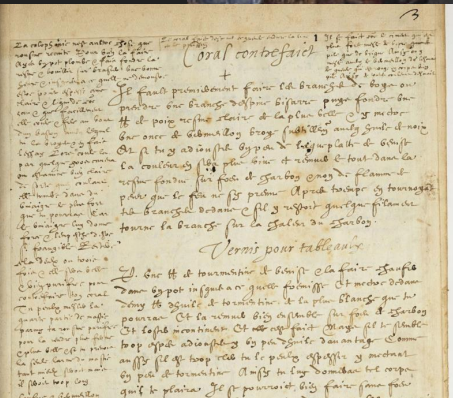


MAKING AND KNOWING

Practical Knowledge in Early Modern Europe



Pamela H. Smith

<http://www.makingandknowing.org>

<http://edition640.makingandknowing.org>





After Jan Breugel the Elder, *Fire*, 1616

Ein wolgeordnetz: vnnnd nutzliches büchlin wie man berg-
werck sūche vnd erfinden sol von allerlay mettaldie den die
siben planeten generiren vnd wūrcken peglicher nach seiner
natur vñ ein flūß nach irem streichender lufft gegen dem auff
gang nydergang: mitag vnd mittnacht anch wie die geschick
lichait der geng in den bergen erfündlich seind nach gelegen-
hait der gebürg als daß das eigentlich anzeigt wirdt mit figu-
ren vñ geschriff vnd ob in etliche bergwercken: in iren teilū-
gen ander namen wāren daß dis büchlin in seiner tailung von
kucks auß weist: so wirt doch hierin gesagt auff alle land berg
werck zū erkūnen wie hernach volgt in disem büchlin



BIBLIOTHEQUE
NATIONALE DES SCIENCES
CENTRALES
11649

Anon.
[attr. Ulrich Ruhlein von Calw],
Bergbüchlein, 1505.

ternacht oder herwider vñ als vor vñ andern dātern d welt
Also vil sey gesagt von dem streichen der geng volgt nun zū
reden von hangends vnd ligends

Item ain yezlicher gang hat sein hangends vñ ligends han-
gends des ganngs ist sein tach yber dem gannng daran sich der
gang mitt dem rugken stoßt Sunder ligends ist sein gestain
darauf der gannng leyrt doch seind etzliche geng die also ge-
richtz ir fallen habendt das man nicht wol andem gannng han-
gends oder gliends erkennen kan: daß allain von zu felligen
henngeküfften die ein anweysung dar zū geben mügen anch
gesein zu allen dātern der welt als si vor benandt sein des zū
einer erkantnuß volgt hernach dise figur

Der morgen



Der mittag

Die mittnacht

Der abent

BIBLIOTHEQUE
NATIONALE
DES SCIENCES
CENTRALES



Wenzel Jamnitzer and Jost Amman, ca. 1578, "Ein gar kunstlicher und wolgezierter Schreibtisch," Fold-out leaf, showing the surveying of a mine. vol. 2, fol. 54. National Art Library Special Collections, MSL/1893/1600–1601. Victoria and Albert Museum, London.

Medicinarius Das buch der Gesuntheit
Liber de arte Distillandi Simplicia et Composita. 1638
Das nūw büch d̄ rechte kunst

zū distillieren. Auch v̄ Castilio sicino v̄ anderer hochberühmter Arzte natürliche v̄ die
Kunst zū Besatzē den gesunden Leib v̄ zū erretzen die Krancheit mit erlangertig des Lebens.



Monasterii Neugubini 1637
Albrecht Dürer
Liber de arte Distil
landi de Compositis.

Das büch der waren kunst zū distillieren die
Composita v̄ simplicia/ v̄nd di Büch rescuras panpen/ Ein schatz d̄ arnt̄ ge
nā d̄ carū/ die bodsam̄in gefallen v̄ d̄ dū q̄ten d̄ Arzney/ v̄nd durch d̄ Experiment
v̄ mir Hieronimo distilliert v̄ geclut v̄n geoffenbar zū rest d̄er die es bezegt.



707
Dies büechlin saget wie man
pferdt artzneyen v̄nd ein yeglich
so reseremmen v̄nd probieren soll.



Hieronimus Brunschwig (ca 1450-1512), *Distillierbuch*
(Book on Distillation), Strasbourg, 1505, 1512

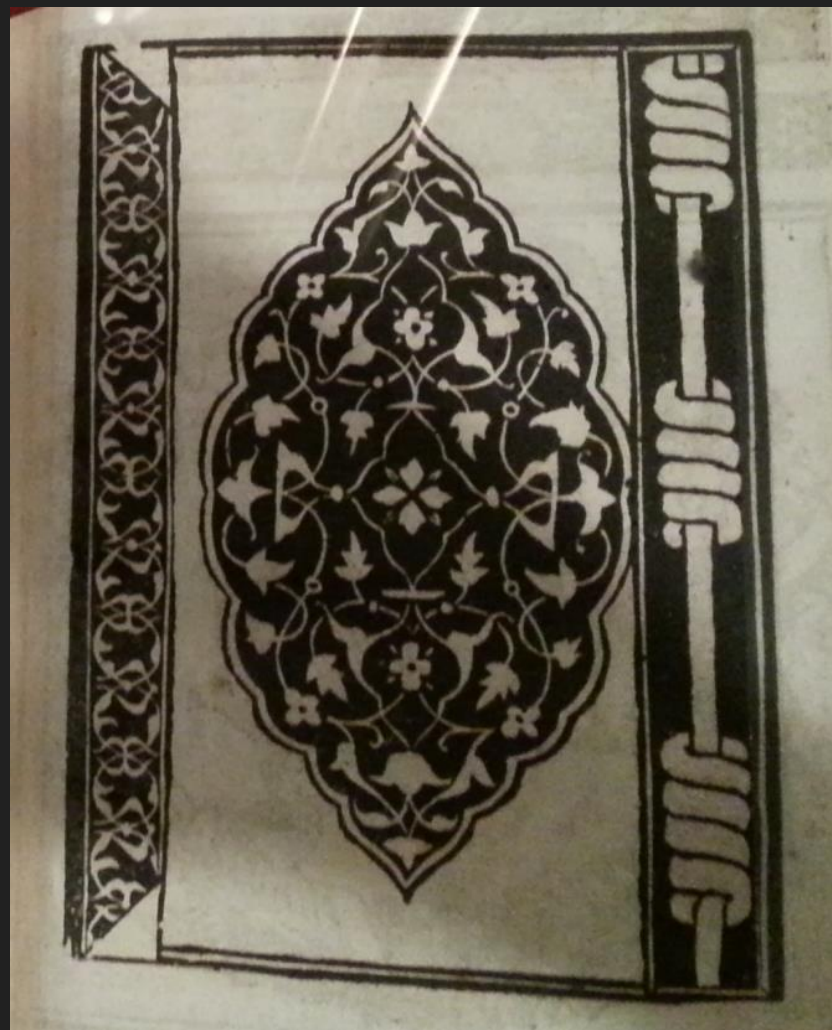
Master Albrecht, *This little book tells how to physic horses and how to recognize and assess (assay) each kind of horse*, Strasbourg, 1514

Ein new
Furmbüchlein

Johann Schönsperger the Younger, *Ein new Furmbüchlein*, title page, printed ca. 1525–29., Woodcut.



Johann Schönsperger the Younger, *Ein new Modelbuch* [. . .] ..*Gemert und gepessert mitt new andern Mödeln*, frontispiece, printed 1524



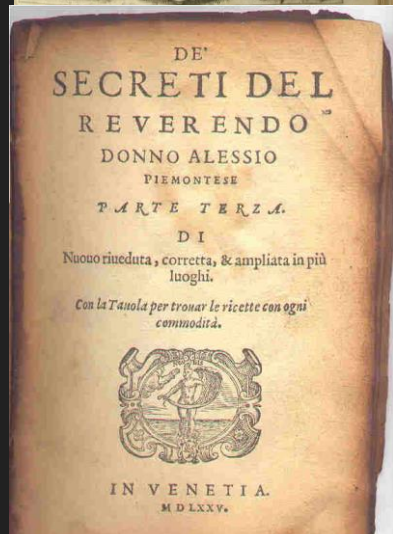
The secretes of the

reuerende Vatter Aleris of Piemount: contayning excellent remedies agaynste diuers dyseases, woundes, and other accidentes, with the manner to make oyls, perfumes, conitures, dyings, colours, fashions, and meltings. & wooke
 Wel appoued, very profitable and necessary for euery Man.
 Newly corrected and amended, and also somewhat enlarged in certayne places which wanted in the first edition. Translated out of French into English, by
 William Waerde.



IMPRINTED AT LONDON, BY
 Henry Bynneman, for Iohn Wight.
 ANNO DOMINI. 1568.

Alessio Piemontese (pseudonym),
Secrets (first published 1555)



Eygentliche Beschreibung
Aller Stände auff Er-
 den / Hoher vnd Nidriger / Geistlicher
 vnd Weltlicher / Aller Künsten / Handwercken
 vnd Händeln / *ic.* vom größten bis zum kleinsten /
 Auch von frem Ursprung / Erfindung vnd
 gebreuchen.

Durch den weitberümpften Hans Sachsen

Ganz fleissig beschriben / vnd in Teutsche Reimen ge-
 fasset / Sehr nutzbarlich vnd lustig zu lesen / vnd auch mit künstreichen
 Figuren / deren gleichen zuvor niemands gesehen / allen Ständen
 so in diesem Buch begriffen / zu ehren vnd wolgefallen / Allen
 Künstlern aber / als Malern / Goldschmidten / *ic.*
 zu sonderlichem dienst in Druck
 verfertigt.



Mit Röm. Keyf. Maieft. Freyheit.
 Gedruckt zu Franckfurt am Mayn.
 M. D. LXVIII.

A 925 AM
 571

Der Buchdrucker.



Ich bin geschicket mit der press
 So ich aufftrag den Firniß reß /
 So bald mein dienn den bengel zuckt /
 So ist ein bogn pappys gedruckt.
 Da durch kombt manche Kunst an tag /
 Die man leichtlich bekommen mag.
 Vor zeiten hat man die bücher gschribn /
 Zu Meins die Kunst ward erstlich triebn.
 F iij Der

Der Uhrmacher.



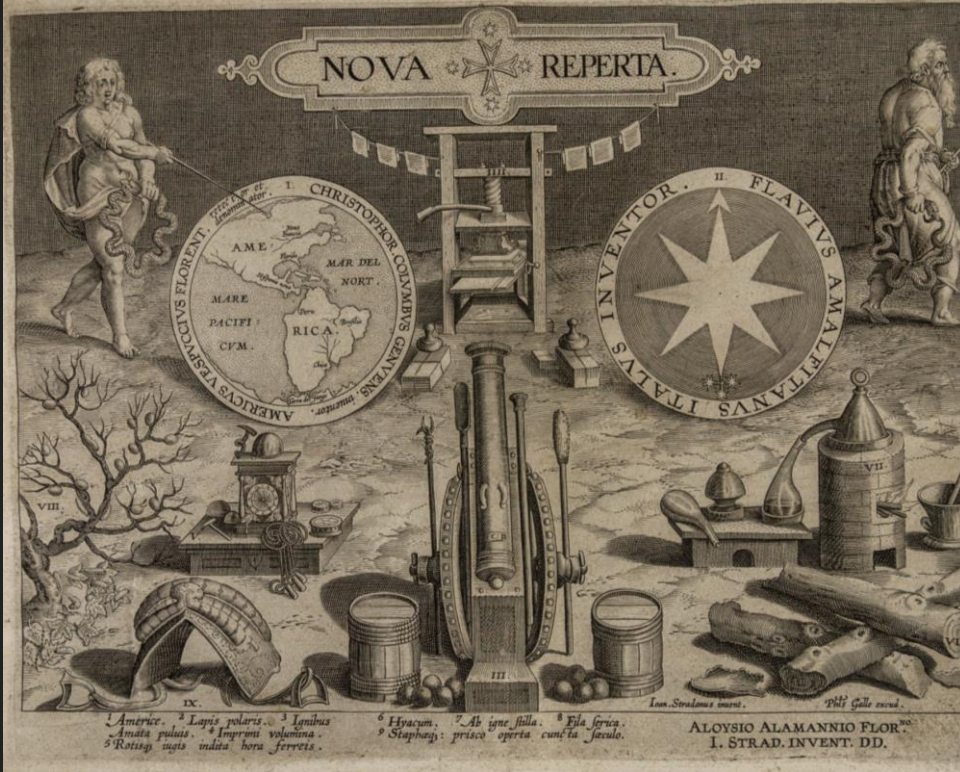
Ich mache die reysenden Uhr /
 Gerecht vnd Glatt nach der Mensur /
 Von hellem glaz vnd kleim Uhrsant /
 Gut / das sie haben langen bestandt /
 Nach auch darzu Hülßen Beheuß /
 Dareyn ich sie fleissig beschleuß /
 Farb die gheuß Grün / Graw / rot vñ blau
 Drinn man die Stund vnd vierteil hab.
 S iij Der

Der Schriftgießer.



Ich geuß die Schrift zu der Druckrey
 Bemachte auß Wismat / Zin vnd Bley /
 Die kan ich auch gerecht justiern /
 Die Buchstaben zusamnn ordniert
 ateinisch vnd Teutscher Geschrieff
 Was auch die Griechisch Sprach antriffe
 Mit Verfalen / Puncten vnd Zügen
 Das sie zu der Truckrey sich fügen.
 E liij Der

Jost Amman & Hans Sachs, *Aller Stände auff Erden*
 (Ständebuch or Book of Trades), 1568



1 Americus. 2 Lapis polaris. 3 Ignibus
 4 Anata puluis. 5 Ingravi volumina.
 6 Hyacum. 7 Ab igne stilla. 8 Fila serica.
 9 Staphaz: prisico aperta cunt la seculo.

ALOYSIO ALAMANNIO FLOR.
I. STRAD. INVENT. DD.

Jan van der Straet, *Nova Reperta*
late sixteenth century



Enses, bipennes, arma Bellonæ omnia,
 Nostro, haud vetusto, sunt polita tempore.

The Making and Knowing Project

Intersections of Craft Making and Scientific Knowing



ABOUT

PEOPLE

BNF MS. FR. 640

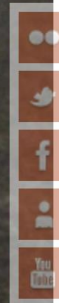
PROJECT COMPONENTS ▾

THE LAB

COLLABORATIONS

PUBLICATIONS & PRESS

SUPPORT



About the Making and Knowing Project

[Click here to learn more about what we are doing at Columbia University to create a digital critical edition of a 16th-century book of secrets.](#)



Secrets of Craft and Nature in Renaissance France: A Digital Critical Edition and English Translation of BnF Ms. Fr. 640

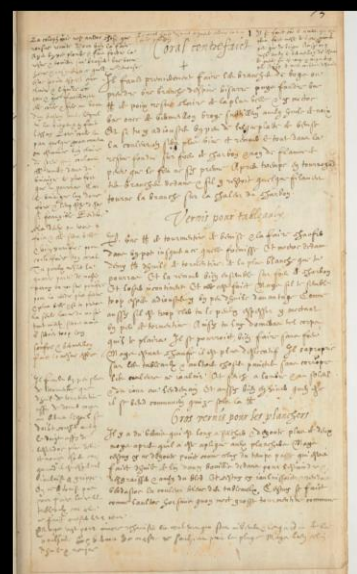
<https://edition640.makingandknowing.org>

The Making and Knowing Project
**Secrets of Craft
and Nature**
in Renaissance France
A Digital Critical Edition of BnF Ms. Fr. 640

Ms. Fr. 640 is a unique manuscript composed in 1580s Toulouse. It offers firsthand insight into making and materials from a time when artists were scientists.

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Facsimile

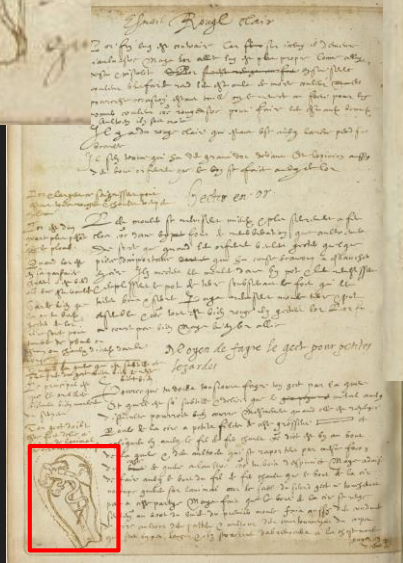
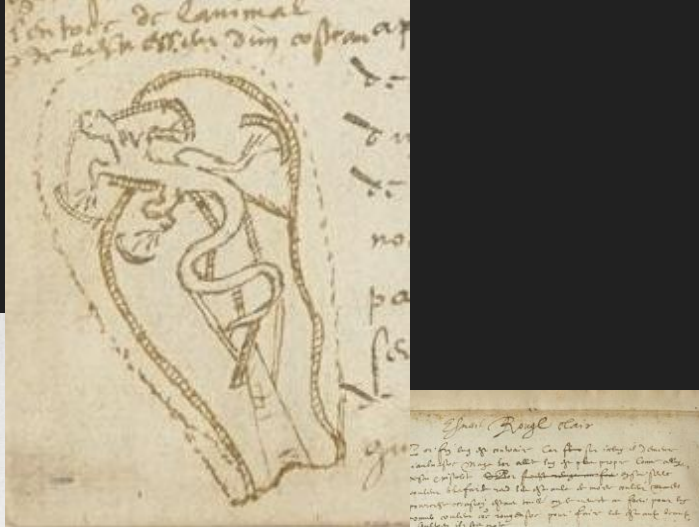
Folio 3r

Coral contrafait*

La colophone nest autre chose que
rouine recule Pour bien la faire
Ayes un pot plombe & fais fondre la
resine & bouillir sur brasier une bonne
heure & jusques a ce quelle ve demonstrate
estre poixct espesse ainsi
claire & liquee comme
eau & que facilement
elle coule & fin au bout
dun baston avec lequel tu la broyes & en fais
lessay Lors coule la
par quelque gros caneva
ou estamine bien claire
de sorte quen coulant
elle tombe dans du
vinaigre de sorte fort
que tu pourras Car le vinaigre luy donne
force & empesche destre
si frangie Reitere
cette chose ou trois
fois & elle sera belle
& bien purifiee pour
considre ton coral
Tu peult mesler la
quarte partie de mastic
pamy la rouine purifiee
pour la rendre plus ferme
& plus bele & si tu prenois
la seule lame du mastic
tand meue seroit mas
il seroit trop long

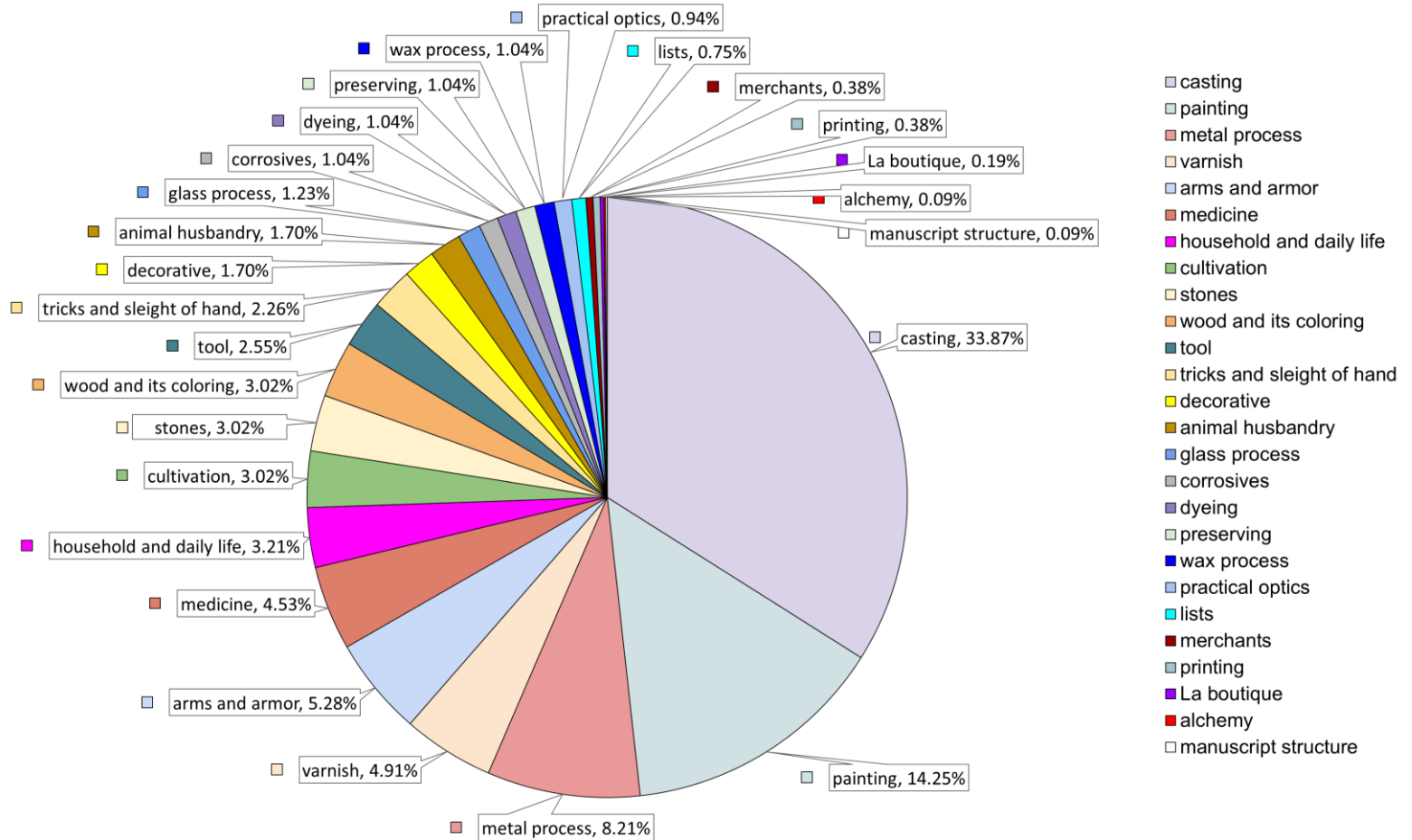
Vernis pour tableaux

P[re]ndre une lb de tourmentine de venise & la faire chauffer
dans un pot jusques a ce quelle fresse et mecre dedans
demy lb dhuile de tourmentine de la plus blanche que tu
pourras Et la remuer bien ensemble sur bois de charbon
Et loder eschauffe Et est fait Mais sil se semble
trop espes adouster un peu dhuile davantage Comme
aussy sil est trop cler le peult espeser y meclant
un peu de tourmentine Arroy la luy donneras ses corps
que tu plaira il se pourroit bien faire sans fous
Mays estant chaude il est plus dessiccat Il saproprie
sur les tableaux & autres choses panches sans contraindre
les couleurs ne jaunir Et sacche a ombre & a soleil
& du jour au lendemain Et aussy bien en hiver quen este
il se vend communement quante sous la lb



BNF, Ms. Fr. 640, fol. 124v

16th-century, life cast, Kunstgewerbe Museum, Berlin





Kunstammer
Chamber of Art

Frans Francken II (1581-1642), *Kunstammer*



“How careful you have to be with this cannot be told in words alone—you’ll have to learn that by experience.”

Benvenuto Cellini, *The Two Treatises on Goldsmithing and Sculpture*, 1568.

Benvenuto Cellini, *Salt Cellar*, 1543



“... the more minutely you describe it, the more you will confound the mind of the reader ...”

Leonardo da Vinci, dissections, ca. 1510-11

About JoVE

JoVE, the Journal of Visualized Experiments, is the world's first peer reviewed scientific video journal. Established in 2006, JoVE is devoted to publishing scientific research in a visual format to help researchers overcome two of the biggest challenges facing the scientific research community today; poor reproducibility and the time and labor intensive nature of learning new experimental techniques.

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M. VITRUVII
POLLIONIS
DE ARCHITECTURA
LIBRI DECIMI
AD CAESAREM
AVGVSTVM.

omnibus omnium editionibus longe emendatioris,
collatis veteribus exemplis.

ACCESSERVNT,

Gulielmi Philanderi Castilioni, eius Romani annotationes
 castigatioris, & plus tertiam partem locupletioris.

ADIECTA EST

Epitome in omnes Georgij Agricolae de mensuris & ponderibus
libros, EODEM AVTORE,

EODEM AVTORE,

Cum Graeco pariter & Latino indice locupletissimo.



LVGDVNI,
APVD IOAN. TORNAESIVM.
M. D. LII.

Cum Privilegio ad Sexennium.

omnia resupinae sunt per ambitum lateris. Alarum autem quinquela fanari oportet, scribemus libro quarto.

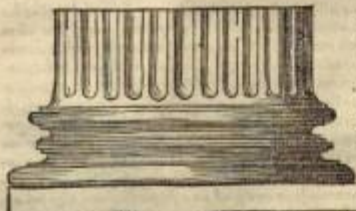
Corinthium Capitulum.



Columna alta est, quantum in una parte est crassa, naves, habet, astragalum & apophyes cum annulo suo, et in algi dicitur. Basu fit alta media parte crassitudine columna. Ea dividitur in partes quatuor: inde una erit plinthis, reliqua tres dividenda sunt in quatuor. Una pars fit trochilus superior, inferior erit una quarta pars. Quod restat, dividatur equaliter.

Una pars fiet cum astragalo & regula duobus trochilus inferior: sed ita distribuetur, ut sit astragalus sexta pars trochili, qua regula illum tangit, sit eius medietatem crassa, qua vero est super eorum, altitudinis astragali habeat tertiam partem. Altera pars dividatur pari dimensio, in trochilum, regulam duas, & astragalum.

Corinthia basi.



Exornata erit proportionum superbiore, tenentur tertius, id est, quadrati profecti, & duarum tertiarum: sed eius proportione quadrato additur septima pars pro cornice, & tantulum pro base. Unius cornicis differat ab duce, quod pro fina habet trochorum, & astragalum crassum dimidia parte trochori. Basu sunt eadem partes, & maiorem eadem dimensio.

Corinth

Corinth

C. PLINII SECVNDI

HISTORIALVM NATVRAE LIBRI XXXVII. POST
omnes omnium editiones, & quae ad hoc usque potissimum, post
omnes omnium editiones, sine ulla dubitatione sunt placuisse in locis
sicut etiam tandem in istum usque usque codicum, & hominum do-
ctissimi diligentia.

Hic nonnulli inopitantes & perinde stultissimi nonnulli, quae
in hoc opere continetur, iudex.

(Reg. du P. David)

PARISIIS
Apud locum Puteum, sub flore Libellulæ,
saxat domum Iacobum.
M. D. XXXIII.

M. Simonis de la Roche
de la Roche

1755

1755

1518
Practica in chirurgia. Jan 27
1864
110 ruy
ppag. 1.



R

Johannes de Vigo, *Practica in arte chirurgica*,
1516

**Practica in arte chirurgica copiosa
Joannis de vigo Julij. ij. Mon. Mar.
Continēs nouē libros infrascriptos.**

- Primus: De anatomia chirurgo necessaria.
Secundus: De apostematibus in vniuersali et particulari.
Tertius: De vulneribus in vniuersali et particulari.
Quartus: De vlceribus in vniuersali et particulari.
Quintus: De morbo gallico: et dislocatione iuncturarum.
Sextus: De fractura et dislocatione ossium.
Septimus: De natura simplicium et posse eorum.
Octauus: De natura compositorum: et est antidotarium.
Nonus: De quibusdam additionibus totum complementibus.

Cum gratia et privilegio.

The Making and Knowing Project

Intersections of Craft Making and Scientific Knowing



ABOUT

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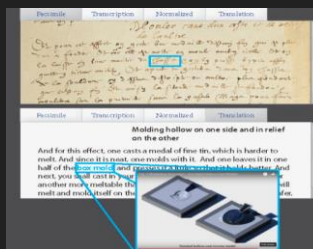
Laboratory Seminars

Reconstruction of the materials and techniques described in the manuscript is being carried out in a laboratory at Columbia University, led by Prof. Pamela Smith.



Making and Knowing Project components

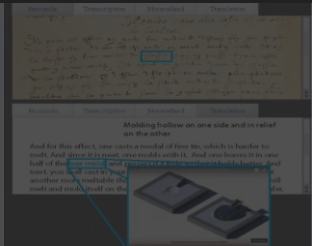
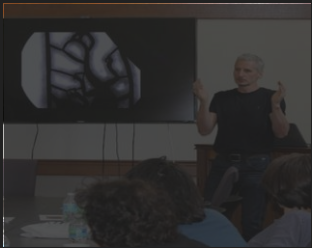
2014–2019

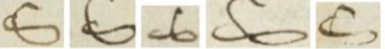



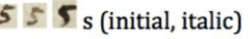
1. **text workshops**
intensive training to transcribe, edit, interpret, translate and markup the manuscript
2. **graduate lab seminars**
research and reconstruction of recipes in the manuscript
3. **working group meetings**
scholars and students meet to review student essays
4. **digital development**
construction and prototyping of the Edition

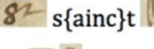
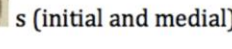
text workshops

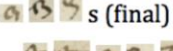
intensive training to transcribe, edit, interpret, translate and markup the manuscript




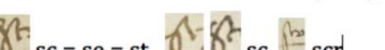
 S (note hook at start)

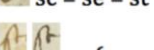


 S (italic)  s (initial, italic)


 s{ainc}t  s (initial and medial)


 s (final)



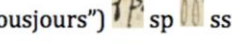
...  s (final)

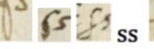
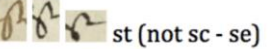
...  s (final)

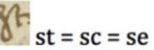

 sc = se = st  sc  sc |



 se (any position) = sc = st

 sf = ff (when in doubt, write ff)

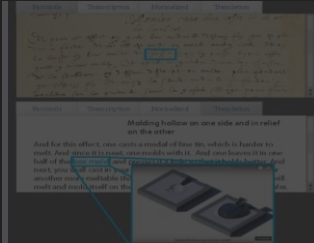
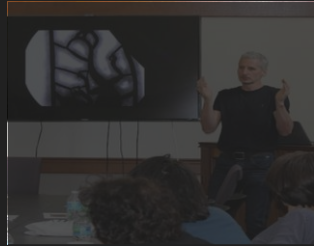
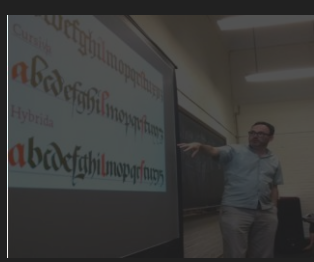
 si - sj ("tousjours")  sp  ss

 ss  st (not sc - se)

 st = sc = se  st (final, not sc - se)

 st (final)  stre

graduate lab seminars to research and reconstruct recipes in the manuscript



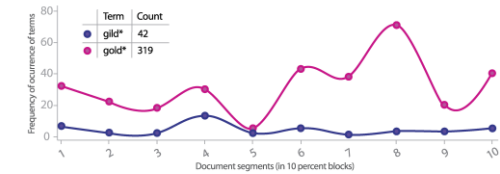
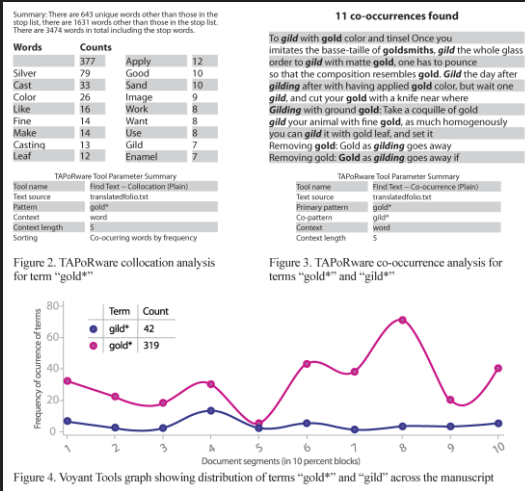
working group meetings bringing together scholars and students



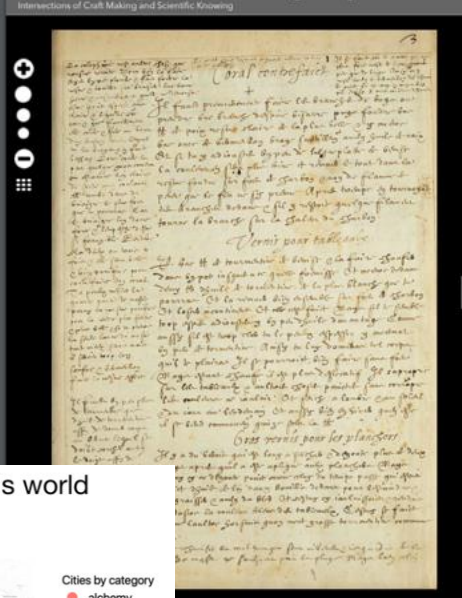
Working Group Meeting
Vernacular Natural History, Practical
perspective, optics, mechanics, and medicine
May 23-25, 2017



digital development prototyping and development of the Edition



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Diplomatic / Normalized / English

Imitation coral

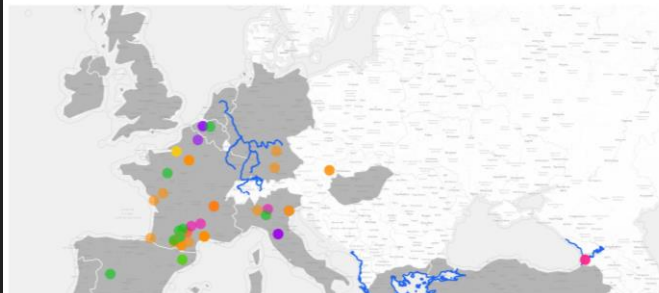


One must first make the branches from wood or take a fantastical thorn branch, then melt a pound of the best possible clear pine resin and add one ounce of finely ground vermilion together with walnut oil, and if you add a little Venice lake the color will be all the more vivid, and stir all together into the resin, molten over a charcoal fire, not over an open flame, lest it catch fire. Then dip in your branches with a swilling motion. And should there remain any filaments, turn the branch over the heat of the charcoal.

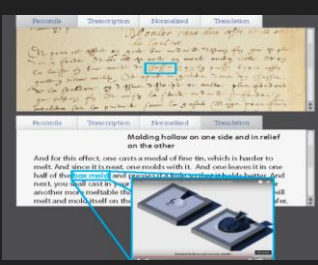
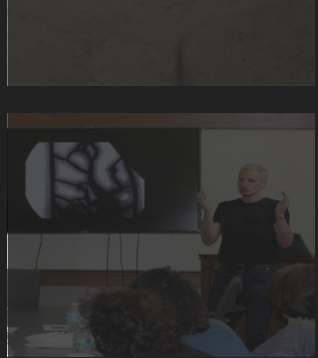
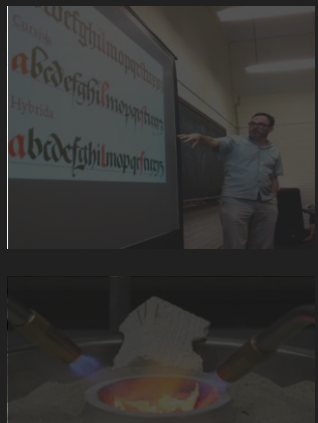
Colophony is nothing other than resin that has been cooled again. To do it well, you take a leaded pot and melt the resin, boiling it over the brazier for a good hour until it appears not thick but clear and liquid like water and it easily runs as a thread off the end of a stick, which you use to crush and test it. Then pour it through a coarse canvas or linnen cloth so that it falls into the strongest vinegar you can find, because the vinegar makes it string and makes it less lumpy. Repeat this two or three times and it will be fine and well purified. To imitate your coral, you can mix a fourth part of mastic with your purified resin so that it move solid and fine, and if you should use just one drop of mastic, it would be all the better, but it would take too long.

The geographic imaginary of a Renaissance artisan's world

Categories of material and technical knowledge in BnF Ms Fr 640



- Cities by category**
- alchemy
 - arms and armor
 - casting
 - metal process
 - glass
 - stones
 - cultivation
 - household
 - medicine
 - optics
 - la boutique
 - list
 - travel
 - painting



Practical Knowledge

- **sensory** tools
- constant **experimenting**

- articulating categories of **material properties**
 - - material properties and **transformation**
 - - **material imaginary** and material **metaphors**

- transformation and imitation
- **imitation as knowledge-making**

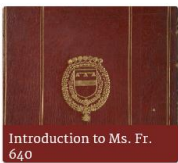
- theorizing natural processes
- **vernacular natural history**
- the relationship between nature and art



- An Introduction
- Art and Its Making
- Knowing Nature
- Society and Culture
- The Making and Knowing Project



An Introduction



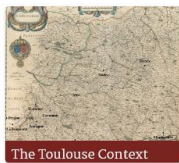
Introduction to Ms. Fr. 640



The Physical Construction of Ms. Fr. 640



Le contexte toulousain



The Toulouse Context



Le Ms. Fr. 640 et la collection Béthune



Ms. Fr. 640 and the Béthune Collection



Making the Edition



Raymond Masse, marchand-orfèvre



Raymond Masse: Merchant-Goldsmith



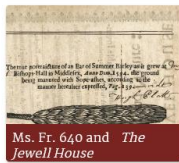
Barthélémy Fraysse and the Author-Practitioner of Ms. Fr. 640



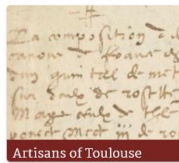
Dominique Bertin et Hélié Bachelier



Dominique Bertin and Hélié Bachelier



Ms. Fr. 640 and *The Jewell House*



Artisans of Toulouse



Toulouse Goldsmithing Manuscript

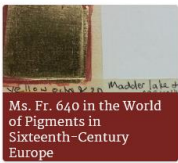


Making Ms. Fr. 640



Collectors and Practitioners of Technical Knowledge

Art and Its Making



Ms. Fr. 640 in the World of Pigments in Sixteenth-Century Europe



Corps in Ms. Fr. 640



Making It Fake or Keeping It Real



Knowledge Exchange and Skill Building in the Artisan's Workshop



Creating Original Patterns for Casting in Ms. Fr. 640



Casting in Frames



Molding Hollow on One Side and in Relief on the Other



Molding Grasshoppers



Embodied experience in artisanal knowledge: **sensory tools**



No quantities; only consistencies

Emogene Cataldo and Julianna van Visco, elm root and wine binder,
the proper consistency of molding sand, fol. 118v

Embodied experience: **sensory tools** – consistency descriptions

1/8 cup ground mustard seeds



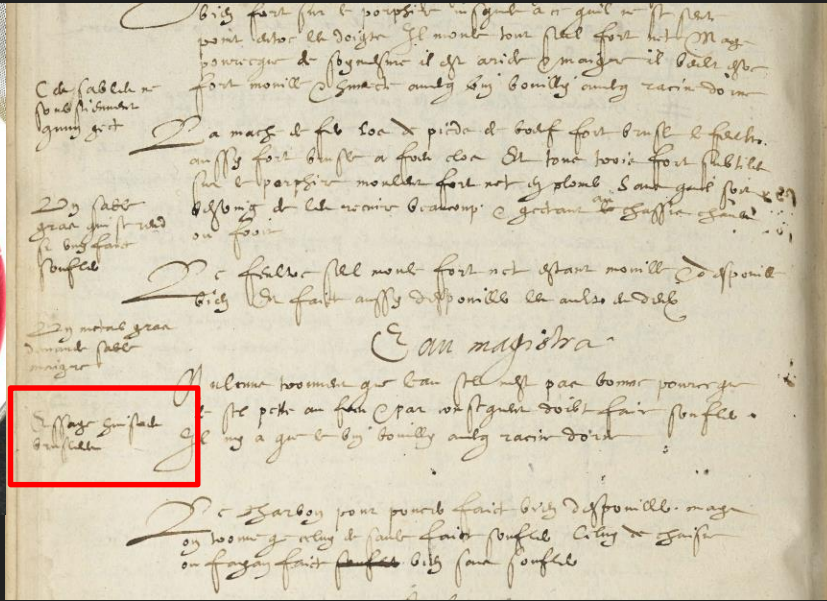
Monday, 1/16 cup ground mustard seeds



“...then apply a thick coat (as thick as mustard or a little bit thicker) over the medal...”
fol. 89v (photos from trials of *Excellente moustarde*, fol. 48v, Diana Mellon)

Artisanal knowledge: unceasing experimentation

Elm root and red wine binder
E. Cataldo, J. van Visco



“try burnt oysters”



**Imitating material gold with yellow pigments
Couleur d'or sans or sur l'argent (the color of gold
without gold on silver), fol. 29v**

turmeric-based pigment with various varnishes
(turpentine, spike lavender oil varnish), Emilie Foyer



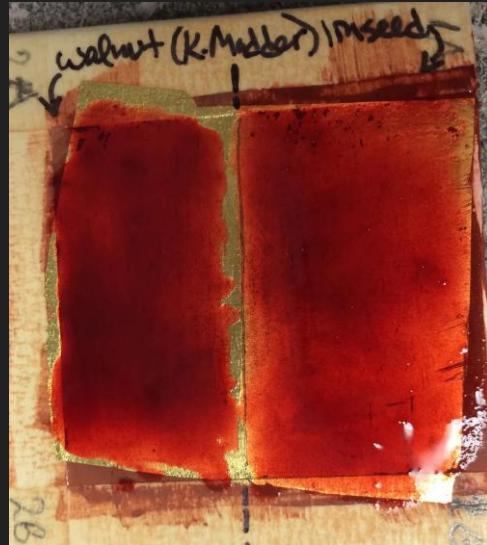
Artisanal knowledge:
imitating expensive materials in cheaper media

Vernis pour destrempe
T. Soley

Rouge claire
Y. Shi, A. Chang



Marbling by layering distemper,
wine-lake, and “cold” varnish



oil-based (left) and resin-based (right)
imitation of the costly vitreous material,
rouge claire



From ground quartz, red lead, potash, and copper
into emeralds

Pierreries, fols. 100r-v, *Esmeraulde*
Kathryn Kremnitzer and Siddhartha Shah





Coral contrefaict, fol. 3r, Making and Knowing Project, 2014

Artisanal knowledge:
imitating ephemeral life

Lifecast rose
G. Chiostrini, J. Palframan
Lifecast beetle
S. Fu and Z. Zhang



Lifecasting organic materials

Preserving lifelikeness

Keeping flowers
C. Sellar

Drying animals
D. Anantharaman & M&K Team



The relationship between nature and art

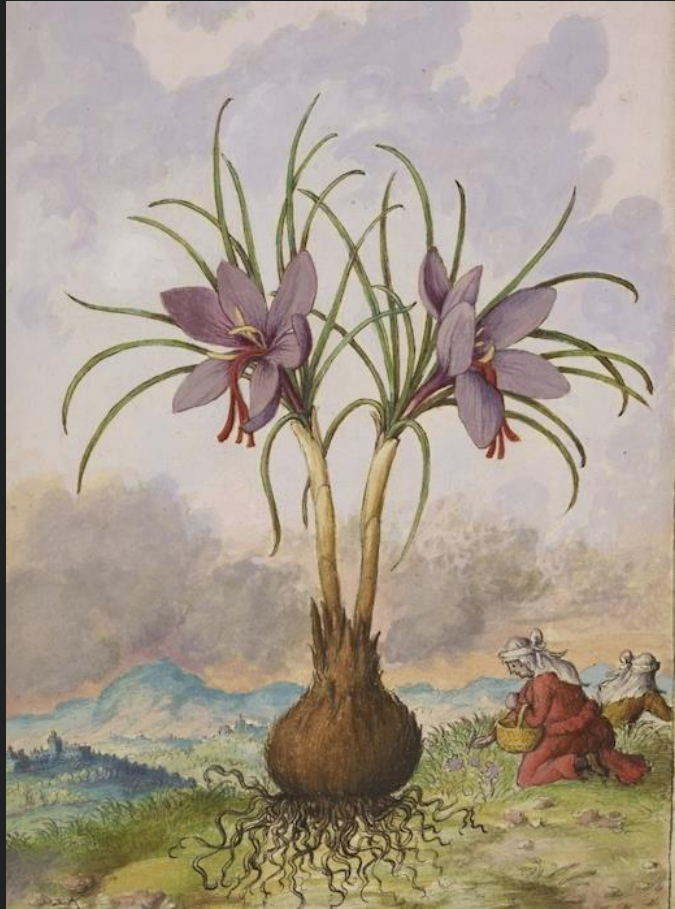
Fol. 130r: "Animals dried in an oven"

"...One can add a painted tongue, or horns, or wings or anything you may imagine, same goes for rats or any animal."

Making and Knowing, 2017



Women gathering herbs



Gherardo Cibo (fl. 1564-84),
Illustrations for
Dioscorides, *De re medica*




Rhizotomi (root cutters)

Artisanal knowledge: vernacular natural history

Fol. 113r: arranging a snake on the clay base of the mold in order to cast

le g...
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 h...
 an oironet...
 au comp...
 en pich...




lezardes
 lezardes
 lezardes

Fol. 124v: arranging a lizard in a mold for lifecasting

lezardes
 lezardes
 lezardes

lezardes
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lezardes
 lezardes
 lezardes

Secrets of Craft and Nature in Renaissance France: A Digital Critical Edition and English Translation of BnF Ms. Fr. 640

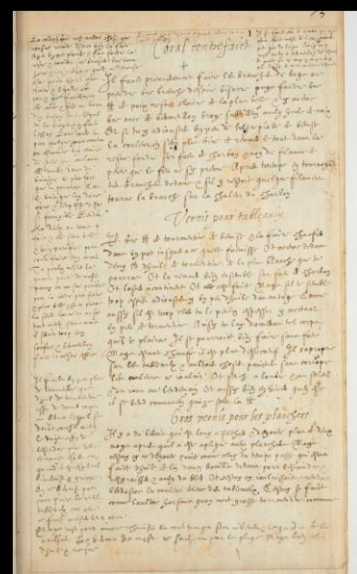
<https://edition640.makingandknowing.org>

The Making and Knowing Project
Secrets of Craft
and Nature
in Renaissance France
A Digital Critical Edition of BnF Ms. Fr. 640

Ms. Fr. 640 is a unique manuscript composed in 1580s Toulouse. It offers firsthand insight into making and materials from a time when artists were scientists.

[Watch Video ▶](#)

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Facsimile

Folio 3r

Coral contraife*

La corallophone nest autre chose que
rouine recule Pour bien la faire
Ayes un pot plombe & fais fondre la
resine & bouillir sur brasier une bonne
heure & jusques a ce quelle ve demonstrate
estre poinct espesse ainsi
claire & liquide comme
eau & que facilement
elle coule & fin au bout
dun baston avec lequel tu la broyes & en fais
lessey Lors coule la
par quelque gros calebais
ou estamine bien claire
de sorte quen coulant
elle tombe dans du
vinagre de sorte fort
que tu pourras Car le vinagre luy donne
force & empesche destre
si frangie Reitere
cette chose ou trois
fois & elle sera belle
& bien purifiee pour
consideree ton coral
Tu peult mesler la
quarte partie de mastic
pansy la rouine purifiee
pour la rendre plus ferme
& plus bele & si tu prenois
la seule lame du mastic
tand meue seroit mas
il seroit trop long

Vernis pour tableaux

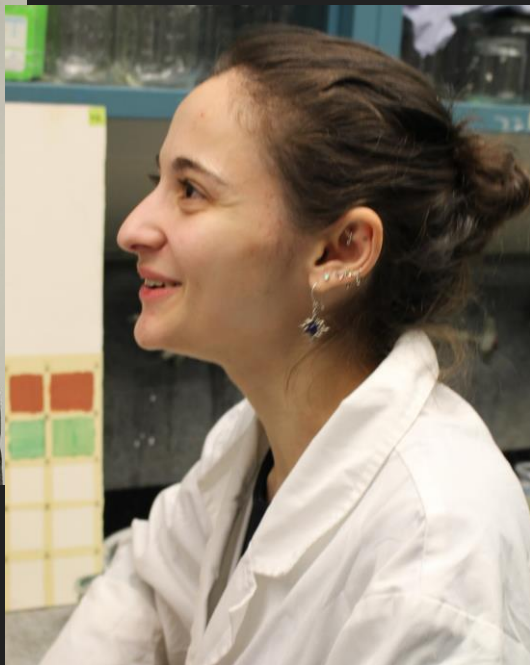
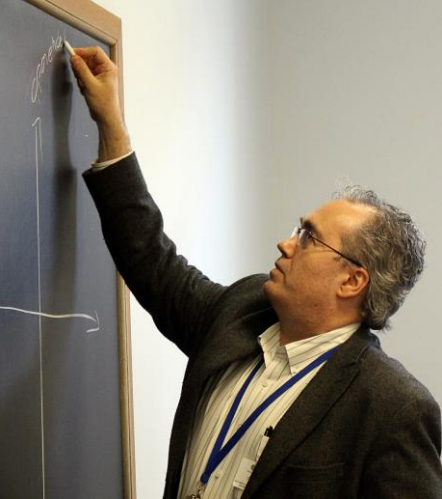
P[re]ndre une lb de tourmentine de venise & la faire chauffer
dans un pot jusques a ce quelle fresse et meure dedans
demy lb dhuile de tourmentine de la plus blanche que tu
pourras Et la remuer bien ensemble sur bois de charbon
Et loder eschauffe Et auec cest fait Maye sil se semble
trop espes adouster un peu dhuile davantage Comme
aussy sil est trop crier le peult espeser y meclant
un peu de tourmentine Arroy la luy donneras ses corps
que tu plaira il se pourroit bien faire sans fous
Maye estant chaude il est plus dessiccat Il saproprie
sur les tableaux & autres choses panches sans contraindre
les couleurs ne jaunir Et sacche a ombre & a soleil
& du jour au lendemain Et aussy bien en hiver quen este
il se vend communement quante sous la lb



Above: Making and Knowing Postdoctoral Scholars Tianna Uchacz (2016-20), Tillmann Taape (2017-20) and Clément Godborge (2019-20); Gerda Henkel Postdoctoral Scholar Sarah Munoz (2019-20)

Below: Making and Knowing Postdoctoral Scholars Jenny Boulboullé (2014-16), Donna Bilak (2014-17), Joel Klein (2014-17), and Sophie Pitman (2017-18); Gerda Henkel Postdoctoral Scholar Colin Debuiche (2017-19)





Left to right: Terry Catapano (Digital Lead), Naomi Rosenkranz (Assistant Director), Marc Smith (Paleography Lead), and Caroline Surman (Project Assistant)

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- Naomi Rosenkranz CC '15, Project Manager; Terry Catapano, Digital Lead.
- 2015 Moldmaking and Metalworking, 2016 Colormaking, 2017 Practical Knowledge, 2018 Ephemeral Art, 2019 Print, Impression, Inscription Working Group Meeting participants.
- Expert Makers and collaborators Tonny Beentjes, Ubaldo Vitali, Andrew Lacey, Sian Lewis, Marjolijn Bol, Erma Hermens, Ad Stijnman. Tamar Davidowitz, Ellen van Bork, and the students of the UvA MA courses, 2009-11 & 2014-16; students of the V&A/RCA History of Design Program 2014-17; RISD Glass Dept & Rachel Berwick; Alexis Hagadorn & staff of Conservation Lab, CU
- Assistants Claire Sabel CC '13, Miriam Pensack CC '13, Jef Palframan, Caroline Surman CC '15
- Collaborators: George Cloyed, Master Silversmith, Colonial Williamsburg; Joosje van Bennekom and Sara Creange, Metals Conservation; and Robert van Langh, Rijksmuseum, Amsterdam; Michèle Bimbenet-Privat, Conservation, Louvre, Paris; Pascal Julien, Art History, Univ. Toulouse.
- Numerous staff of museums: Metropolitan, NYC; V&A, London; Kunsthistorisches Museum, Vienna; Germanisches Nationalmuseum, Nuremberg; Bayerisches Nationalmuseum, Munich; Historisches Museum, Basel; Rijksmuseum, Amsterdam; Kunstgewerbemuseum, Berlin; British Museum, London; Munich Residenz Schatzkammer; Louvre, Paris; National Gallery, Washington, DC.; Dubrovnik Cathedral Treasury; Cleveland Museum of Art; Musée de la Renaissance, Ecoen; Musée des Augustins, Toulouse.
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- And many others...

Secrets of Craft and Nature in Renaissance France,
<https://edition640.makingandknowing.org>

Sandbox

<https://github.com/cu-mkp/sandbox>

