Annotation for 029r - G8906 Craft and Science

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<title id=”p029r\_a1”> Stuc pour mouler </title>

<ab id=”p029r\_b1”> Ayes de la gomme dragant et la mects tremper jusque a ce quayant beu son eau elle soict enflee et reduicte comme gelee Lors broyes la bien fort sur le mabre et apres ayes de la farine de seigle qui est meilleure que celle de froment a cause quelle est plus humide et ne rend pas la paste si brusque Et en saulpouldres votre gomme dragant et continues a broyer et mesler Ainsy peu a peu la farine bien subtillement tamise Et la pestrisses comme si vous voulies faire du pain Jusque a ce que vous cognoissies quelle aye asses de corps et soict ferme comme la paste du pain quon veult mectre au four Cela se cognoist quand elle sestire asses sans se rompre Et si elle nestoit asses forte elle ne se despouille pas bien Estant ainsy preparee frottes dhuile de cane avecq une broisse affin que lhuile penetre par tout pour mieux faire despouiller Et presses la paste dedans bien fort Et si elle ne se despouille pas bien mesles y encores de la farine jusques a ce quelle aye asses de corps avecq cella vous moules fort net telle ouvraige ou masques ou festes quils vous plaira qui seront secs dans un jour Apres vous les aplique avecq colle forte ou colle de paste comme il vous plaira Et les pourres paindre et estoffer dor et toutes couleurs On en faict les ornements des planchers a romme On en peult faire des ornement de lits Si tu veut que louvrage demeure blanc il vault mieux mouler de plastre au lieu de farine il est vray quil est plus brusc et plus ferme aussy Mays il le fault preparer en ceste sorte Destrempe le estant en pouldre dans bonne quantite deau de sorte quil soict clair et le broye plusieurs fois le jour lespace de quinze jours Puys verse leau par inclination Et ramasse le plastre et le broye subtillement sur la mabre Et le pose en quelque vaisseau plombe et net quil ny tombe aulcune poulsiere et ordure et le laisse a lair et au serain lespace de quinze jours avecq son eau Et il deviendra mat fort blanc et legier fort propre a faire assiete dor bruny Et de cestuy cy en pouldre peux tu mesler au lieu de farine parmy la gomme dragant Et ton ouvraige sera fort beau En default de plastre tu y peult mesler de la croye bien broyee Ou de la ceruse et essayer du bol choses semblables Ce stuc avecq la gomme dragant a cela de propre que comme il presse nestant pas encore sec il sacomode ou sur choses rondes ou plattes comme il te plaira Cest pour faire un ornement a peu de frais </ab>

<note id=”p029r\_c1”> [transcription missing] </note>

<title id=”p029r\_a1”> STUCCO FOR MOLDINGS </title>

<ab id=”p029r\_b1”> Have some tragacanth gum and let it dip until it drinks all the water and is swollen and turned into jelly. Then grind it strongly on marble and then have some rye flour which is better than the wheat one for it is more humid and don’t make the batter so dry and spread your tragacanth gum and keep grinding and mingle little by little the very finely sieved flour and knead it as if you wanted to make some bread until you reckon that is thick enough and firm like bread pastry you want to put in the oven. You can reckon when it can be stretched without breaking, and if it is not strong enough it can’t be well detached. After being so prepared, rub it with some cane oil with a brush so the oil soak into it to make it more detachable and press the batter strongly, if it is not well detachable, mix with some flour until it gets thick enough. With this, you can mold very neatly any work or masks or [...] You wish which will be dry in one day. Then, apply some white glue or [...] glue as you want, and you will be able to paint them, ornate them with gold and other colors. There are used as floor ornaments in Rome and they can be used as bed ornaments. If you to keep your work white, you‘d better mold some plaster rather than flour which is drier and firmer but you have to prepare that way, when it is in powder, soak it in good quantity of water so it is clear and grind it several times a day for 15 days, then pour some water by fits and starts and gather the plaster and finely grind it on marble, and put it in a lead and neat vessel in which mustn’t fall any dust or filth, and leave it still air-dry for a fortnight in its water, And it will become mat and very white and light, very appropriate for a base for brown gold. And this is the powder one you can mingle instead of flour with some tragacanth gum, and your work will be very beautiful. In the absence of plaster, you can mingle some well ground chalk or ceruse and try other similar matters. This tragacanth mingled stucco is typical for fitting on either round or flat things as you wish when it is pressed not completely dried. This is to make some bargain ornaments. </ab>

<note id=”p029r\_c1”> [translation missing] </note>

The recipe *Stucco for Molding* on 029r of the manuscript BnF Ms. Fr. 640 positions itself as a way “to make some bargain ornaments.”[[1]](#footnote-1) The focus on cost and ornamentation in this recipe provided us with an opportunity to explore how our author/practitioner engaged with two disparate, yet important and connected activities of his era; specifically, the economic practices of the early modern era; and his interaction with ornamental, celebratory and ephemeral art culture.

In regards to issues related to cost, the author/practitioner frequently exposes his acumen as a profit-motivated entrepreneur throughout the manuscript. Quite often he positions his recipes as ways to save money or save time,[[2]](#footnote-2) “That is why to make some savings goldsmiths use it for binding in order to save some borax which costs 8 sols an ounce and saltpeter 10 sols a pound,”[[3]](#footnote-3) “Artisans who undertake a big job and who want to save money do not need to crush [sand],”[[4]](#footnote-4) and “in order to save the time they would spend grinding, pulverizing and artificially preparing their sand -- look for sand from sandpits.”[[5]](#footnote-5)

The fact that he was trying to save money by modifying his processes and the materials used in production is not in and of itself unique. It seems safe to assume that anyone engaged in a profit-making enterprise would be naturally inclined to try to save money. This recipe and several others stand as examples of the author/practitioner attempting to increase his range of available materials which could be used as inputs used in production, thus reducing costs and increase his potential market share among his clients. It stands as evidence that he was an actively engaged and knowledgeable entrepreneur who was frequently absorbing, reconfiguring, and relaying information on the uses of materials and their sourcing.

It should also be noted that in describing his outputs as ‘cheap’ does not necessarily indicate that he intended to market his goods to a low-end, low-cost market (i.e. peasants or city laborers), in fact his target audience may be quite the opposite. As our experimentation revealed, this ‘stucco’ was a material used in manufacturing ornaments, floats, or other ephemeral art displays.

As a subject, ephemeral art remains a very large and relatively unexplored aspect of early modern art culture. The temporary nature of these works has left art historians with little to nothing to study and only inferences through other means, such as etching, drawings, and engravings can be made. From the evidence that does remain it can be seen that many of these works were used by rulers or governments during public celebrations or religious festivals, and they are closely related to architectural practices of the era.[[6]](#footnote-6)

This engagement with ephemeral art also provided our artisan/practitioner with an opportunity to experiment with different materials and new processes and possibly even influence those who commissioned his work, “Artists and architects designed structures and decorations by commission, affording them the chance to experiment with new ideas or encourage city officials to consider new uses of public space.”[[7]](#footnote-7) His statement that this material was used to make “floor ornaments in Rome” may also indicate that he was engaged with a larger narrative of architectural aesthetics and ornamental designs which was flourishing in 16th century Italy, potentially drawing him into debates concerning artistic license and agency in the assembly of ornamentation.[[8]](#footnote-8) It was hoped that by recreating this material and assessing its qualities we could potentially determine how successful our author/practitioner was at achieving this kind or license and agency.

Before we could commence, we first had to decide the standard by which to judge the material we produced. During the 16th century both the term ‘stucco’ and the material ‘stucco’ were used in a myriad of applications. The word stucco entered into the English language via Italian. It is believed to have originated in Old High German *stukki* meaning fragment, piece, or crust.[[9]](#footnote-9) The word was adopted into French from the Italian and the original French term ‘stuc’ had a variety of applications, “Stuc: m. A fine, and shining Potters clay; also, a compounded morter or clay mad of lime, sand, paper, and other materials; verie fit for Imagerie.”[[10]](#footnote-10)

The manuscript itself contains another three recipes for stucco, which could provide some indication: 012v – Moulding stucco promptly; 044v – Stucco; and 080r – White stucco very tough. These recipes use a variety of materials including beeswax, turpentine from Venice, egg shell, white lead, rosin, sulfur, crushed brick, white chalk, white stone, Armenian bole, and sanguine. These recipes all use the French ‘Stuc’ to describe the material they are intended to manufacture. This ubiquitous term complicates how these individual materials are to be understood. From a non-reconstructive survey of these recipes it appears that the materials they produce will be paste like and have adhesive qualities.

The title of this recipe found in Bnf Ms. Fr. 640 indicates that the resulting material is intended to be used in a sculpture or molding.[[11]](#footnote-11) For the material to be employed as such or to be considered as viable, we believe that it had to achieve several properties as outlined in the following: (1) it had to adhere easily to a surface other than itself (i.e. wood, stone, or marble); (2) it had to be able to maintain its shape on flat, vertical, and inverted positions (i.e. floors, walls, ceilings); it had to be malleable before drying; (3) it had to dry in a relatively short amount of time; and (4) the artist had to be able to smooth or touch up the model after drying. Our experiments with this recipe revealed that it yields a material that, despite a few shortcomings, mostly fulfills these requirements.

Two iterations of this experiment were completed.[[12]](#footnote-12) All were accomplished using roughly the same techniques and yielded similar materials. As recommended by the recipe, rye flour was used as it “is better than the wheat one for it is more humid and don’t [sic] make the batter so dry.”[[13]](#footnote-13) Maintaining the moisture of the mixture is essential to making behave in the right way for molding: too wet, and it will not hold its shape or be extremely sticky; too dry, and it will lose its adhesion and crumble.

The binding material in this recipe, tragacanth gum, is a difficult material to engage with. [Fig. 1: film of entire process, film] Unlike most other materials with which we experimented with in the course of this research project, tragacanth gum demonstrated a large amount of ‘agency’ during the manufacturing process.[[14]](#footnote-14) In its inert state, it is a powder derived from the dried sap of various plant species found in the *Astragalus* genus.[[15]](#footnote-15) When added to water, it is extremely powerful even in small quantities. A light dusting of tragacanth gum can expand rapidly when it comes into contact with water, adhering easily (and annoyingly) to human hands. This material demands the use of a flat surface with a tool similar to a traditional putty knife. [Fig. 2: use of putty knife, third attempt]

Overestimating the quantity needed quickly leads to an excess of binder and an overly moist mixture that is difficult to mold. When attempting to follow the recipe, it is difficult to avoid such a quandary since the author does not rely on modern scientific measurements.[[16]](#footnote-16) He instead relies on adjectives and the reader’s personal judgment. For example, to activate the tragacanth gum it is set in water and left “until it drinks all the water and is swollen and turned into jelly.”[[17]](#footnote-17) The reader is then asked to “mingle little by little the very finely sieved flour and knead it as if you wanted to make some bread until you reckon that [it] is thick enough and firm like bread pastry you want to put in the oven.”[[18]](#footnote-18)

The best results were obtained during the last iteration of the experiment. Due to the benefit of past experience, we understood more thoroughly how the materials behaved and how to achieve optimal results. Roughly 40 mL of tragacanth gum was mixed with 250 mL of water and stirred over 10 minutes. Depending on the quality of the gum we varied the mixture until it appeared to be a jelly. We ensured that the gum was not added all at once, otherwise it clumped and we had to grind it longer on the marble surface. Once this was complete we removed the mixture from the bowl and placed it on a marble slab.

Using a putty knife we ground the mixture until it had a consistent texture throughout and began adding the finely sieved flour. This was done slowly so as to gauge how well the flour was being absorbed by the jelly and to ensure an even consistency throughout. In the end we added approximately 300 mL of flour to form the stucco. The final ratio for the ingredients was 4/25/30 (tragacanth gum/water/flour).

Once the mixture was consistent throughout, approximately 10 mL of linseed oil was “brushed” into the mixture.[[19]](#footnote-19) The linseed oil acts as a separator so that human hands and tools do not become hopelessly stuck to the mixture. Without the oil, this material would have been very difficult to work with. The amount of linseed applied was as minimal as possible, since introducing too much would leave the mixture too wet and it would lose its cohesion. The stucco dried very hard in less than a day and could be coated with a gesso to make it paintable.[[20]](#footnote-20) [Fig. 3: sculpting, third attempt] [Fig. 4: finished sculpture, third attempt]

As implied by the nature of its ephemeral use, the only area in which this material falls short of the necessary characteristics to be considered a quality alternative to traditional stucco is its durability. After a week or so the inside of the sculpture starts to lose its mass and eventually comes loose from the surface on which it was molded.

To say anything conclusive about the author/practitioners engagement with constructing ephemeral ornamentation would be premature. The study of ephemeral art has a long way to go before inferences such as this can be made. However, it can be said that this recipe provides a strong and moldable material that would have made a successful candidate for fulfilling its role as a stucco for sculpture and/or ornamentation.

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1. BnF Ms. Fr. 640, 029r. [↑](#footnote-ref-1)
2. Recipes in which the author suggests alternatives for inputs with the aim of reducing costs: 004v - *Black varnish for sword guards, [metal] bandanas for chests*, etc.; and 165r - *Dragon’s blood*. Recipes that seek to modify processes of production procedures in order to save on cost: 162r - *Iron vase assembled and soldered*; 124r - *Core for molding hollow*. Recipes that imitate other materials and objects found in nature: 003r - *Imitation coral*; 010r - *Imitation jasper*; 010r - *Roses*; 012r - *Paper*; 051r - *Damask Cloth*; and 138v - *Imitation diamonds put into the work*. [↑](#footnote-ref-2)
3. BnF Ms. Fr. 640, 039r. [↑](#footnote-ref-3)
4. Ibid., 088v. [↑](#footnote-ref-4)
5. Ibid., 090r. [↑](#footnote-ref-5)
6. For several examples of early modern European displays of ephemeral art see Yuri Long, *From the Library: The Fleeting Structures of Early Modern Europe, February 4 – July 29, 2012.* (National Gallery of Art, Washington, 2012) accessed December 22, 2014, www.nga.gov/exhibitions/fleetingstructures.htm. [↑](#footnote-ref-6)
7. Ibid. [↑](#footnote-ref-7)
8. Alina Alexandra Payne, *The Architectural Treatise in the Italian Renaissance: Architectural Invention, Ornament, and Literary Culture*. (Cambridge: Cambridge University Press, 1999), 16-21. [↑](#footnote-ref-8)
9. “stucco, n.” in *OED Online* (Oxford University Press: 2014) accessed December 22, 2014, http://www.oed.com/view/Entry/192033?result=1&rskey=XeUnuQ& [↑](#footnote-ref-9)
10. Randle Cotgrave, *A Dictionarie of the French and English Tongues* (London: 1611), STR. ‘Imagerie’ in this definition could very well allude to ephemeral art objects such as sculptures or moldings. BnF Ms. Fr. 640 mentions paper as a molding material in many other recipes, including 050r – *Molding* and 053r – *Molding from paper*. [↑](#footnote-ref-10)
11. For examples of Italian ornamentation using stucco see Victoria and Albert Museum, and Elizabeth Miller, *16th-Century Italian Ornament Prints in the Victoria and Albert Museum* (London: V & A, 1999). [↑](#footnote-ref-11)
12. See field notes – Palframan, 17 September 2014 and 25 November 2014, Stucco for Molding. [↑](#footnote-ref-12)
13. BnF Ms. Fr. 640, 029r. [↑](#footnote-ref-13)
14. For more information on the connections between material agency and making see Tim Ingold, *The Perception of the Environment Essays on Livelihood, Dwelling and Skill* (London: Routledge, 2000).; Richard Sennett, *The Craftsman* (New Haven: Yale University Press, 2008).; and Pamela H. Smith, *The Body of the Artisan: Art and Experience in the Scientific Revolution* (Chicago: University of Chicago Press, 2004). [↑](#footnote-ref-14)
15. Leonard Stoloff, *Natural Plant Hydrocolloids* (Washington: American Chemical Society, 1954), 38-44. [↑](#footnote-ref-15)
16. In some places in the manuscript the author attempts to overcome the lack of a universal system and defines a standard for measurement using common coinage as a standard, “And [it was] of the thickness of a coin of forty sols,” (BnF Ms. Fr. 640, 085v), “take a small coin’s worth of verdigris” (Ibid., 104r). For more information on the history and development of systems of measure see Ronald Edward Zupko, *Revolution in Measurement: Western European Weights and Measures Since the Age of Science* (Philadelphia: American Philosophical Society, 1990); H. Arthur Klein, *The Science of Measurement: A Historical Survey* (New York: Dover Publications, 1988); and Jean Claude Hocquet, *Anciens systèmes de poids et mesures en Occident* (Hampshire, Great Britain: Variorum, 1992). [↑](#footnote-ref-16)
17. BnF Ms. Fr. 640, 029r. [↑](#footnote-ref-17)
18. Ibid., 029r. [↑](#footnote-ref-18)
19. Ibid., 029r. The recipe calls for ‘cane oil.’ Unfortunately, cane oil is banned in the United States due to its toxicity. Therefore, although we were unable to attempt a trial with this illegal substance, it seemed to us that linseed served as an effective substitute. [↑](#footnote-ref-19)
20. See annotation on for 076v – *Making cheap and very beautiful gold color* for the painting of the results of this experiment and the application of a traditional gesso coating made of plaster and powdered marble. This recipe also provides a method for whitening plaster and combining it with tragacanth gum in a similar manner. However, since flour was the focus as an alternative to reduce costs, the more traditional materials were not tested. [↑](#footnote-ref-20)