Bolognese Manuscript itself we find recipe 116, for preparing sappanwood: «Sum(m)e v(er)zinum et s(u)btile rade et pone i(n) parascide et desup(er) i(n)funde clara(m) ovi p(re)p(ar)atam ita q(uod) cop(er)iat(ur) v(er)zinum et i(m)pone desup(er) aliqua(n)tulu(m) de lumine rochj ita q(uod) no(n) fatia sp umam et deinde mite unam aut bina(m) guctam mellis» («Take *verzino* and shave it fine and put it in a goblet and pour prepared egg white over it so that the *verzino* is covered. And add on top a little bit of rock alum in such a way that it does not produce a froth. And then put in one or two drops of honey»). There are further stages to the recipe, but no further ingredients other than more egg white. Here we have egg white and rock alum, and the honey might be a substitute for sugar, but there is no rose water.

⁹ The only other reference in Italian artisanal writings of the period comes in the *Liber diversarum arcium*, where it is again used in preparing lac, Clarke, M., *Medieval Painters’ Materials and Techniques*, Archetype, London, 2011, p. 108.

¹⁰ Merrifield, M., *Original Treatises...*, vol. 2, p. 894; Muzio, F. *Un Trattato...*, p. 102, note 25; I Dodici Rifinatori, *Ricettario Fiorentino*, Stamperia dei Giunti, Florence, 1574 (1st edition 1498), p. 15.

The manuscript of the Paris-based Jehan Le Begue was compiled in 1431 from Italian recipes. However, the passage of interest occurs in the table of synonyms at the beginning of the work, apparently devised by Le Begue himself: «Lignum braxillii rubeum seu purpureum colorem reddit si in lixivio urina aut in claro ovi cum alumine temperetur» («Sappanwood produces a red or purple colour if it is tempered in lye, urine or in egg white with alum»). As above, egg white is used with alum, but neither rose water nor sugar of any kind is mentioned.¹¹

Beyond these, the author has not found sugar or rose water in Italian recipes for lakes or fake gems of the period and the contemporary artisanal texts have no recipes for sugar alum. The recipe in the *Ricettario Fiorentino* appears to be the earliest in Italian literature and this probably accounts for the fact that it is almost universally quoted by modern commentators. However, as will become clear, it is anomalous in including sugar.

The vast majority of European historical commentators take the etymology of the name ‘sugar alum’ from the form in which the alum was sold. The earliest example to have come to the reader’s attention is in a fifteenth century transcription of an earlier Provençal text, which mentions, «alun zuccharino, comme disent les Italiens, c’est-à-dire en forme de pain de sucre» («sugar alum, as the Italians call it; that is to say, in the shape of a sugar loaf»)¹².

The *Luminare Maggiore* of Nicolo Mutoni, a medical compilation, is the first Italian text of which the author is aware to give something approaching this etymology. First published in Latin in 1552, it is quoted here in an Italian translation: «Alume secondo Dioscoride è di molte specie, ma tre sono necessarie all medicina. Cioè rotondo, spesso, & liquido. Rotondo si noma zucarino, perche si rassomiglia al zucar» («According to Dioscorides, there are many kinds of alum but there are three which are needed in medicine. These are round, thick and liquid. Sugar alum [(zucarino)] is called ‘round’ because it looks like sugar»)¹³.

A very much clearer explanation is given by the German doctor, Leonhart Fuchs, in a book published in Paris in 1550: «Alterum alumen factitium est, quod in metae figuram formant, & Saccharinum, vel ut loquuntur officinam hodie Zuccharinum nuncupant, eo quod in massas quasdam turbinatas in modum globorum sacchari fingatur» («Another kind of alum is made, which they form into the shape of a turning post, and they call it *Saccharinum* or, as they say in the workshops these days, *Zuccharinum*, because it is moulded into the same kind of conical masses as lumps of sugar»)¹⁴.

The first actual recipe for sugar alum to follow that given in the *Ricettario Fiorentino* comes from an edition of the work of the first century BC Greek medical writer, Dioscorides, published in Italy in 1554. Here we find, «officinae a sacchari effigie zuccharinum appellant, ex crudo alumine rupeo, ovorum albo, et stillatitia rosarum aqua paratum» («[which] workshops call *zuccharinum* due to its likeness to sugar, made from raw rock alum, egg white and rose water»)¹⁵.

¹¹ 10. Merrifield, M., *Original Treatises...*, vol. 1, p. 30.

¹² Anon., «Chronique», *Annales du Midi : revue archéologique, historique et philologique de la France méridionale*, 11/3 (1891), p. 420.

¹³ Mutoni, N. *Luminare Maggiore*, Giovanni Bariletto, Venice, 1559, p. 51.

¹⁴ Fuchs, L. *Methodus seu ratio compendiarie cognoscendi veram solidamque medicinam*, Iacobus Dupuys, Paris, 1550, vol. 1, pp. 282-283.

¹⁵ Matthioli, P. *Commentarii in libros sex Pedacii Dioscoridis de medica materia*, Venice, 1554, 5, p. 617.

From this period on, recipes for sugar alum proliferate in the medical and scientific literature and, almost without exception, they are based on rock alum, egg white and rose water. Two are of particular interest. First, the Pisan botanist, Andrea Cæsalpino, mentions in 1596: «alumen Zuccharinum, quod ad mulierum dealbationes componitur ex alumine Rocchæ, ovorum albumine, & aqua rosacca» («sugar alum, for the whitening of women, which is made up from rock alum, egg white and rose water»)¹⁶ Secondly, Pierre Pomet, pharmacist to Louis XIV, gives a very full recipe in the early eighteenth century, quoted here in an English translation of 1748, «Saccharine Alum, because it resembles Sugar, is made of English Alum, Rose-water, and Whites of Eggs, boiled together till it is stiff; and this Alum so boiled, and reduced into a paste, what Figure or form you please may be given to it; and when it is cold, it becomes as hard as a stone».¹⁷ Here we have clues as to the properties of sugar alum and the function of its ingredients. For cosmetic use, rose water, as opposed to ordinary water, would give a pleasant scent. The fact that sugar alum becomes as hard as stone on drying would make it a good choice for fake gem stones, a use suggested in the Bolognese Manuscript.

We can add to this evidence the English writer, John Hill, who says in his history of medical materials published in 1751:

«Alumen Saccharinum. Saccharine Alum. Take common Alum four Ounces, Water one Pint, the whites of six Eggs; dissolve the Alum in the Water and let it almost cool; then beat up the Whites of the Eggs in it and boil it again, stirring it all the while till it is stiff enough to be worked into any Form. This has usually been formed into the Shape of Sugar Loaves, and tied up in the same Manner in blue Papers, and hence it obtained the name of Saccharine Alum».¹⁸

Notably, he uses ordinary water rather than rose water. To understand why, we may turn back a page in his book and read, concerning alum in general, that, «The best Method of giving it is in Pills, its Taste being a very displeasing one in Liquid Form».¹⁹

If the alum is to be taken internally in pill form, rather than used as an external cosmetic, then there is no necessity for it to smell of roses. The bad flavour might account for the presence of sugar in the *Ricettario Fiorentino* recipe. Alternatively, sugar might have been included there in ignorance of the etymology ‘sugar alum’, under the assumption that a substance so called must contain sugar.

For the purposes of the lake and fake gem recipes in the *Bolognese Manuscript*, a sugar alum containing rock alum, egg white and ordinary water, like Hill’s, would be sufficient. However, since sugar alum is likely to have been sold already made up with rose water in the period, with the large medical and cosmetic market in mind, artisans probably used the same substance, despite the scent being irrelevant.

¹⁶ Cæsalpino A. *De Metallicis*, Aloysius Zannetti, Rome, 1596, vol. 1, p. 55.

¹⁷ Pomet, P. A. *Complete History of Drugs Written in French by Monsieur Pomet Chief Druggist to the late French King Lewis XIV. To which is added what is farther observable on the same Subject*, from Lemery, M. and Tournefort, J. and Bonwicke, J., Birt, S. Parker, W., Hitch, C. and Wicksteed, E., London, 1748 (4th ed.), vol. 3, p. 154.

¹⁸ Hill, J. *A History of the Materia Medica*, Longman, T., Hitch, C. and Hawes, L. and Rivington, J., London, 1751, p. 113.

¹⁹ *Idem*, p. 112.

We have already seen that sugar alum might have been chosen in preference to rock alum in fake gem recipes due to its hardness on setting. We could also conjecture that the egg white, which appears to constitute the chief difference between rock alum and sugar alum, might have given a certain gloss to these gems. In terms of lake pigments, perhaps its presence had the advantage of obviating the need to add anything but water when making it up for use in illumination. A recipe for the preparation of sappanwood lake in the *Strasbourg Manuscript* supports this theory; it requires sappanwood, chalk and alum to be covered with glair and then dried for storage, before stating that simple water should be used to temper the lake for use.²⁰

The author's research has not yet reached the stage of practical experimentation, but this might help to settle the question of the possible purpose of the rose water and egg white.

5. SCALY ALUM

Mrs. Merrifield had already suggested that the *alumen scabis* (Latin) mentioned in recipe 124 of the Bolognese Manuscript, on making sappanwood lake, was probably the same as *allume scagliuolo* (Italian), as described in the *Ricettario Fiorentino*. She also speculated that this might be the *alumen* described by Eraclius as a white pigment. These observations and connections, however, are scattered through notes, additional notes and corrections and indexes across both volumes of her work, with very little cross-referencing, making them difficult to discover and reconcile.²¹

That *alumen scabis* is indeed equivalent to *allume scagliuolo* is highly likely if we examine the roots of the two words. Words with the *scab-* root in Latin refer to roughness, scabs and scurf, and the Italian *scabbia* likewise means 'scab' or 'scurf'. According to John Florio's 1611 dictionary of Italian and English, meanwhile, the Italian *scaglia* means «fish scale» or «shiver of stone». A sense of flakes or plates is therefore shared between these words and an equivalence between *alumen scabis* and *allume scagliuolo* seems probable.

In a chapter on alum, the *Ricettario Fiorentino* tells us, «I fattizzi ancora sono molti, cioè, lo scagliuolo fatto della pietra speculare; che è più tosto gesso, che allume» («There are many more preparations, for example the *scagliuola*, made from specular stone, which is actually gesso rather than alum»).²² Cæsalpino agrees with this, with a reference to «*alumen scaliolum, qui lapis est specularis inter genera Gypsi*» («*alumen scaliolum*, a stone which is specular, amongst the kinds of gypsum»).²³ This goes some way to explaining Eraclius's contention that *alumen* is a white pigment, since gesso could be used as a pigment, while alum could not.

Turning once more to John Hill, we find: «besides the several Kinds...of true and genuine Alum, Authors have very improperly and absurdly given that Name to several other Substances wholly different from it: among these we find the common *Lapis specularis* called *Alumen Squamosum* or *Scaliolum*». This substance, he says, «is composed of a Multitude of extremely thin, pellucid and beautiful Plates or Flakes of great extent». ²⁴ Hill's very full description

²⁰ Neven, S. *The Strasbourg Manuscript*, Archetype, London, 2016, pp. 82-83.

²¹ Merrifield, M., *Original Treatises...*, vol. 1, pp. 232-245; vol. 2, pp. 443 and 893-894.

²² I Dodici Riformatori, *Ricettario Fiorentino*, p. 14.

²³ Cæsalpino A., *De Metallicis*, vol. 1, p. 55.

²⁴ Hill, J. *A History...*, pp. 111 and 248.

combined with the examination of linguistic roots above, allows us to identify the *alumen scabis* of the Bolognese Manuscript as the species of gypsum known as selenite.

6. CONCLUSION

These examples demonstrate the complexities of tracking down the meanings of technical terms and finding appropriate translations for them. The process requires significant research around the terms and comparison of their use in different historical and geographical contexts. Above all the process requires the translator to be vigilant. The best-known sources cannot be trusted, the best-known commentators cannot be trusted, dictionaries cannot always be trusted and nor can common sense: there is no sugar in sugar alum and scaly alum is not alum at all.

BIBLIOGRAPHY

- ANON. (1891), «Chronique», *Annales du Midi : revue archéologique, historique et philologique de la France méridionale* 11/3, pp. 419-423.
- BARALDI, Pietro (2008), Untitled transcription of the Bolognese Manuscript, Biblioteca Universitaria de Bologna, <https://bub.unibo.it/it/collezioni-cataloghi/manoscritto-bolognese> [consulted: 23/08/2019].
- BATTAGLIA, Salvatore (1961-2004), *Grande dizionario della lingua italiana*, Unione Tipografico-Editrice Torinese, Turin.
- BROECKE, Lara (2015), *Cennino Cennini's Il Libro dell'Arte: A new English Translation and Commentary with Italian Transcription*, Archetype, London.
- CÆSALPINO, Andrea (1596), *De Metallicis*, Aloysius Zannetti, Rome.
- CHAULIAC, Guy De (1585), *Chirurgia Magna Guidonis de Gauliaco*, In off. Q. Philip Tinghi, Flor. Apud Simphorianum Beraud and Stephanum Michaëlem, Lugduni (first published 1363).
- CLARKE, Mark (2011), *Medieval Painters' Materials and Techniques*, Archetype, London.
- FLORIO, John (1611), *Queen Anna's New World of Words, or Dictionarie of the Italian and English Tongues*, Edward Blount and William Barrett, London.
- FUCHS, Leonhart (1550), *Methodus seu ratio compendiaria cognoscendi veram solidamque medicinam*, Iacobus Dupuys, Paris.
- HILL, John (1751), *A History of the Materia Medica*, T. Longman, C. Hitch and L. Hawes and J. Rivington, London.
- I DODICI RIFORMATORI, (eds.) (1574), *Ricettario Fiorentino*, Stamperia dei Giunti, Florence (first published 1498).
- LESSICOGRAFIA DELLA CRUSCA, (1st ed. 1612; 2nd ed. 1623; 3rd ed. 1691; 4th ed. 1729-38; 5th ed. 1863-1923), Accademia della Crusca, DOI: 10.23833/BD/LESSICOGRAFIA.
- MATTHIOLI, Pietro Andrea (1554), *Commentarii in libros sex Pedacii Dioscoridis de medica materia*, Fernando Civardi (transcriber), Vincentum Valgrisium, Venice.
- MERRIFIELD, Mary Philadelphia (1849), *Original Treatises, Dating From the XIIth to XVIIIth Centuries, on the Arts of Painting, in Oil, Miniature, Mosaic, and on Glass; of Gilding, Dyeing, and the Preparation of Colours and Artificial Gems; Preceded by a General Introduction; with Translations, Prefaces and Notes*, John Murray, London.

- MUTONI, Niccolò (1559), *Luminare Maggiore*, Pietro Lauro (translator), Giovanni Bariletto, Venice.
- MUZIO, Francesca (2012), *Un Trattato Universale dei Colori. Il MS. 2861 della Biblioteca Universitaria di Bologna*, Leo S. Olschki, Florence.
- NEVEN, Sylvie (2016), *The Strasbourg Manuscript*, Archetype, London.
- POMET, Pierre; LÉMERY, Nicolas; PITTON DE TOURNEFORT, Joseph (1748), *A Complete History of Drugs Written in French by Monsieur Pommet Chief Druggist to the late French King Lewis XIV. To which is added what is farther observable on the same Subject*, from Mess. LEMERY and TOURNEFORT (4th ed.), BONWICKE, J. *et alii*, London.
- SMITH, Cyril Stanley; HAWTHORNE, John G. (1974), «*Mappae Clavicula. A Little Key to the World of Medieval Techniques*», *Transactions of the American Philosophical Society*, 64/4, The American Philosophical Society, Philadelphia.