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## Recipes for Experimentation

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#### **1. DELICATE FLOWERS**

##### **1a. Principal Recipe**

##### **117r - Molding flowers and herbage**

<title id="p117r\_a1">A way to mold flowers and herbs</title> <ab id="p117r\_b1">It is necessary to pick them in full bloom and color, and only pick them, if it is possible, when you are ready to mold them so that they will not wilt. Or if you need to carry them from afar, put their stems in a bottle of water, or even better in wine. Start with making a wax stick pointed like a big peg, of a size adapted to what you want to cast, as you see in the margin, marked A. At the bottom of this peg, put and prick a bit of iron wire, rather thick and strong. And at the pointed end of the big peg, you will fit your flower stem or your herb. This done, set it aside. Arrange your clay circle and outline as you did for the snakes, in the shape of a lute according to the size of your herb. Then take the herb you have prepared to be cast, as we have taught you, and wet and moisten it daintily with good spirits with a brush. Then place the wire end through through the end of the clay mold, shaped like a lute, so that the wax peg, where the herb is, touches the edge of the clay lute. And arrange your herb that lies

thusly so that it remains in the middle of said lute-shaped mold, without touching any of the side. So that the sand that you put in the mold will be of equal thickness everywhere, and will be two fingers higher than your flower. And having made sure that the wire is secure, quickly throw your wet sand that will be much clearer than the one used for serpents, in the lute- shaped mold, and the quicker the better, so that your spirits do not evaporate. And adjust your [sand] mixture with a bit of essence of sal ammoniac, unlike the one for serpents. And when you make sand especially for casting your bouquets, mix in a bit offeather alum, this will only make it better. In this way, your mold will be in one piece and it will not be necessary to separate it, but you will have to separate it from the clay once it will have set. Leave it dry. And then fire it again until the herbs are burnt. Note that if the herb you want to cast has a strong stalk and stem, you can cast it lying down, as said. But if it is fine and delicate, plant up standing up with with the wax peg so that the sand will always raise it up, it being very clear. Do not forget to arrange two vent holes with two small sticks, which will start at the bottom of the cast, which is the pointed end of the wax peg.

<note id="p117r\_c3a">If the flowers are so delicate that they come off the top when you are putting in the wet sand, you can stop this and curtail it with a net sewed onto the mold with a needle.</note> <note id="p117r\_c3b">The more delicate the flower is, the clearer the sand must be.</note> <note id="p117r\_c3c">This is a noyau mold.</note>

### **1b. Principal Recipe Materials**

#### **Flower materials (cited directly from the manuscript)**

- Flowers in full bloom
- Water
- Wine
- Wax stick
- A bit of iron wire, rather thick and strong
- Clay circle and outline as you did for the snakes
- Sand
- Feather alum
- Good spirits
  - A brush
- Two small sticks
- Optional: a net sewed onto the mold with a needle
- Optional: butter (see fol. 154v)

### **1c. Principal Recipe Questions & Commentary**

#### **- Overcoming the weaknesses of flowers**

The maker clearly struggled with the soft pliancy of flowers, particularly the flimsiness of the petals. The “net sewed onto the mold with a needle” was evidently meant to keep the flower petals from breaking off the stem. It would seem this particularly juncture, between petals and stem, was the point of greatest weakness of the flower. (A later recipe in the MS for casting roses suggests casting the petals separately and then attaching them to the stem.)

#### **- Reference to an earlier recipe:**

The recipe suggests that this is meant to the clay is meant to be arranged in the same way as in an earlier recipe for snakes: "Arrange your clay circle and outline as you did for the snakes, in the shape of a lute according to the size of your herb." There is also a recipe titled "molding snakes" on 109r, however this recipe primary describes how to keep snakes alive before molding them.

#### **- Noyau mold:**

The recipe concludes by explaining that this is "a noyau mold".

#### **1d. Related Recipes (BNF Ms. Fr. 640)**

##### **116v – Tin or lead mixture**

**Tin or lead mixture** **For fine herbs, flowers and greeneries.** You need more than 3 parts of tin for one part of lead. If this material is thick and fat, you need 3 parts lead. Heat the mostly tin mixture, which must become red and very hot. When you want to cast, remove your crucible from the fire, and add two or three grains of resin for one and a half or two pounds of lead or tin. With the resin, also some fat glass-looking tin, the size of an auclane with its shell, mix and cast. Make sure you have more metal than you need; some metal should be set aside. If you haven't enough metal, keep casting and finish your cast, it will set, however it will not be so neat. Dip your mold into water, and dismantle your mold carefully with a point. Make an elongated cast in order not to damage anything. If you mold something very thin, you must make your cast with mostly tin.

**If you want to cast lead or tin as a core with the sand above mentioned, reheat your mold once only if there is nothing to be burnt inside. But if there are flowers or animals to be burnt inside the mold, reheat it twice. However do not reheat the second cast for as long as the first cast for lead and tin. As for gold and silver, those must be red when you cast. For lead and tin, let them cool down until you can dip your finger into the cast without burning yourself. The cast must be warm.**

##### **117v - How to clean flower and herbage molds**

**To make the waste of flowers and herbs leave molds** Some people put quicksilver inside. But, if it is a little work, or fine & delicate foliage, that only has a slender issue, they make two errors: the first, that quicksilver by its heaviness can destroy some delicate tract inside in coming out, the other, that some bit will always linger inside that will make [other] metals sour & inhibit the perfection of the casting. It is true that if it is to empty the mold of some large animal that has big conduits & passages through which the quicksilver can easily exit, like of a bird or a serpent, one can indeed put some amount of quicksilver to break the calcinated bones of the animal in escaping, because of which the said ☿ will empty out & not remain at all.

**The asparagus stalk is so hard that most often it perseveres as charcoal. Because of this, do it rather dried out or wet it with sulfur oil & that of turpentine, or indeed cast the little branches separately & solder them onto a fat stalk drawn through with a wire.**

**If the burnt thing has left behind some filth or ash, let it cool down a little, & with an iron wire wrapped in cotton that can bend with the cavities that you have, investigate. Clean & blow to a fault, either with a soft brush or a clipped brush.**

##### **124r – Hairy animals and flowers**

**Hairy animals and very thin delicate flowers** It is difficult to mold hairy animals because hairs raise up and come

out looking mixed and entangled. Therefore, it is necessary to keep it laid down with a drying agent and which makes it firmer, and the best thing to use is wheat oil, with which you will anoint it. Once cast, you will be able to repair it. The bodies of butterflies or of herbs that have a stem and leaves that are rugged with downy and lanuginous hairs must also be anointed in the same oil to keep this foliage laid down. With these, flowers that have very delicate and thin leaves because dry wheat oil straightens them and makes them firm. And, If someone brags to [be able to] cast anything that will be given to them, give them to cast the fuzzy head of the herb called dandelion or a papus, which comes from the seeds of lapasses and takes flight at the slightest sigh of wind.</ab>

### **131r – Plants that are burned in the mold with great difficulty**

<title id="p130v\_a3">For molding thinly</title> <ab id="p130v\_b3">After you have molded the first mold as the core, leave it to dry well before removing the figure from wax, so that the mold is not ruined. Afterwards, then make make a small lasagna of paste as thick as you like, and, once you have greased the cavity of your first hollowed mold with butter, apply the paste to it [the cavity of the first concave mold] and then the upper part of the second mold. If you grease [the mold] with oil, it will be soaked up [into the mold] and it will not be as clean as butter.</ab>

<http://gallica.bnf.fr/ark:/12148/btv1b9059316c/f268.item>

<title id="p131r\_a1">Herbs difficult to burn in the mold</title> <ab id="p131r\_b1">Mold them in two or three castings; being annealed, your mold will open, and it will be easier to extract the charcoal from inside. </ab> <note id="p131r\_c1">Try [this]</note>

### **145v – Flowers**

<title id="p145v\_a2">+ Flowers</title> <ab id="p145v\_b2a"> When you mold them, if they are not strong enough to hold themselves upright, run a thread through the mold to keep them lest they do not hoist themselves up. & cast the sand little by little & continuously and blow on it strongly and constantly so that it covers everywhere. Otherwise, it will become lumpy. Since you won't put anything in thin sheets of clay, the mold sometimes sticks to the table on which you mold. To release it, strike a great blow on the side of the table with a hammer.</ab> <image id="p145v\_d2"> [image] </image> <ab id="p145v\_b2b">It's enough to reheat your clayed mold once for flowers & to heat it the second time if you cast in tin & lead, insomuch as for gold & silver, you have to reheat it twice.</ab> <ab id="p145v\_b2c">When very red, cast your tin into the mold when it is so hot that you can[not?] hold your finger in the hole without [illeg].</ab>

<ab id="p145v\_b1b">so that it is wet everywhere. If not, wet it with a large brush dedicated to this. Then pass the end of an iron wire that holds the wax casting through the end of the mold that closes the circle and have the iron cleave the clay mold as you see; & position it on the bottom, attending that the herb or flower does not touch anything, and leave some thickness to your mold, because the moistened sand always elevates the herb or flower. Even so, if it isn't thick of its own accord, pass a slender thread through the flower with a needle to keep it elevated. Or, if you forget this, lower the flower with a little stick just until the cast sand starts to thicken. With your flower well-positioned, take a platter large enough to moisten all the sand that you will need to fill the mold. Put a little sal ammoniac water in it, and then some spring water, and when your platter is almost full, put a sprinkle of your sand on it, & mix it, & steep it until it becomes totally uniform, because if it were to clot it would consume the mold. For flowers it does not need to be very thick. And likewise, at the

beginning, when you just barely pour it so it remains transparent on your flower & covers it sort of half way, blow strongly everywhere so that you eliminate the little bubbles, and afterwards finish filling it & blow, always slightly tilting your mold down towards its larger side. And if you find some remainder of thick sand that was not well soaked, set it rather close to the casting than otherwise. Then you can cast some thicker moistened sand to make it set sooner. I molded a marigold, with its leaves, in this manner. Crocum ferri is safer for flowers, and when there is some crocum, clay it with the same sand that has already been used and is the most excellent of all.

<note id="p145v\_c1a"> The stem on which I cast a large branch of marigold with its flower, its buds and its leaves came out neatly, just like nature, was made of one lb. of fine tin mixed with two ounces of lead.</ note> <note id="p145v\_c1b"> If there are a few froths, fix it with a pen knife.</note> <note id="p145v\_c1c"> Uncover the molded flower while gently breaking the mold with the point of a knife. And,even better, soak it well in water. Afterwards, try a pig brush at the end of an iron wire, etc.</note> <note id="p145v\_c1d"> When the mold is reheated for the first time, leave it to cool down halfway. Then, run an iron wire gentle through the casting to make an opening for the burned ash inside. Afterwards, blow inside with a bellows and turn the mold over on the casting to make everything leave, & sometimes blow and suck in with your mouth.</note> <note id="p145v\_c1e"> Heed that you not attach the stem of the flower too firmly to the casting with wax, lest it consume something when you remove the wax from the casting. To remove it, you have to loosen it a bit all around & then draw it out by the iron wire with little pincers.</note>

#### **154v – Strengthening flowers and delicate things**

Strengthening flowers and delicate things </title>

<ab id="p154v\_b4">

One doesn't use wheat oil to strengthen flowers and herbages, but one uses melted butter. Cover the back of the leafs of flowers, e.g. : roses, pansies with a fine coat of melted butter, do the same with flowers which need to be strengthened. One uses wheat oil to strengthen the feet of a fly or of any small animal. </ab>

#### **160r – Sand to cast flowers**

<title id="p160r\_a2">Sand to cast flowers</title> <ab id="p160r\_b2">In casting with thick sand, flowers crumple; it squeezes them into a mass. For this reason, be sure to dilute your sand very thinly, and blow on it so the flowers are not entirely covered. When you dilute your sand, do not only stir it with the small shovel, but beat it as you would egg white.</ab>

### **1e. Related Recipes (Outside BNF Ms. Fr. 640)**

#### **Bernard Palissy**

This is not a recipe, but in his *Discours admirables* (1580), Bernard Palissy describes the medicinal/aromatic qualities of flowers in the section marked “Du Mitrodatiser.” As Palissy was also casting flowers for his ceramics, one assumes these properties of flowers somehow came to bear on his thinking when casting flowers. For example, in his text he explains that an extract from a single flower could produce a greater aroma than an entire bouquet; might this have been an indication of why flowers were cast singly rather than in bunches or bouquets? “La premier est la consideration d’un bouquet composé de plusieurs fleurs, jamais la senteur dudit bouquet, ne sera si aimable comme s’il estoit d’une fleur

seulement.” Bernard Palissy, *Discours admirables de la nature des eaux et fontaines, tant naturelles qu’artificielles, des métaux, des sels et salines, des pierres, des terres, du feu et des maux* (Paris: Martin le Jeune, 1580), 150.

### **Modern Casters:**

**Ubaldo Vitali** - On the display tables in the front of Ubaldo Vitali’s studio were a number of live-cast cluster flowers.

**William Hayes** - A foundryman based in Essex, England, William Hayes casts numerous bronze flowers and even sells them through his website.  
[http://www.butterflybronze.com/William%20Hayes/Bronze\\_Flowers.php](http://www.butterflybronze.com/William%20Hayes/Bronze_Flowers.php)

### **1f. Related Recipes Questions & Commentary**

**Leaving the Mold Closed** - Whereas in our sandcasting experiment, we were able to open the mold, it is quite clear that this mold needed to stay closed (presumably after having been luted). This is evident by the fact that ashes must be teased out of the mold with a wire: “If the burnt thing has left behind some filth or ash, let it cool down a little, & with an iron wire wrapped in cotton that can bend with the cavities that you have, investigate. Clean & blow to a fault, either with a soft brush or a clipped brush.” The danger here is that one does not have the opportunity to examine the quality of the impression after making the mold.

**Herbs vs. Flowers** - In Ubaldo’s studio, I noticed that the live-cast flowers were not independent flowers with large, separate petals, but rather a “bunched” group of small flowers clustered together. The cluster of flowers cast together may have been some form of Artemisia. Perhaps this explains why the recipe calls for “herbs,” as a bundle of herbs without large, separate petals may have been easier to cast.

**Medicinal and Aromatic Qualities of Flowers** - As noted in the citation from Bernard Palissy’s *Discours admirables*, flowers were well-known for their medicinal and aromatic qualities.

**Multiple Modes of Sensory Engagement - Sight, Smell, Taste** - In class we discussed the “hierarchy of the senses,” and Prof. Smith explained that in the Renaissance, sight was not necessarily considered the dominant or most important sense. As flowers are naturally aromatic, I wonder how the engagement with the sense of smell would have impacted the making and use of cast flowers.

### **1g. Rose Recipes (BNF Ms. Fr. 640)**

#### **10r – Roses**

<title id="p010r\_a3">Roses</title>

<ab id="p010r\_b3">These are imitated either with the scrapings of **horn used for lanterns**, or with very light, fine and **dyed parchment** scrapings, used as you know.</ab>

#### **129r – Molded roses**

<title id="p129r\_a4">

Molded roses </title>

<ab id="p129r\_b4">

Roses are molded with difficulty because of their leafs which are very delicate, double and soft. To obviate these disadvantages rub it with wheat oil which is very dessicant, once dried the oil stiffens the leafs which will withstand soaked sand. Do the same thing with flies, pansies, and other delicate things like capers </ab>

### **155r – Molding a rose**

<title id="p155r\_a1">Moulding a rose</title> <ab id="p155r\_b1">Because of the little branches of the rose bush, which are around the flower, are sometimes very spread out, they would demand too big of a mold. We make and cast them separately, the rose and the rosebuds separately as well. And then one brings them together, soldering the little branches and leaves of the rose bush to the stem of the rose, on which you will have purposefully left bits of the small branches. Put your petal or rose as low as you can in your mould, because sand will always bring it up or raise it. You can also mould several petals together, arranged one on top of the other, separating them some thread. And for the look of the rose you can give a thin layer of melted butter on the back of the petals, but only on the outside petals, not the inside petals, to stiffen them and give them the strength to withstand, so that the wet sand does not stretch or spread them out more than necessary. You can also mold well the leaves of a rosebush, strawberry plant and similar things, that are flat and can be flattened without being spoiled. **For two castings, to open your mould, when it has been reheated and then clean the ashes out, make some vents, and [you will be able to do] several casts.** This is the easiest way and you can also do the other. And with little vents of wax that has been adapted and joined from petal to petal, you can make casts. You can even make a little vent of wax from the back of the first petal, which will join up with the main cast. All of this will facilitate the casting process. The main thing is to let your reheated moulds cool down rather than cleaning them and blowing inside them to make the wax come out, because when the mold is hot, the ash almost attaches itself to it. But when it is cold it, it detaches and leaves with air draft or when one draw in one's breath through the small opening.

<note id="p155r\_c1a">You can also give a little thickness at the ends of the stems that are holding up the petals, by lightly oiling them underneath with melted butter, because the petals are big and weigh heavily, and the stem made of lead or tin will not have enough strength [to hold it].</note>

<note id="p155r\_c1b">I would be of the opinion to mold the rose on its own with a bit of its stem close to its bud, and then to join the rose to a longer one [a stem] made of glazed brass, because the rose bloom is very big and heavy.</note>

<note id="p155r\_c1c">Moisten your rose with spirits before placing it in the clay. Do not forget to oil the wax cast. And when you have thrown in your wet sand, blow heavily, until it begins to set. The rose came out well. But because the sand was mixed within the petals, soak your work in water for a long time so that when you shake it in the water, the earth comes off.</note>

### **155v - Rose**

<title id="p155v\_a1">Rose</title> <ab id="p155v\_b1">Because the rose bloom is rather wavy, and its petals are all mixed up and arranged in various ways, it will not be beautiful if it is not painted, and you must also consider that its weight cannot be supported by the tin stem which is sour and fine. One moulds the flower of the rose in a separate mould, casting it thickly so that it comes out more easily. Then one cuts the cast at the edges of the stem of the bud, in which you graft and solder a

stalk of brass wire to which you also solder the leaves. But because this tin, being so thin, is hard to solder, and may melt some of the leaves and also the cast flowers; [you should consider] that cast flowers, especially roses, are not beautiful without being painted, so one does not make the effort to solder them, but [instead] one grafts the pieces that you want to join together and glues them with fish glue that has been a little moistened and melted until thick. And so that it takes better, you heat the work in tin lightly and for a long time, because if it is cold, the glue will not take. Once your flower is thusly repaired, you follow the joints of the added parts with some esbaucher wax, which is a white wax mixed with much well-ground ceruse, or even better, white lead, melting it and placing it on your work with a small warm bit of iron needle. In the same way you can repair the little filaments that are in the middle of the rose, or the holes that may appear in some of the petals. Then paint your rose realistically. If you cast your rose in gold or silver, you can also rejoin [parts] and solder its. And in those materials, when you have join something very delicate together with the flower, such as a fly or other similar things, fish glue is excellent, and holds very well, fixing it with a few little needles that act as nails. The leaves and buds can be cast in two molds that can be opened once they have been reheated, but not before. Then these things join up [with the flower].</ab>

#### **h. Related Rose Recipes (Outside BNF Ms. Fr. 640)**

##### **i. Roses Questions & Commentary**

It seems that this rose recipe (155r) is casting rose petals straight into sand. The wax appears to be some kind of binding agent with which to join two petals, if one desires to cast them as a unit - it is not cast in wax itself, but straight into sand.

Why is there so much emphasis on molding a rose?

Is the technique different than for other objects?

##### **j. Painting/Enameling the Cast Flowers (BNF Ms. Fr. 640)**

\* If we are able to carry out this recipe, we are hopeful that the medals we produce could be used in the second iteration of this seminar, as there are numerous recipes for the painting of cast flowers.

##### **116r – Enameling very fine gold rose leaves and others**

<title id="p116r\_a4">Enameling very fine gold rose leafs and others </title> <ab id="p116r\_b4">Once you have cast, or hammered with gold the fine leafs of a rose, or something else, enamel it. That is to say you must solder your fine gold leafs on a silver strip which will reinforce enamel. Once you had enamelled your work, dip it into aqua fortis, silver will be eaten away with this, but gold will remain with its enamel. Gold must be sieved through

##### **129r – Painting herbages made from metal**

<title id="p129r\_a1">

Painting herbages made from metal </title>

<ab id="p129r\_b1">

If you are in a hurry it is much better to dilute your color with not very much gum which must not be very thick because it takes a long time to dry, and it runs if thinly applied as you have to do with herbages. If you are still in a hurry, dilute your color



with beaten albumen with fig peels, very soon your work will dry, but do apply it thinly  
</ab>

## **2. MOLDING PAPER AND OTHER VERY THIN OBJECTS**

### **2a. Principal Recipe**

#### **131r – Molded letter paper**

<title id="p131r\_a2">molded letter paper</title> <ab id="p131r\_b2">Write with some ink bien gommé or any other color dye which has body, and which is not erased if dampened with brandy. Then put your paper on the sheet of clay, and dampen it with brandy. Cast both sides [of paper].</ab>

### **2b. Principal recipe materials**

- paper
- ink bien gommé
- clay
- brandy

### **2c. Principal recipe questions & commentary**

**Ink bien gommé** - This particular type of ink seems critical to the process of molding a piece of paper with writing on it. Would the ink “bien gommé” create a raised surface that would make a clear impression in clay? What type of ink might this be? Also, what type of ink could withstand the wetness of brandy?

**Why mold paper? What comes next?** - Presumably, once one has molded paper into clay, one would cast something in the clay. The recipe does not state any further instructions after molding the paper in clay.

**Practice?** How might the molding of paper relate to the molding of other very thin objects, such as flower petals? Could it have served as a type of practice?

### **2d. Related Recipes (BNF Ms. Fr. 640)**

#### **122v – Molding medals and flat things**

<title id="p122v\_a3">

Molding medals and flat things </title>

<ab id="p122v\_b3">

You haven't to make a paste to cast, because if your mixture is thinner it will perfectly cover your medal. Make a paste to cast fine works. The thinner mixture allow your flat medal to be easily stripped. **Your cast must not be as thick as your medal, in the case this medal isn't as thin as a sheet of paper.** First cast where your medal is, do not make a thick cast into the intake of your medal or work, otherwise your work wouldn't be well stripped. Make a cast not very thick from the middle of your work to the top, and make a cast very thin from the middle of your work to the bottom. Do not forget to notch the top of your mold, that way metal won't run too fast. </ab>

#### **142v - Molding grasshoppers and other things too thin [paper?]**

<title id="p142v\_a1">Moulding grasshoppers and other things too thin</title> <ab id="p142v\_b1">If you have a piece of written paper to mold, which is very thin, after

you have made a first casting and it has taken, add a little thickness to the back of your paper with some melted butter, which is the most appropriate means there is, and [this method applies as well] for strengthening the wings of either a butterfly or grasshopper, or any delicate part of an animal for which you need to add some thickness. Be advised [however] to apply this melted butter underneath the wing or whichever place, so that it is not seen. To give thickness to a pansy or other flowers, butter is not good, thus [one uses] wheat oil, which dries quickly and holds firm. Wax would not be appropriate [in this case] because it is too hot, having been melted, and it makes the thing to which it is applied draw in. But butter is good [to work with] and easy to handle.

If you write on paper or on cardboard, and your piece of writing has been made with gum, the wetness of the clay pack or of the soaked sand for the noyau will moisten it [and] ruin it. Thus, write with cinnabar mixed with oil, on oiled and stamped paper.

## **2e. Related Recipes (Outside BNF Ms. Fr. 640)**

### **Modern paper/metal casts**

#### **Eckman Fine Art**

Allen and Patty Eckman make large- and small-scale sculptures in paper and subsequently cast them in bronze. While they claim to have developed a “revolutionary process” that allows them to achieve this, it seems likely that they are using a lost wax process: <http://eckmanfineart.com/taking-paper-to-bronze>

### **2f. Molding insect wings**

\* The thinness of paper seems comparable to the wings of insects, which the manuscript is particularly concerned with molding properly. We wonder whether the molding of paper could have been a mean of honing one’s skills of molding thin objects, namely insect wings.

#### **149v – Molding flies**

Molding flies Large flies can be molded & cast. But you must grease them on top of their wings with wheat oil, which dries quickly and firms them up & gives them a little thickness. The same is done with butterflies, cicadas, grasshoppers & similar things. But to cast them more easily, set them on some leaf or bouquet. Others nimbly place them on a very slender silver blade. You cannot keep your insects when they are dead, since they will dry out and their legs will break.

#### **156v - Moulding a Fly**

Moulding a fly Take the fattest flies, that go to pantries, which are not hairy, if at all possible. If they are hairy, oil lightly their fur and their unmanageable hairs with olive oil to make them lie flat. Take them also and use them as quickly as you can after they have died, because if you leave them to dry out, their legs will break when you want to stretch them. You must also, to get a better cast, arrange them on some kind of leaf or other similar thing. This will help to cast their little legs, that are so fragile that unaided, they will not cast easily. They can be arranged on a sage leaf or something similar. They cast well in gold or silver but one usually the legs and wings separately and then join them [to the main body.] I have cast one on a bouquet of sage that had seven or eight leaves.

And to arrange it, I affixed the legs on the largest leaf with a bit of melted wax and joined them with the pointed tip of a hot iron wire. And to make sure that the wings will [eventually] join more easily [to the body], I applied on the underside some melted butter with a small brush. And with same pointed end of a warm iron wire I applied wheatgerm oil on the legs and feet. To tame and bed the downy hair that it has I also apply a bit of olive oil. <ab id="p156v\_b1b">I do not let wheatgerm oil dry out a lot because it is very thick and has body, and the spirits cannot penetrate it.</note> <ab id="p156v\_b1c">For applications, tallow is too harsh, pork fat is too soft, and but is excellent because it is rather dry and curdles and instantly melts and is firmer. Be advised that the legs and feet are well set on the leaf, and not go beyond the leaf, because the whatever exceeds the leaf will not cast as well, even if cast in silver, because these parts are so fine that they will not cast. And truthfully, feet set on a leaf, cast well, but those set from leaf to leaf which remain iffy did not come out well in tin. The rest of the fly was cast, and likewise the sage bouquet which cast very beautifully.</ab> <note id="p156v\_c1a">You could also cast them well in gold or silver without the feet, and without attaching to a flower by casting it underneath the belly and then joining the feet with soldering. And if you need to, cast the wings in the same metal and it could be enameled if you fortify the wings and feet as previously said.</note> <note id="p156v\_c1b">If you sage leaf or your branch needs to be repaired, do as I havesaid underneath. And then paint in a realistic way.</note> <note id="p156v\_c1c">Having been cast in gold, one enamels the wings with window glass from Lorraine, which is and transparent.</note> <note id="p156v\_c1d">It is necessary to cast the fly from the ass with some melted wax, fitted by an iron tip, as you know, to which the fly attaches itself, and then the wax, as it melts, serves as a cast for the fly.</note> <image id="p156v\_d1">[image]</image> <note id="p156v\_c1e">If it happens that you have some defects with your fly's wings, hamer some very fine tin, or gold or silver, if you cast it, and shape with scissors the amount you need for your wings. And then apply it with tweezers and glue it with fish glue, applied like it is shown underneath. And before doing thing this heat your work lightly so that its coldness does not repel the glue, which will dry quickly, heating it from afar. Then cover lightly the joints of whatever you've attached to the cast with some esbaucher wax, which is a white wax that is mixed with a lot of ceruse or white lead, melting it with and warm iron tip. You will also cut little bits of harpsicord string and will glue them with the aforementioned glue when they are dry. That is the say, the feet, having been reworked thusly, you will make them bigger with this same melted wax so that they are equal in proportion [with the rest].</note>

### 157r - Flies

<title id="p157r\_a3">Flies </title> <ab id="p157r\_b3">**They mold better on a single leaf than on a bouquet or a flower or the branch of an herb, since the single leaf is molded in two halves that being reheated can be opened up and cleaned well, & the cast will be better.** In picking up the fly, take heed that you do not break its legs or let it dry out too much, because then the legs will fall off. And if this happens to you, glue the same legs back on with fish glue and wax, or adapt the hairs of a pig or the cords of a spinet. Fix the leaf on a flat piece of clay with two pins, and the fly with one pin in the middle of its body & the feet with wax.</ab>

## 3. JOKES

### 3a. Principal Recipes

**33r – To make somebody think he has a silver coin on his forehead**

<title id="p033r\_a1">TO MAKE SOMEBODY THINK HE HAS A SILVER COIN ON HIS FOREHEAD </title> <ab id="p033r\_b1"> Have a token or silver coin and wet it and make it hold on your forehead and tell your assistant that if you put it like this on his forehead he won't be able to make it fall unless with your hands, no matter how much he shakes his head. Fainting that you are putting it on his head, hold it in your hand and wet your finger with your saliva and press it strongly on his forehead. He will think having the coin on his forehead because of the coldness of your saliva and will shake his ears without getting anything. </ab> <title id="p033r\_a2">

**33r – To make some blood or wine flow out from somebody's forehead or a wall**

TO MAKE SOME BLOOD OR WINE FLOW OUT FROM SOMEBODY'S FOREHEAD OR A WALL </title> <image id="p033r\_d2"> [image] </image> <ab id="p033r\_b2">

Have a mouthpiece or a white iron funnel which has a double body but not the opening. At the top edge, make sure there are a small hole and another slightly bigger one onto the inside liner a bit above the edge as on the opposite example. Then when you want to use it, pour some wine in it or some liquid Brazil rosette or some black cherries juice. And whilst blocking with your little finger the opening's hole, make sure the mouthpiece is filled so the wine can be poured inside the liner via the edge's hole

<note id="p033r\_c2"> [translation missing] </note>

**34r – To tell someone that if he keeps holding his finger on his forehead, you will stop him from going out of his room**

<title id="p034r\_a1"> TO TELL SOMEONE THAT IF HE KEEP HOLDING HIS FINGER ON HIS FOREHEAD , YOU WILL STOP HIM FROM GOING OUT OF HIS ROOM </title> <ab id="p034r\_b1"> Make him embrace a bedpost or similar thing and with his same finger put his finger on his forehead. </ab>

**34r – Bet somebody that while he is walking to a place and coming back, he won't say four time in a row boots without spurs**

<title id="p034r\_a2"> BET SOMEBODY THAT WHILE HE IS WALKING TO A PLACE AND COMING BACK, HE WON'T SAY FOUR TIME IN A ROW BOOTS WITHOUT SPURS </title> <ab id="p034r\_b2"> If he tries to say it, he has to speak loudly and when he has gone there and come back, you will tell him he has lost because he has had to say times boots without saying eperon for this was your bet. </ab>

**34r – Hang a candle on a wall without making a hole**

<title id="p034r\_a3"> HANG A CANDLE ON A WALL WITHOUT MAKING A HOLE </title> <ab id="p034r\_b3"> Make a groom hold it back to the wall. </ab>

**34r – How not to break a glass with a log or a large stick**

<title id="p034r\_a4"> HOW TO NOT BREAK A GLASS WITH A LOG OR A LARGE STICK </title> <ab id="p034r\_b4"> You will cut a small bit as big as a toothpick and so you will say it is a log or a large stick with which he can't break a glass </ab>

**34r – Hidden writing**

<title id="p034r\_a5"> HIDDEN WRITING </title> <ab id="p034r\_b5"> Cut some long fine parchment little rolls and mark them in order from ABC et cetera, then make them be sewed in the [...] of a rough cloth shirt like for a messenger who won't notice anything if you want to use his skirt </ab>

**35r – To tell somebody you will teach him something he doesn't know, neither do you**

<title id="p035r\_a1"> TO TELL SOMEBODY YOU WILL TEACH HIM SOMETHING HE DOESN'T KNOW NEITHER YOU DO </title> <ab id="p035r\_b1"> Have a thread or small stick and measure from his ear's end till his nose's end, then show that to him and so you will teach him what neither you nor he did know. </ab>

**35v – To make a ball change into a fine thimble**

TO MAKE A BALL CHANGE INTO A FINE THIMBLE </title> <ab id="p035v\_b1"> Make a small plain cow or maroquin leather case quite thick, three fingers high, sewed like a glove's finger and wide enough for two fingers' ends to fit inside and with its end slightly [...] and with a hole as wide as a double liard. Have two similar box tree balls and one must be hollow and with a round hole on one side so the thimble can fit inside. Then, when you want to play, you will put your leather case on the table with the non-hollow ball, fit a stick into the case to show that there is nothing in it as well as the round ball, and hold the hollow one with the thimble inside it between the small finger and the annulus, and this with your right hand that holds your stick. Then, take your leather case and put it on the hollow pall which is between your fingers and pretend to spread some ori[...] powder, put your leather mould that holds the thimble-ball back on the table, then, take the plain and round ball still on the table and order it to fit below the table into the leather case. Then, raising the leather, it seems to be the same one while it is the hollow one. Then cover it and order it to become invisible. And when you raise the case up while squeezing also the ball and you will put it away together with the case and there will be instead a lady thimble [...] </ab>

**3b. Principal Recipes Questions & Commentary**

Why are these jokes or tricks included in this manuscript?

How can we put them into context?