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*«To bring light to the pious reader»: references to information sources and transmission of knowledge in the artistic recipe book by João Stooter (1729-1732)**

«Since he had always been a merchant» and had excelled in diamond cutting, but had never taken «the art of lathing as a craft», let alone painting or sculpting, João Stooter felt it was inappropriate for him to write a speech to enrich the Portuguese craftsmen and artists' way of working.[1] However, having seen the best of Europe and admired the «multiplicity of arts» and the «perfect curiosities» ingeniously produced in the emporiums of Paris, London, Antwerp, and Amsterdam, on his return to the Kingdom, he noticed that in the cities of Lisbon and Porto there was not to be found «a couple of curious master turners who, in their small work, knew how

* This work was developed within the scope of the author's activities at the School of Information Science at the Federal University of Minas Gerais (BR) and has the support of the History Center of the Lisbon University (PT), the John Carter Brown Library (USA) and the Erfgoedbibliotheek Hendrik Consciece (BE). https://orcid.org/0000-0003-3812-6234.

[1] Stooter 1729, I, p. 65. To clearly reference the contents of the work, in the footnotes, the first book of the work, «Arte dos Vernizes» will be indicated by numeral I and the other, «Huma Offerta», by numeral II.

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to give a brilliant luster or grace».[2] Nor did the Lusitanian craftsmen seem to him to exploit with the utmost refinement the raw materials that overseas trade harvested in the four corners of the world, to cast onto Iberian shores. Compassionate about «this great poverty» with which the raw materials were treated, especially the woods from Brazil, the Indies of Castile, Angola, and several European nations, the Flemish collected a large number of recipes for the production of varnishes, paints, glues and other artistic compounds, experimented them, corrected them and wrote them down in a book.

It was in the city of Porto that Stooter experimented with the formulations he collected to compose the booklet entitled «Arte de Brilhantes Vernizes, & das tinturas. Fazelas, & o como obrar com elas (Art of Shining Varnishes, & Dyes. To make them, & how to work with them)». However, it would be in Antwerp that the work would be published, starting in 1729. Despite the recent improvement in the art of printing and the expansion of the printing complex in Portugal, under the patronage of the monarch D. João V, the writer preferred to entrust the work to printers who like him were foreigners.[3] Zealous about the quality of the printing he would get from the presses in his hometown, among the most important printing houses in that publishing center, Stooter chose the traditional Verdussen family house to convert his manuscripts into a printed book. Nevertheless, he did not discuss with the patriarch Hendrik Verdussen the execution of the work, as he had done ten years earlier when he published his first book. When the printer died in 1728, his widow took over the business; she, in turn, passed it on to her children, who became the fifth generation of printers to run the family business.[4]

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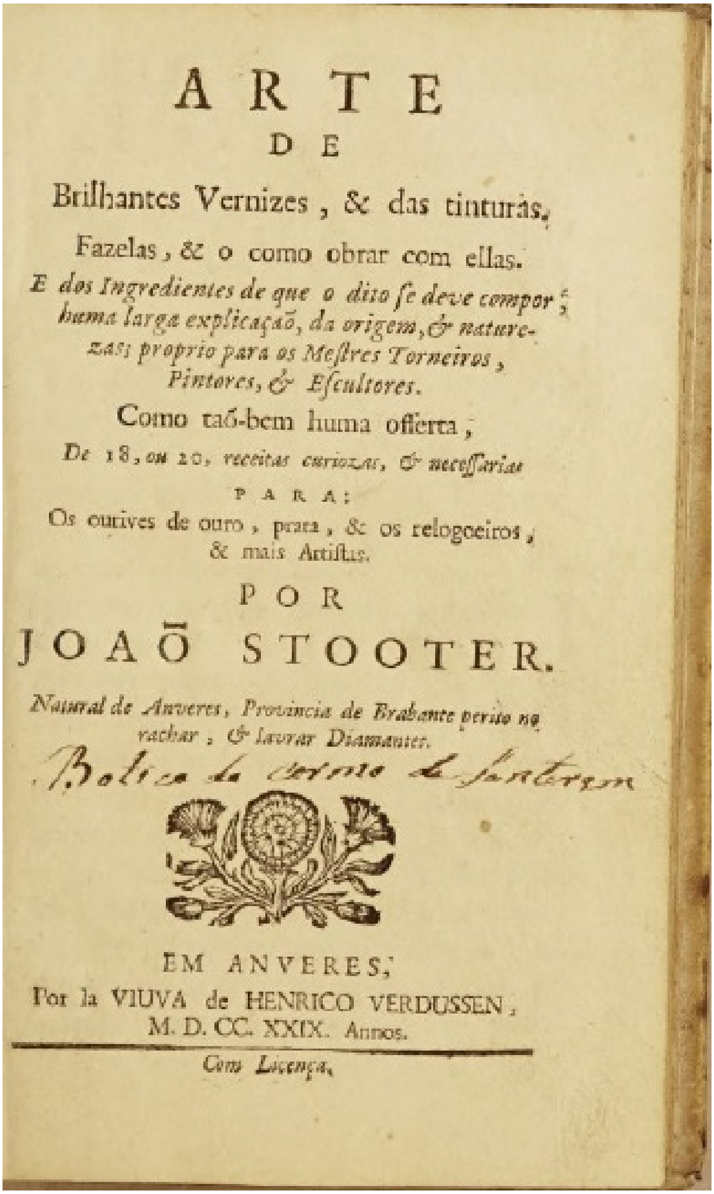
2 Stooter 1729, I, p. VII-VIII.

3 Marques 2014, p. 17 *et seq.*

4 Hendrik and Cornelis Verdussen were members of the fourth generation of the Antwerp printer dynasty, started by Hieronymus Verdussen in the late 16th century. Born in 1653, Hendrik was the second child of Hieronymus III. He died in 1721. At the turn of the 17th to the 18th century, Hendrik managed the enterprise



ARTE
DE
Brilhantes Vernizes, & das tinturas,
Fazelas, & o como obrar com ellas.
E dos Ingredientes de que o dito se deve compor; huma larga explicação, da origem, & naturezas; proprio para os Mestres Torneiros, Pintores, & Esculteres.
Como taõ-bem huma offerta,
De 18, ou 20, receitas curiozas, & necessarias
PARA:
Os ourives de ouro, prata, & os relogoeiros, & mais Artistas.
POR
JOAÕ STOOTER.
Natural de Anveres, Provincia de Brabante perito no rachar, & lavrar Diamantes.
Botica do Carmo de Santarem
EM ANVERES,
Por la VIUVA de HENRICO VERDUSSEN,
M. D. CC. XXIX. Annos.
Com Licença.

Fig. 1a. Title page of *Art of Brilliant Varnishes* belonging to the John Carter Brown Library. Photo: John Carter Brown Library

with his brother Cornelis, born in 1661. With Cornelis' death in 1728, the printing house was run by Hendrik's widow and children. Van Rossem, 2014, p. 1-50.

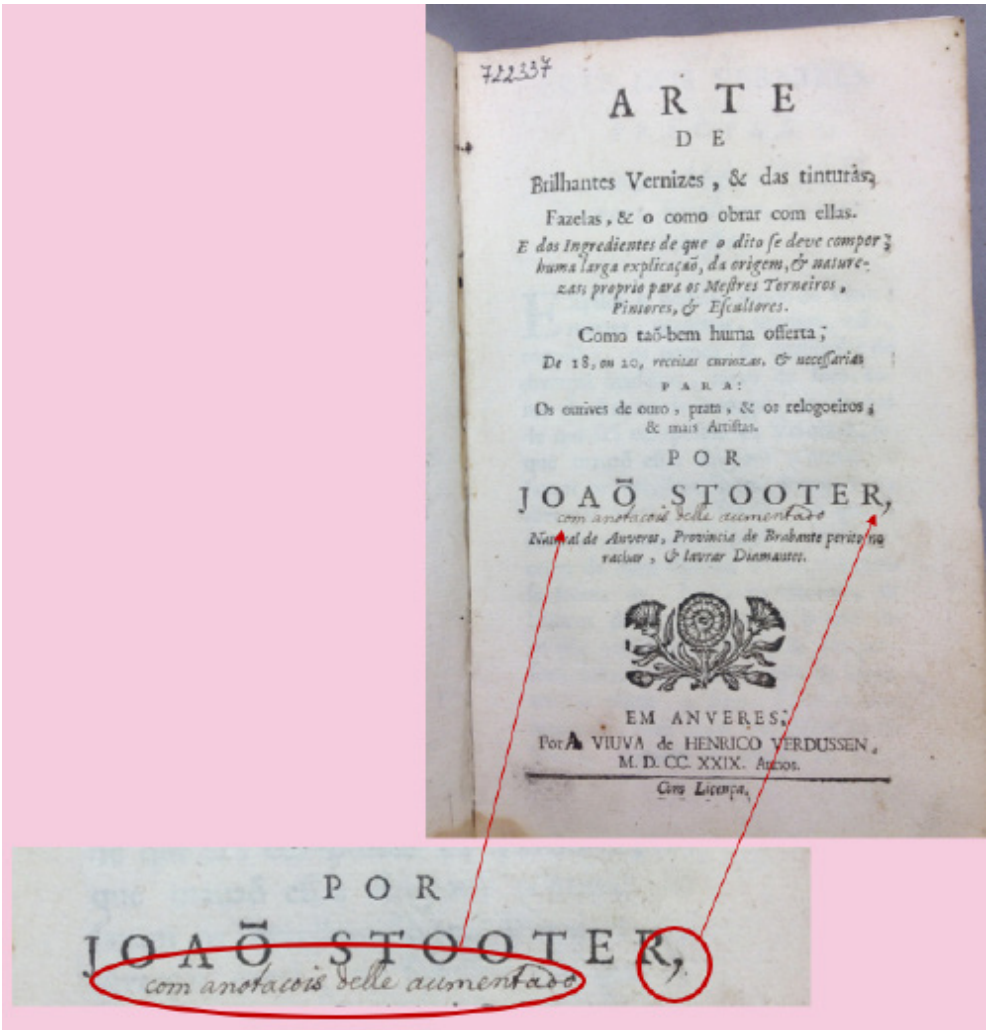


Fig. 1b. Title page of *Arte de Brilhantes Varnishes* belonging to the Erfgoedbibliotheek Hendrik Conscience, annotated by the author. Photo: René Lommez Gomes.

The author's efforts resulted in a book that, despite having been printed outside the Kingdom, gained prominence for being one of the first, if not the very first, practical manual or recipe book for the manufacture of varnishes to be published in the Portuguese language. And the most

complete as well: by collecting formulations to produce chemical compounds and warnings about the proper use of raw materials and some craft processes, Stooter created a «repository of recipes and technical precepts» with a thematic scope that was unprecedented in the Portuguese artistic literature. That it would not find a successor until the 19th century, although some works were dealing with the same subjects in a secondary way, particularly in translations of foreign authors.[5]

From the book, the diamond cutter mirrored the broad spectrum of subjects that excited his speculative genius, including explanations of «the drugs of which varnishes are composed»; «the names and qualities of various woods»; the method for making varnishes and dyes of various colors; the preparations of glues that served to cover wood pores, leading to a «greater use of other costly varnishes»; various gold and silver dissolving techniques for gilding wood and metals, or for illuminations on paper; «the perfect way to smooth [and polish] metals, wood, ivory, bone" and 'coquilhos' (small coconuts); ways to imitate tortoiseshells and China lacquers; as well as recipes for transparent or colored oils to protect oil-painted panels.[6] The publication anticipated, by more than twenty years, the endeavor of Portuguese intellectuals and editors to produce useful books, from technical manuals to scientific treatises, whose printing concentrated in the second half of the 18th century.

In many ways, it also foreshadowed the cultural transformations, the educational needs, and the new political and economic guidance of the Kingdom, which would be boosted by the Portuguese Illustration at the end of the century.[7] While in Portugal and its colonies, artistic teaching and the transmission of craft knowledge took place within the workshops, in a close relationship between masters and apprentices, Stooter's book increased the possibility of knowledge being

5 Ferraz 2017, p. 65; 188. Marques 2014, p. 199-200. Almada 2012, p. 138-144. Oliveira 1757.

6 Stooter 1729, I, p. V-VI.

7 Marques 2014, p. 109.

transmitted at a distance, intermediated by the written culture. In the teaching of mechanical arts, the book suggested the replacement of manuals, 'exams' and 'classes' that circulated in handwritten copies among teachers and students (as in military engineers' training), by printed works, a process that only began in the 1730s.[8]

Moreover, the book would come to fill the lack of practical printed material in the Portuguese publishing houses and book market, designed to meet the needs of craftsmen in the metropolis and the colonial regions. Until then, the available works dedicated to crafts were mainly theoretical works or books with an aesthetic or historical nature, mostly foreign works translations; except for a few productions, such as Felipe Nunes' treatise «Arte da Pintura. Symmetria, e Perspectiva (Art of Painting. Symmetry, and Perspective)», printed in Pedro Crasbeeck's workshops in Lisbon in 1615.[9] João Stooter's intention, in contrast, was to produce a manual of craft techniques intended for the use of «curious master turners, painters and sculptors», but also of the gilders, illuminators, goldsmiths and watchmakers of the land.[10] The authors of the Portuguese painting manuals, until then, hardly paid any attention to the formulations of varnishes, adhesives, and other compounds suitable for the protection of paintings and illuminations, or even to the techniques to transform the new woods and raw materials that arrived in Portugal, such as ivory and coconut. When they did, their authors or translators rarely bothered to explain the origins of these products, to explore their properties for the readers' better instruction, or to offer alternative solutions to their use, adapting the recipes to the use of ingredients easily accessible in the Kingdom, as Stooter tried hard to provide.

One example is the preparation made with Avignon grain – in other sources '*graine jaune*', as the *Rhamnus saxatilis* seeds were known. The use of this input was the first alternative found by Stooter to teach

8 Bueno 2011, p. 140-144.

9 Marques 2014, p. 195. Nunes 1615. Almada 2017.

10 Stooter 1729, I, p. VII-VIII.

how to make a good yellow dye. Already well known, the recipe had been taken from earlier works such as the «Dictionnaire Universel de Commerce: contenant tout cequi concerne le commerce qui se fait dans les Quatre Parties du Monde [...]», written by the Frenchman Jacques Savary des Brûlons.[11] However, after mentioning this preparation, Stooter presented «yet another yellow dye", whose raw material came from Brazil, specifically from the Captaincy of Pernambuco: «a wood named 'tatajuba'». In clear attention to everything useful to the arts that overseas trade made accessible in Portugal, Stooter explained that the dye was made from scrapings or pieces of 'tatajuba' (*Maclura tinctoria*) boiled in lime water until achieving a good concentration of color.[12]

Signs of this attention to readers' interests are everywhere in the «Arte de Brilhantes Vernizes» and became apparent at times when Stooter tested preparations already published by other authors. In these situations, he did not avoid «telling the pious reader something new» and not «dealt with or reached from the work of the quoted author». His addenda to the recipes often took the form of speeches addressed to one or another specific type of users that the manual intended to reach: the ordinary craftsman, only interested in reproducing his recipes, and the curious reader, who would examine and put to test everything he was taught, exercising his functional virtues and speculative skills. Once, when a «work by J.K.» (Johann Kunckel) came into his hand, containing «models of how to make various and excellent varnishes», Stooter saw his «thirst for knowledge» increased. With the help of «an interpreter and [with] hard work», he «learned of the said recipes», examined them, and incorporated them into the book.[13] The same occurred when he appropriated recipes for gilding and silvering wood, which used special pigments from the West and East Indies, such as indigo, ultramarine blue, shellac, and gum arabic.

11 Stooter's quotations indicate that he used the first edition of the work, published in 1723. BRÛLONS 1723, p. 260-261.

12 Stooter 1729, I, p. 40.

13 Kunckel 1707(a), p. 195-243. Stooter 1729, II, p. 40.

Foreseeing difficulties in accessing the products, he advised beginners in the arts that if they were outside the main Portuguese cities and could not find «the drugs cited in this work», because they «will find very few of them», they should not be discouraged at all. It was advisable to do as apothecaries and painters, «who search for everything in Lisbon and Porto, [at] the druggists' shops».[14]

The recommendation had its reason. It was in the apothecaries shop that the chemical compounds and other ingredients used in the preparation of paints, glues, and other artistic supplies could be easily obtained; as well as some book dedicated to the masters of the arts who used such raw materials. The 'Botica do Carmo', a druggist's shop located in Santarém, had its own copy of «Arte de Brilhantes Vernizes». By its parchment binding pyrographed with a coat of arms and the excellent preservation of the book, the exemplar shows signs of not having been used in a workshop. It is to be assumed that it was available to the apothecary and his clientele for consultation of the components needed to prepare a recipe. On the flyleaf of the copy, a handwritten note in Stooter's handwriting warned: «in the city of Porto, in Ponta Nova, at Dionizio Verne's shop», an important apothecary, «these little books are sold».[15]

Communicating correctly the recipes and the craftsmanship, searching for better solutions for the transmission of tacit and explicit knowledge through writing, was the main task of the useful books' authors in the early modern era. However, Stooter was urged to perform a wider range of activities to achieve the ambitious goal of enriching the Kingdom with his practical work and luster the fame of Portugal's arts. These included identifying, selecting, compiling, testing, standardizing, and writing down recipes for compounds and technical precepts. Of all the knowledge contained in the book, a portion was part of the stone cutter's practices and was learned by Stooter during his training in Ant-

14 Stooter 1729, II, p. 46. Barata 2015. Cruz 2013, p. 297-306. Serrão 2006.

15 Stooter 1729 (JCB). This copy of the book is in the custody of the John Carter Brown Library; which from now on will be indicated by the abbreviation JCB.

werp or his daily work in Portugal. Some of the book's content, perhaps the smallest part, came from the author's notes, such as «some curious recipes» found «on the shelves, among the books, as if it was lost». Because they seemed «very useful» to him, Stooter decided to offer them to «art lovers, and especially to gold and silversmiths», as well as to watchmakers. Most of the content of the recipe book came from a selection of information taken from books of diverse genres, such as dictionaries, pharmacopeias, chemistry manuals, medical treatises, how-to books, and 'books of secrets' related to mechanical arts.

At the origin of «Arte de Brilhantes Venizes», therefore, is the author's bibliographical gesture[16] that set himself the complex task of organizing and making available the existing knowledge about raw materials and their characteristics (especially woods and gums from the Americas and the «Kingdom of Angola»), the diverse qualities of inputs, the multiple craft techniques and recipes for synthesizing compounds for artistic purposes; in short, all the knowledge needed to improve the work of Portuguese craftsmen, which was scattered in several sources of information.

João Stooter's bibliographical gesture did not imply the offering of a list of works necessary to compose the ideal library for the artists and artisans who would read it – mostly people of low literacy. At the same time, the author did not limit himself to the acts of selecting, recording, and organizing the recipes and information he found in the records within his reach. Deliberately, Stooter chose to fulfill the role of useful books author by mediating the relationship between readers and his own information sources. Unlike other authors of how-to books, he did not hide in the text the authors and the works he consulted, exposing them in two ways: by testing, correcting, and standardizing the recipes stating their origin, so that their data could be verified by any craftsman; and, by building an intricate system of references to other works, inducing the most virtuous readers to fol-

16 Crippa 2016, p. 36.

low the path he took, by repeating his experiences. Thus, Stooter intended to expand his bibliographical impulse to the most virtuous readers, spurring them to action both by testing his 'little book' and by putting to the test the knowledge provided by other authors.

Starting from the premise that the field of the bibliography can expand into the historical study of the production modes and use of documents,[17] this essay aims to investigate how João Stooter, at the dawn of the Portuguese Illustration, conceived his way of producing how-to books in which bibliographical references and the induction of the reader to access other books were central to the process of transmitting artistic and craft knowledge. To this end, his book «Arte de Brilhantes Vernizes» will be taken as a document of its history, being investigated in its textuality (both in handwritten and printed contents) and in its materiality, both taken as mediating instances of signification and conditioning factors of the author-reader relationship, in the processes of transmission and reproduction of craft knowledge.

The book's form

The «Arte de Brilhantes Vernizes» comprised two books when it went to print in 1729: «Arte dos Vernizes (Art of Varnishes)» and «Huma Offerta (One Offer)», which was followed by a «Supplemento (Supplement)» to both books.[18] The first book consisted of a sonnet in honor of the author, the frontispiece, a summary of its contents, a 'Prologue' and the approval for printing, all without page numbering, and the contents of the recipe book itself, with pages numbered 1 to 65, followed by an index. The second book, «HumaOfferta», had an index with unnumbered pages and its contents, with pages numbered 1 to 63. The origins, nature, and characteristics of the woods from Brazil, Angola, the ‹Indies of Spain› and other parts of the world, available to

17 McKenzie 2004, 16.
18 Gomes 2020.

the work of Portuguese craftsmen, was the opening theme of the first book; which continued with the recipe of formulas for the synthesizing of compounds and the transmission of 'secrets' - or artistic techniques - used to work new and 'curious' things, such as the Chinese lacquers. To the «goldsmiths, silversmiths, and watchmakers» the author then 'offered' some twenty methods for gilding, silvering, or dyeing metals, opening copper plates, producing shellac, and purging tartar oil (castor oil). The supplement – while not a book in itself – added some reference works, corrections, and new techniques to the previous books.

A weak correspondence linked this division of the manual with a certain systematization of the subjects, indicating the author's weak intention to endow the publication with an internal order, calculated to print hierarchies to the topics.[19] Before that, the arrangement of the books mirrored the peculiar way in which Stooter conceived the work and his role as author, letting the text be subdivided in an order that explored information and processes associated with each type of materiality of the artistic inputs, without imposing hierarchies among them; thus, wood, oily varnishes, dyes, alcohols, gilding, among others, were equally addressed. About woods, for example, he first explored their origins and qualities, before teaching techniques and recipes of compounds for their transformation. The interpolation of subjects also revealed the clumsy pace of writing that hardly ever came to an end, and the discontinuous aspect of an editorial process occasionally interrupted by corrections and insertions in the work's content.

Thus, as the author had «the will to know more, as well as the printer to print», and having the latter «already done up to page 39» of the 'Supplement', at a certain moment, the binding of the volumes was interrupted so the second book could receive another part, named «Couza Nova (New Thing)». The reason for the change was

19 One of the aims of the internal order of modern books was the imposition of meanings on the reception of the printed material. Changing the order and other conventions of the textual and material presentation of books meant manipulating the reader's senses and understandings. Chartier 1998, p. 9; 35.

the arrival in the author's hands of a work, printed in Nuremberg, with recipes «to make several and excellent varnishes», very much in vogue in painting and decorative arts: dyes to imitate the shell of turtles, cochineal dye and substances to mirror glass –novelties that Stooter translated, tested, selected and included in the new book, to remember them and «by the great desire to see already complete this [...] limited treatise».[20]

After enriching the manual with the novelties, at the end of the «Couza Nova», Stooter incorporated a list of errata regarding the first book and the «Offerta», suggesting that «the reader, with [a] pen, [may] amend them». In the follow-up, «for more clarity of the curious», improvements were added to the «Offerta». Encouraging again the contamination of the print with handwritten notes, he recommended the future owner of the booklet to add, «in the proper place, with the pen» the information to the text.[21]

As many additions and patches to the print were not enough, a new booklet of «Couza Nova (New Thing)» was incorporated into the work, sometime in 1732. The reason for the inclusion of the themes, which occupied pages 56 to 63, was presented by the author as an introduction to this printed booklet, which was now added to the previous ones. Finding himself traveling from the city of Porto – where he lived – to the court of Lisbon, between 1731 and 1732, it came to his knowledge that «all serious people (for a hobby)» had adopted the art of plastering beds, tables, and a multitude of very gallant fans, «covering the white floor, in parts, with some little printed figures, painted with illumination», and varnishing over them. So, embarrassed by the curious people there, who complained about not having full instruction on the technique, he included the news in the manual.[22]

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20 Stooter 1729, I, p. 40. According to Stooter, when the editorial process was suspended, more than 50 copies of the work were already bound, which were «spread» among friends who «annoyed» him in their eagerness to receive them.

21 Stooter 1729, II, p. 55.

22 Stooter 1729, II, p. 56.

For the written culture historian, attentive to the relations between manuscripts and printed matter, the handbook is of special interest. Four centuries after its publication, the Erfgoedbibliotheek Hendrik Conscience (EHC), located in Stooter's hometown, holds a exemplar of the first edition of the recipe book «augmented» with the author's handwritten notes. Other copies with Stooter's handwritten interlinear and marginal notes are in the custody of the John Carter Brown Library (JCB), the Coimbra University Library (BUC), and other North American and European institutions. The authenticity of the notes is verified by the handwritten record of his authorship, written on the title page of the EHC exemplar; as well as by the analysis of the handwriting of these notes compared to other notes inserted in exemplars of the first practical manual published by Stooter – the «Spingardeiro com Conta, Pezo & Medida *(Gunnery with Counting, Weight &Measurement)*».

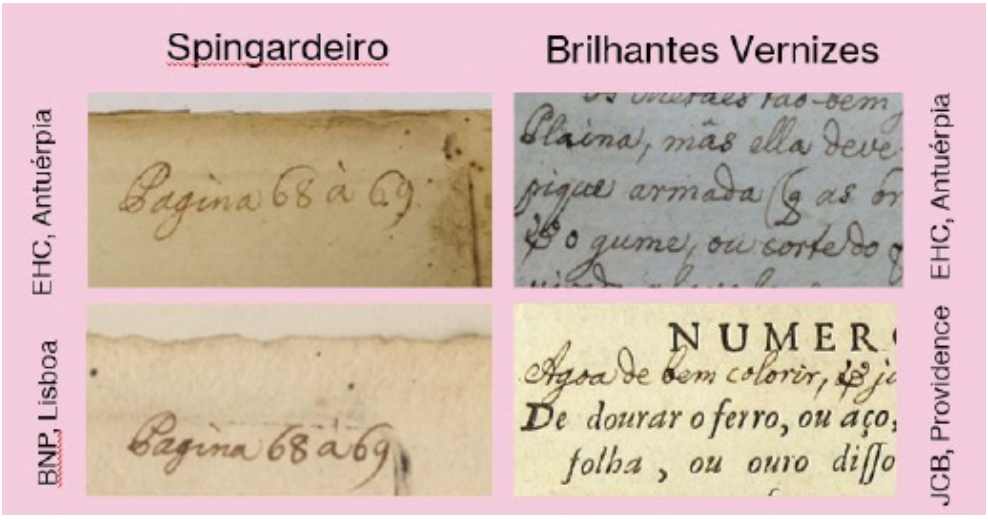


Fig. 2. Handwriting examples of the notes of the copies of *Spingardeiro* and *Arte de Brilhantes Varnishes*, belonging to the Erfgoedbibliotheek Hendrik Conscience and to the John Carter Brow Library. Photo: René Lommez Gomes.

Recorded in the margins or next to the printed text, these interventions rarely corrected words and phrases printed, in Portuguese, by the Flanders printers. Most of the nearly two hundred notes, homogeneously distributed throughout the EHC copy, add new content, such as translations of raw material names into French and Flemish, bibliographical references, cross-references to other parts of the book, and whole paragraphs with comments and additional information on the covered topics. Curiously, an expressive number of the data present in the handwritten marginals refer to techniques and materials used in Brazil, demonstrating some intimacy of the author with the universe of craftsmen who worked on the other side of the Atlantic.

The annotated exemplars of the recipe book, held by the JCB and BUC libraries, have handwritten notes that vary in size, content, and function from the EHC copy. They are reduced to seventeen in the BUC exemplar, which has fewer notes. The notes in the two exemplars are reduced versions of their counterparts in the EHC copy. These variations denote that Stooter maintained a distinctive stance in annotating copies with different recipients; while the existence of notes in exemplars of the first manual points to Stooter's long-standing habit of correcting and supplementing his printed works, integrating his textual practice and his perception of the author's role.

Correction notes, which rectify textual and typographical elements, are scarce in the varnish manual. Interspersing the lines of the printed text, squeezing through the side margins, or stuffing the spaces between paragraphs, the annotations most present in the exemplars are amendments to the printed text that expand its contents. The marginal registers are, in substance, additional notes of this type.

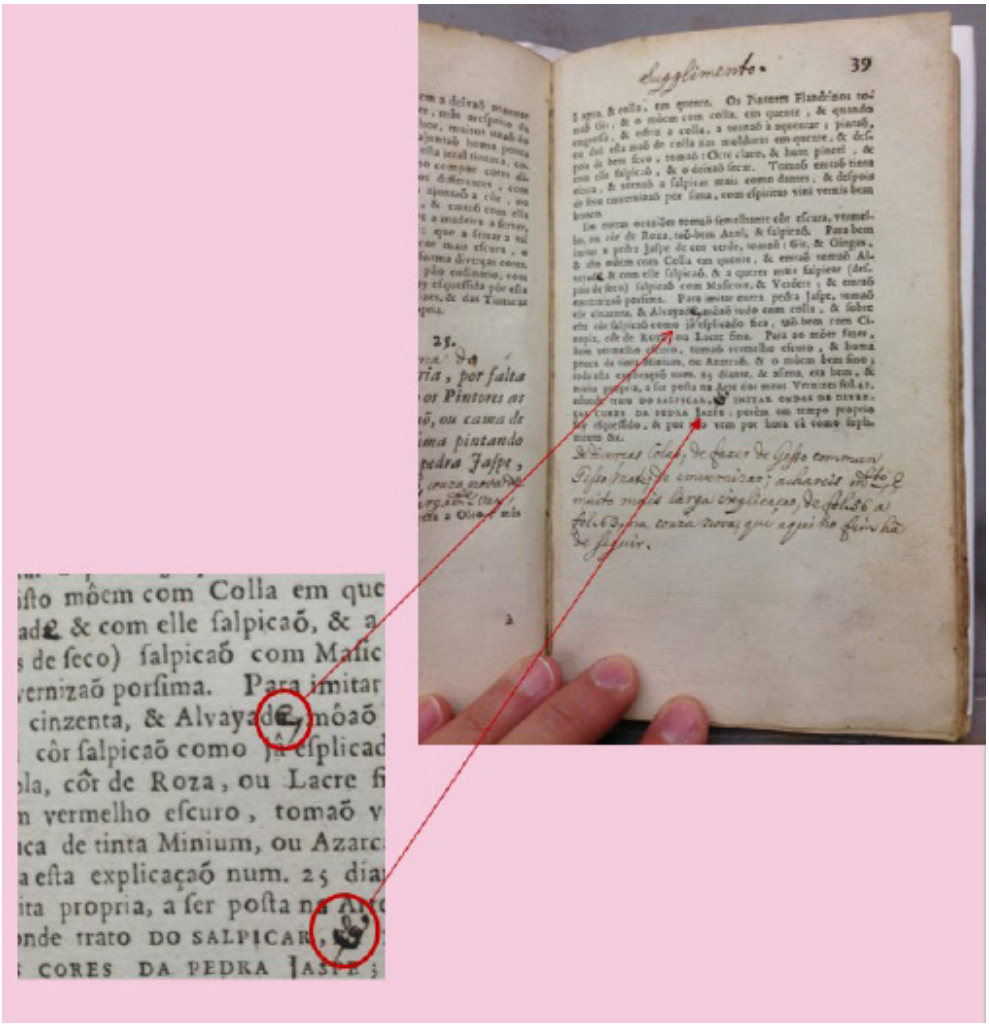


Fig. 3a. Examples of handwritten correction notes, in the copy of *Art of Brilliant Varnishes* belonging to the Erfgoedbibliotheek Hendrik Conscience. Photo: René Lommez Gomes.

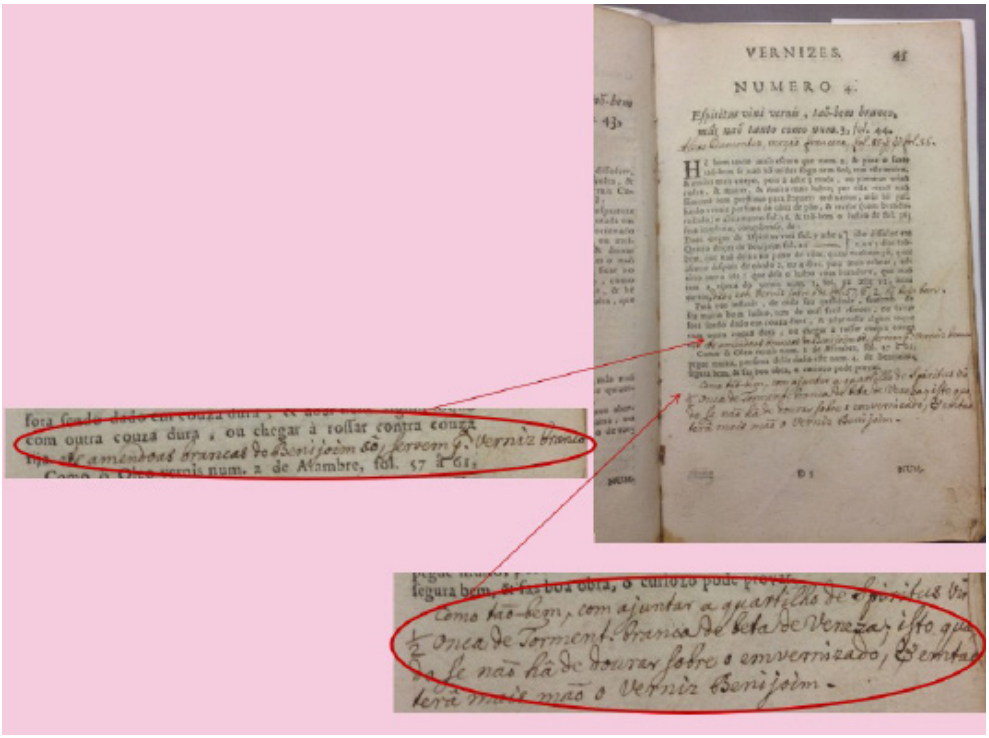


Fig. 3b. Examples of handwritten addition notes, in the copy of *Art of Brilliant Varnishes* belonging to the Erfgoedbibliotheek Hendrik Conscience. Photo: René Lommez Gomes.

The posthumous reissues of the book from 1786 onward did not incorporate the handwritten interventions. The driving force for Stooter to annotate his work was not, perhaps, the intention to produce corrected and expanded editions, but the desire for expression. His authorial work seemed to be completed only in the act of inscribing his handwriting on the printed matter. By Stooter's hands and pen, the mass-produced printed books returned to the condition of singular objects, in response to users' specific needs and interests. The habits of this author, in turn, call into question the primacy of print over a manuscript, and the hierarchies between author and publisher, facts that scholars often project onto textual practices of early modern era.

With Counting, weight, and measurement

John Stooter was not a beginner in the art of writing books. When his manual on the «Arte de Brilhantes Vernizes, & das Tinturas» went to print in 1729, exactly ten years had elapsed since he published his first work, a manual for the production of firearms entitled «Spingardeiro com Conta, Peso & Medida (Gunnery with Counting, Weight, &Measurement)», also printed by the Verdussens. This time, as in the previous one, he ventured into the enterprise of making a book not for «profit, because he (had not) any need of it». But to satisfy his curiosity and to make «exact experiments» on the recipes for varnishes and paints that he decided to compile and expose of the readers' approval, who were willing to synthesize them and «to work with them».[23]

While he remained a dilettante writer, Stooter's second foray into the preparation of a useful book allowed him to consolidate writing and text preparation practices that he felt were necessary for the composition of a good book. He was aware that those who read have some purpose in mind – pleasure, curiosity, knowledge acquisition. And that, for a book to be properly read, the composition of a clear and correct text was the first step to take.

If it did not hinder reading at all, except for occasional cases, Stooter's writing style, with Portuguese words written phonetically by a Flemish speaker, certainly lent an unusual flavor to the work. However, for the author it was unacceptable that errors and inaccuracies persisted in the text, clouding the understanding of the content and preventing readers from perfectly performing the prescribed chemical compounds or artisanal techniques.[24] In his care for readers' correct instruction, the writer seemed to be less concerned with his faults than with the errors made by other authors. Strong protests were directed at the carelessness of those who perpetuated knowledge tainted by inaccuracy, with the transmission of recipes so flawed or incomplete

23 Stooter 1729, I, p. VII.
24 Stooter 1729, I, p. VII.

that they were difficult or impossible to reproduce. He was also annoyed by the conscious failures of those who wished to keep knowledge obscured under the garb of trade secrets.

It bothered him much more those who prescribed formulas indicating unreasonably the quantities of ingredients needed to obtain quality compounds. For this reason, he made strong censures to the description of the white varnish oil or turpentine oil that the French lexicographer Jacques Savary de Brûlons published in the «Dictionnaire Universel de Commerce [...]»; a blunt sample of João Stooter's reprimands to his main sources of information.[25] His criticism was directed at the entry on varnishes, in which the Frenchman described the white varnish, which «we also call Venice varnish» as a «compound of turpentine oil, fine turpentine, and mastic».[26] Ignoring the nature of dictionary entries, whose textual genre leaned more toward descriptive than injunctive writing, he affirmed: «for my part, I find the reported brief, but without Counting, nor weight!» His biggest complaint was «in not explaining [there] the quantity of each thing to be taken» in the preparation of the varnish; a defect that seemed serious to him who stated: «I have always been, and still am, a friend of counting, weight, and measurement, that without them nothing I found myself well!» As for Brûlons, he considered him an author «misinformed by someone» and, worse, who «did not test», did not experiment, «what he was told».[27] Observation and experimentation with exact measurements – in a vulgar appropriation to the scientific practices in consolidation since the mid-seventeenth century – appeared, then, as the main weapons wielded by Stooter in the fight against mistakes. And it was since his first book.

In the title and subtitle engraved on the front page of «Spingardeiro», the Flemishman exhorted observation, experimentation, and measuring as practices that gave distinction to his work. The main

25 Stooter 1729, I, p. 65.
26 Brûlons 1729, 1883.
27 Stooter 1729, I, p. 65.

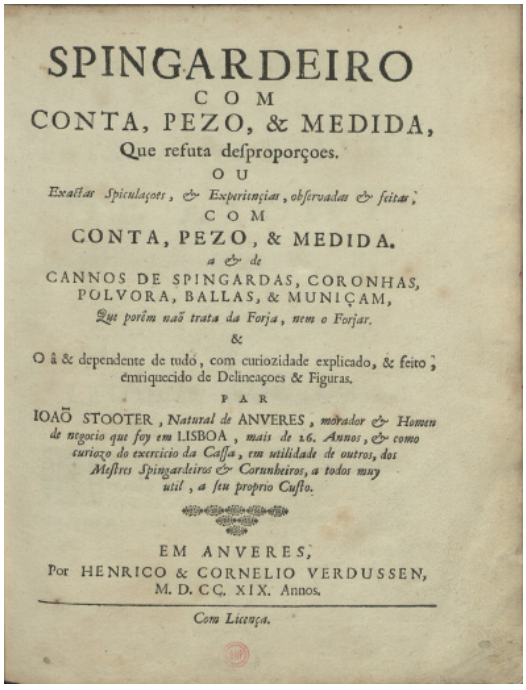
title of the work, «Spingardeiro com conta, pezo, & medida, que refuta disproporções (Gunnery with Counting, Weight, & Measurement, that refutes disproportions)», announced accuracy as Stooter's guiding principle in preparing the recipes. The subtitle «Ou Exactas Spiculaçoes, & Experiençias, observadas & feitos com Conta, Pezo, & Medida (Or Accurate Especulation & Experiments observed and carried out with Counting, Weight, & Measurement)» showed the path he took to offer them to the reader. The redundancy of the labels, in asserting the accuracy of the measurements used in the manual, showed that it was just as important to convey that the contents of the work were obtained «by experimentation»[28] as it was to clarify that it was intended to teach the making of rifle barrels, stocks, gunpowder, and ammunition – in short, everything that concerned the manufacture and repair of firearms, except the art of forging.

There is not, in this observation, an overvaluation of the messages conveyed by the recipe book's title page. It is through this kind of content that the book identifies itself and begins its dialogue with the reader». One of its functions, in this conversation, was to use texts and images to qualify the content of the work, summarizing and eventually adjectivizing the topics it dealt with. The text contained in the frontispiece could also place the work, directly or indirectly, «before other works on similar subjects» preceding it.[29]

However, the reader could only access the contents of the frontispiece «using the materiality resulting from a series of interventions made on the manuscript text»; interferences conceived and performed by the many craftsmen of a typographic workshop that made the passage of writing from its original material condition to the printed book form, defining its visual aspect and ensuring its readability. Publishers, typesetters, typographers, a small army of craftsmen helped with their efforts to materialize editorial intentions that not only generated the physical existence of the book but also contributed to the production of the text's meaning since

28 Stooter 1729, I, p. VII.
29 Meirinho 2006, p. 24.

they interfered in the way the reader would apprehend it. Printing officials were responsible for conceiving an editorial enunciation that blended with the textual enunciation, in a way that the reader would hardly notice them separately.[30] It was, therefore, in observing the 'visual rhetoric' of a book's title page that the reader had «his first contact with the text, through a metonymic relationship in which partial information is offered to him», anticipating his judgment of the work.[31] Accordingly, in the first manual devised by Stooter, printers allocated about one-third of the title page's print area to identify the author and the printers of the book. All the rest of the print area was covered with information that gave a title and qualified the book.



SPINGARDEIRO
COM
CONTA, PEZO, & MEDIDA,
Que refuta deſproporçoes.
OU
Exactas Speculaçoes, & Experiençias, obſervadas & feitas,
COM
CONTA, PEZO, & MEDIDA.
a & de
CANNOS DE SPINGARDAS, CORONHAS,
POLVORA, BALLAS, & MUNIÇAM,
Que porêm naõ trata da Forja, nem o Forjar.
&
O â & dependente de tudo, com curiozidade explicado, & feito,
emriquecido de Delineaçoes & Figuras.
P A R
IOAÕ STOOTER, *Natural de* ANVERES, *morador & Homem de negocio que foy em* LISBOA, *mais de 16. Annos, & como curiozo do exercicio da Caſſa, em utilidade de outros, dos Meſtres Spingardeiros & Corunheiros, a todos muy util, a ſeu proprio Cuſto.*
EM ANVERES,
Por HENRICO & CORNELIO VERDUSSEN,
M. D. CC. XIX. Annos.
Com Licença.

Fig. 4. Title page of *Spingardeiro* belonging to the National Library of Portugal. Photo: National Library of Portugal.

30 Cayuela 2015, p. 296-297. On the concept of editorial enunciation, see Souchier 2007, p. 23-38.
31 Harden 2019, p. 334.

Getting more typographical prominence, as usual, the main title of the manual was chosen as the most important visual element of the title page. In composing the page, the printers made it occupy the entire upper third of the printing area, organizing its words in four lines: «SPINGARDEIRO// COM// CONTA, PEZO, & MEDIDA». The typographical strategy ensured the readability of the text while highlighting the words whose meaning synthesized the book. For the word «Spingardeiro», the most important word on the page because it quickly titles and characterizes the manual, the composers reserved the first line of the print area. Located in the most prominent position, at the top of the page, the word was printed with uppercase type and considerably larger sizes than the other components of the page. Second in the composition hierarchy was the section of the title containing the words «conta, peso, & medida», highlighting central concepts for formulating the content of the work. The sequence of words was also spelled with uppercase letters, a little smaller than those used in the first line, but still with prominent dimensions concerning the remaining text on the page.

A further eye-catching point was created in the second third of the composition. Using the same strategy of writing in capital letters and large font – albeit smaller than in its first appearance – this time it highlighted the line repeating the terms «CONTA, PEZO; & MEDIDA», as part of the work's subtitle. The emphasis, in repeating the concepts, drew attention to the subtitle, written in italic typeface: «Exactas Spiculaçoes, & Experiençias, observadas & feitas; (Exact Speculations, & Experiences, Observed & Made [with…])». The passage indicated the method of construction of the recipe book. The segment «CANNOS DE SPINGARDAS, CORONHAS,// POLVORA, BALLAS, & MUNIÇAM (GUN BARRELS, GUN BUTTS,// GUNPOWDER, BULLETS, & AMMUNITION)», finally pointed out the practical teachings that were the book's main object.

Printed book titles, in the 18th century, were much more than names. Long titles, «abundantly descriptive, provided the reader with information about the nature of the work [...], about the covered topic (the area

of knowledge or some thematic specificity), and even about the text's history».[32] In the «Spingardeiro»»s title page's typography, the printers used the rhetorical power of the word's visuality to lead the readers' perception of the work's meanings, assigning a distinct weight to each piece of information that was offered to them. The graphic hierarchy of the data sets up a sort of architecture of meanings and values. The most important piece of information in the title was presented first and most prominently, identifying the work as a useful book in the field of weaponry knowledge. This was followed by qualifications of the book's content, described as calibrated by the author through countings, weights, and measurements taken in «exact speculations» and «experiments». Obliquely, in emphasizing these features of the «Spingardeiro», Stooter and his printers declared the difference which separated the work from other weaponry manuals that did not standardize weights and measures according to methods advocated by the new science.

The author's care had its purpose. When Stooter acted as an author, the measurement systems for determining dimensions, weights, and volumes varied from place to place. The standardization of the decimal metric system would only really occur after the French Revolution.[33] Until then, calculations involving incompatible units of measurement were always laborious, making the conversion of units «a fundamental necessity» in the sharing of technical knowledge between different localities.[34] Stooter himself exemplified the complexity involved in these exchanges by identifying that Lisbon craftsmen adopted the beam (vara), the cubit (côvado), the beam's span (palmo da vara), and the cubit's span (palmo do côvado) to measure dimensions, while his colleagues in his hometown in Flanders opted for feet and inches. Even when different places adopted homonymous units of measurement, there was the risk of dealing with different standards: similar nomenclatures gave the false impression of homogeneity in

32 Harden 2019, p. 339.
33 Bueno 2011, p. 51.
34 Bueno 2019, p. 196-197.

measurements, when in fact they hid a plurality of standards, with different values and regional validity. A stick from Lisbon was «the same length as the one from Paris», but was different from the Spanish stick; as the feet in London were of different sizes from those in Antwerp, Amsterdam, and Hamburg.[35]

Many writers and translators of useful books in eighteenth-century Portugal were not careful with the variation of measurement standards. Father José Joaquim Viegas de Menezes – born in the Brazilian town of Vila Rica and resident for a period in Lisbon – was one of these authors who failed to observe the issue when translating into Portuguese Abraham Bosse's «Traicté des manières de graver en taille-douce sur l'airin». The Portuguese version «Tratado da Gravura (Treatise on Etching)» was printed by the Arco do Cego's typography, in 1801. The manual brought recipes with measurements identical to those presented in the original book, without undergoing any adaptation to local reality; as occurred with the recipe that explained «how to make the hard varnish for etching on red copper». In the recipe translated into Portuguese, Viegas de Menezes indicated the use of five ounces of «Greek pitch» and five ounces of «Tyro resin», maintaining the measurements indicated by Bosse to his French readers. The same occurred with the composition of the aqua fortis. The cleric printed the preparation without converting the measurements to their Portuguese counterparts, stating, as in the original, that the compound was obtained by taking «three 'canadas' (equivalent to six liters) of vinegar, six ounces of common salt [and] four ounces of verdigris, or all in the proportion that you want to make more or less aqua fortis».[36] The false correspondence between the weight systems of Paris and Lisbon was certainly misleading and required the engravers to correct the execution of the preparation to the local conditions through trials.

A vignette, bordering on the form and function of an epigraph, was constructed as a «thought related to the subject matter dealt with in

35 Stooter 1919, p. 1-2.

36 Bosse 1645, p. 9-11. Bosse 1801, p. 3-5. Bosse 2016, p. 5-9.

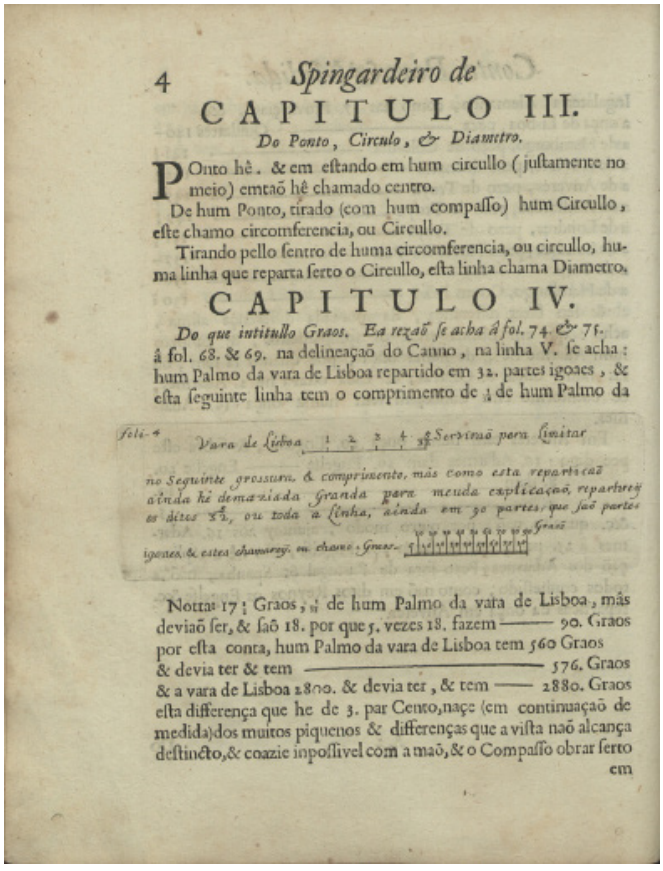
the body of the text» and carefully prepared to be printed at the top of the page of the first chapter of «Spingardeiro».[37] Highlighted by the graphic treatment, with the first words in capital letters, the note signaled the author's perception of the topic to be dealt with in the first five chapters of the book, stating emphatically: «QUEM QUER TRATAR DE// conta, pezo & medida, para bem deve primeiro de hum &// outro[,] dar instruosaõ para naõ ser mal entendido, &// lido sem Fruto (WHO WISHES TO TREAT OF counting, weight & measurement, for good must, first of all, give instruction of one &// other[,] so as not to be misunderstood, &// read without fruition)».[38] The writer and his printers would not do differently in constructing the internal economy of the manual. In anticipation of the needs of his readers, Stooter drew on experience gained from travels in Europe to organize equivalences between the units of measure of each place. Using textual explanations, tables, and graphic scales, inserted in these chapters, he defined the measurement standards used in the book and their conversion to places other than Lisbon. Only when he reached the sixth chapter, the author began to give explanations about the reason for the work and arguments about its conception, which would usually take up a prologue.

In the first chapter, Stooter differentiated the measurements used in determining the dimensions of objects. The variety of weights and measurements of capacity was the subject of the next chapter. To make himself understood and to arrive at the definitions necessary for the readers' comprehension, in both segments of the work, he explained the differences between the systems adopted in Lisbon, Madrid, Paris, Antwerp, London, Amsterdam, and Hamburg.[39] By referencing cities rather than nations or kingdoms, João Stooter prevented regional variations in standards; a constant concern that led him to distinguish the measures in use in Porto and Lisbon, reference cities for his readers.

Definitions of basic geometric concepts – such as the notions of

37 Araújo 2008, p. 410.
38 Stooter 2019, p. 1.
39 Stooter 2019, p. 1-8.

point, circle, diameter, and degrees – were given in the third and fourth chapters of the book, along with an indication of how to measure using a compass. To teach the dimension of degrees, Stooter and the Verdussen printers devised a feature that would be used more than once in the book: the inclusion of graduated scales printed next to the text. To avoid distortions in the measurements and guarantee their accuracy, the book's creators ensured that the parts of the text which contained scales were not printed with movable type, but with open engravings on copper plates.



4 *Spingardeiro de*

CAPITULO III.

Do Ponto, Circulo, & Diametro.

PONto hê. & em eſtando em hum circullo (juſtamente no meio) emtaõ hê chamado centro.

De hum Ponto, tirado (com hum compaſſo) hum Circullo, eſte chamo circomferencia, ou Circullo.

Tirando pello centro de huma circomferencia, ou circullo, huma linha que reparta ſerto o Circullo, eſta linha chama Diametro.

CAPITULO IV.

Do que intitullo Graos. Ea rezaõ ſe acha á fol. 74 & 75. á fol. 68. & 69. na delineaçaõ do Canno, na linha V. ſe acha: hum Palmo da vara de Lisboa repartido em 32. partes igoaes, & eſta ſeguinte linha tem o comprimento de $\frac{1}{4}$ de hum Palmo da

fol. 4 Vara de Lisboa 1 2 3 4 $\frac{1}{4}$ Servirnõ para limitar no Seguinte groſſura, & comprimento, más como esta repartiçaõ aĩnda hé demaziada Granda para meuda explicaçaõ, repartirey os ditos $\frac{1}{4}$, ou toda a Linha, aĩnda em 30 partes, que saõ partes igoaes, & estes chamarey, os chamo: Graos. Graos

Notta: 17 $\frac{1}{2}$ Graos, $\frac{1}{32}$ de hum Palmo da vara de Lisboa, más deviaõ ſer, & saõ 18. por que 5. vezes 18. fazem —— 90. Graos por esta conta, hum Palmo da vara de Lisboa tem 560 Graos & devia ter & tem —— 576. Graos & a vara de Lisboa 2800. & devia ter, & tem —— 2880. Graos esta differença que he de 3. par Cento, naçe (em continuaçaõ de medida) dos muitos piquenos & differenças que a viſta naõ alcança deſtincto, & cozzie inpoſſivel com a maõ, & o Compaſſo obrar ſerto em

Fig. 5. *Spingardeiro* page with scale printed on copper plate. Photo: National Library of Portugal.

Text and graphic representations merged inextricably, creating a material product intended to exceed verbal communication and to transfer spatial knowledge.[40]

For the practicality offered in the transmission of knowledge, the insertion of engravings in the middle of the text also met the need to communicate other non-verbal content. Graphics were used to facilitate the calculation of the proportions between parts of weapons, as in a scheme by which Stooter taught how to take the length of a rifle barrel from the diameter of its bullets. Other graphic solutions came in the production of *hors-texte* engravings.[41] For the outlining of a scantling – or «the accurate portrayal of the thicknesses» – which served as a guide in the design of the gun's parts, molds were printed so that they could «be outlined on paper» or further «opened with a burin» or file, respectively on a plate of copper, iron or other metal.[42]

[40] To facilitate the assembly of the book, the engravings had numbers indicating the folio in which it should be printed. On the role of non-verbal elements in books in conveying meanings, see McKenzie 2004, p. 17.

[41] Stooter 2019, p. 22. The pictures were annotated by the author, with the page numbers after which they should be inserted in the book. This material vestige of the volume composition process, present in the copies of the «Spingardeiro» existing in the EHC and in the National Library of Portugal, registers the direct participation of the author in the production of the booklet and the close relationship he established with his printers.

[42] Stooter 1719, p. 25.

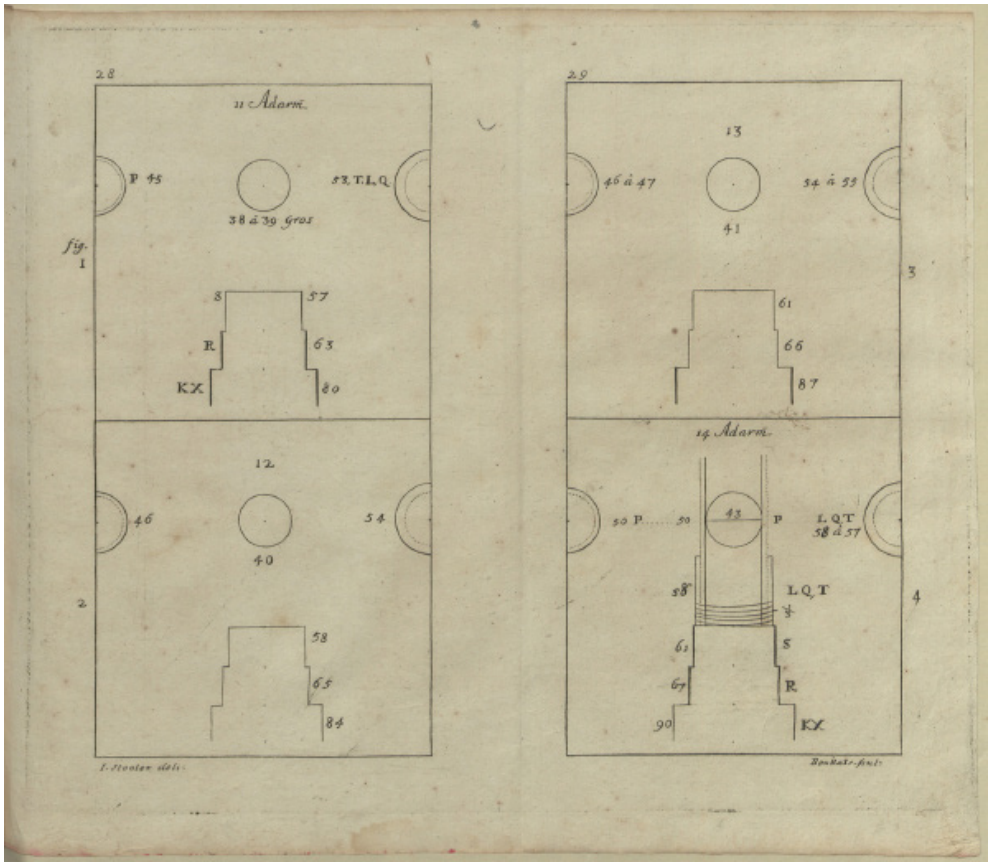


Fig. 6. Page of the *Spingardeiro* engraved on copper plate, showing templates. Photo: National Library of Portugal.

To explain the features and how to use tools and machines necessary to produce weapons, illustrations were printed to represent them in whole or in parts, as in the case of the image of a lathe. The engravings were drawn by Stooter and transferred to copper plates by the Flemish engraver Philippe Boutats, who often contributed to the Verdussen house.

Imaginative, the use of scales and molds to convey precise measurements made the book a tool to be used in craft practice. Such a sophisticated graphic solution, merging the content to the imagina-

tion of the book's form, could only have come to fruition through the confluence of the skills of the writer-artist and the printers.[43] Still, the collaboration did not prevent the mistake. «In checking the print of this work against the original outlines [of] themeasurements, weights, and countings», Stooter noticed differences in the scales and dimensions of the printed molds. He confessed to the readers his mistake of having outlined the rulers of the first part of the work «without experience», that is, without verifying the results obtained; because it turned out that the printed outlines were 2.5% smaller than the original sizes. The reason for the difference was merely technical since the measurements were correct on the plates, «but not in the paper printouts». The author explained the deviation, recording that «when printing on paper, to do it well, firstly they wet it or moisten it very well», and still wet it is printed. Once dry, the paper shrinks, deforming what has been engraved on it.[44]

«To prevent this from happening to anyone else», Stooter warned that whoever repeated the printing experiment should «increase the size of the plates» so that they would be printed correctly on paper, because «one must unacurately work to achieve the correct». Something different would occur with printing on parchment, but not with the dry material, which, as impertinent, «is more difficult to get it right». By puffing the parchment with the mouth or hanging it for 12 or 24 hours, according to Stooter, one would not experience «this difference in shrinking» or, if it occurred, it would be from «a part so tenuous that it is not worth talking about». Considering this, the author had «printed, for some curious people and for his own rest, some outlines on parchment», which would not be difficult to glue on a board to be used as a ruler and which «do not settle in a book», not even *hors-texte*. The few owners of these scrolls could use models and scales without detriment to the result. Those who «have no parchment printings, should rely on using the outlines in the book»,

43 Smith 2013(b), p. 176.
44 Stooter 1719, p. 80-81.

correcting the dimensions according to a table provided by Stooter.[45] Besides the ingenious solution to the battle between printing processes and the imperatives of knowledge transmission, the idea of Stooter and his printers indicates a certain inclination by the author to adapt the printed book to the needs of specific users.

Another «certain remedy» for correcting deviations in paper printouts was to «take all the outlines out of the book» and have them flattened on a board with 5 25/32 palms of Lisbon rod. Then, «with a sponge and clean water», the reverse of the outlines had to be wet, so the reader should «take white gum (like the one the starchers use) and, with a brush, paint the board and paste the print on top, rubbing it in the direction of the dimensions you want to correct». Thus, what has shrunk would be stretched. To prevent the book from being damaged, he had ordered the *hors-texte* engravings to be included twice in, reprinted as a group and included as an attachment at the end of the book.[46]

By working with counting, weight, and measurement, the Flemish artisan built part of his mission as an author of practical books, differentiating himself from his sources of information and from most of the authors of how-to-do books that preceded him. At the same time, by choosing to provide, in this book, mechanisms for converting measurements, the author was building his status as a master and making a first bet on the curious spirit of his reader-pupils, expecting as a response their engagement with the production and checking of the necessary measurements for the manufacture of good weapons. In his second book, «Arte de Brilhantes Vernizes», confident in the success of «Spingardeiro», Stooter would not only refine his methods of approaching records but would also reinforce how he induced readers to take an active role in the acquisition of craft knowledge.

45 Stooter 1719, p. 81.
46 Stooter 1719, p. 81-82.

Experience, the mother of science

A new judgme't on the author's identification was considered in the composition of the tittle page of «Arte de Brilhantes Vernizes». Ten years after João Stooter's first book was published, the title page of the artistic recipe book did not refer to the emphasis he placed on the use of exact measurements, in the daily life of the workshops and in preparing the book. The difference regarding the «Spingardeiro» frontispiece did not imply a lesser concern with the issue. On the contrary, the concern with proportions and exact measurements were incorporated in the recipe book, the way Stooter reorganized and meant the information available in his sources, especially the printed ones, bringing to the foreground the care to verify, through experiments, the accuracy and reproducibility of all techniques and recipes that came to his hands. The change in behavior marks Stooter's maturity as an author of useful books and the sophistication of the methods by which he mediated information to his readers, inducing them to critically go through the recipe book and works that informed it.

On the title page, the author and publishers highlighted data that characterized the work: the contents it addressed and the audiences it targeted. The printers, when designing the title page, allocated the top half of the printing spot to the book's identification; next to information about the author and publisher. The first section of the page was headed by the main title of the work, spelled in large font and a few words in capital letters: «ARTE// DE// Brilhantes Vernizes, & das tinturas». For readers, the presentation of the title was a message indicating that the how-to book dealt with topics related to the mechanical arts and the fine arts. Perhaps it would not be an exaggeration to reinforce that the work was action-oriented, for the performance in workshops and ateliers, informing that it dealt with dyes and varnishes, teaching how to «Make them, & [or] how to work with them (Faze-las, & o[u] como obrar com ellas)».

The guidance to action was enough to make Stooter's book some-

thing different from most of the manuals and how-to books of the early modern era. The «Arte de Brilhantes Vernizes» was not like the compilations of nonsensical recipes assembled by entrepreneurial printers without the concern to adapt them to the readers' reality, which made them difficult to reproduce and of little use. Nor did it resemble the technical writings that set out to teach something, but often remained in the realm of theory or «only proclaimed that 'doing' was a legitimate activity, of high 'status', that could be expressed in written form». Many useful books written in the seventeenth and eighteenth centuries were not meant to be used pragmatically, merely discoursing on the identity and autonomy of some craft; or to polish its practice, implying a closeness to the liberal arts and ridding it of the mechanical arts stigma. Other technical writings "functioned simultaneously as 'how-to-do' and on 'how-to-be' books," and "seem designed to be used mostly by connoisseurs" or curious people, who were "taking the measure of the burgeoning world of material goods" to which they had access through the expansion of luxury manufacturing and global trade.[47]

When the how-to-do books came close to the ideal instruction book, they resulted from the lesser or greater success of authors and publishers in meeting the challenges of transmitting information and mediating the diverse regimes of knowledge involved in artisanal practices (including the knowledge of the body): «although some of these books deliberately conceal processes» regarded as trade secrets or as knowledge to be kept in the restricted community of a workshop, others endured from the limitations of technical writing, such as the difficulty of translating bodily activity into words or narrating artisanal gestures and processes.[48] The success of a recipe book, therefore, depended on how its creators recognized the reader's prior knowledge and created strategies to engage the reader physically and intellectually in using the work.

47 Smith 2013(b), p. 178.
48 Smith 2013(b), p. 179.

Stooter's recipe book, unlike the works he consulted and other books on 'how to make' crafts and chemicals, were deliberately designed to circumvent the problems of transmitting knowledge. The construction of the text from instructions given in sentences governed by verbs in the imperative – 'take', 'gather', 'let boil' – is one of the textual elements that made «Arte de Brilhantes Vernizes» align itself with the kind of useful books actually designed to be used in workshops and ateliers. João Stooter, however, tried to conceive his textual strategies to convey to readers everything he learned in his «exact experiments». To the synthetic lists of ingredients and instructions for the execution of techniques, common to every recipe book, he added detailed narratives about what he experienced while experimenting each compound. To the instructions with verbs in the imperative, Stooter counterposed several 'ifs' that introduced new conditions and explored alternatives (viable or not) of work, exposing the process of testing the recipes gathered from various sources and giving the reader autonomy in the search for new solutions for executing them – as in the case of «gold for painting or writing [that] is seasoned with rose water in which a little clear gum rabic has been dissolved». In an annotated volume by the author, Stooter further extended the instruction with a new alternative: «if one attempts to gild with gold already prepared for painting or writing, one will not experience a capable effect, therefore, the gold must again be heated with aqua fortis, and [for] the gold to take on the metal, [it must] be heated with fire». However, there were «other curious people who say that without heating the metals with quicksilver, aqua fortis, [for] the gold to take, [it must] be heated with fire». This last variant of the recipe, added by hand by Stooter in one of the annotated books, was to be found in the French version of Alejo Piamontez' book, and, not having been tried by the author himself, he claimed that «my curious ones will examine it for me».[49]

Thus, to the chapters with insipid descriptions of processes, warn-

[49] Stooter 1729 (EHC), II, p. 17.

ings were added, with additional explanations about the nature of materials and their reactions to craft processes, clarifications about the execution of techniques, guidelines for alternative preparations, and the revelation of tricks that made work easier or safer and more economical. These textual strategies were ways invented to escape the limitations of recipe books in communicating the various forms of artisanal knowledge – many locked in the skilfulness of gestures and the refinement of the senses.

Another specific characteristic of the booklet was also indicated in the title's reinforcement: by giving equal weight to the teaching of the 'making' of artistic compounds and the transmission of the techniques for 'using' them, the book was placed on the border between a technical manual, a treatise, and a recipe book; whose writing formulas and typographic presentation were already becoming sedimented in printing culture. The hybrid character of the book was evidenced in the less prominent sayings that complemented this section of the front page, stating that it also dealt with «the Ingredients of which the said [paints and varnishes] should be composed;// a wide explanation, of the origin, & nature//; proper for the Master Turners, Painters & Sculptors (dos Ingredientes de que o dito [as tintas e os vernizes] se deve compor;// huma larga explicação, da origem, & nature-// zas; proprio para os Mestres Torneiros, Pintores & Escultores)». By elaborating at length on the virtues, uses, and origins of the recipe inputs, Stooter was abandoning the structure of the recipe book and bringing the work closer to dictionaries and treatises. This deviation from the recipe book form can be explained, in part, by the nature of the printed works that Stooter consulted, such as Brûlons' «Dictionnaire Universel de Commerce»; Nicolas Lemery's «Curso Chymico (Course of Chemistry)», translated by Felix Palacios; the treatise on minerals and their properties by Valentin Krauterman (pseudonym of Christoph von Hellwig); and the book of recipes and artistic techniques published by Johannes Kunck-

el.[50] The instability of the book's form and genre reflected how the author thought about the transmission of craft knowledge, giving readers the conditions to perform their experiments, increasing the vernacular knowledge of chemistry cultivated by craftsmen.

The section ended by providing important information for readers. The preparations of varnishes and dyes, arranged in the first book of the volume, «Arte dos Vernizes», were «suitable for Master Turners,// Painters, & Sculptors (próprios para os Mestres Torneiros,// Pintores, & Escultores)»; although they were used in other trades. In the next book, there would be an offering of «18, or 20, curious, & necessary recipes// FOR:// The goldsmiths of gold, silver, & the watchmakers,// & more Artists (De 18, ou 20, receitas curiozas, & necessárias// PARA:// Os ourives de ouro, prata, & os relogoeiros,// & mais Artistas)». The writer and printers were directly addressing their audience, preparing them for the unusual composition of subjects that shaped the book. To avoid readers' expectations leading them to an error in using the recipes, it was necessary to make it clear that the preparations Stooter experimented with had many applications and specific effects on each type of surface or support. Hence, they were of greater or lesser use in each métier. An informed reader would not find it strange that the recipe for dark lacquer «does not suit painters to put over their panels», preferring formulations such as copal gum or alambre and benzoin varnishes. These, being «white and liquid, do not hinder the brightness of the colors on the panels; on the contrary, they make them brighter, preserving them [so that] the good paints and colors do not fade».[51] Certain instructions for gilding iron and steel were appropriate for the work of watchmakers and goldsmiths. They should not be confused with the recipe for gold dissolved in quicksilver used by gilders; or with the shell gold tempered with rose water, which was used by illuminators, for writing and painting.[52]

50 Brûlons 1723. Palacio - Lémerie 1703. Krauterman 1717. Kunckel 1707.
51 Stooter 1729, I, p. 20.
52 Stooter 1729, II, p. 16-18.

Information about the author and his publisher filled the second section of the title page. Faced with the audience for his first book, the Flemish author was an unknown writer. As a stonecutter and merchant, he appeared to be famous, well-off and sufficiently integrated into the elites of the cities where he lived in Portugal. The cover of «Spingardeiro», then, presented him, based on his social credentials, as an author born in Antwerp, resident, and businessman in Lisbon, who, being curious about the art of hunting, wrote at his own expense a book «for the benefit of others», such as the master shotgunners and manufacturer of gun stocks. The lapse of a decade and the circulation of the book beyond the borders of the Portuguese Kingdom did not assure Stooter's notoriety among the community of readers, even if composed of men who, like himself, would be artisans or curious about the subject. For the good effect of his 'onimity', that is, the signature he lent to the work, it seemed important to him to declare, on the title page of the «Arte de Brilhantes Vernizes», not only his name – with his first name duly translated to show his belonging to two places, his native Flanders and his long residence in Portugal. It was also up to him to point out his job as an «expert in cracking and processing diamonds», as a sign of authority to compose the book. The editors knew that, when printed in the book's entry, this information would be at the service of the work, lending it personality. The sex of the author, his trade, his nation of origin and his adopted city, his social insertion, when inserted in the paratexts of a book, fulfilled a «contractual function» in the relationship with the reader, very «strong in all kinds of referential writings, where the credibility of testimony, or its transmission, is largely based on the identity of the witness or reporter».[53]

If the author's concern with rigor in testing the recipes was not ex-

[53] Onymity is the term coined by Genette to designate the condition of the author's name indicated in a printed work, when the latter 'signs' it with his real name; distinguishing it from other conditions: anonymity (the absence of the author's name) and pseudonymity (the signature with a false name, borrowed or invented). Genette 2009, p. 39-42.

pressed in the frontispiece of the artistic recipe books, it appeared in the «Prologue to the Reader» and was often reiterated throughout the work. Justifying the desire to compose and print the book to enrich the work of artists, craftsmen and teachers of various arts, João Stooter took the diligence to, «at the cost of his own work» and because he was curious, gather in such a «weak gift», «the various recipes for varnishes and other curiosities» and to make «exact experiments on them». Subsequently, he stated that the basis of this method was the commitment of the work to forge a «future time ahead» in which, «not being the Portuguese nation of less understanding than the others», the success of England, France, Italy, Flanders and Holland in forging their «arts, crafts and perfect curiosities» could be repeated throughout Portugal. Stooter's purpose was to supplant the very small empirical spirit with which the craftsmen of «all the Portuguese Kingdom» worked, encouraging the emergence of «some more acute and perceptive ingenuity» capable of giving «greater emphasis» to the arts and crafts which benefited from raw materials from all over the orb.[54]

The focus on the use of reason to improve the production processes of Portuguese ateliers and workshops, in turn, shows that the Flemish immigrant's thinking was in line with the enlightenment ideas of the European intellectual and political elites, which were already reaching Portugal. Rooted in Lisbon and Porto, but without losing his connections with Antwerp, Amsterdam, and other cities, Stooter served as a link between the illustrated foreigners and the local elites, who cultivated projects based on an «illuminist culture of scientific guidance, but with an essentially practical connotation».[55]

Time and again, Stooter allowed restraint to give way to emphatic assertions of his authority as an artisan, vouching for the quality of his work in observing techniques and experimenting with recipes, correctly recording the measurements and proportions of his ingredients. He declared his mastery on the book's themes in a variety of ways,

54 Stooter 1729, II, p. VIII.
55 Pataca - Luna, p. 26.

from advertising to attacking other authors' ways of working. The most recurrent way, however, was to call on readers to evaluate or improve his booklet, challenging them to observe the reactions of inputs, to experiment with the recipes, and to point out their errors; for, to the author's greater liking, «the curious speculative will make amends and speculate further».[56] When teaching readers that the pint of Porto «is larger than Lisbon's by twenty percent», the author challenged the doubters protesting that «there is no doubt in this, for those who examine me», because «it is in Porto that I write this speech and that I make my experiments, and not in Lisbon».[57]

João Stooter resorted to the use of the words 'speculation', 'experience' and 'experimenting' to distinguish his manual of rifle-making and his artistic recipe book from other works of the genre that preceded them, indicating the novelty of the methods used in their elaboration. Their recipes were not based on «unreflected repetition» or the unquestioned transmission of traditional knowledge kept by the masters of the mechanical arts. They were not even based on knowledge obtained through trial and error. They were based on the submission of each step in the production of weapons or dyes and varnishes to speculation and experimentation, to arrive at the necessary revisions under a rational and controlled investigative method that would ensure the quality of the instructions offered and the readers' success in carrying them out. In the books, the primacy of experimentation over thoughtless practice was textually and visually repeated through the thoughtful choice of words used to express it and the way these words were presented, in the paratexts and other graphic elements that were left up to the publisher.[58]

The reason given by the author for the writing of «Spingardeiro» was the observation of the existence of countless rifle barrels and ammunition made with different proportions. Created by

56 Stooter 1729, I, p. 8.
57 Stooter 1729, II, p. 9.
58 Harden 2019, p. 330. Safier 2019, p. 335.

«common masters» and «great gunsmith officers», every existing firearm in Portugal was made «without rule or proportion because each one worked [according to] his will» and without considering the dimensions of the pieces and projectiles that would ensure their efficiency. Since he could not find any «treatise» dedicated to the subject and driven by a «natural curiosity» to seek the «fundamental rule» of things, the Flemish author dedicated himself to «experiments (the mother of sciences)», in the search for perfectioning «a barrel as parallel or bullet as equal as possible».[59] Not satisfied, he called upon the genius of renowned riflemen and authors of a manual of weaponry, the brothers José Francisco and João Rodrigues, to contribute with their wealth of knowledge to solve the problem.[60]

If, in «Spingardeiro», the author and his peers carried out the necessary experiments to regulate the measurements and to correct the proportions of the parts of firearms, in «Arte de Brilhantes Vernizes», Stooter experimented with the recipes he compiled, adapted them to the use of Portuguese craftsmen, standardized their formulations, and transmitted the entire process to his readers, encouraging them to test his instructions and to point out any errors. There was in this posture a desire to make of the artisanal practices, conducted in the workshops, a vernacular version of the scientific processes of that time. The use and prominence given to the concepts of speculation and experiment evidenced a certain vulgarization of scientific investigation's vocabulary and methods, which were in fixing since the middle of the previous century, and the adoption of observation and experimentation as essential parts of the theory and practice of the new philosophy. Whether by inspiration from the works of chemists and pharmacists that were part of his readings or circulating among scholars in various European cities, the way Stooter mobilized these concepts characterized the author as a craftsman who aimed to align

59 Stooter 1719, p. 9.

60 Fiosconi - Giuserio 1718. César Fiosconi and Jordam Giuserio are anagrams of the brothers' names.

the mechanical arts he professed with science, to achieve better and preciser results in the workshop.

The term 'speculation', in Portuguese at the turn of the 18th century, could express the commonplace act of seeing, observing, or contemplating something. But speculation was also expected to be a synonym of contemplation, in the sense of the spiritual, philosophical, or intellectual disposition to the examination of the sacred, of truth, or of nature. By derivation, speculation could be understood from the identification between theory and contemplation, as opposed to action and practices. Not least, the dictionary writer Raphael Bluteau exemplified the use of the term speculative with a phrase that referred to theoretical knowledge, to lucubration, to intellectual work: «those things touch the speculative, these the practical».[61] Thus, facing the myriad of meanings that speculation could acquire when connected to the production of knowledge, some modern authors took it as reasoning without any practical scope, while certain philosophers considered it an important activity of reason, which feeds on itself.[62] However, by associating the 'exact speculations' observed in the testing of published recipes with experiments «made with counting, weight, and measurement», Stooter brought his use of the word closer to a new understanding of the concept of observation; one that emerged when the observation was elevated to the status of an epistemic category – that is, when it became an object of reflection in the philosophical lexicon and found a place in treatises on methodology.[63]

With a solid use in medicine and astronomy for two centuries, observation became an essential epistemic category for the sciences and the arts, as a result of innovations in its use and conceptualization. One transformation was the emergence of an unprecedented perception of the relationships built between reason and experience, with

61 See entries 'speculation' and 'speculative' in Bluteau 1712-1728, p. 265, Moraes Silva 1789, p. 757.
62 Mora 2005, p. 880-883.
63 Daston 2011, p. 81.

the emergence of new forms of disciplined experience advocated in the field of science. Throughout early modernity, observation and experimentation were inseparable concepts and practices of knowledge production, with one defining the other. By the early 17th century, the two terms were synonymous, used in situations as in the phrase 'observations and experiments', which became commonplace in literate circles. At the turn of the next century, there was a change in the meaning of experiment: the term meaning, that covered a wide range of empirical procedures from common experience to the formulation of medical recipe books and craft knowledge, «shifted from the broad and heterogeneous sense of 'experimentum' as recipe, trial, or just common experience to a concertedly artificial manipulation, often using special instruments and designed to probe hidden causes».[64] Thus, observation and experimentation became complementary, parts of the same research method. The concept of experiment gained specific contours with the publication of Francis Bacon's «Novumorganum» in 1620. Slowly, as far as the production of knowledge was concerned, the term was used to denote « deliberate manipulation that would shed light on causes inaccessible to the unaided senses and intellect»; an intervention or an «artificial experiment» different from the phenomena observable in the ordinary course of nature. Already by the end of the 17th century, there was a clear distinction between an experience (or experiment) and observation, with the former indicating interventions in nature for the production of effects and the other the study of effects and phenomena as they occurred in their natural course, with or without the aid of instruments.[65]

A diamond cutter and merchant, Stooter was not – and perhaps did not expect to become – a natural philosopher. He appropriated the practices, techniques, and knowledge developed by chemists and apothecaries, without claiming to be their equal. His book was the result of a curious man's effort, who, borrowing scientific methods and

64 Daston 2011, p. 82. Bluteau 1712-1728, p. 390-391.
65 Daston 2011, p. 82-86.

vocabulary, explored the causes of nature and their effects on materials, to refine the practices of mechanical officials in processing natural elements to arrive at their products. Despite his imperfections, Stooter must be perceived as an agent who, in Portugal, modeled the approximation between artisanal practices, the operative portion of the liberal arts, and scientific experimentation, as proposed by Bacon.[66] In his way, he planted the Enlightenment idea that «the understanding of natural materials created connections between the natural world, the mechanical arts, and the world of industry and commerce.[67]

The obsession with improving craftsmanship represented the virtuoso trait that Stooter aimed to achieve as the author of recipe books, rebuking whenever he could his colleagues' sloppy work. Eradicating the errors of his predecessors, testing procedures, and refining the accuracy of measurements seemed to him a pledge of a good harvest in the use of available publications and a pleasure to the curious mind. The critical appreciation and correction of recipe books used by craftsmen, artists, and writers were traits of an 'enlightened posture' that he insisted on maintaining and textually expressed during the manual's elaboration process. Thinking of his judgment by posterity, in the preface to the recipe book, the Flemish gave up claiming credit as the inventor of new recipes and let the desire for recognition lie in the modest position of one who, at the cost of some money, assembled and experimented with a vast array of recipes for varnishes and dyes to the benefit of those who should have done so «by office», such as master turners and artists.[68] Was this inclination to work with exact methods that Stooter intended to transmit as a legacy to his readers.

Thus, the book would be useful to two kinds of readers: the ordinary craftsman and the curious reader. The ordinary craftsman would expect little more from the book than the chance to reproduce the exact recipes, with the certainty of achieving a good result. The curious

66 Daston 2011, p. 86.
67 Bertucci 2017, p. 25.
68 Stooter 1729, I, p. VII.

reader, on the other hand, would be the one towards whom Stooter aimed his best efforts because they would be capable of equaling or surpassing the qualities of the greatest masters of their art. His curious genius would not be pleased with reproducing recipes. He would examine and put to the test everything he was taught, exercising his practical and speculative virtues.

To enlighten the pious reader

The access of an individual to the world of written culture, in the 18th century, required a minimum command of the writing and reading codes: the codes of the written language, the bibliographic codes, and even the corporal codes required for good writing and effective reading. An explanation about the «posture of the body when writing» was the second lesson presented in the writing manual published in Paris in the 1750s by one of the most important calligraphers of the century, Louis Rossignol. Preceded by the way of «carving the feather», the lecture instructed the apprentices to maintain an elegant and appropriate posture for the exercise of writing:

> sit comfortably, in such a way that the arms can act on the table without constraint [and] that the body is supported on the left arm, which will be placed on the table; you will not hold the paper on which you are to write more than the right arm, [which] should be kept close to the body and rested five or six fingers from the elbow and on the last two [fingers] of the hand, which will be somewhat elevated to the fist to very easily flow when writing.[69]

Significantly, a handwriting manual developed by an experienced author would begin by teaching how to handle the material elements of the writing culture (the quill, the table, the paper) and how to con-

69 Rossignol 1756, p. 3.

trol each part of the body (trunk, arms, hands, and fingers), before moving on to the examples of letters to be copied by the learning reader.

The master turners and watchmakers, most painters and sculptors, most of Jão Stooter's readers did not aspire to elegance as they exercised their art in the workshops and ateliers.[70] Every reader could not be expected to adopt the same limited repertoire of body positions when reading, or to exercise a very restricted set of gestures when handling books that fulfilled such different functions. The emergence of the first generation of solitary, silent readers was only just beginning at that point in the 18th century, although books became progressively cheaper, and the habit of reading reached more and more people.[71] But, recipe books did not serve as a refuge for the solitary reader, in the fashion of novels. Reading in silence and standing at the high tables of a library did not meet the needs of artists and artisans either. Convenient for intensive reading, «which establishes a solitary and intimate relationship between the reader and the book,»[72] perhaps the ways of silently giving oneself to books were suitable only for the curious person envisioned by Stooter who, eager to increase his knowledge of craft techniques, would renounce – even temporarily – the impulses of the speculative spirit that impelled him to experimentation.

Also of little use to the craftsmen would be the practice of collective reading and reading aloud, even though this modality of reading continued to be the most common form of access to texts, both inside and outside home. The reader was listened to in the appreciation of sermons and religious texts, in the sharing of newspaper news and the debate of pamphlet controversies, in the exercise of work activities, and for the information of the great number of illiterate people of the modern world. «Reading aloud could mean sitting on a bench, reading

70 On the relationship between the brush and pen arts and social projection, see Almada 2012. On turning as a hobby of aristocratic distinction, see Gomes 2017.
71 Williams 2017, p. 11.
72 Chartier 1991, p. 113.

cheaply printed versions of folk tales to an audience made up of illiterate craftsmen», or sitting alone and enjoying the sound of a text.[73]

Regarding how books were used among craftsmen and in the daily life of the workshops, almost nothing has been recorded beyond accounts of collective readings of novels and newspapers. A Scotsman, Hugh Miller, recounted how reading was done in a craftsman family in the 19th century. His eldest uncle, a shrewd man with an excellent memory, had a «great thirst for information». Because he worked alone, harness-making took up his entire day in the summers, leaving little time for reading. This was remedied because he always found someone to read beside him during the day. On winter evenings, the bench was moved to the other side of the house and installed in a room, where Miller's youngest uncle would read, under the eyes of the family and a neighbor, any interesting volume for the «general benefit».[74] Common, these practices served to communicate news and reading narratives, occupying the mind and leaving the body free for work. Reading aloud, however, had its limits in the instrumental use of works that taught 'doings', whose reading required attention to follow the steps of execution and freedom of gestures adjusted to the action in producing something.[75]

Judiciously published in the in-octavo format, to be of low cost and easy to handle, Stooter's how-to-do book was a work designed to be handled amidst machines, ovens, crucibles, flasks, and reagents. An ordinary choice at the printers of the time, the option for this format would have a bearing on the real possibilities of the book's use. Large formats generated huge volumes, «unfit for continuous reading» due to the difficulty imposed on handling, so they were better suited to luxury or reference works such as atlases, treatises, and dictionaries.[76] Volumes that were too small would not stay open out of the hands and had tiny letters, inconvenient for viewing the text. The in-octave

73 Williams 2017, p. 8-11.
74 Miller 1865, p. 33.
75 Darnton 1990, p. 160.
76 Tschichold 2007, p. 53.

book, on the other hand, was perfectly suited to the gestures and needs of the craftsman who consulted it while working. An action-oriented recipe book could not be read linearly, and the reason for this was not only because it would be boring to read. In the execution of one preparation, attention to the text had to be intermittent, with the artisan's eyes going back and forth between the instructions in the recipe and the hands controlling instruments and substances. Something that would only be possible if the manual remained open with an ease similar to that offered by *in-octavo* books.

Browsing the book and consulting what the author wrote here or there while performing a preparation, would be an expected act among artisans who used recipes. The consideration of this gesture may have weighed on the decisions of the Verdussen house publishers to print the «Arte de Brilhantes Vernizes» in a format convenient to the reader. In recipe writing, authors used to spin the text around and around to variations of the same technique. At other times, they would spread different recipes for the same process over pages far apart from each other, due to the way they organized the themes of the work.[77] Often, Stooter induced the book's users into this intermittent reading mode, causing them to scroll relentlessly through the pages of the book as they complied with the insistent suggestions to consult several parts of the text.

Reading was always a complex act. Reading does not consist in seeing words put together and decoding their meanings. At each moment that the eyes travel through the text, at each turn of the page, new impressions complete or annul previous ones. The way Stooter elaborated the «Arte dos Vernizes (The Art of Varnishes)», the name of the first of his recipe books, is an example of how the physical presentation of a text imposes reading modes and interferes in the reception of its content, modifying the construction of meanings and inciting interpretations.[78] Therein, he broke the textual and bibliographical codes that the literary

77 Smith 2013(b), p. 179.
78 Allen *et al.* 2011, p. 1-3.

and typographical traditions were consolidating for the printing of recipe books, by choosing not to divide the book into chapters and recipes that succeeded each other as the work progressed. Instead, the text was fragmented into independent sections, with boundaries demarcated by titles spelled in capital letters and subtitles with equally large letters, but in italics.

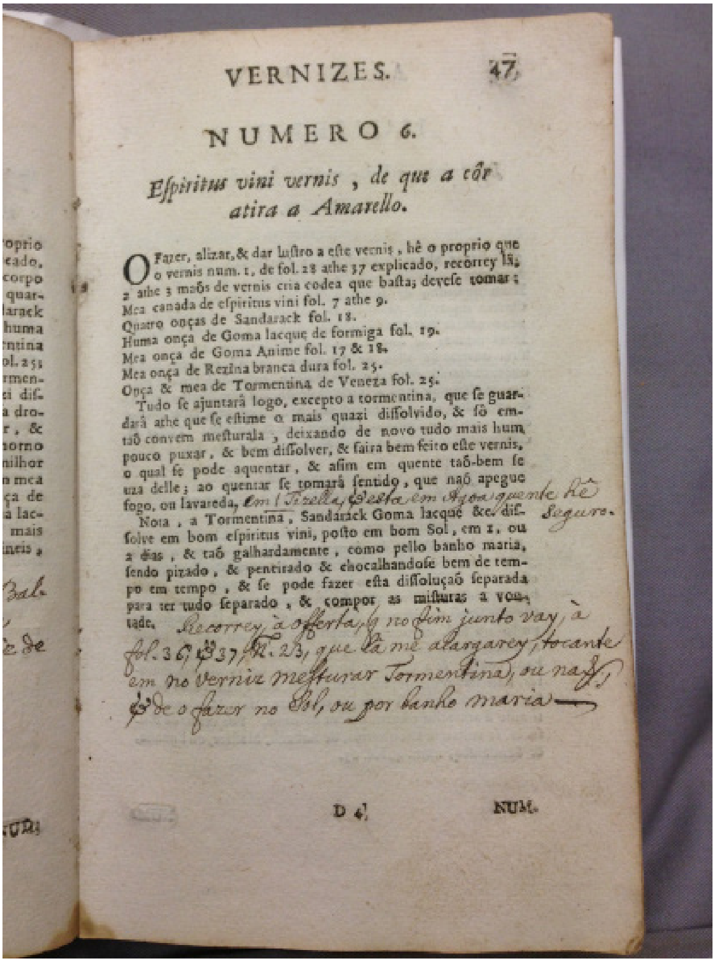


Fig. 7. Annotated page of the *Art of Brilliant Varnishes* with chapter title, belonging to the Erfgoedbibliotheek Hendrik Conscience. Photo: René Lommez Gomes.

The structure invented by Stooter mixed the appearance of a treatise with that of a how-to-do book. Each section began with explanations of a type of raw material or preparation – woods, oily varnishes, dyes, alcoholic varnishes, etc. In the course of the text, the sequence of the topics dealt with presenting the origins and virtues of the material discussed, followed by the instructions for preparing the compounds and the steps in the manufacture of objects in which the material served as an ingredient. Thus, beginning with the presentation of the woods «from outside the Kingdom of Portugal», in the first subsection of the book, he pointed out «the woods most capable of turning», a text succeeded by a «preparation of good glue» to seal «the porous wood». Finally, he closed by indicating techniques for smoothing, sanding, and polishing wood pieces, before and after varnishing. Next, Stooter introduced the topic of oily varnishes, starting by giving warnings about recurring terms and processes in the work: from the extraction of resins from trees to the water bath to the distinguishing between 'oil varnishes' and alcohol varnishes.[79] When introducing the subject, he explained the origin and properties of the ingredients, then taught the formulations and ways to apply them on wood, metals, and other surfaces. Each recipe was numbered with Arabic numerals, which preceded the title of the section.

Stooter organized the contents of «Arte das Vernizes» as if the writer were a collector trying to layout the order of the world by arranging objects within a cabinet of curiosities. It was as if each chapter embodied an item gathered in the collection of his knowledge about the material world. The reader who ventured to read the work, section after section, could feel as if he were standing in front of the cabinets and displays that show off each segment of the collection. The cabinet of the «woods most capable of turning and that is found in the Kingdom of Portugal», brought together samples of boxwood, orange wood, maple wood, pomegranate wood, loquat, myrtle, wild

79 Stooter 1729, I, p. 1-17.

olive, olive tree, walnut wood, aderno wood (*Heberdenia excelsa)*, holly wood, cornel cherry wood and almond tree. Later, Stooter's handwritten notes in one of the volumes of the book would incorporate new acquisitions: almond wood, holly, sanguine, almond. If each item had value on its own, the opening paragraph gave meaning to the whole, stating that «so as not to forget and shorten the writing, I must first warn you that all these woods have these parts: they smoothen well, allow good threading, and accept varnish well».[80]

Time and again, the order invented by the bissextile author seemed to falter and fail; as when, after the long explanation of how to make varnish 'number 1' – a cinnamon-colored alcoholic varnish – he went on to instruct on how to mix two ready-made varnishes and to teach the techniques of applying the explained varnish. At this point, the author interrupted the sequence of varnish recipes and moved on to the dyes section, with the introduction of six preparations.[81] After the last of these, on the very next page, highlighted headings read: «continuation of varnishes; number 2, the whitest spiritus vini there is». Thereafter, Stooter introduced ten recipes for alcoholic varnishes of different colors, instruction on how to polish varnished parts off the lathe, and again taught how to synthesize three types of dyes or, rather, colored compound varnishes.[82] The hesitating systematization, the outcome of a dilettante's writing and solutions without ballast in the bibliographical tradition blew an air of disarray over the work. The meticulous artisan, however, would perceive the logic of materiality shining under the misty varnish of presumed disorganization: from the formulation of a varnish that served as a base for the preparation of others, there was an explanation of how to «withdraw the dyes of various colors, which are used to put under the varnish»[83] or to mix with it; only then would one return to the varnishes, with alcoholic

80 Stooter 1729, I, p. 4-6.
81 Stooter 1729, I, p. 37-42.
82 Stooter 1729, I, p. 53 *et seq*.
83 Stooter 1729, I, p. 37.

preparations and varnishes with metallic elements.

The Flemish author listed item by item, the materials, and instruments of the most complete workshop that could ideally exist in Portugal. The long lists created by João Stooter gave the recipe book the aspect of a catalog or a dictionary. With this way of ordering the subjects, he made the «Arte de Brilhantes Vernizes» a collection of knowledge from the world of materials. What he lacked, then, was to lead the readers to the connection of contents and the crossing of knowledge, offering conditions to execute the recipes with freedom of experimentation. The construction of a complicated system of cross-references was the solution he found to mitigate the difficulty, imposing on the reader the gesture of turning pages forward and back again, in search of complements to the recipe being executed. At that time, the publishing practice of including glosses, notes, and subtitles in the margins of typographic blots had already fallen into disuse. Instead, several systems of cross-references appeared – marked by Arabic or Roman numerals, asterisks, or other graphic signs – to locate on the ‹same page› particular themes or elucidations, necessarily longer than a simple subtitle or rubric.[84] By launching the reader on the hunt for information laid out on distant pages, the cross-references created by Stooter bore little resemblance to the publishing houses' new practices.

The Stooter's reader who wanted to work with the old Maple wood described on page 4 of book one would find that it «accepts well the varnish oil» with turpentine, described in recipe number 15, which would appear 60 pages later. When he arrived there, he would learn that the varnish had a «good luster, since it produces it on old sycamore wood. However, to synthesize the compound, it was necessary to do as Stooter instructed and return to pages 61 and 62 to repeat how to make varnish number 3, known as white varnish oil. The composition of this preparation was made with half a pound of walnut oil,

84 Araújo 2008, p. 96-97.

whose properties were explained on sheet 16, half an ounce of sandarac gum, as on pages 17 and 18, and two and a half ounces of mastic in tears, as seen on 17. For the method of preparation, it was best to use the water bath, taught on page 15.

The fixing of information already offered was, along with the need to supplement a recipe or an explanation, one of the reasons that led the writer to overload the work with references to other parts of the book. After explaining the entire process of making that cinnamon-colored alcoholic varnish, Stooter turned one of these references into a kind of ritornello that took the reader back to the first stage of the process: «lest you be deceived, I renew your memory and direct you to pages 7 to 9, where you will find explained in detail the proofs or experiments for the right purchase of the good and strong *spiritus vini*».[85] Exorbitant, the volume of cross-references used throughout the book must have cost the Flemish publishers immense care and time in their efforts to maintain accuracy in the indications of the pages to be consulted – a complex job that perhaps required the author's participation in the editing, at least in the correction of a proof of the printout. Considering the statement that «authors do not write books», but «texts that become written objects»,[86] one must recognize that in writing, Stooter already foresaw something of the materialization of the text, for there were many cross-references made between the first and second books comprising the work.

If the intermittent reading of a recipe was a reality when working in studios and workshops with attention divided between the pages of the book and the processes being carried out, Stooter forced a discontinuity of reading, gestures, and tasks by imposing the need to go through various parts of the work to fully understand all the stages of a recipe, from the selection and acquisition of ingredients to the correct way to wash tools and machinery after use. When reading the text, the ordinary craftsman and the curious reader were subjected to

85 Stooter 1729, I, p. 31.
86 Chartier 1998, p. 9.

the appreciation of the physical form of the text; as the construction of its linguistic meaning did not evade the interpretation of material meanings.[87]

The curious reader, on the other hand, was impelled to complete the meaning of the writing by accessing sources of information used by the author, to which he would be referred mid-reading. «During the explanation of [how] to take the tinctures», in addition to the references to other sheets «of this little book», Stooter made several citations to the two volumes of Brûlons' dictionary. The references to the tomes of the dictionary, in the author's expectations, would serve to bring «more light to the pious reader, in wishing to resort to them». In the dye recipe number two, in which the production of yellow dyes was taught, Stooter made indications of topics to be clarified by consulting the Frenchman's work: in the first, he referred to the entry in which the dictionary writer presented the qualities of graine de Avignon, from which color as good as that of Pernambuco tatajuba wood could be extracted; in the second, about where to get more knowledge about gut gum. Later on, in the already mentioned recipe for gilding metals, he again indicated the use of tatajuba dye. This time, as an option, he indicated the use of Cuba wood (pau fustete, *Chlorophora tinctoria*), imported from Tobago and other Antillean islands, also described by Brûlons.[88] About bismuth, the reader could find information in Lemery's «Curso Chimico», translated from French to Spanish by the apothecary of the court of Madrid, Don Felix Palácios.[89] Palacios' treatise «Palestra pharmaceutica, chymico-galenica» should be consulted to better understand the purification of ethyl alcohol.[90] From Kunckel's artistic recipes, he took new recipes for ex-

87 On the imbrication between linguistic and material meanings of a text, Aallen *et al.* 2011, p. 2.
88 Stooter 1729, I, p. 39-55.
89 Stooter 1729, II, p. 35. Lemery 1721.
90 Stooter 1729, II, p. 28. Palacios 1703.

cellent varnishes,[91] while a recipe for making mirrors with steel was taken from Kräutermann's treatise.[92]

In several of the handwritten notes added to the exemplars of the book, Stooter also made references to alternative solutions to his preparations, present in a French edition of Alejo Piemontés' «Libro de los secretos».[93] By offering access to the works he took as a reference, Stooter extended his bibliographical gesture to the book's users and pledged that the experiences of reading and the search for knowledge would lead the curious to speculate further, finding solutions to the challenges of the workshop. The form of reading recommended for the curious reader included visits to a library, between the alternating gestures of reading the «Arte de Brilhantes Vernizes» and handling wood, jars, crucibles, and stoves.

Conclusion

At the end of his work, in the «Couza Nova», an extension added to the book «HumaOfferta», John Stooter gave testimony of the publication's objectives and the method he created to achieve them. According to him, «as I have the compelling occasion to order the printing of the Table of Errata» and «to complete this work more perfectly», he felt «obliged» to offer readers «a curious and perfect recipe» on «how to put steel in glass to make an excellent mirror». Beyond the usefulness of the recipe, Stooter wanted the «curious reader to see and examine it both for the public good and for the disquiet of some greedy private individuals, who do not want to publish and [even less] teach, but rather hide it with chimeras and frivolous pretexts». So that «these wise and avaricious people do not make me feel any particular aversion» for revealing secrets of their office, the

91 Stooter 1729, II, p. 40. Kunckel 1707, p. 195-243.
92 Krautermann 1717.
93 Stooter 1729 (EHC), II, p. 17; 20; 23.

Flemish author stated that the recipe had not been taken from a Portuguese workshop, but rather came from a printed work. About the author, who deliberately brought it and from whom he «took some light», Stooter revealed to be «a curious German named Valentino Krauterman» who published important recipes.[94]

Written in the form of a «novelty warning» to amplify previous contents of the work, the passage condenses in an exemplary manner the strategies created by João Stooter to construct his recipe book, some of which were so unique to the author that they easily escaped the conventions of the art of printing and would hardly be repeated in similar books. If Stooter justified the elaboration of the recipe book by the desire to make the creations and fame of Portuguese craftsmen shine, making their products rival the finest workmanship of other European nations, he hoped to achieve success by training the craftsmen offering them the most recent and correct information available about their work materials. To achieve his goals, he sought to engage his readers, from the ordinary craftsman to the curious reader, in craftsmanship, but also in the pursuit of knowledge, to be acquired through three ways: the observation of phenomena, the execution of experiments, and the absorption of letters. It was not enough for him, therefore, to provide craftsmen with corrected and adequate recipes and formulations for their work context. It was up to him – and he firmly believed in this – to teach the reader-pupils the mechanisms to «reach the enlightenment», whether by inviting them to re-enact their bibliographic gesture in the search for more information or by making his workshops a flat version of the laboratories where the sciences of the Enlightenment were rehearsed and tested on the veracity of the lectures learned from reading. In following this path, the reader would have, in the «Arte de Brilhantes Vernizes» and the curious spirit, his most faithful guides.

94 Stooter 1729, II, p. 48.

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Abstract

Nato ad Anversa e residente in Portogallo, il tagliatore di diamanti João Stooter acquistò una certa reputazione nel XVIII secolo quando produsse un manuale di armeria e un ricettario artistico. Le sue opere avevano lo scopo di migliorare la qualità delle creazioni degli ufficiali meccanici e degli artisti del Regno, facendole rivaleggiare con i prodotti stranieri. Per quanto riguarda la sua seconda opera, un ricettario artistico intitolato "Arte de Brilhantes Vernises", l'autore scrisse su una vasta gamma di soggetti – vernici, pigmenti, adesivi, ecc. – relativi alla trasformazione artigianale delle materie prime che il commercio internazionale scaricava nel mercato portoghese, per esempio il legno proveniente dal Brasile e dall'Africa. Agli albori dell'Illuminismo Portoghese, Stooter raccolse, mise alla prova e corresse le ricette delle vernici e di altri composti artistici scelte da una vasta gamma di fonti di informazione, soprattutto vari generi di "libri utili" a stampa. I risultati degli esperimenti fatti nel suo studio per testare, emendare e standardizzare i preparati e le tecniche formarono la prima opera di questo genere stampata in portoghese. L'opera fu curata dalla casa Verdussen, ad Anversa, tra il 1729 e il 1732. Diverse copie furono poi arricchite con annotazioni manoscritte dell'autore. Sia nei testi a stampa che nei manoscritti – nati dal suo gesto bibliografico, nel selezionare, compilare e mediare le schede precedente – l'autore sviluppò un complesso sistema interno di rinvio al contenuto del libro e alle opere prese come fonte, il quale richiedeva il gesto tecnico dall'artigiano lungo il percorso di lettura indicato affinché una preparazione potesse essere eseguita in modo soddisfacente. Partendo dal presupposto che il campo della bibliografia comprende la storia della produzione e dell'uso dei libri, questo studio dimostrerà come il sistema di rinvio definì il modello di libro utile concepito dall'autore, essendo al centro della trasmissione del sapere artigianale desiderata nella opera.

Letteratura artistica; Bibliografia; Storia del libro

Born in Antwerp and living in Portugal, the diamond cutter João Stoot-

er acquired some prominence in the 18th century when he produced an armory manual and an artistic recipe book. His works were intended to improve the quality of the products created by the Kingdom's mechanical officers and artists, making them rival foreign products. Regarding his second work, an artistic how-to-do book entitled «Arte de Brilhantes Vernises», the author found himself moved to write on a wide range of subjects – such as varnishes, paints, and glues – relating to the artisanal transformation of raw materials that the overseas trade dumped on the Portuguese market, such as wood from Brazil and Africa. At the dawn of Portuguese Illustration, Stooter gathered, tested and corrected recipes for varnishes and other artistic compounds obtained from a wide range of information sources, above all in various genres of printed books. With the result of the experiments conducted in his studio, which aimed at testing, correcting and standardizing the preparations and techniques, he composed the first recipe book of its kind to be printed in Portuguese. The work was edited by the Verdussen house, in Antwerp, between 1729 and 1732. Several copies of it were later enhanced with handwritten notes by the author. In printed and manuscript texts – which were born from his bibliographic gesture, when selecting, compiling and mediating previous records – the author developed a complex system of internal references to the contents of the book and to works taken as a source, which required the technical gesture of the artisan if added to the indicated reading path, so that a preparation could be carried out satisfactorily. Based on the proposition that the field of bibliography encompasses the history of production and uses of books, this study will demonstrate how the references defined this recipe book model, placing itself at the center of the transmission of artisanal knowledge advocated in the work.

Artistic Literature; Bibliography; Book history