

In an Ancient Workshop, Discovering Modern Ideas

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Walk into the basement of Columbia's Chandler Hall, and you enter sixteenth-century Europe: leather-clad artisans are melting tin in an iron crucible, boiling elm roots in red wine, and coating roses, dead insects, and taxidermied lizards with butter and wheat oil. After a few hours of work, they will have created exquisitely detailed pewter replicas of the flora and fauna — gifts suitable for any aristocrat.

These craftspeople, graduate students working on Columbia's Making and Knowing Project, are members of a multidisciplinary research team that hopes to gain insights into the mindset of Renaissance craftsmen by reproducing their wares. Led by history professor Pamela Smith, the project is focused on replicating the works of an anonymous Frenchman who, in the last decades of the sixteenth century, obsessively jotted down everything he learned about making pigments, varnishes, colored metals, coins, jewelry, knives, guns, and decorative objects. His 340-page notebook, which is preserved in the Bibliothèque nationale de France and known by its catalog name, BnF Ms. Fr. 640, is one of the most comprehensive accounts of craftsmanship from the era. Until now, though, no modern academics have ever attempted to follow its recipes.

"It's only in the past couple of decades that scholars have come to regard craft-making as a knowledge system that is worthy of serious investigation, rather than as a collection of rote techniques," says Smith, whose team is also producing the first English translation of BnF Ms. Fr. 640.

One reason historians have begun to take an interest, Smith says, is that their study of early-Renaissance European society has taught them that artisans in the period enjoyed a bump in social status as a result of their increased economic importance.

"In addition to producing art objects that collectors were eager to acquire, craftspeople were manufacturing weapons, tools, and other metal items that

everybody needed,” says Smith. “This gave them power.”

By the sixteenth century, artisans had acquired so much prestige that philosophers and other intellectuals began to study the craftsmen’s work to try to figure out how they were honing their techniques. What they witnessed in the craftsmen’s workshops, Smith says, was a revelation: tireless trial-and-error experimentation, as the same procedures were repeated over and over with slight variations each time, with the results documented in notebooks.

“Basically, this was the birth of the modern scientific process,” she says. “Inspired by what they saw in the workshops, the great natural philosophy and medical societies of Europe would, by the mid-seventeenth century, embrace laboratory experimentation as the basis for accumulating new knowledge about the physical world.”

Over the past three semesters, students enrolled in a graduate course that Smith is teaching in conjunction with the Making and Knowing Project have reproduced about fifty recipes from BnF Ms. Fr. 640.

“There are certain things you can’t learn about this craftsman and his social milieu without getting your hands dirty,” says Smith. “How long did it take him to acquire the skill to cast a rose in metal? Did he document his techniques so clearly that other people might copy them easily? How did he experience and understand the hardening of plaster and the behavior of metal flowing in the molds? These are the types of mysteries we want to solve.”

A recipe for life casting

1. Graduate students are recreating recipes from a sixteenth-century artisan's handwritten notebook.

Monter une rose 153

du rosier
 Courez le brang-ble qui sont au part ailleurs et
 la faire pour que que soit fort de la tige et pour
 by trop grand mont Oyle fait a part Et la rose
 C qui est de bouton a part Et puz a oy raport
 aultz pouldur de brang-ble foelle de rosier a la
 guhe de la rose a laquelle oy laiffre de puz de
 petite bonte de brang-ble Mode la foelle de rose
 le plus bar que tu pouras d'ore le mont pour ce fait
 la creche souffrir Tu y peult aussi monter plus s'ura
 foelle de puz de essant de puz de l'ur sur l'autre le
 distingant aultz le foelle ^{no dit de} Et pour le regard
 de la rose le plus de mont by leger d'ore de bierre fonde
 au dor de la foelle ^{avec puz de foelle de rose a celle de d'ore} C qui est de puz de
 puz de ^{assez que le fait de puz de rose de la tige et de la guhe} En la plus de mont aussi de foelle de
 de rosier foelle et semblable qui sont plain
 C qui est plain aplaie sans le gaste a d'ore gote
 pour omir by mont quand il est irant Et nothoye
 de la creche ^{Tout de faire de de souffrir et}
 plus s'ura gote Et est by est le plus facile
 C a la creche se peult faire aussi Et aultz de petite
 f'ore de air a d'ore creche de foelle a foelle
 le plus f'ore de gote Mesme le plus faire
 de puz la puz de foelle de puz de by filoy de air
 qui est raporta au grot Tout est facile le grot
 aultz le principal est de laiffre by foelle de
 mont irant plus que le nothoye et souffre d'ore
 pour faire sortir la air pour ce quand le mont se
 fait la creche se hant de attache Mais quand il
 est foelle de puz de et fort aultz le bier ou quand
 on veut laisser a by par le petit puz
 Monle la rose de by plus que la nothoye an
 le creche de d'ore puz de puz de le grot de air
 de quand tu aurat gote by fait de d'ore puz de
 insant a ce que tu aurat a faire puz de la rose de
 by bier Mais pour ce le fait se f'ore de puz de
 foelle de air long temps de simple by omir dans ce est qui
 le puz de dans la tige de air

En plus de by
 de mont by puz
 de puz de au
 bont de h'ge
 qui sont plain
 de foelle de
 aignat by de by
 par de d'ore de
 bierre fonde
 pour ce de
 foelle de puz
 grand de puz
 de la h'ge
 de puz de
 d'ore n'aurat
 par aultz de
 f'ore
 se f'ore de d'ore
 de mont la
 rose de by
 by puz de gote
 puz de by bont
 C puz de raport
 en plus long
 de l'oy estant
 pour ce de la
 rose de puz
 de grand de l'ur
 C puz de



2. A rose is coated with butter so that its petals retain their shape when cast in plaster.



3. Clay walls are built around the rose, and a mixture of plaster, ground bricks, water, and ammonium chloride is poured inside.



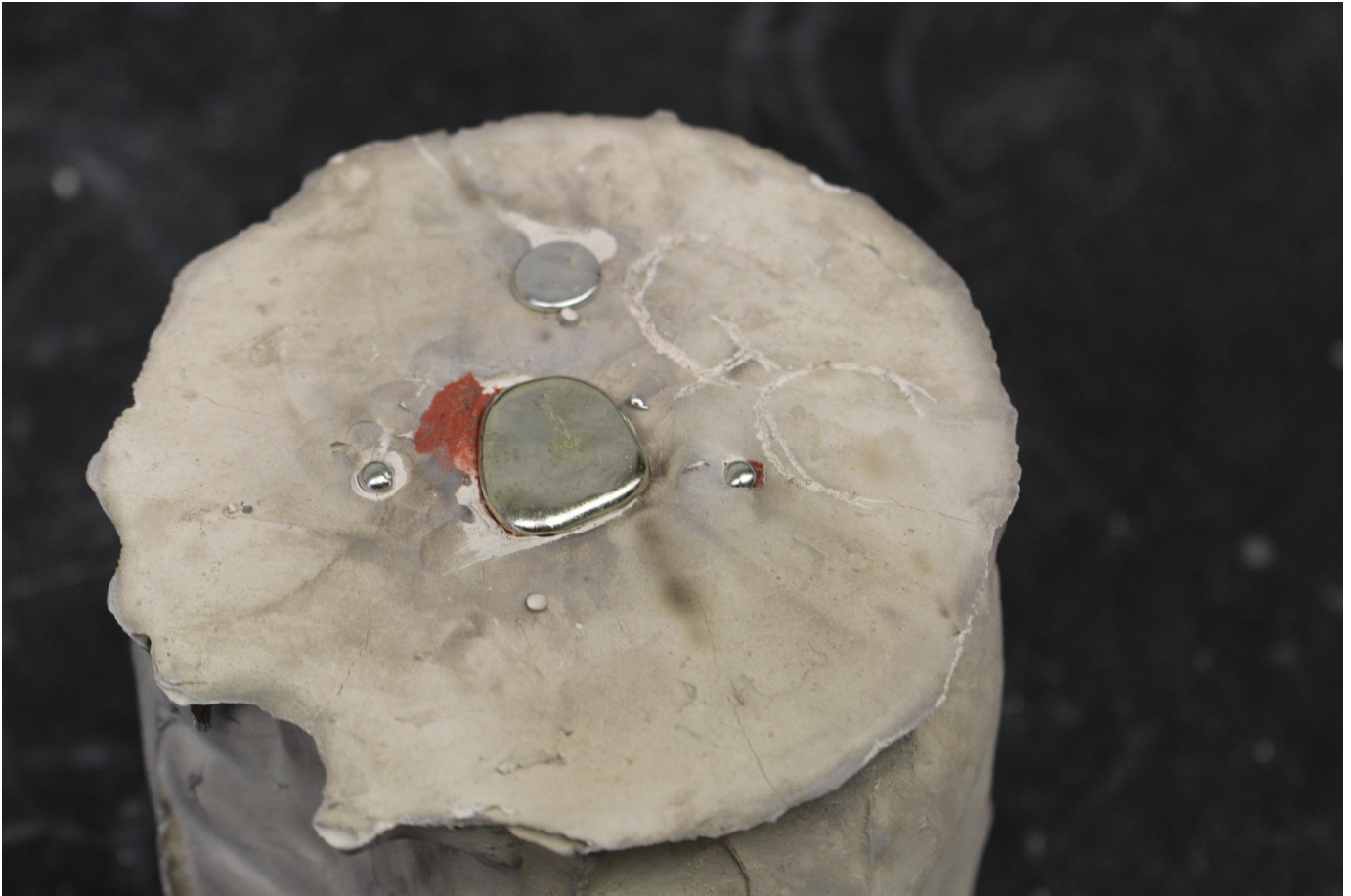
4. The basin is heated in a kiln. The rose turns to ash but leaves its impression in plaster.



5. Tin and lead are melted to form pewter, an alloy whose malleability made it popular among Renaissance craftspeople.



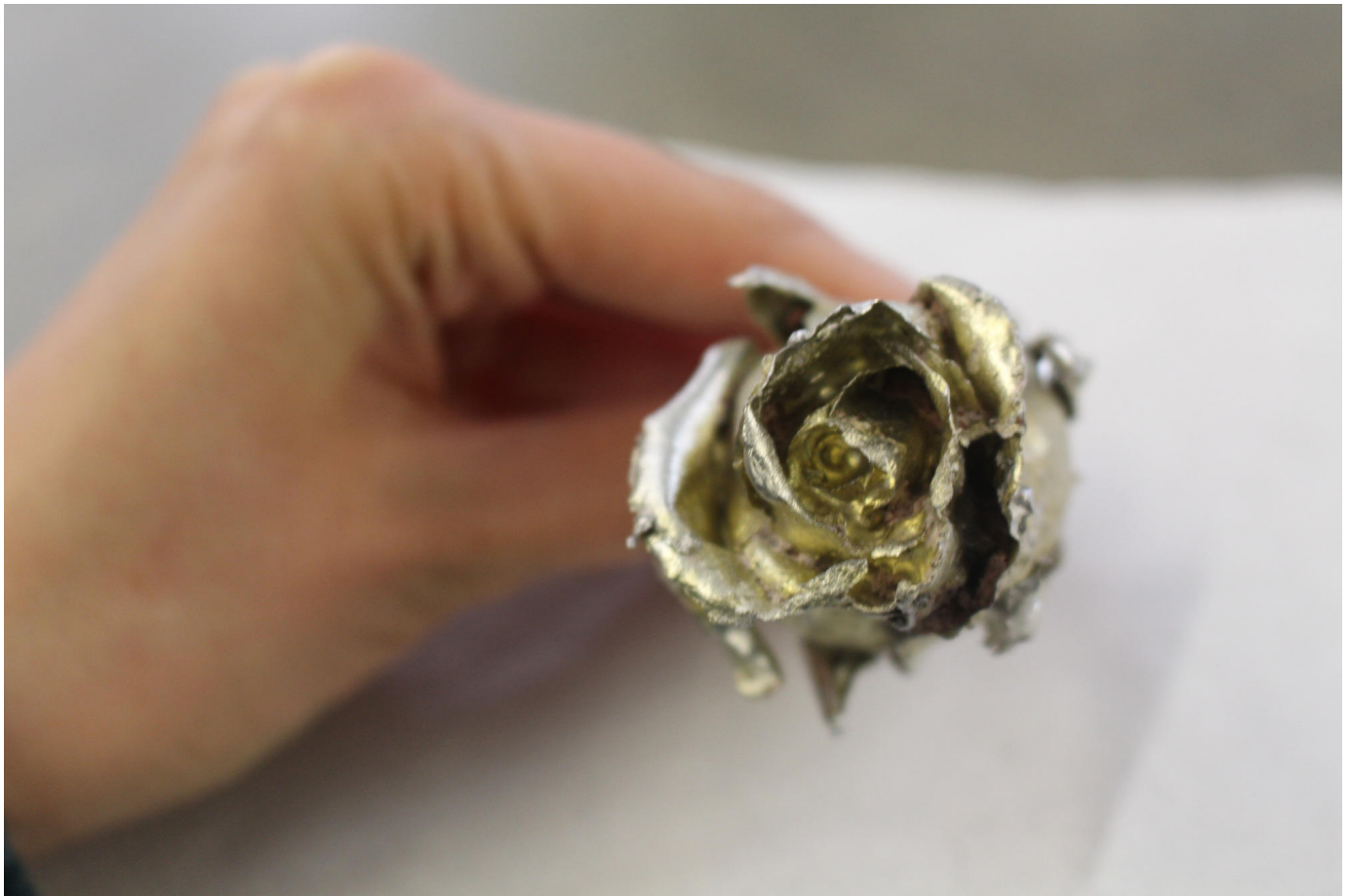
6. The hot pewter is poured into a mold very slowly, so that it fills every crevice.



7. Once the metal cools, the flower is broken out of the plaster, and any rough edges are filed away.



8. "An object like this was viewed as the pinnacle of the craftperson's ability to imitate nature," says historian Pamela Smith.



Photos courtesy of the Making and Knowing Project.



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