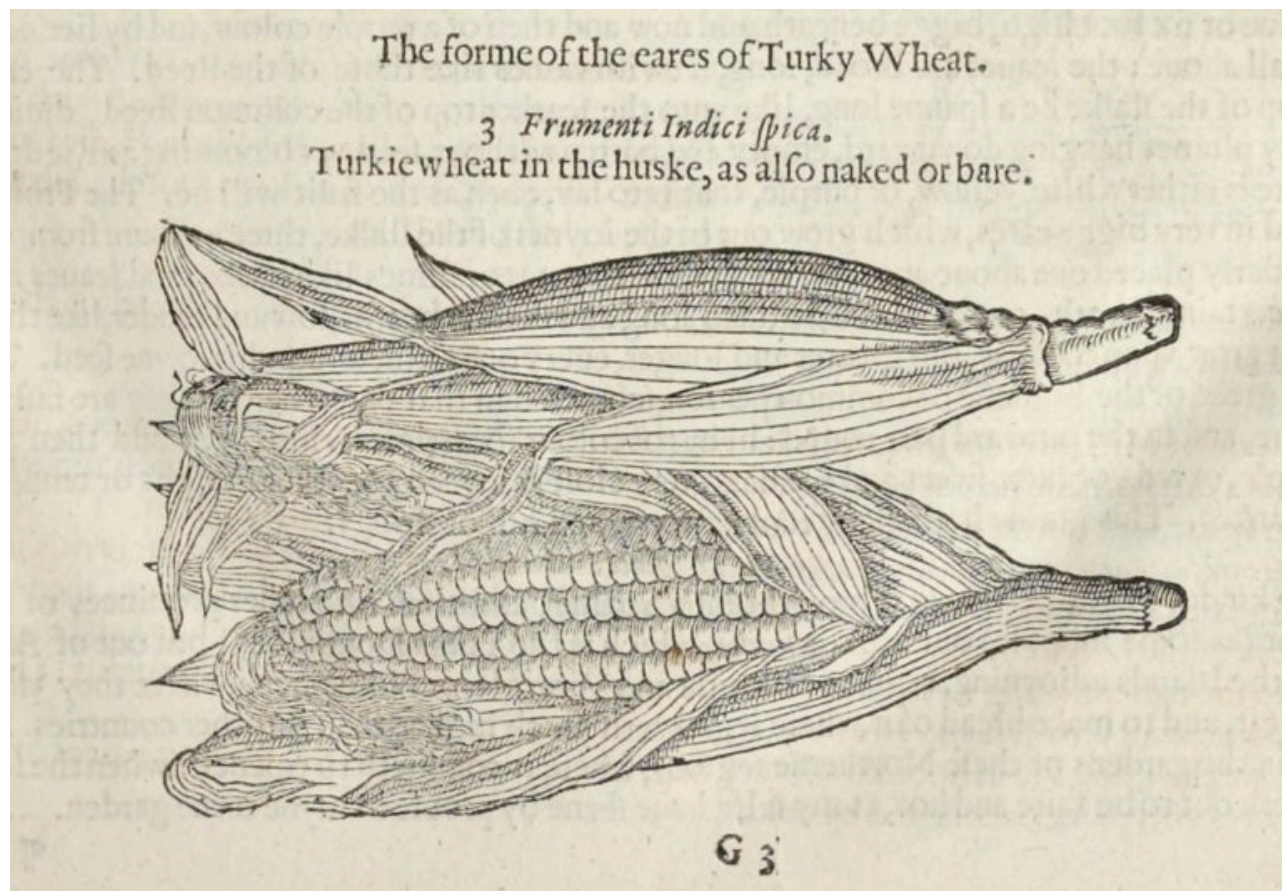


Unpacking Winthrop's Boxes



A physician-projector and the improvement of Connecticut, c. 1670

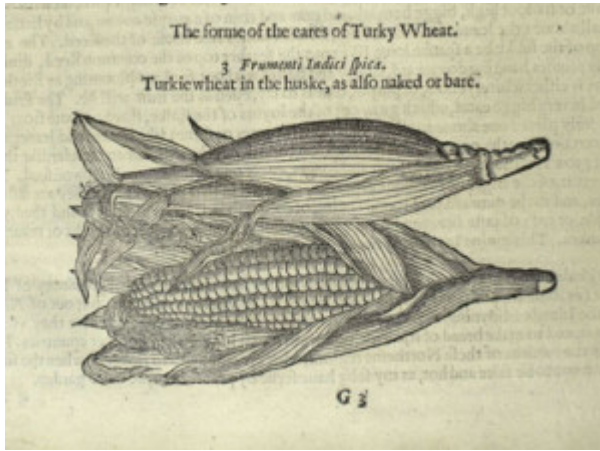
On February 10, 1670, the fellows of the Royal Society assembled at Arundel House for the viewing of experiments. Those present that Thursday evening were "entertained with . . . the View of divers Curiosities of Nature": namely, four boxes of natural history specimens recently received from the society's only fellow in the American colonies, the alchemist, physician, and Connecticut governor John Winthrop Jr.

Like the agents and reagents of a chemical demonstration, Winthrop's specimens illustrated a fundamental transformation as they were unpacked from their crates: not a transformation in their material state, per se, but rather an alteration of the New World environment and the political economy of colonial New England according to Winthrop's careful designs. The tangle-rooted dwarf-oaks and the plump ears of Indian corn represented the before and after of Winthrop's plan to clear the New England forest and establish profitable plantations. The Indian-language Bible and the girdles of Indian currency testified that the natives could be taught to live both as Christians and as producers and consumers participating in the emergent world market. The candlewood and even the boxes themselves, presumably made of New England pine, illustrated the potential for harvesting the raw materials of a shipping

industry from the Connecticut hills—an industry on which the success of England's commercial economy was widely seen to depend. Holding all this and more, the boxes contained a representation of the project that ended in their own creation—a project emblematic of Winthrop's promises for England's success in building a commercial empire on the western shore of the Atlantic.

As the majority of the specimens in the boxes indicate, Winthrop's colonial project rested on the New England Indians' assimilation of European conceptions of the land and its potential. John Eliot's Algonquian Bible and the strings of wampum (complete with an account of exchange rates) represented the bookends of a missionary project that began with the Indians' conversion to Christianity and ended with their full participation in the commercial economy of the English Atlantic world. In pursuing a goal of remaking Indian-held lands into productive farms and manufacturing centers, the English aimed consciously to avoid the brutal conquest that characterized, in their imagination at least, Spanish imperial activity in Central and South America. Their approach was based in part on a different notion of wealth than that motivating the Spanish conquistadors—namely that wealth could be created through human labor and ingenuity and was not limited to what nature provided. While the Spanish may have been able to exploit the natural abundance of their possessions in the tropical zone, New Englanders would have to make something more of the resources their stony lands provided them. As projectors like Winthrop saw it, if their colonies were going to prosper, New Englanders would have to indoctrinate their Native American neighbors into a European program of “improved” agricultural and manufacturing processes, rather than merely exploit their labor to extract valuable commodities.

The missionary project therefore complemented Winthrop's many economic projects, to the point that its religious objective did not alter its potential to profit both the community at large and private investors. In a 1662 letter, Winthrop encouraged the Council on Foreign Plantations to organize the missionary society dedicated to converting the New England Indians, known as the New England Company for the Propagation of the Gospel, as a joint-stock venture. He suggested raising funds through a stock sale in order to establish a plantation on which the Indians would begin to live the sedentary life of English agricultural producers. Their labor would bring them “in a neerer way to service & the knowledge of the Christian religion” and would provide “such necessaries as may make their lives more comfortable as civil people have.” The scheme would benefit both the local English population by opening new markets and England in general by increasing production of “severall commodities very proper to that country.”



From *The Herball or Generall Historie of Plantes*, gathered by John Gerarde of London, Master in Chirurgerie . . . Enlarged and Amended by Thomas Johnson, Citizen and Apothecarve of London (London, 1633). Courtesy of the American Antiquarian Society.

Numerous examples of such commodities and potential materials for manufactures filled the specimen crates examined by the society in 1670. Among the agricultural products were the winter and summer wheat used as packing ballast; "Red Beans and White in two papers"; "Hasle-nuts grown in New England"; "Five Ears of Indian Corne of a special kind, said to ripen a month at least before other kinds." Others—the "Flys like moths, which engender the worms that Spoyle Apple-trees" and the plough-tripping dwarf oaks—focused on potential agricultural hazards. There were potential raw materials for a colonial textile industry: "Shreds of stuffe made by the English Planters, of Cotton Wooll: put up to shew the Colour, which is onely died with the bark of a kind of Walnut-tree, called by the Planters the Butternut-tree" and "A Branch of a Tree, call'd the Cotton-tree, bearing a kind of Down, which yet is not fit to spin." There were also minerals, among them various salts (which Winthrop hoped to produce on an industrial scale), sands for use in glassmaking, and ores to be refined in the ironworks that Winthrop had already established.

Yet of all of the potential commodities included, two were most illustrative of Winthrop's design: namely, candlewood and corn.

For Winthrop the ultimate end of improving agriculture and manufactures was increasing trade. In order to pursue trade, the English in the era of Charles II's restoration were in desperate need of ships. The candlewood in the specimen crates represented a solution to the problem that could be found in New England's uncountable acres of pitch pine. Candlewood was another name for pitch pine, from which one could produce turpentine, the raw material for pitch and tar. Applied to boards of New England oak, these could build a merchant fleet to ferry commodities in pinewood crates, as well as a navy to protect it. Without access to such products, England's future in the lucrative North Atlantic trade was in danger.

A timber crisis provoked by the disruption of the Baltic trade was still plaguing England at the end of the 1660s and therefore became a significant

concern for the Royal Society. On March 1, 1669, Henry Oldenburg, the society's corresponding secretary, asked Winthrop for "a true account of ye qualitys of yr Timber, and the progresse of yr building of ships," explaining, "Great is the outcry here for the late waste of Timber . . . a noyse loud enough to turn our faces and seek Timber else-where, even whilst we enjoy peace." The crisis, precipitated by the pillaging of royal forests during the Interregnum, had prompted much discussion. John Evelyn's *Sylva* of 1664, the first book published under the society's imprimatur, was born in response to a series of inquiries addressed to the society by the commissioners of the Navy. Incorporated into the text were comments on pitch pine that Winthrop had presented the society in the early 1660s. In his paper to the society, Winthrop had explained that knots formed where the pitch pine's limbs met its trunk, and from these turpentine could be extracted. Such knots, often all that remained of generations of fallen trees in fields burned clear by the Indians, were "provided without any labour but the gathering together." By properly exploiting what lay there for the taking, the realm would no longer have to depend on Scandinavian imports to maintain its navy. Should an influx of migrants arrive to jump-start the industry or the Indians be instructed in the process, Winthrop's colony specifically stood to gain; as he explained, "there are of those pines in severall parts of New England, but the most Tarr is made about Connecticutt."

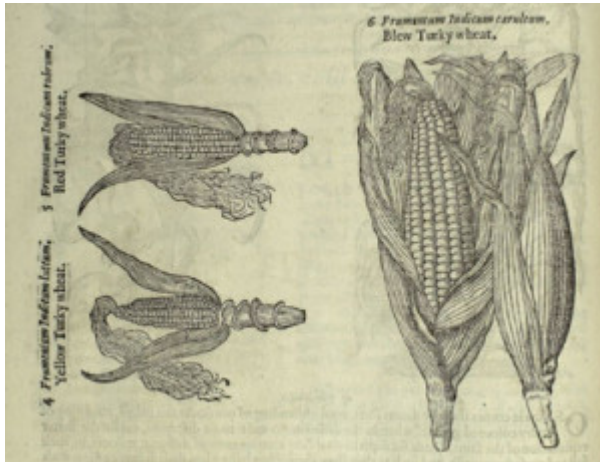
As Winthrop detailed in another paper to the society, New England possessed not only the requisite timber resources but also sawmills on navigable rivers and skilled tradesmen knowledgeable in the various processes of shipbuilding. He envisioned a complete process whereby a ship built in New England from indigenous materials "may be presently fraughted with Planks, Boards, Knee-timber, or other Timber, and Prunnells, or with excellent masts; all which will be of good use, for supply of building ships" in England. Such vessels might just as well ship home the mineral and agricultural products produced by both European settlers and converted Indians through the schemes Winthrop proposed. Realizing the potential of the New England forests would not only bring settlers to his colony but also establish it as a key node on the Atlantic trading network, a New World locus of agricultural production, shipbuilding, manufacture, and trade.

Among the products that could be shipped in this way, in addition to iron manufactures, salt, glass, and textile fibres, was that uniquely American commodity, corn. Winthrop had personally delivered a discourse on maize at a meeting of the Royal Society in December 1662. He cataloged the virtues of the American corn as food and later focused on its medicinal properties, taking issue with the herbalist John Gerard who doubted the healthfulness of the grain. The paper detailed an exchange of agricultural knowledge between the Indians and the English, stressing in the end the superiority of English practices. He explained that the Indians cultivated it in rows heaped up by hoeing, "[b]ut the English have found an Easier way of raising Quantity of that Corne by the helpe of the Plough." The Indians, according to Winthrop, had taught the English how to increase their yield "many times more than double" by fertilizing the ground with fish carcasses; in turn the English taught them how

to fertilize with "the Dung of their Cattle, well Rotted." The account ended with a detailed description of the ways in which the English improved the preparation of the grain into food, making not only porridge as Indians did but also bread and that most English of foodstuffs, beer, the brewing of which Winthrop demonstrated for the society the following March.

Moreover, according to Winthrop, the Indians' exposure both to English agricultural and culinary practices and to the Anglican faith would ultimately be mutually reinforcing, as the Indians would take English imperium over nature to be a sign of the superiority of Christianity and its attendant natural philosophy. Henry Oldenburg predicted to Winthrop that "the savage Indians themselves, when they shall see the Christians addicted, as to piety and vertue, so to all sortes of ingenuities, pleasing Experiments, usefull Inventions and Practices, will thereby insensibly and ye more cherefully subject themselves to ym." Robert Boyle likewise gave an example that this process was already working in his 1670 essay *Cosmicall Suspitions*. Citing the commonplace notion that English farming practices were altering the unnaturally harsh New England climate for the better, Boyle recalled the testimony of William Wood that such changes have led "the Heathen natives" to accept that "the English-mans God . . . is a good God that sends them so many good things, so much good Corn, so many good Cattell, temperate rains, fair seasons, which they likewise are the better for since the arrivall of the English: the Times and seasons being much altered" for the better. As in Winthrop's proposal, material satisfaction realized through the application of natural philosophy reinforced Indians' spiritual conversion.

As the Indians' labors began to bear fruit through the systems Winthrop envisioned, the profits they generated would first go to repay the initial investors, with interest. Thereafter, Winthrop explained, the native populations would pose no further financial burden on the company or the crown, and "the maintenance of the chief business of the corporation thereby out of their owne labor [would] be raised without any charge to the people of England." The civilizing process, once begun, would be self-perpetuating: the Indians would finance their own conversion to a productive, Christian lifestyle, and the realm would enjoy the ancillary market benefits without bearing any of the cost. Much like Winthrop's schemes for the extraction and refining of minerals, his plan for the conversion of the Indians was a classic example of what his contemporaries would have called a "project": it would improve the fortunes of the Indians themselves and in turn benefit both the commonweal as a whole and those investors whose private capital got the scheme running in the first place.



From *The Herball or Generall Historie of Plantes*, gathered by John Gerarde of London, Master in Chirurgery . . . Enlarged and Amended by Thomas Johnson, Citizen and Apothecarve of London (London, 1633). Courtesy of the American Antiquarian Society.

Gaining official sanction for these missionary-industrial schemes required deft political maneuvering on the part of the colonies' leaders, and many of the commodities in Winthrop's boxes speak to this aspect of the endeavor as well. Winthrop's scientific activities proved beneficial in politics, providing him an entree into the highest echelons of government in England. Among the ruling classes in restoration England, corporate affiliations often overlapped. Thus was the New England Company for the Propagation of the Gospel headed by the eminent fellow of the Royal Society, Robert Boyle, who was also an active member of the Council on Foreign Plantations. In North America, the New England Company's finances were controlled by the Commissioners of the United Colonies of New England, who counted among their ranks Winthrop himself. For figures such as Winthrop and Boyle, science and empire were of a piece. In addition to benefiting from scientific exchanges with Boyle, Winthrop relied on the favor of administrators like Boyle in his pursuit of a new charter for Connecticut following the Restoration. Similarly, Boyle, in his capacity as an agent of the crown, relied on a governor like Winthrop to endorse the new system of imperial governance. Through it all, natural philosophy helped secure the bonds of imperial patronage. Boyle, for instance, wrote Winthrop on December 19, 1661, to arrange a meeting to discuss both "the Affaires & Rarity's of Your Contrey," linking the subjects as one and the same. Again on December 28, he wrote to inform Winthrop that the Lord Chancellor would see him the next day, adding, "If you thinke fit to bring along with You any of Your Mineralls You & I may chance to have some opportunity to discourse of them betwixt ourselves."

The relationship between scientific exchange and imperial politics is reflected in the seemingly most "rare" and "novel" specimens in the crates sent to London in 1670—the "two pretty big shells," the "curiously wrought" fish, and others. These and similar items represented the foundations on which the entire colonial project rested, serving as the sorts of gifts that would elicit the pleasure of both the Royal Society's and the Connecticut Colony's patron, King Charles II. Even those objects whose use-value was highlighted in other

contexts were redefined for presentation at court, where rarity and curiosity were the more important determinants of value. The dwarf oaks were noted for their dwarfed state, not simply for their potential as agricultural hazards or mineral indicators. The candlewood knots infused with turpentine became an aromatic treasure: "ye gummy fragrant bark with knobs." The wampum became not a foreign currency but "ye bagges with litle shells in them." The extraordinary fish, in the end, proved the chief attraction, as the king viewed all the objects "wth no common satisfaction, expressing his desire in partictular, to have yet Stellar fish engraven and printed." The king's interest guaranteed that this "curiously contrived fish" received conspicuous placement in the society's *Philosophical Transactions*.

Of all the natural specimens in Winthrop's boxes, however, the "pods of silk grass" underwent perhaps the most conspicuous transformation from a potential commodity into the currency of courtly patronage. In a letter of March 26, 1670, thanking Winthrop for his contribution, Oldenburg added in a postscript: "Sr. R. Moray . . . tells me, yt his Majty would be well pleased, if you sent over such a quantity of yr silkpods, as would make him a pillow." It had long been recognized that silk-grass, despite initially promising reports, could not be spun into a durable fiber for cloth production. A note was made upon receipt of the boxes, however, that "it is used by some to put into cushens or pillows," redefining the fiber as a potential material for luxury manufactures, rather than a basic commodity. Providing the necessary pods would be wise, Oldenburg advised Winthrop: "It may occasion his Majty to think on you"—and by implication the colony and the myriad projects invested in it—"as often he lays his head on such a pillow." The pillow would therefore stand as proxy for the colonial project, always near to the king's kind thoughts.

In their evocation of his imperial-scientific goals, Winthrop's specimens conjured up an image of the man himself, whose combined attributes as a physician, projector, and magistrate positioned him as the ideal leader of the colonization program he proposed. His extensive medical experience made him an expert on technical matters, especially those relating to the generation and transformation of the elemental minerals—iron, mercury, lead, niter, salt—which formed the basis of both his alchemical pharmacology and his plans for establishing New England industries. His access both to the latest science and to large stores of capital made plausible the application of his expertise on an industrial scale in projects like the mining and refining of iron, the extraction of salt from seawater, and the transformation of Connecticut black lead (or graphite) into silver. As the scion of a merchant family he commanded the social and economic resources necessary to bring such commodities to the world market. And as the political leader of Connecticut's diverse population of Europeans and Native Americans, he was nominally in a position of sufficient authority to organize the meaningful participation of the wider community in his schemes. More than a mere collection of rarities meant to adorn a cabinet of curiosity, the specimens in Winthrop's boxes represented a schematic outline for the scientific improvement of the New World environment—a project specifically designed around Winthrop's particular attributes as a technical

expert and an administrator of men and information. The participation of the Royal Society in this exchange helped reinforce its own identity as not simply a princely academy devoted to knowledge production but also as a clearinghouse for the economic information that would bring the imperial designs of fellows like Winthrop to fruition. Among Winthrop's associates were other physician-entrepreneurs who aspired to, and in some cases achieved, positions in the English imperial administration. These included William Petty, Benjamin Worsely, and the philosopher John Locke.

Objects such as the specimens that Winthrop sent to the Royal Society make evident that we still have much to learn about the role of natural philosophers (and physicians especially) in shaping the political economy of the English Empire in the seventeenth century. As a group, these men promoted a vision of industrial development for England's possessions in the North Atlantic region that never successfully took hold. A full analysis of why this was cannot be sufficiently undertaken here. No doubt the brutal war between New England's English and Indian inhabitants, which broke out within months of Winthrop's death in 1676, contributed to the demise of his particular design. After the war, the two groups would never achieve the productive coexistence Winthrop had envisioned. Even before the war shattered Anglo-Indian relations, the friction of cultural contact was certainly significant; Native Americans' own long-established political and economic systems were undoubtedly not the unformed, easily manipulated state-of-nature systems that Winthrop and so many others assumed them to be. New England's mineral industries likewise never proved as profitable as Winthrop believed they would, and in the eighteenth century, Britain's empire builders turned their attention to the sugar colonies of the Caribbean and the tobacco colonies of the Chesapeake, where slave labor produced staples for export and an altogether different political economy prevailed. Yet for a time, however briefly, Winthrop and his project had represented the greatest hopes of both Englands, old and new.

Further Reading:

The classic accounts of Winthrop's life remain the relevant chapters of Richard Dunn's study of the Winthrop family, *Puritans and Yankees: The Winthrop Dynasty of New England, 1630-1717* (New York, 1962) and Robert Black's biography, *The Younger Jon Winthrop* (New York, 1966). Winthrop's industrial schemes are the focus of a biographical sketch in Samuel Eliot Morison's *Builders of the Bay Colony* (Boston, 1930), and the Winthrop family's relationship to the North Atlantic merchant community is examined in Bernard Bailyn, *The New England Merchants in the Seventeenth Century* (Cambridge, Mass., 1955). Winthrop's medicine and alchemy have been the subject of numerous articles by Ronald Sterne Wilkinson, including "'Hermes Christianus': John Winthrop, Jr., and Chemical Medicine in Colonial New England," in Allen G. Debus, ed., *Science, Medicine, and Society in the Renaissance: Essays to Honor Walter Pagel* (London, 1972). The link between medicine and alchemy in this period is analyzed at length in William R. Newman's study of the New England alchemist George

Starkey, *Gehennical Fire: The Lives of George Starkey, an American Alchemist in the Scientific Revolution* (Cambridge, Mass., 1994). Winthrop's collaboration with female medical practitioners has been examined by Rebecca Tannenbaum in "'What is Best to be Done for These Fevers': Elizabeth Davenport's Medical Practice in New Haven Colony," *New England Quarterly* 70 (1997). Margaret Newell has analyzed the relationship between economic projects of Winthrop's collaborator Robert Child and his political economy in "Robert Child and the Entrepreneurial Vision: Economy and Ideology in Early New England," *New England Quarterly* 68 (1995). Among the most recent studies of Winthrop's science and its relation to his politics, which offers something of a different interpretation of the shipment of specimens considered here, is Walter W. Woodward's "Prospero's America: John Winthrop, Jr., Alchemy, and the Creation of New England Culture (1606-1676)" (Ph.D. diss., University of Connecticut, 2001).

Joan Thirsk's *Economic Policy and Projects* (Oxford, 1978) remains the standard work on English projectors in the seventeenth century. For institutional histories of the Royal Society and the New England Company for the Propagation of the Gospel, see Michael Hunter, *Establishing the New Science* (Woodbridge, Suffolk, 1989) and William Kellawny, *The New England Company, 1649-1776: Missionary Society to the American Indians* (London, 1961), respectively. For analyses of the social structures governing the behavior of fellows of the Royal Society and their implications for the production of knowledge, see Steven Shapin, *A Social History of Truth* (Chicago, 1994). On controversies over the perceived social implications of the Royal Society's work, see Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life* (Princeton, 1985). On the Royal Society's (and other large corporations') relationship to scientifically minded travelers to the New World, see Daniel Carey, "Compiling Nature's History: Travellers and Travel Narratives in the Early Royal Society," *Annals of Science* 54 (1997) and Steven J. Harris, "Long Distance Corporations, Big Sciences, and the Geography of Knowledge," *Configurations* 6 (1998). On the economics and applications of alchemy in the early modern period, see Tara Nummedal, "Practical Alchemy and Commercial Exchange in the Holy Roman Empire," in Pamela H. Smith and Paula Findlen, eds., *Merchants and Marvels* (New York, 2001) and Pamela H. Smith, *The Business of Alchemy: Science and Culture in the Holy Roman Empire* (Princeton, 1994). On the function of scientific objects as the currency of courtly patronage, see Mario Biagioli, *Galileo, Courtier: The Practice of Science in the Culture of Absolutism* (Chicago, 1993). For the definitive study of the uses of curiosities in early modern scientific thought, see Katharine Park and Lorraine Daston, *Wonders and the Order of Nature, 1150-1750* (New York, 1998). On the war between the English and the Indians that engulfed New England in the late 1670s, see Jill Lepore, *The Name of War: King Philip's War and the Origins of American Identity* (New York, 1998).

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