Author: General Editor

Semester: Fall 2099

**EXAMPLE ANNOTATION “Stucco for Molding”, fol. 29r**

# **Stucco for Molding**

Stucco is a type of plaster used to coat walls and to create wall and ornamental moldings. The entry on fol. 29r\_1, “Stucco for Molding,” describes a process for creating this material and provides an opportunity to examine varieties of early modern stucco to better understand the aims of the author-practitioner. How do the materials and techniques detailed in fol. 29r\_1 compare to contemporaneous recipes for “stucco”? What do they tell us about how the author-practitioner intended to use this material, and, finally, do they allow insight into whether he experimented with the stucco himself?

The entry includes more than one set of instructions. The first outlines a straightforward process for making stucco from tragacanth gum and rye flour, and then molding it. In the main text, the author-practitioner warns against using wheat flour, suggesting that rye is better because it “is more humid and does not make the paste as brittle.” A marginal note on this process (apparently in the same hand, but using different ink), however, warns against flour, saying that chalk or ceruse is preferable. The next recipe, in the same paragraph, appears to be a process for slaking plaster of Paris and allowing it to decompose over a period of 30 days, with a note that the resulting compound is particularly white. A reconstruction of these four different types of stucco—rye flour, wheat flour, chalk, and plaster of Paris, each combined with tragacanth gum—can shed light on the author-practitioner’s reasons for using or avoiding certain ingredients and whether this affects the intended use. Due to time constraints, the 30-day process was not reconstructed, but further investigations might further illuminate this set of instructions.

Before venturing further, it is necessary to define “plaster,” “stucco,” “gesso,” and “Plaster of Paris.” According to the Oxford English dictionary, plaster is: “A soft pliable mixture of sand and water with gypsum or lime, spread on walls, ceilings, etc., to form a smooth hard surface when dry; a coating or surface of such material.”[[1]](#footnote-0) Stucco is: “A fine plaster, esp. one composed of gypsum and pulverized marble, used for covering walls, ceilings, and floors, and for making cornices, mouldings, and other decorations.”[[2]](#footnote-1) Gesso is defined as, “Plaster of Paris; gypsum; as prepared for use in painting and sculpture.”[[3]](#footnote-2) The definition for stucco specifies its use in making decorations, whereas the definition for plaster specifies it is “pliable” but does not specify that it can be used for decorations, while the definition for gesso relies on the definition for plaster. Plaster of Paris is specifically made of gypsum, but here is listed as an ingredient in plaster, stucco, and gesso. Despite the difference in material components, lime and gypsum plasters can be used in similar ways, and “plaster” seems to be used as a general term referring to any material with a base of gypsum or lime.

The four terms are often used interchangeably in translations of historical and contemporary recipes, which raises the question as to which material the author-practitioner referred. In fol. 29r\_1 he mentioned plaster as an ingredient for stucco, which implies he was referring to powdered plaster as a component in his recipe, rather than stucco as a type of plaster. Primary source texts sometimes differentiate between gypsum-based “plasters” and lime “plasters,” using the term plaster for each. It is possible to speculate on what the author-practitioner means when he calls for “plaster” in this folio. Both gypsum-based and lime-based plasters are produced by calcining the mined earth, and produce heat when water is added (slaking), implying that they have similar physical properties. Both are calcium compounds, which likely contributes to their similarities. Plaster of Paris is produced when gypsum or limestone is burned, driving off the water. This process is called calcination, and it produces a “live” material that undergoes a chemical reaction on contact with water that causes it to set.

The author-practitioner mentions plaster in fol. 12r\_4, writing, “that from the mountains is greyer, and the one from the region of Albi is whiter.” It is not clear what mountains he is referring to, but plaster from Albi is presumably limestone, given that Albi is built on a limestone deposit. Similarly, Paris was adjacent to productive gypsum mines, which is why plaster of Paris already came to be named after this city in the middle ages. In fol. 41r\_3, “Sand,” he writes that the sand can be made bindable with, among other things, “plaster or calcined alabaster.” Alabaster is a type of gypsum. In fol. 106r\_a2, “Making gold run for casting,” the author-practitioner specifically mentions plaster of Paris and describes it as “firm as stone.” It seems, therefore, that the author understood the difference between lime “plaster,” calcined alabaster and plaster of Paris, and had access to each, but the practical and material differences between them are unclear. Considering that plaster and calcined alabaster are treated as interchangeable in fol. 41r\_3, it could be that their differences are negligible.

Given the difficulty of distinguishing between plaster, stucco, and gesso in primary sources, and to avoid a lexical quagmire, this annotation focuses on how the material was described in early modern texts and recipes which indicated that the substance (whether “plaster”, “stucco”, “gesso”, or “Plaster of Paris”) was plastic and malleable, rather than liquid, and was used as a ground layer for paint.

### **Materials for Stucco**

Tragacanth gum is the first component of the recipe. It also appears in the manuscript in instructions relating to “Dragon’s Blood” (fol. 29v\_6) and “Colors” (fol. 52v\_2). In “Colors,” tragacanth gum is a component of a type of varnish which helps to brighten painted colors. The author-practitioner’s functional references to this ingredient indicate that he was likely personally familiar with it.

Tragacanth gum was a common ingredient in the early modern period, although it was spelled in a variety of ways. It is “dragagant” in Cotgrave: “Gumme Dragagant, a gummie liquor which distills from the root of the Candian shrub, called Goats-beard.”[[4]](#footnote-3) A natural gum made from the sap of a legume plant in the genus *Astragalus*, tragacanth is native to the Middle East and areas of the Mediterranean.[[5]](#footnote-4) The gum of this plant was typically dried, then ground, and the resulting powder could then be rehydrated and made into a mucilaginous jelly. Once in this form, it is very versatile: it was used medicinally,[[6]](#footnote-5) in skin care[[7]](#footnote-6) and for baking[[8]](#footnote-7)—specifically, in making a type of sugar paste that can be likened to a modern fondant.[[9]](#footnote-8) I did not find the use of tragacanth gum in fol. 029r\_1 as a base for stucco in other recipes from this period, but its use for a similar purpose does appear in very large eighteenth-century compilation of recipes for a great variety processes and objects that relied upon earlier sources: *Der neu-aufgerichteten und vergrösserten in sechs bücher ...verfasten curieusen Kunst- und Werck-Schul*, vol. 2 (1707). It is used there to produce mirror frames, ornaments, and sculptural works.[[10]](#footnote-9)

The author-practitioner instructs that the gum must be mixed with water, indicating that he began with the tragacanth gum in a powdered or otherwise desiccated form. Although he does not mention the specific quantities of ingredients in this recipe, he does however provide qualitative instructions, stating that it should be “rendered like jelly.”[[11]](#footnote-10) Through experimentation, I discovered that watering the tragacanth gum until it resembled modern petroleum jelly rendered the best results; it was smoother, more elastic, and incorporated well with the powdery main ingredient.

Rye flour is the second component of this recipe. Flour, like bread, seems to be invoked as a versatile ingredient, often used to describe the desired properties of other materials.[[12]](#footnote-11) While wheat flour is specifically called for in fol. 104r\_a5 (a recipe for enamel) and in a marginal note of fol. 88v\_a2 (a recipe for mineral sands), the author-practitioner’s use of rye flour is unique in Ms. Fr. 640 to fol. 29r\_1, suggesting that his use of rye flour was thus not due to its availability in his workshop, but rather because it should be employed for its specific qualities, and that he was familiar with the various properties of different flours. The author-practitioner explains that rye flour “is better than wheat because it is more humid and does not make the paste as brittle.” Nonetheless, the marginal note of fol. 29r\_1 implies that he attempted the stucco recipe using flour and found it lacking: “The flour is not good in this, but chalk or ceruse is.” He offers no explanation for this conclusion.

Stucco is a versatile material, long in use throughout Europe and beyond. Several sources indicate the use of stucco in early modern Italy, where it was used to create temporary structures as well as more permanent installations. In 1529, Pope Clement VII traveled to Bologna to meet with Emperor Charles V, and a Doric-style triumphal arch made of stucco was erected along the processional route to the Piazza Maggiore, decorated with scenes from the Old Testament.[[13]](#footnote-12) Stucco was also used as a sculpting material: Gianlorenzo Bernini created stucco angels for the catafalque made for the anniversary of Pope Paul V’s death in 1622.[[14]](#footnote-13) Additionally, stucco was used in the early modern period to make copies of other works. The Metropolitan Museum of Art in New York owns a mid-fifteenth-century stucco copy of a marble Madonna and Child sculpture by Donatello, known as the Pazzi Madonna—the original is in the Staatliches Museum of Berlin.[[15]](#footnote-14)  [[Fig. 1](https://drive.google.com/open?id=1CA9iz_h7HYoY_CzpsxfKnrcnarSluui0)] [[Fig. 2](https://drive.google.com/open?id=1qgwf622DTns6t0fyCg9lyNo6yHyG9r86)]

The Roman writer Vitruvius described the attributes of good stucco: it should be close-textured, hard, have a polished surface, and allow for superb modeling in low and high relief.[[16]](#footnote-15) He also wrote that “the lime should be of the best quality, and tempered a long time before it is required for use, so that if any of it is not burnt enough, the length of time taken in slaking it may bring the whole mass to the same consistency.”[[17]](#footnote-16) Vitruvius went on to describe the method for achieving an even and fine consistency in the material: “the burnt and water-slaked lime was chopped with iron hatchets and turned over. This was to be repeated at intervals if necessary until the choppers became glutinous with the unctuous lime, which indicated that it was rich through slaking.”[[18]](#footnote-17) This process is similar to the thirty-day process described on fol. 29r\_1, which requires regular hydration and mixing. In the case of fol. 29r\_1, as previously discussed, it is unclear what the author-practitioner meant by “plaster;” it could be a quicklime as described by Vitruvius, or some sort of gypsum compound.[[19]](#footnote-18) Giorgio Vasari described a method for making stucco out of marble chips pounded in a stone mortar. He also notes a method for making white lime out of marble chips or travertine, which were then combined through kneading with a ratio of two-thirds lime to one-third pounded marble.[[20]](#footnote-19) Similarly, Pirro Ligorio, a prominent sixteenth-century Italian architect who designed much of the Villa d’Este, recorded a recipe for stucco in a manuscript dated between 1550-1570 and currently housed at Oxford’s Bodleian Library: “take three parts of pounded Parian marble, easily got from among the ruins of Rome and broken statues; add one part of lime which is to be perfectly slaked by letting it lie in a heap covered with *pozzolana* and exposed to the sun and rain for at least a year.[[21]](#footnote-20) This lime is to be made from pure white marble, not from travertine or any other stone which is full of holes and yellowish in tint; mix a few days before with sufficient water on a tile floor.”[[22]](#footnote-21)

Pliny the Elder wrote that ancient Greek stucco was made of refined lime, “mixed with milk and saffron, polished with spittle rubbed with the ball of the thumb.”[[23]](#footnote-22) The saffron apparently gave the stucco a yellowish tint, and the milk and spittle were probably necessary to hydrate the refined lime to make it malleable. A twentieth-century publication on the history of stucco listed the following ingredients as having been used before the modern period to keep stucco malleable for longer periods of time: fig juice, rye flour, hog’s lard, ox blood, curdled milk, white of eggs, melted wax, or honey.[[24]](#footnote-23)

Cennino Cennini provided perhaps the earliest recorded recipe for a plaster-like substance using gypsum as the main ingredient rather than lime. He distinguished between three types: first, *Gesso grosso,* a mixture of ground alabaster and glue, which is kept warm and applied to panels as a priming layer.[[25]](#footnote-24) Like the author-practitioner, Cennini uses flour as a descriptor, in this case for the texture of the powdered *gesso*. Second, *Gesso sottile*, which is said to be better suited for finer work. The basic recipe is the same as that for *gesso grosso*, but it must be kept moist in a large tub for at least a month and stirred well every day until “it is practically rotting and every spark of fire leaves it and it becomes as soft as silk.”[[26]](#footnote-25) The water used to make it can be discarded and the resulting powdery mixture can be worked into cakes and allowed to dry. It is to be used for gilding, working in relief, and for “making lovely things.” Cennini’s instructions to create *Gesso sottile* are similar to the author-practitioner’s instructions for thirty-day, thoroughly slaked plaster in fol. 29r\_1. Cennini’s last type, *Gesso bolognese,* or *Gesso Volterrano*, prepared from white alabaster from the quarries near Bologna and Volterra, is good for making molds of the human face.[[27]](#footnote-26) Cennini also mentions adding brick dust to the mixtures to strengthen them; similarly the author-practitioner mentions brick dust in other recipes which describe molding or stucco (see fols. 12v\_1, 44v\_4).[[28]](#footnote-27) In addition Cennini describes a process for making “little figures in lead or in other metals,” which uses *gesso sottile* or *gesso grosso*. He describes the process for making a mold, greasing it with oil then casting it with *gesso sottile* or *grosso*, “ground with rather strong size.”[[29]](#footnote-28) He also has a recipe for using lime plaster used to cast medallions by taking impressions of them, and instructions for how to create relief on walls using lime “in the same way as you create relief with gesso on panel.”[[30]](#footnote-29)

In the sixteenth century, plasterwork in England became so important that the craft received royal recognition. In 1501, Henry VII granted a charter to the Worshipful Company of Plaisterers of London, which essentially recognized them as a guild of artisans, and they were granted a coat of arms by Henry VIII.[[31]](#footnote-30) Hampton Court Palace, built in 1514 by Cardinal Thomas Wolsey and seized by Henry VIII in 1529, features some stucco decorations. Although the builders sought to make the stucco there in the Italian style, marble dust was difficult to acquire, so “a compound of gypsum, rye flour, and glue was used in some cases; evidently a suggestion from French practice.”[[32]](#footnote-31) While this “compound” was usually defined as “a paste of rye meal with gypsum,” some centuries after the time of Henry VIII, lime was prepared with milk and eggs for fine work. This flour and glue-based stucco is the most similar historical recipe to that of “Stucco for Molding” on fol. 29r\_1. Other English records indicate that beer, milk, eggs, gluten, sugar, pitch, and wax were added to stucco before the seventeenth century.[[33]](#footnote-32) Hugh Plat, a prolific sixteenth-century collector of artisans’ recipes, does not provide a recipe specifically for stucco, but some of his instructions for casting and molding are similar to the Ms. Fr. 640 stucco recipes, including instructions for molding in flour: “some will mold great, and curious patterns in the crum of fine manchet well tempered into past[e], and pressed hard upon the pattern, and some commend flower [flour], and the fat of Bacon dissolved, and strained.”[[34]](#footnote-33) Although Plat does not specify what kind of flour should be used, manchet refers to a fine wheat bread. Plat also mentions making “counterfeits” from carved or embossed faces and objects, and that these can be used to “garnish beds, tables, court-cupboards, the jawms [jambs] and mantle trees of chimneys, and other stately furnitures of chambers or galleries.”[[35]](#footnote-34) Moreover he mentions that these creations, once coated with Isinglass (collagen from the swim bladders of fish) or fish glue, will “harden the same by such means, as that no sudden moisture can make it to relent or give again.”[[36]](#footnote-35) This helps clarify what the author-practitioner means when he instructs that the stucco should be coated in glue and applied. Moreover, it indicates a concern with preserving stucco and making it last, as opposed to using it only for a temporary decoration.

Briefly looking outside a European context, a Persian method for the preparation of plaster is similar to the one mentioned by the author-practitioner. Persian stucco was primarily made of gypsum, but it was made in small quantities and “rather stiff. [...] It is then freely manipulated, being pressed and kneaded with the hands until the mass attains a certain plasticity. [...] The ornamentation [is] finished by modeling and impressing or stamping out.”[[37]](#footnote-36)

The author-practitioner’s entry focuses on molding, so it was important to determine what kinds of molds he might have used. Vasari wrote, “to make enriched mouldings or modeled leafage, it is necessary to have shapes of wood carved in intaglio.”[[38]](#footnote-37) The molds are powdered with marble dust and struck with a hammer to imprint the “tenacious” stucco with the carved design. The Italian sources mention rendering the wall decorations by hand, whereas the English sources emphasize either using wooden blocks as stamps or rolling pins with carved designs.[[39]](#footnote-38) Cennini mentions using clay, chalk, and wax molds for gesso in two separate entries.[[40]](#footnote-39) Regarding the oil used for coating the molds, the author-practitioner does not specify which should be used. When discussing oiling molds, Cennini mentions oil either for “eating or burning,”[[41]](#footnote-40) and Plat indicates that “sweet almond oil, oil of turpentine, or Spike” can be used, specifying that these are good due to their “thinness, whereby they will not fill up any part of the work.”[[42]](#footnote-41)

References to historical French stucco are rare, but one document from medieval Poitiers mentions that stucco was made of chalk mixed with powdered marble, or limestone if marble was unavailable.[[43]](#footnote-42) Stucco work in early modern France may have been introduced and popularized by Italians in the early sixteenth century, when Italian plasterers were hired to work on Fontainebleau palace approximately between 1530 and 1540.[[44]](#footnote-43) Considering the stucco work at Fontainebleau and the contemporaneous increased importance of plasterwork across the English Channel, the author-practitioner’s entry corresponds to a growing interest in stucco work. While I have not been able to track down early modern or Renaissance primary sources of flour stucco in England, the indication that English artisans used a flour-based recipe from France according to W. Verrall, and the presence of such a recipe in the manuscript, seems to indicate that a flour-based recipe was indeed in circulation before and during the author-practitioner’s time.[[45]](#footnote-44)

### **Recipe reconstruction**

This survey of stucco materials and techniques in pre-modern Europe reveals numerous recipes for stucco in circulation, but the author-practitioner’s appears unusual in one respect: its use of tragacanth gum. Moreover, it is the only recorded recipe I have located which employs flour as a primary ingredient without lime, chalk, or plaster—even though the author-practitioner corrects the entry by commenting in the margins that flour does not work well. Overall, this review of early modern stucco helps to illuminate several significant aspects of the material and its use. Stucco had been used for centuries before the author-practitioner’s time but experienced a resurgence in the mid-sixteenth century, when it became fashionable again, as evidenced by its use in the palaces of Hampton Court and Fontainebleau. Before and during the author-practitioner’s time, ingredients other than water and gypsum or lime were used—specifically, perishable ingredients, like flour and milk. This helps situate the author-practitioner’s initial inclusion of flour as a primary ingredient. In addition, it is possible that flour was included as an inexpensive ingredient, readier to hand than chalk or plaster.

The last line of fol. 29r\_1 is significant: “it is to make an ornament at little expense.” The majority of surviving historical recipes emphasize stucco’s use as a material for plastering walls or as a material which could be shaped by hand. The author-practitioner’s emphasis on molding stucco rather than shaping it indicates that he was working with pre-existing patterns rather than generating new designs.[[46]](#footnote-45) Moreover, his instruction that the mixture should be kneaded like bread implies that he was working with small quantities which could be manipulated by one person. Perhaps, then, the author-practitioner’s method was meant to be a comparatively inexpensive and fast method to create small amounts of stucco for molding, to be used decoratively.

Reconstructions of fol. 29r\_1 help to shed light on the author-practitioner’s methods for creating stucco; indeed, the flour-based recipes produced inferior results.[[47]](#footnote-46) As reconstructions of this material demonstrated, while there is a great difference in longevity of stucco made from flour and from plaster of Paris, in both cases, the tragacanth gum made the mixture malleable and easily moldable. The wheat and rye flour stucco did not dry completely even after a week, which contradicts the author-practitioner’s claim that it would be dry within one day. Once dry, the wheat flour stucco had cracked considerably [[Fig. 3](https://drive.google.com/open?id=18fQSMRmZyD7r2xsY11Y855xJs-x5Wvmj)]. The rye flour stucco fared slightly better [[Fig. 4](https://drive.google.com/open?id=1hDqMfFj79HvVZDf9VFxJA0gkmwDnSZWY)]. Chalk produced a good impression, yet it began to show small cracks on the surface after a week of drying. Plaster of Paris stucco resulted in the smoothest and most durable finished product [[Fig. 5](https://drive.google.com/open?id=1BUqKeMq1zzEJltMLh_scFZ_0IkTfIwb8)]. I used pre-prepared plaster of Paris which had a fine and even consistency, but it had not been slaked, and so it reacted quickly to the water in the tragacanth gum mixture and set rapidly. Also, given the author-practitioner’s focus on using this stucco for molding, it seems that the tragacanth gum helps the mixture stay malleable before and during the molding process. Here the author-practitioner tackled the issue of plasticity, which was addressed by others using different materials. Cennini’s recipe for *Gesso Grosso* makes plaster malleable through the use of glue, whereas the 1503 manuscript at St. Mark’s Basilica employs slaked lime which, when mixed vigorously, becomes somewhat unctuous, aiding the molding process. However, glue and tragacanth gum jelly are viscous without needing vigorous mixing, which possibly expedites the stucco making process and keeps the mixture plastic for longer. Further recreations of early modern recipes beyond Ms. Fr. 640 might help us understand the role or efficacy of glue compared to tragacanth gum when molding stucco, as well as the different properties of slaked versus un-slaked plaster of Paris.

Fol. 29r\_1 is not the only entry in the manuscript about stucco, but it is the lengthiest (see Table 1 for all references to stucco). Other recipes give instructions for making, glueing, or molding stucco. Fol. 12v\_1, “Molding Stucco quickly,” describes how to make a mold out of pre-existing material, in this case a “relief medal;” a marginal note commenting on the properties of crushed, sieved brick over Armenian bole implies that the author-practitioner used this recipe. Conversely, fol. 80r\_1, “Very hard white stucco,” is a very short entry and consists solely of a list of ingredients, with no instructions. These ingredients, particularly the white wax, suggest that this recipe also produces a malleable stucco that can be used for molding and that will look white without needing paint.

Fol. 29r\_1 offers the most extended discussion of stucco, containing the following lines: “In Rome they make ceiling and wall ornaments with it. One can make bed ornaments with it.” Whether the author-practitioner had visited Rome or learned about the stucco decorations there through other means, this line indicates the author-practitioner’s familiarity with stucco’s uses outside of Toulouse. Moreover, the author-practitioner specified the use of stucco as a bed ornament. This is one of several instances in which the author-practitioner mentions bed ornamentation, suggesting that he was particularly interested in domestic ornaments (Table 2). As Plat also mentioned stucco as a material for bed and furniture decorations, such decorative practices were possibly widespread in early modern Europe, though few examples of such works survive, perhaps because they were for daily use and therefore less valuable and less likely to be preserved.

The author-practitioner wrote that “this stucco with the tragacanth gum has the quality, being malleable before being dry, of fitting on either round or flat things, as you like.” There is no indication as to what the author-practitioner meant by “round or flat things”—a “flat thing” could easily be a wall, or table, or bed post. A round thing could be a vaulted ceiling, a curved bed post, or the underside of an archway. In any case, the author-practitioner made clear that this stucco is versatile and that ornaments made with it can be applied to almost any surface. If indeed the stucco in fol. 29r\_1 was inexpensive, it could have been used to replace more expensive ornamentation, such as stone sculpture or wood carving, or any sort of “counterfeit,” to use Plat’s term. It may be that the author-practitioner had experience in creating ephemeral art, copies or decorations which were intended for a specific and short-term purpose and not intended to last long.

After the stucco ornaments have been molded, the author-practitioner instructs: “Next, you will apply them with strong glue or paste glue as you like, and you will be able to paint and decorate them with gold and all colors.” During the first round of experimentation, it was unclear whether the author-practitioner meant that the glue could be used for sticking the stucco on a surface or if he meant that it should be used to coat the stucco before applying colors or gilding. We had previously made stucco in the lab, so I experimented with painting pieces which had been coated in rabbit skin glue, and/or gesso, or left without a coating.[[48]](#footnote-47) During this first reconstruction, we created a paste glue that was rather viscous and lumpy, and we concluded that such a glue would not have been used to coat the stucco. Rabbit skin glue, on the other hand, is smooth and easy to apply, and seemed an ideal coating—and sealant—for stucco. Future reconstructions should try Isinglass or fish glue, as per Plat, and observe any variations. Regarding the effects of painting the stucco, further investigation is required.[[49]](#footnote-48) Tentative experiments show that the rye flour stucco took paint well even without coating, which implies that flour stucco could be useful on a limited budget, despite the author-practitioner’s comments. Generally speaking, oil-based paint produced the richest hue, and the stucco coated in rabbit skin glue took the paint best and did not obscure details in the stucco [[Fig. 6](https://drive.google.com/open?id=1N1BSSNNY9r_aM0wS61GGdKblTI19A5bW)].

### **Conclusion**

The author-practitioner’s use of tragacanth gum appears to be unusual among stucco recipes, although its inclusion to facilitate easy manipulation addresses a problem that other writers solved with other materials such as glue or slaked lime. His original call for flour and subsequent correction raise further questions. Where or how did he obtain this recipe, and was the use of tragacanth gum his own idea? For what purpose did he intend his stucco—temporary structures, wall and ceiling ornamentation, or furniture, and for indoor or outdoor use? Perhaps, like the Romans he mentions, the author-practitioner used his stucco to decorate ceilings and walls. We do know that he was interested in bed ornamentation as it is mentioned several times throughout the manuscript, whereas ceilings and walls are mentioned only in fol. 29r\_1.

The author-practitioner’s multiple marginal notes on stucco recipes indicate that he was trying to make a durable, uniform, white result. As he mentions using molds in various entries in the manuscript, it is clear that he was working from pre-existing models or patterns, and/or making molds from other objects, rather than sculpting new forms. This relative ease of the process implies that he might have been making ephemeral art: temporary, ornamental decorations which were not intended to be unique or long-lasting. Given the scarcity of records and the paucity of scholarship on ephemeral art, the author-practitioner’s references to cheap, durable ornamental stucco serve to remind us of the importance of domestic and temporary decorative arts in the early modern period, and illustrate the importance of studying craft practices to widen our understanding of art making in the sixteenth century.

Table 1: Stuccos

|  |  |
| --- | --- |
| Folio; title | Entry (translation) |
| <id>p012v\_1</id>  <head>Moulding <m>stucco</m> quickly</head> | <ab>Grind &amp; pulverize finely <m>brick</m> or <m><pl>Armenian</pl> bole</m> or <m>sanguine</m> &amp; incorporate it with melted <m>wax</m>, &amp; thus melted, cast like the others on a <tl>relief medal</tl>, &amp; thus you will have a cavity where you will be able to cast with <m>plaster</m>, <m>crushed paper</m> or <m>terre chimolee</m>.</ab>    <ab>  <margin>left-top</margin>  Finely sieved <m>brick</m> is better, because the <m>bole</m> is too fat</ab>  </div> |
| <div>  <id>p029r\_1</id>  <head><m>Stucco</m> for molding</head> | <ab>Take <m>tragacanth gum</m> and put it to soak until, having drunk its <m>water</m>, it is swollen &amp; rendered like <m>jelly</m>. Then crush it quite hard on the <tl><m>marble</m></tl> &amp; next take <m><pa>rye</pa> flour</m>, which is better than <m><pa>wheat</pa></m> because it is more humid and does not make the paste as brittle, and sprinkle your <m>tragacanth gum</m> with it, &amp; continue to grind <add>and mix in</add> thus, little by little, <del><fr>le et mesler legi</fr></del> the very finely sieved <m>flour</m>. And knead it as if you wanted to make <m>bread</m>, until <del>you</del> you perceive that it has enough body &amp; is as firm as <m>bread dough</m> that one is ready to put in the <tl>oven</tl>. This is perceivable when it can stretch enough without breaking. And if it was not strong enough, it would not <del><fr>sti</fr></del> release well. Thus once prepared, rub the cavity <del><fr>au u</fr></del> with <m>oil</m>, with a <tl>brush</tl>, so that the <m>oil</m> penetrates everywhere to make it release better, and press the paste inside quite hard. And if it does not release well, mix in more <m>flour</m> until it has enough body. With this you will mold whatever work you like, masks or garlands, which will be dry within one <ms>day</ms>. Next, you will apply them with <m>strong glue</m> or <m>paste glue</m>, as you like, and you will be able to paint and decorate them with <m>gold</m> &amp; all colors. In <pl>Rome</pl> they make ceiling and wall ornaments with it. One can make bed ornaments with it. <rub>If you want that the work stays white</rub>, it is better to mold with <m>plaster</m> instead of <m>flour</m>. It is true that it is more brittle and firm as well, but one needs to prepare it like this: temper it, when it is powdered <del>strong</del>, in a good amount of <m>water</m> so that it is <add>clear</add>, &amp; grind it several times a day for fifteen <ms>days</ms>. Then pour <m>water</m> at an angle, and gather the <m>plaster</m> &amp; grind it finely on the <tl><m>marble</m></tl>, &amp; place it in some kind of clean <tl><m>lead</m> vessel</tl>, so that no dust &amp; dirt falls into it, &amp; leave it <env>in the open air</env> &amp; <env><fr>au serain</fr></env> for fifteen <ms>days</ms> with its <m>water</m>, and it will become matte, strong, white and light, very suitable for making a groundlayer of burnished <m>gold</m>. And this, when powder, you can mix, instead of <m>flour</m>, with <m>tragacanth gum</m>, and your work will be very beautiful. Lacking <m>plaster</m>, you can mix in well ground <m>chalk</m> or <m>ceruse</m>, &amp; try <m>bole</m> &amp; similar things. This <m>stucco</m> with the <m>tragacanth gum</m> has the quality, being malleable before being dry, of fitting on either round or flat things, as you like. It is to make an ornament at little expense.  </ab>  <ab>  <margin>left-top</margin>  The <m>flour</m> is not good in this, but <m>chalk</m> or <m>ceruse</m> is.</ab></div> |
| <id>p044v\_4</id>  <head><m>Stucco</m></head> | <ab>For <m>glueing</m> <m>stone</m>, some do not use <del><fr>poi</fr></del> <m>resin</m> &amp; <m>black pitch resin</m> because it is too fatty, but take <m>rosin</m> &amp; <m>sulphur</m>, <ms>as much <del>as</del> of one as the other</ms>, &amp; as much of  <m>wax</m> as the two, and mix it with <m>crushed brick</m> for greater strength. Others, <m>white chalk</m> or <m>crushed &amp; pulverized &amp; sieved white stone</m>.</ab></div> |
| <div>  <id>p080r\_2</id>  <head>Very hard white <m>stucco</m></head> | <ab><m>White wax</m>, <m><pl>Venice</pl> turpentine</m>, <m>eggshell</m>, &amp; <m>ceruse</m>.</ab>  </div> |

Table 2: Beds

|  |  |
| --- | --- |
| Folio; Title | Mentioning bed decoration |
| Fol. 6v\_a2; For stamped ornaments[f] used for embellishing and inserting into or covering the edges of mirrors, the tops of chests, or the friezes of bed valances. | See title. |
| Fol. 7r\_a1; for gilding with gold color and tinsel | You can cover trunks, mirrors, canopies & posts of beds of colored velvet or satin and then apply the gilded stamped ornament on them with strong glue. |
| Fol. 10r\_1; Counterfeit jasper | (Left-top margin) You can encrust beds with it & on the joints you can throw the filings of talc or of pins on the fresh cement of the said joints. |
| Fol. 131r\_3; Adorning beds, mirrors and similar things | See title. |
| Fol. 29r\_1; Stucco for Molding | One can make bed ornaments with it. |

1. "plaster, n.". OED Online. January 2018. Oxford University Press. http://www.oed.com/view/Entry/145274?rskey=nmk3T7&result=1&isAdvanced=false (accessed January 25, 2018). A materials definition can be found in CAMEO for both “plaster” http://cameo.mfa.org/wiki/Plaster and “plaster of paris” http://cameo.mfa.org/wiki/Plaster\_of\_Paris [↑](#footnote-ref-0)
2. "stucco, n.". OED Online. January 2018. Oxford University Press. http://www.oed.com/view/Entry/192033?rskey=k3ZTOb&result=1&isAdvanced=false (accessed January 25, 2018). A materials definition can be found in http://cameo.mfa.org/wiki/Stucco [↑](#footnote-ref-1)
3. "gesso, n.". OED Online. January 2018. Oxford University Press. http://www.oed.com/view/Entry/77943?redirectedFrom=gesso (accessed January 25, 2018). A materials definition can be found in CAMEO http://cameo.mfa.org/wiki/Gesso [↑](#footnote-ref-2)
4. See the entry for “*dragagant*” in Randle Cotgrave, *A Dictionarie of the French and English Tongues* (London: Adam Islip, 1611). [↑](#footnote-ref-3)
5. Its colloquial name, ‘Goats-beard’, refers to the fact that goats were known to graze on it. [↑](#footnote-ref-4)
6. See the entry for “An other worthi ointment, called Vnguentum R sump iuum for the Pleurisie” in William Bullein, *A comfortable regiment, and a very wholsome order against the moste perilous pleurisi whereof many doe daily die within this citee of London, and other places: and what the cause is of the same* (London: Ihon Kingston, 1562), 25; Gervase Markham, *Maison rustique, or The countrey farme· Compyled in the French tongue by Charles Steuens, and Iohn Liebault, Doctors of Physicke. And translated into English by Richard Surflet, practitioner in physicke. Now newly reuiewed, corrected, and augmented, with diuers large additions, out of the works of Serres his Agriculture, Vinet his Maison champestre, French. Albyterio in Spanish, Grilli in Italian; and other authors. And the husbandrie of France, Italie, and Spaine, reconciled and made to agree with ours here in England* (London: Adam Islip for Iohn Bill, 1616), 141; and entry for “The Operation upon the Bowels, for their Extrusion of Ailment,” in Francis Bacon, *Historie naturall and experimentall, of life and death. Or of the prolongation of life* (London: Iohn Haviland, 1638), 283:11.

   Hugh Plat also wrote about tragacanth gum’s medicinal use against coughs and hoarseness of the throat. See “Tragacanth” in Hugh Plat, *The jevvel house of art and nature : containing divers rare and profitable inventions, together with sundry new experiments in the art of husbandry : with divers chimical conclusions concerning the art of distillation, and the rare practises and uses thereof. Faithfully and familiarly set down, according to the authours own experience / by Sir Hugh Plat ... ; whereunto is added a rare and excellent discourse of minerals, stones, gums, and rosins, with the vertues and use thereof / By D.B. gent.* (London: Bernard Alsop, 1653; Originally published in 1594), 223-24. [↑](#footnote-ref-5)
7. See the entries for “An odoriferous and pretious water, wherewith a manne may weat or bath any linen cloth, to wipe or rub his face, which will make his flesh white and wel coloured: and the more a man rubbeth his face with it, the fairer it is, and also continueth six moneths. A thing experimented and proved, yea and it were for a Queene” in Alexis of Piedmont, *The secrets of the reverend Maister Alexis of Piedmont, containing excellent remedies against diverse diseases, wounds, and other accidents, with the manner to make Distillations, Parfumes, Confitures, Dyings, Colours, Fusions, and Meltings. A worke well-approved verie necessarie for everie man. Newly corrected and amended, and also enlarged in some places, which wanted in the first edition. Translated out of French into English by William Ward* (London: Peter Shon for Tomas Wight, 1595), 65. [↑](#footnote-ref-6)
8. See the entry for “To make a paste of Suger, whereof a manne maie make all manner of fruites, and other fine thinges with their forme, as Platters, Dishes, Glasses, Cupps, and such like thinges, wherewith you maie furnishe a table: and when you have done, eate them up. A pleasante thing for them that fitte at the table” in Alexis of Piedmont, *The secrets of the reverend Maister Alexis of Piedmont, containing excellent remedies against diverse diseases, wounds, and other accidents, with the manner to make Distillations, Parfumes, Confitures, Dyings, Colours, Fusions, and Meltings. A worke well-approved verie necessarie for everie man. Newly corrected and amended, and also enlarged in some places, which wanted in the first edition. Translated out of French into English by William Ward* (London: Peter Shon for Tomas Wight, 1595), 62-3. [↑](#footnote-ref-7)
9. It is still currently used to make fondant; the lab acquired its supply of tragacanth gum from a baking supply store. [↑](#footnote-ref-8)
10. “Allerhand schöne Spiegel-Rahmen/Zierathen/ und Bilder-Werck vom Staub Mehl underschiedlicher Farbe zu Machen,” J. K. [perhaps Johann Kunckel], *Der neu-aufgerichteten und vergrösserten in sechs bücher ...verfasten curieusen Kunst- und Werck-Schul* (Nürnberg. Johann Ziegers, 1707), p. 273, no. 103. [↑](#footnote-ref-9)
11. See the following field notes for our first attempt at making rye stucco: TYD, NEG, KT, Fall 2017, “Understanding Stucco”, <https://making-and-knowing.wikischolars.columbia.edu/Stucco_FA17_TYD> [↑](#footnote-ref-10)
12. For further information about flour and bread as a descriptors, see Emma Le Pouesard, Fall 2016, “Pain, Ostie, Rostie: Bread in Early Modern Europe” <https://docs.google.com/document/d/1CEBDmg30igI1Lgo6JRlVJWs1HvwP0wjG1XTEYLY6xdA/edit?usp=sharing> [↑](#footnote-ref-11)
13. David J. Drogin, “Art Patronage and Civic Identities in Renaissance Bologna,” in *The Court Cities of Northern Italy*, ed. Charles M. Rosenberg (Cambridge University Press, 2010), 280. [↑](#footnote-ref-12)
14. Jennifer Montagu, *Roman Baroque Sculpture: The Industry of Art* (Yale University Press, 1992), 180. [↑](#footnote-ref-13)
15. “Virgin and Child, after an original by Donatello,” Mid-15th Century, in the Metropolitan Museum of Art, New York, accessed December 15 2017: <https://metmuseum.org/art/collection/search/194856> . [↑](#footnote-ref-14)
16. W. Verrall, *The Modern Plasterer: Volumes I and II*, (Shaftesbury, Dorset: Donhead Publishing Ltd, 2000), 12. [↑](#footnote-ref-15)
17. Lime is extracted from limestone and/or seashells through a heating process. Slaking is the process of combining burnt lime, also called quicklime, with water. This produces slaked lime (Calcium Hydroxide) which is a fine powder, and a versatile building material when re-combined with water. [↑](#footnote-ref-16)
18. W. Verrall, *The Modern Plasterer*, 1.1 [↑](#footnote-ref-17)
19. Gypsum is the primary component in plaster of Paris; alabaster is a type of gypsum which is often mentioned in stucco recipes. Plaster of Paris is produced by calcining gypsum, which produces a material that is “live,” and which sets on contact with water. [↑](#footnote-ref-18)
20. *Vasari on Technique*, edited by Prof. Baldwin Brown, trans. by Louisa S. Maclehose, 1907, pg 86. [↑](#footnote-ref-19)
21. A volcanic ash, historically also mixed with lime to make Roman cement. [↑](#footnote-ref-20)
22. J. Henry Middleton, “Ancient Rome: MS, notes by Pirro Ligorio, made between c. 1550 and 1570 AD” in *Archaeologia: Or miscellaneous tracts relating to antiquity, Published by the Society of Antiquaries of London*, Volume 51, Issue 2 (London: The Society, 1888). 497. Also W. Verrall, *The Modern Plasterer,* 21. Additionally, a 1503 manuscript in the library of St. Mark’s Basilica, Venice, includes a recipe “as tried by Messere Jacopo de Monte San Savino, the Sculptor” which is described as “admirable Stucco for making and modeling figures and for coloring and resisting water. Take of finely powdered travertine 5 lb., and if you would have it fine and more delicate, take fine marble instead of travertine, and 2 lb. of slaked lime, and stir and beat them well together like a fine paste and execute what work you will with it, either by forming it with your hands, or in moulds, and dry it in the shade.” The instructions go on to explain how this stucco can be made waterproof and painted. This recipe is almost exactly the same as the one described by Pirro Ligorio. From W. Verrall, *The Modern Plasterer,* 20. [↑](#footnote-ref-21)
23. W. Verrall, *The Modern Plasterer*, 10. [↑](#footnote-ref-22)
24. The National Lime Association, *Lime Stucco:It's Essential Qualities, Historical Development and Use, Description of Modern Properties, Its Application, and Specifications for the Guidance of Architects and Builders* (Washington D.C.: National Lime Association, 1922), 8. [↑](#footnote-ref-23)
25. Lara Broecke, *Cennino Cennini, Il libro dell'arte* (London: Archetype, 2015), 150. [↑](#footnote-ref-24)
26. Broecke, *Cennino Cennini,* 152. [↑](#footnote-ref-25)
27. W. Verrall, *The Modern Plasterer,* 19; and Broecke, *Cennino Cennini,* 250. [↑](#footnote-ref-26)
28. W. Verrall, *The Modern Plasterer,* 20; and Broecke, *Cennino Cennini,* 255. [↑](#footnote-ref-27)
29. Broecke, *Cennino Cennini,* 259-260. [↑](#footnote-ref-28)
30. Broecke, *Cennino Cennini,* 260, 162. [↑](#footnote-ref-29)
31. Jeremy Musson, *Plasterwork: 100 Period Details from the Archives of Country Life*, (London: Aurum Press, 2000), 7. [↑](#footnote-ref-30)
32. W. Verrall, *The Modern Plasterer,* 27. [↑](#footnote-ref-31)
33. W. Verrall, *The Modern Plasterer,* 30. [↑](#footnote-ref-32)
34. See “The Art of Molding and Casting,” in Hugh Plat, *The jevvel house of art and nature : containing divers rare and profitable inventions, together with sundry new experiments in the art of husbandry : with divers chimical conclusions concerning the art of distillation, and the rare practises and uses thereof. Faithfully and familiarly set down, according to the authours own experience / by Sir Hugh Plat ... ; whereunto is added a rare and excellent discourse of minerals, stones, gums, and rosins, with the vertues and use thereof / By D.B. gent.* (London: Bernard Alsop, 1653; Originally published in 1594), 201. [↑](#footnote-ref-33)
35. Hugh Plat, *Jewel House*, 209-210. [↑](#footnote-ref-34)
36. Hugh Plat, *Jewel House*, 210. [↑](#footnote-ref-35)
37. W. Verrall, *The Modern Plasterer,* 40. [↑](#footnote-ref-36)
38. *Vasari* ed. by Prof. Baldwin Brown, trans by Louisa S. Maclehose,170-171. [↑](#footnote-ref-37)
39. *Vasari* ed. by Prof. Baldwin Brown, trans by Louisa S. Maclehose, 22, 25. [↑](#footnote-ref-38)
40. Broecke, *Cennino Cennini,* 258-9. [↑](#footnote-ref-39)
41. Broecke, *Cennino Cennini,* 160. [↑](#footnote-ref-40)
42. Hugh Plat, *Jewel House*, 204. [↑](#footnote-ref-41)
43. Christian Sapin, *Le Stuc: visage oublié de l’art médiéval* (Poitiers: Musee de Poitiers, 2004), 28-29. [↑](#footnote-ref-42)
44. Sapin, *Le Stuc*, 28-29. [↑](#footnote-ref-43)
45. W. Verrall, *The Modern Plasterer,* 30 [↑](#footnote-ref-44)
46. Please see annotation by Rozemarijn Landsman and Jonah Rowen, Fall 2014, “Original Patterns” <https://docs.google.com/document/d/1NnRe2CYpz5d9jb6m-fgMsdpf07Xu2hw2HQA1neRTZUQ/edit?usp=sharing> [↑](#footnote-ref-45)
47. For a detailed record of the recreation process, please see my field notes entry: Nina Elizondo-Garza, “Stucco Annotation Fieldnotes” in the Making and Knowing Wiki page: <https://making-and-knowing.wikischolars.columbia.edu/Stucco%20Annotation%20Fieldnotes%20fol.%2029r_1> [↑](#footnote-ref-46)
48. See field notes for our first attempts at making rye stucco: TYD, NEG, KT, Fall 2017, “Understanding Stucco,” <https://making-and-knowing.wikischolars.columbia.edu/Stucco_FA17_TYD>; and RU, Fall 2017, “Stucco Molding,” https://making-and-knowing.wikischolars.columbia.edu/Ullman+-+Stucco+molding+FA17 [↑](#footnote-ref-47)
49. Please see my annotation fieldnotes: Nina Elizondo-Garza, Fall 2017, “Stucco annotation - painting stucco,” https://making-and-knowing.wikischolars.columbia.edu/Stucco+annotation+-+painting+stucco [↑](#footnote-ref-48)