English Horse-bread, 1590–1800

First therefore you shall understand that the principal food whereupon a running horse is to be fed most, as the very strength and chief substance of his life must be bread, for it is of all other foods most strong, clear, healthful, of best digesting, and bread the best blood.

Gervase Markham, Carolina or the English Horseman, 1617

In the summer of 1645, the Aragonese ambassadors on their way to the court of Henry V purchased horse-bread every day, spending more on horse-bread than on practically anything else. Don Quixote bragged to an innkeeper that his horse was the finest that ever ate bread. Thomas Nugent, writing about pumpernickel in 1768, relied upon his readers' association of horse-bread with travel to introduce the still-repeated absurdity that the name was coined by a Frenchman at an inn who complained that Westphalian black bread was unsuitable for himself, though “ap’d maiston pour Nicolas,” his horse, and the writers of the Oxford English Dictionary, when they published the letter h in the closing years of the nineteenth century, appended to their definition of “horse-bread” the factual statement, “Horse-bread is still in use in many parts of Europe.”

More refined than hay or raw grains, and thus a denser source of calories and protein, horse-breads enabled tired horses to rebound from their exertions. As an early eighteenth-century writer put it, horses “cannot so soon recover with Hay or Grass, as with Horse-breads.” For centuries, in addition to being a feed supplement for tired horses, these breads helped feed the countryside during famines and were eaten by the poor, even in times of plenty. They therefore provide a rare glimpse into the cuisine of English poverty.

In the late sixteenth century Gervase Markham (1568–1637) initiated reforms in the training of hunting and racing horses that made him famous during his lifetime and long afterwards. He was most noted for the refined leavened breads that formed a key part of his training regimen. Markham's elite horse-breads were based on the breads of the affluant, and so, in a sense, separate from their nutritional role in a training program for equine athletes, his leavened horse-breads can be understood as elite breads for elite animals. Markham's era was a period when the English were taking a renewed interest in the bloodlines of their elite horses. The late sixteenth century saw an increased interest in English bloodlines, and these more refined breads were matched with horses whose profiles were becoming increasingly aristocratic.

In our own day Markham is well known among culinary historians for the bread recipes he published in The English Housewife (1615). These recipes stand out in the early English bread literature for their unusual clarity and specificity. The explanation for Markham's evident expertise as an author of bread recipes is simple: by the time he wrote The English Housewife he had had twenty-two years' experience writing bread recipes for an unusually demanding audience—the owners and trainers of expensive horses.

The recipes for elite horse-breads developed by Markham and his followers between 1595 and 1621 provide insights into the birth of modern ideas about nutrition and veterinary medicine. They also provide insights into aspects of the breads served to the English elite that are not found in the regular cookbook literature. For example, the elite horse-bread literature suggests that people who could afford a choice in breads viewed bread as both a food and a medicine and decided what bread should be put on the table, at least in part, by considering the consistency of their stool. During the early modern period the bread literature devoted to horses far exceeded in quantity and nuanced detail the literature devoted to breads for English bibles. It is a literature with a wealth of information for artisan bakers, culinary historians, historians of material culture, and students of manners.

The best general introduction to “common haker’s horse-bread”—the breads fed to horses involved in transportation—is found in material Markham contributed to the 1606 edition of Maison Rustique, a general work on country life.
Home-crests were so important to the smooth functioning of the English system of horse transport that for hundreds of years English law recognized two broad classes of bread — man's bread and horse bread — and regulated the commercial production of each. Commercial horse-crests were regulated as to size, retail price, wholesale price, authorized producer, and, sometimes, composition.  

Common baker's horse-crests were of three types: a bread made of bean or pea flour; one of wheat bran or chisel — what are now called "middlings" — separate or combined, with the addition of flour to bind the dough, and a bread of mixed pulse and grain flour.  

Sieges produce famines in miniature and at an accelerated rate. In 1549 the English city of Exeter was besieged by rebels from Devonshire and Cornwall in rebellion against King Henry vi. Raphael Holinshed reports that as the siege tightened the governors commanded that bread be baked for general distribution — a bread that his readers would have recognized as an exceedingly crude bran-based horse-crest.

And in the mean while, when their corn and meal was consumed, the governors of the cities caused bran and meal to be muddled up in cloth, for otherwise it would not stick together.  

Describing a famine that had occurred in 1557, Holinshed addresses the consequences to the poor of high grain prices:  

In this season victuals were so scant and dear, and wheat and other grains brought so high a price, that the poor people were constrained through famine to eat the flesh of horses, dogs, and other vile beasts. ...  

While, in the case of this famine, Holinshed does not mention the type of breads people ate as they descended into
starvation, we can assume a progression from wheat to less expensive grains, then to horse-breads in various forms, and finally to horse-breads extended by wild foods such as acorns and ferns, before they finally resorted to "breads" made from whatever edible plant product they could scrounge. Seventeenth-century writers suggest that for the rural poor even times of plenty could be times of scarcity, forcing the indigent to rely on breads their more fortunate neighbors recognized as horse-breads.13

The link between poverty and famine is well established and continues to this day, as does the link between poverty and foods of lesser social status. Literary references right up to the seventeenth century reflect the common knowledge that horse-breads were a food of the rural poor and that any one falling into abject poverty would turn to horse-bread as a food of last resort.14

In William Langland's poem "Piers Plowman" (1377-1379), hunger suggests that recalcitrant workers could be made to work if threatened with a diet "of pounds-bread and horse-bread" accompanied with beans to "boil their womch."15 While it is impossible to know which style of horse-bread Langland had in mind, in 1578, when the poem was being written, the City of London issued an edict to bakers mandating that no "horse-bread be made except of pure beans and peas, without mixture of other grains or bean"—a clear indication that Langland could have had any type of horse-bread in mind. One of the two horse-bread recipes Markham published in House Rustique was one of these formerly prescribed breads:

[T]ake two bushels of Bar or Chisnell, and add unto it one bushel of bean or pea meal, and so knead it up with water scalding hot, and after the leaves are molded, to roll them in speltld beans crushed and bruised in a mill, and so make it well.16

Restoration comedies played the idea that when the going got rough, horse-bread was the last food grasped as one descended into hunger and the first food grasped as one escaped its clutches. From the comedy Gunner Gustons Needel (1650-1653), we see the former:

Save this piece of dry horsebread,
Ch' not bit this livelong day; no crumb come in my head,
My guts they yowl,rawl, and all my belly rumbles;
The pudding [intestines] cannot be still, each one over other rumbles.17

And in Jacob and Esau (1688), we see the latter:

In what greevous pain they die, that die for hunger.
O my greedy stomach, how doth bite and gnaw?
If I were at a rack, I could eat hay or stone.
Mine empty guts do feast, my warm doth even teare,
Would God I had a piece of some horsebread here!18

Ben Johnson's Every Man out of His Humor associates horse-bread with a certain strata of sagrant with the insult, "You thread-bare horse-bread eating hacksl. " In Christopher Marlowe's Dr. Faustus, Ralph promises his friend Robin, if he really can procure the kitchen maid for him, to "feed thy devil with horse-bread as long as he lives, of free cost." A period audience, understanding horse-bread as a bread associated with famines, beggars, and field hands, would have seen Ralph's offer as both insanely contemptuous of the devil's status and as a marker of his own.

The relationship between poverty, horse-bread made from bean flour, and social status is explicitly addressed by Thomas Cogan, an influential author of the late sixteenth century. In The Haven of Health (1584), writing about the eating habits of workers at the bottom of the Leicestershire social ladder, he notes that fava beans "are meat for Mowers, as the Proverb is, and for ploughman, but not for students."19

When he mentions that in Leicestershire these people baked beans-flour breads, a method of preparation that further lowered the already low social status of beans, he feels the need to clarify that "I mean not horse-bread (which is commonly done throughout England) but for their family..." Perhaps, he had tasted the bread himself and found it pleasant, for he acknowledges that people who were used to eating this type of bread liked it. While Cogan took beans-bread in stride, he could not abide pea-bread. He notes that this bread, too, is "much used in Leicestershire" but adds that "I leave it to mortises, who have stomachs like Ostriches, that can digest hard iron, and for students I allow no bread but that which is made of wheat..." It is perhaps inevitable that people who eat foods identified with animals will themselves be seen as part animal.

Writing one hundred years later in his weekly newsletter, A Collection of Letters for the Improvement of Husbandry and Trade (1681-1685), John Houghton, one of his era's most inquisitive observers of rural life, notes that when sifting flour the next coarsest product after bran is chisel and that it "makes dry short bread or horse-bread, but is usually mixed with yre...and if leavened, makes good bread for the poorer sort."20 Houghton's bread is described by multiple authors in texts about horses. The following description by Thomas de Grey was published in 1684 and is thus contemporaneous with Houghton's own writing:
Horse bread—being made of bran and chaff for the most part with a little coarse rye meal, to make it stick together, and so made up and kneaded with cold water and after the outside of the Loaves or Rolls are rolled in ground or rather bruised meal—arkham’ be that world—coarse leavened breads with the associations with animal feed is made explicit. The bread isn’t kneaded. It is really nothing more than a baked sour mash. In contrast, Markham’s elite horse-breads shared with the elite breads of his era the use of the best ale yeast as leavening, and even when they included substantial amounts of beam flour, his elite horse-breads were carefully kneaded to develop dough structure.

Markham’s first work on horses, Discourse on Horsemanship (1595), was a manifesto that established him as the intellectual force in the world of English hunting and running horses. While Markham acknowledged having read foreign authors, unlike those of Thomas Blundeville and other sixteenth-century writers his works were explicitly informed by experience and driven by personal opinion. Markham is Markham’s authority.

Until Markham trainers had fed elite horses common baker’s horse-bread as part of their regular feed and specially formulated spiced flat breads as part of a horse’s special training for the hunt or course. These spiced breads were part of an oral tradition shared by farmers, the men who cared for and trained horses, and the trainers of fighting cock. In 1684, Thomas de Grey, a hutoffter from this earlier tradition, claimed that his spice-filled bread would “give [the horse] strength of body, be very helpful to his wind, keep him from fainting in his labor and exercise, be it never so sore.”

Take Wheat meal, Oat meal, and Beans all ground very small, of each one ounce, Aniseeds four ounces, Gentian, and Fennegrack, of each ounce, Licorice two ounces, let all those be finely powdered, and scarfed, and add the whites and yolks of twenty new laid Eggs, well beaten together, and put to the other ingredients, and so much strong Ale as will knead it up, then make your Loaves like to Horse bread, but not too thick, and let them be well baked, but not burned...

Markham categorically rejected the concept that either physical stamina or intangible qualities like courage could be inbred through drugs. He insisted that the only efficacious preparation for the hunt or the course was disciplined physical training paired with a diet to match the horse’s evolving physical condition. Markham placed formulated leavened breads at the center of that diet. Drugs such as aniseed, gentian, and fennegrack were for sick animals,
not healthy ones. As the horse became more fit through exercise, Markham and his followers advised feeding them breads of increasing refinement. Near race day, the bread had minimal fiber content and increased fat content in the form of egg whites, butter, and sometimes milk. In modern terms, as the horses became more fit, the feed supplement became denser with what we think of as "energy" and what Markham thought of as "spirit." As yeast-leavened breads became more common and lighter and increase in fat content, they also increase in social status within a hierarchy that places broiche at the top and unleavened whole grain horse-breads at the bottom.

What makes the elite horse-bread recipes found in the early modern English horse literature so unusual, and so uniquely useful, is that the recipes were presented in the dynamic context of the horse's life as it was being physically prepared for a high-stakes athletic contest. It was assumed that the breads offered were for the purposes of general example and that they would be modified, as needed, to take into account the nature of the actual horse being trained and its progress through the program. The authors of these recipes provided ancillary information so that owners and trainers of expensive animals could make informed decisions as they brought their horses to peak condition. Markham and his followers drew upon nutritional ideas found in the medical literature and then explained to their readers how to apply these ideas so that they could formulate bread recipes and modify bread service to maintain their horses' health and, specifically, good digestion.

Horses are animals with which many people had close physical and emotional relationships. In pre-Darwinian England one could believe that horses were the smartest of the animals and in many senses, including medically, the most closely related to people. The medical remedies for home and human diseases were often interchangeable. When Markham, in Discourse on Horsemanship (1593), prepares the horse to run a match, he gives the horse as its last meal a piece of toast dipped in muscadine wine. The passage calling for this food demonstrates affection and empathy for the horse, feelings that permeate the horse literature. These horsemen thought of their horses as biologically and socially very much like themselves. Nobody who is close to a pet will fail to understand the emotional context in which Markham and his followers developed breads for their horses.

Take a big piece white leaf, and cut the same into haste, and treat them against the fire, then steep them in Muscadine, and lay them between hot cloths, and being laid before the fire, dry them again, and so give them to your horse.

These be so pleasant and comfortable, that your horse's emptiness (for he must be wonderful empty when he goeth to the course) shall little aggrieve him.

This toast is a medicine intended for humans. Cogan prescribes it to "cleeneth the teeth, sharpeneth the fight, digesteth which is indigestible, and reduceth superfluos digestion to a mean." With the exception of teeth cleaning, these were the medical purposes for which Markham recommended the toast as elite horse-breads were modeled on elite human breads and as, in many ways, these horses were thought of as similar to humans, the feeding of horses can shed light on customs surrounding bread in the early modern period. Until recent times the practice of removing the bread's crust by chipping it away with a knife or scraping it off with a rasp was one of the purest class markers. Miss Tox, in Charles Dickens's novel Dombey and Son, signifies that she is associated with the upper crust—or at least wants you to think she is—by eating breakfast rolls from which the crust had been removed. For students of manners, the most direct, if poignant, explanation of chipped bread is the one published in the first English edition of Maison Rustique (1600).

The crust of bread notwithstandeth it be of better taste and shock than the crumbs, and that the common people do think that it maketh a stronger body, yet it engendereth a colicke, and adultereth the price, and this be the cause why in houses of good persons they use to chip their bread.

When cookbook authors mention chipping, as Robert May does in his recipe for French bread (1654), all he says is "being baked in a quick oven, chip it hot." But how deeply should one chip it? What, exactly, does chipping entail? How is one to think of chipping: might it be decorative? Here is the guidance Markham offers to his followers:

Lastly, you shall observe after your Horse begins to eat bread, whether upon that food he be quick or slow of digestion, as before in the first fortnight, and if you find that he be quick of digestion, that is, that he keeps his bread but a little while in his body (as for the most part your fury, and free Horses do), you shall but only lightly chip your bread, and give unto your horse crust and crumb together: but if he be slow of digestion, which is, that he keeps his meat long in his belly, then you shall clean your horses in the middle, and give unto your Horse nothing but the crumb only, for the crumb is quick of digestion. And the crust is done of digestion, and asks (by reason of his hardship and dryness) a double time before it be connected.
A chipped roll served a medical function: to enable the elite diner to digest that part of the bread believed to be most easily digested by a person of his or her social class. The crust may taste better—may even be the best part of the bread—but for the better sort of diner, not having the stomach of an ostrich like a common laborer, it had to be forgeone. The treatment of chipping in elite horse-breads suggests that when setting the period table, servants might have taken into account what they knew of the intimate health of the family’s guests—or at least of their master’s family—and thus modified their chipping to cater to the diner’s digestion.

The belief that the best-tasting bread, and the bread that is best for you, is found in breads that include at least some bran is not new. One should not assume that the English elite ate only white bread. It is evident from Markham’s The English Housewife breed recipes that while he assumed that his readers’ “principal bread” was manchet, he also assumed that at least sometimes they would eat bread that included at least some wheat bran and also bread that included rye or barley flour. While Americans have become trained to see flour as either completely refined or completely unrefined, Markham stocks his English housewife’s bake house with “bolten, seares, ranges, and meal serves of all sorts both fine and coarse.” Between the choice of sifters and the choice of grains, Markham offers his English housewife a nearly infinite variety of possible breads. How might she have made her choices?

In his home books Markham instructed farriers to think of every grain in terms of its medical or biological function. In Markham’s first horse-bread, in Discourse on Housewifry (1597), he explains that he included some rye flour because it “is altogether清单ing and sownering, [and] that being joined to the former [wheat], it keepeth the horse cool and in good temper in his body.” Markham and his followers created recipes in which the type of flour and its fiber content is purposely manipulated to match both the horse’s health and its level of training. Taken as a group, the horse-bread recipes and supporting texts published between 1553 and 1800 are alive with reference—and argument—with respect both to grain choice and the degree of appropriate refinement. It is clear that bakers had a range of sifting options. They must have been conversant of sifted flour and fully engaged with horse owners and farriers in the formulation of the perfect bread for a given horse on a given day.

The consistency of excrement as it related to bread was a common subject in dietary texts for both people and horses. Cogswell, for example, recommends eating a bread that includes at least some bran if one becomes constive. It was thought that both the bran and the butter would lubricate one’s system.

I have known this experience of it, that such as have been used to fine bread, when they have been constive, by eating broken bread and butter have been made soluble. The current American discussion of the importance of whole grain breads is the continuation of a centuries-old discussion in which bread is viewed as both a food and a medicine. The horse training books of the early modern period provide a link between the cookery books and medical literature to suggest more precisely how and why a mother might have chosen the bread she did for the family meal; they also offer principles that might have been used by bakers for recipe improvisation.

Bread styles change over time. The American culinary elite currently favors breads with an open crumb and irregular holes, which are achieved by making breads with a relatively high water content. Markham and his followers usually specified a stiff dough, one that produces bread with a regular crumb and small evenly-sized eyes, or no eyes at all. This style of bread was favored by the English elite. Before the advent of mechanized baking equipment, the finish kneading for stiff dough was accomplished with a brake—a stick attached to a wall that could be worked over the dough—or with one’s feet.

In Cavelarie (1607) Markham recorded the basic structure for handling a bread dough that begins stiff and then stiffens further as it is worked. He instructed one to “work the dough together exceedingly, first with hands, after with feet by treading, and lastly with the brake.” These instructions were elaborated in a different recipe where he advised that cloth be placed over the dough prior to treading. A cloth was used only when working with stiff dough. For softer dough that is too sticky to go through the brake, Markham instructs in Cavelarie that

After the dough hath been well kneaded with hands, you shall then cause the Baker, having his feet clean sownered and washed, to go into the trough and bread it exceedingly.

Dough hydration and the amount of kneading are central to a bread’s character. The elite horse-bread recipes demonstrate that between kneading with feet and working dough with a brake the preindustrial baker had the technical vocabulary to effect subtle manipulations of dough structure, regardless of dough stiffness. John Halfpenny, whose three bread recipes from The Gentleman’s Jackey and Approved Farrier (1674) were widely referenced (if without attribution) for the hundred years following its publication, adds his own color and focus to his
description of kneading stiff dough." Halfpenny helpfully specifies that the dough be mixed "with as little water as may be" and then instructs that we "labor it in the trough with all painfulness, tread, break it, and after cover it warm." The call for minimal water to create a dough that is hard to knead by hand recalls the instruction to "temper all these together, without any more liquor, as hard as ye can handle it" from the anonymously written The Good Housewives Handmaid for the Kitchen (1594). While "painfulness" can be interpreted as "with all care," the author who penned The Complete Housekeeper (1672), a work attributed to Gervase Markham but apparently a reworking of Halfpenny's book, took "painfulness" literally.  It is an indication of how important these elite horse-breads were thought to be, the author of The Complete Housekeeper put effort into reexaming, in his own language, Halfpenny's bread recipes. Among other changes, The Complete Housekeeper's author does not seem to be addressing the horse owner or farrier who will in turn tell a baker what to do. Instead, he seems to write the recipes for a person who will actually be doing the baking, someone he imagines might not be strong enough to knead the bread. Thus, refreshingly, he introduces into the early English bread literature the idea of human frailty. He says to add "as much water as will just make the Meal up into Dough, which must be kneaded with all your strength in a Trow, or some such like thing for that purpose. If you are not strong enough to knead it with your hands, you may tread it with your feet, being sure to leave no noes in it." It was probably obvious to the reader of the Handmaid for the Kitchen that she could scrub her feet and jump right into the tub, with or without a cloth placed over the dough. This step is no longer obvious to artisan bakers. I have spoken with an American baker who does all his mixing by hand. He has injured his hands from kneading. We are at a disadvantage as we take up the ways of the past, whether as bakers or historians, because the details of those ways were often either not written down or not written down in the most obvious places.

I have focused on the link between common baker's horse-breads and the bread of the poor and elite horse-breads and the breads of the affluent. But the horse-bread literature, taken in its entirety, also helps us better understand breads baked by households that were neither rich nor exceedingly poor, households that may have used ingredients associated with low-status breads, such as pea flour, but employed baking methods associated with higher status breads, such as levelling the dough with yeast. Working between our libraries and our kitchens, and keeping the horse-bread literature in mind, we should be able to reconstruct a substantial piece of the English bread culture in the centuries prior to the industrial revolution.

Recipes
Here follow six bread recipes, three by Gervase Markham (1594 and 1607) and three by John Halfpenny (1677). These breads were intended for specific stages in the training of the hunting or running horse. The stages were typically divided into fortnights, with each fortnight having its own training and feeding program. John Halfpenny's recipes are interesting for their use of "lightening," leaven, in addition to yeast. They are stylistically interesting because they are tested. The first recipe serves as the master recipe, so steps that have been described in the first recipe are not repeated in the subsequent two. This is the style of the recipes published by Nicolas Bonnefon in Les Délités de la Campagne (1654). It is curious that Halfpenny uses Bonnefon's unusual recipe style, that he includes leaven, which is not common in English bread making, and that, of all English bread recipes anthologized of his period, he is the only one to mention that the bread should be cooled "bottom upward," an instruction found in Bonnefon and that is essential if one is to preserve the crust's crispiness, even if only to chip it off.

Three Broads by Gervase Markham

Gervase Markham's First Horse-bread Recipe
From Discourse on Homemanship (1595)

Take a strike of beams, two pecks of wheat, and one peck of rye, grind these together, sift them and knead them, with water and Barne, and so bake them thorougly in great loaves, as a peck in a leafe and after they are a day old at the least, your horse may feed on them, but not before.

Ordinary Bread
From Cavelsam (1607, Book 1, p. 32)

Take a strike of clean beams, two pecks of wheat, and a peck of Rye, grind these together, and then sift them through a tempe, then knead it with good store of Barne and water, but let your water be scalding hot, that it may take away the strong savour of the Beam, when you have moulden it well, then lay a cloth over it, and let it be also well bollde, then mould it up into great loaves like Household loaves, having as near as you can guess, about a peck in a leafe, then bake as you bake good household bread, and no otherwise, and let it be at least two days old before your horse taste any of it. But if your horse for whom you make this bread, be exceedingly soluble and much subject to looseness in his body, then you shall put in no Rye at all: but if he be of a hot body, and subject to more than ordinary dynes, then you shall stir over and besides the Rye, put to the former proportion of rye, about two pounds of sweet barley.
The Last Bread (killed to the horse during the last fortnight training before the race)

From Casalanca (665)

Take three Pecks of fine Wheat, and put one Peck of clean Beans, grind them to powder on the black stones, and boil them through the finest Bollet you can get, then knead it up with very sweet Ale Barm, and new strong Ale, and the Barm beaten together, and also the Whites of at least twenty Eggs, in any wise no water at all, but instead thereof some small quantity of new milk. Then work it up, and labor it with all painfulness that may be, tread it, break it, and after cover it warm, and let it be a pretty space in the Trough to swell: then after knead it over again, and mold it up into big Leaves, and so bake them well, and them soak soundly, after they are drawn from the Oven, turn the bot-
toms upward and let them cool.

Three Breads by John Halfpenny

The First Bread

Take three Pecks of clean Beans, and one Peck of fine Wheat, and mix them together, and grind it to pure meal.

Then scarce and bolt it through a reasonable fine range, and knead it up with great store of barm and lightening, but with as little water as may be; labour it in the Trough with all painfulness, tread it, break it, and after cover it warm, and let it be a pretty space in the Trough to swell: then after knead it over again, and mold it up into big Leaves, and so bake them well, and let them soak soundly, after they are drawn from the Oven, turn the bottoms upward and let them cool.

At three days old you may adventure to give this bread, but hardly sooner, for nothing doth occasion surfeit, or is more dangerous than new bread....
The Second Bread
You shall take two Pecks of clean Beans, and two Pecks of fine Wheat, grind them on the Black stones, scatter them through a fine range, and knead it up, with a fine Stone of Burns, and great Stone of Lightning [sic]; working it in all points, and taking it in the same sort as was showed you in the former Bread.
With this Bread, having the Closet cut clean away, and being old (as was before showed) with clean oiled Oats, and with clean fresh split beans, you shall feed your Horse this Fashion.

The Last Bread
Take three Pecks of fine Wheat, and put one Peck of clean Beans, grind them to powder, or, on the black stones, and loft them through the finest Bolter you can; then knead it up with very sweet Ale, Rum, and new strong Ale, and the Barn beaten together, and also the Whites of at least twenty Eggs, in any size or water at all; but instead thereof some small quantity of new milk. Then work it up, and labour it, with all painsfulness that may be, as was showed, in the first Bread; then make it and order it, as was declared, in the former.

Glossary
burns: the sediment left over after ale is brewed, the source of yeast in pneumostratal bakeries.
bolt: a verb that applies to the action of sifting out the finer grades of flour from a coarse meal
bolter: a cloth or cloth bag used to sift out the finer grades of flour; fineness range from white flour for marchet to a fine whole wheat for fine cheese.
beans: the bean referred to in these recipes is the "harse bean" or fava, Vicia faba.
break: a device used to knead a stiff bread dough
bree: the overturned bunk of wheat
lightening: a term for soundings or levation, the modern French levain
chisel: an older term for mullings
mullings: after the bran the next set of impurities removed from flour, usually includes small pieces of bran and some flour, but in a well cleaned form they are sold as a breakfast cereal in the United States and Canada under the name Cream of Wheat.
peck: there are four pecks in a bushel; a bushel of the best unmilled wheat weighs sixty pounds, so a peck weighs fifteen pounds. Beans also weigh sixty pounds per bushel. After sifting and bolting to remove bran and other impurities, the weight of the beans and flour used in these recipes would have been significantly reduced.
saremos: a hair nets that could be as fine as a boliter but could also be coarser. Flour boiled through a coarse ranged from white to a medium whole wheat, appropriate for broads ranging from white to "鸢aisier. "鸢aisier" is also a verb meaning "to sift."
finepe and range: types of sifters and probably synonymous; at their finest they are appropriate for making coarse cheese.
ske: unit of measure often used for beans that varied in size from half a bushel to four bushels; in Markham’s recipes it was probably equal to two bushels.

Notes
1. George Markham, Caudice, or the English Hexameter (London: Printed for Edward Whitt, 1682), 5-4.
5. George Markham, Country Constipants; Or, the Husbandman’s Recreation, The First Edition (The English Housewarden, 4th ed. London: B.R., 1611), 5:2128. All other references to Markham’s English Housewarden recipes refer to these pages.
6. The war in which Markham explains his licensed broads in his first home-turning book suggests that he is either the innovator of or an early adopter of coarse food for high-performance horses. George Markham, A Discourse of Horse-Wheat (London: for Richard Smith, 1647), chap. 3. These-bread recipes for race horses were published throughout the eighteenth century, but the innovator passed was over in the close of the seventeenth century. After this date the recipes are repetitious. The best of the eighteenth-century recipe collections found in Gibson, The Farmer’s Dispensatory, 1752-99.
7. Everyone who considers the “yargage” in whole wheat bread to be good is doing the same thing — looking at bread as both food and medicine.
8. Markham, A Discourse of Horse-Wheat, chap. 3.
9. In England, under the amnesty laws of Markham’s time and for hundreds of years previous to his era, the baker was given the bread “to his advantage.” Bread was not defined and seems to have anything not considered true by the baker, including the muffins. John Peterlin, A Collection of Several Authentic Accounts of the History and Price of Wheat, Bread, Malt, etc., from the Conquest of William the Conqueror to the Reformation 1529 (London: W. Whishaw, 1597), 21923. Charles Estienne et al., Maien Hastings, or, the Country Gourmet (London: Printed by Alain Bifil on John Bill, 1672), 51.
11. For example, in the article in January 1647, as recorded by John Powell, several regulations were promulgated regarding horse-bread, including this item: “Bakers shall roll and deliver unto Inhabitants and Vistitors in house bread, but only three
bees for a penny, and 1½d. for half a coal. (In almost every one of these houses weighing the full weight of a penny white loaf, whether white or brown, cheap, or dear, in which in some houses bread, the baker generally sold 1d. in every 1l. bread.) Turnbull does not record regulations concerning the composition of homesteads, but its composition may have been regulated by custom. John Boulton, The Art of Bread. (London: J. Wills, 1741, n.p.


12. Ibid., 255.

13. Holkham refers to the poor making bread from “ten em” in times of famine, as well as from other situations. See Holkham, The Third Volume of Chronicles, 166-169, William Harris addresses the everyday conditions of want in the English countryside. Raphael Holkham et al., The First and Second Volumes of Chronicles, Comprising the Description and History of England, the Description and History of Ireland, the Description and History of Scotland. (London: T. Williams, 1738, 1739, 1740, Andrew Borello, an influential author of a charity book, provides an inadvertent record of house-bread as a human food when he writes that a certain house “shall never be good to us, no more than house bread or bread made of and peas shall do; through the matter doth go much by the education or the bringing up of the people; which have been nourished, clad with such bread.” Andrew Borello, Histoire Politique et Commerciale du Royaume de HOLLAND, (London: Robert Wisse, for John Gregoire, 1765, bread chapter.

14. If a penny white loaf weighed seven pounds, a penny householder would weigh fourteen, and a penny’s worth of house-brain, brown-teen pounds. Thus, in the seventeenth century for the price of the cheapest bread sold in a bakery, one got 153 percent more bread than he bought. Portly, The History of Bread, n.p. 169.


16. Fontaine et al., Meurs of Rastipol, 628, 520. The instruction to scald the water is found whenever prose need is used. See the “Chrorwiche house-bread,” in Matheous, Gervase, 312, and Matheous, The English Plowman (1875, 1877).


22. Sift whole wheat flour through one or more Graduated sieves to separate the bran and meal which will be left to the seam and middlings in a bowl with an equal weight of hot water. Let this mixture, lymph, and then kress for a few more minutes. Cover and let the dough ferment, which can take as long as an unfermented beam. The addition of even a small amount of yeast flour speeds up fermentation. Sift 1/2 opt of flour on top, and let sit for a single hours before baking or roll likely to make crackers.

23. The English Plowman (1875, 1877), 91. It is worth noting, given the status of whole grain broad in our culture, that this was not thought of as a "local" stew, and so even this keystroke bread was not made with whole grain flour.

24. Matheous, Gervase, 116. The use of these black stones to produce flour that is in white or stone is explained in Matheous’s contribution to Meurs of Rastipol, Fontaine et al., Meurs of Rastipol, 467, 527. Matheous explains that the best flour is made from stones that mince the grain and are sold to produce the seam of bran. We can infer from this explanation that the “good black Colleses stones” were made of an unamal base, one that held in color better than other rolling stones and could thus be relied upon to cut the wheat, dunging off the

beams in large pieces and exploiting the endgame. These hard stones were far more desirable than softer middles, which quickly became dull and then tended to become the grain, facturing the many small pieces and then impermissibly contaminating the raw with impurities.

25. Matheous, A Disease of Homesteads, chap. 3.

26. Thomas Blandford, The Farrier Clerrzy Office Belonging to Homesteads. (London: Printed by Henry Bodley, on the King’s Licence, for William Sewry, 1781). Matheous felt encased from the force of tradition. He explains that while Blandford speaks against house-bread because, in 1781, bakers were making it badly, it is clear that it was the high stature house he is writing about. Thomas Blandford, “Dishing of Horse,” is The Farrier Clerzy Office Belonging to Homesteads, 15-17. Matheous’s rem attack in the practice of feeding horse broad to high performance horses implies that it was a common practice. See, for example, Matheous, A Disease of Homesteads, chap. 3.


28. de Grey, The Complete House-Man, 158. Every wants to make this bread, then reduces this recipe as follows, one 1½ opt each finely ground whole grains flour made of wheat, oat, and burns. Use a total of 1½ cups sugar and 1½-100-2. While de Grey doesn’t mention it, where he is intended for use in bread dough, it was usually specified at dried, and that is what I had to make in this recipe.

29. Matheous could not have been clearer. His cocoa vines. Making bring broads low. Referring to broads baked with horses and aniseed it went: “see have I seen any stone, but have none many Horses broads [sic], which have been kept with such a stone.” Matheous, Gervase, 357.

30. See the description of Pans and wheat in Matheous, A Disease of Homesteads, chap. 3. Matheous’s nutitional concept was that the “nutrient” and “spirit” of the stone, as in the broads, burnt with heat and clear, and that of his that, from the stone he is extracted in a dry stone thing that has “bless” of stone, thus, in a sentence that reveals the creative that underpins Matheous’s diet, he challenges his reader.” And what [the broads] can that (physical broads) and not—no tape used with a house that most avoids excessive salt. In fact, total. Stone. Burnn is now iso carbon, but is high in protein and is, in fact, 1979, good for high performance horses. Far-enriched breads were also used in cooking soda near the end of the light. These more enriched broads can mixtures close to twice the man have derived from the cock breads, the primary difference being that the broads for the stick broads were favored.


34. I am citing the first English edition of Matheous Rastipol rather than the 15th edition Matheous worked on, to emphasise the count of this time. The time Matheous was writing his most important works on horses. Charles Fontaine, Matheous Rastipol, or the Country Farm, Richard Bollier, lane, (London: (LS), 1720, “Aid,” like choline and niacinolic acid, has negative annotations in the homed medical center.

35. Robert May, The Accomplshed Cook, or, the Art and Mystery of Cookery (London: Prospect Books, 1845, 179).

36. Matheous, Gervase, 352.

37. For a musical works, see Thomas Stroan, The Man to Heal, Long Life and Happiness (London: Andrew Stroan, 1852, 1857). For a medical works, Stroan lends his enthusiastic voice to the praise of country-bred bread. Stroan and Brapley, A Collection for Improvement of Flaxenly and Spa, 1842.
39. Markham lists others in descending order of fineness: the coarsest boller was finer than the coarsest sears, while the coarsest sears was finer than the coarsest range. As each type of flour had its own range from fine to coarse, and the other were calibrated to create a single integrated sifting system. In their finest inclusions, the latter and the coarsest were probably equivalent, both were capable of refining meal into white flour (see Robin et al., Matanzas Baptique [696], 277). The coarsest range was equal to the finest range or torque (boler), by extension, the coarsest range or torque was probably functionally equivalent to the finest meal swive, which Markham specifies for the coarsest white bread [The English Housewife, 1597]. In Matanzas Baptique Markham lists the others that could be used to produce flour for three breads—white (mandible) and two grades of brown bread (fine, sears, and coarse sears). Markham further specifies the following range for each type of oil: the latter refined flour from white to fine, the sears, from white to coarse sears, and the range or torque was used for coarse sears.

The sifting terminology itself is confusing. Fine flour was produced by “bolting,” while coarse flour was produced by “sifting” or “screening.” The verb chosen by period authors to describe the processing of the meal suggests the quality of the final product. Fine grades of flour were produced in a more thorough process. The flour was first sifted or seared and then sifted again more finely in a process referred to as “bolting.” Modern bakers speak of the flour’s “extraction ratio.” Whole wheat flour has an extraction ratio of 100 percent, meaning that no grain is lost in processing. White flour produced by sifting can have an extraction ratio as low as 72 percent meaning half the grain is lost through processing. We note some period texts refer to “sifting” at extraction rates of less than 75 percent and to “bolting” at rates in excess of 75 percent. Thus, a mill might be referred to or “soured” to remove the first 25 percent of bran and impurities and then, to create flour that is no more or less than 75 percent.

40. Markham, Gervinus, 57–9.

41. Cogans, The History of Food, 72.

42. Anyone who considers the “stoutage” in whole wheat bread to be a good thing is really confusing bad old food and medicine, confusing the old European dietary traditions.

43. Gervinus, 6:5, 17. The loaves is a piece of industrial baking equipment that would also have been found in well-equipped private bakers. In the home-based recipes Markham assumes the baker has one. In the manuscript recipe written for his English housewife, Markham often omits machined if it doesn’t “add the strength” to a ley, and one with first bread or “a good space together.” Markham calls for a baker in the sheet bread recipe, but in his instructions to “lean out, boil, ink, and, if it probably offers it in an instant order, as boiling some never to follow the strength with the loaves. Markham, The English Housewife [695], 265–72.


45. The yeast recipes in this work appear on these pages, The Complete Jolyet, or the Most Exact Rules and Methods in the Observation of the Rising of Breads, attributed to John Markham (London, 1697), 15–21. It is similarly likely that The Complete Jolyet is really by Markham. It was first published as part of the 1697 edition of Markham’s Masterkey. Frederick Paynter attributes the text to the fourth chapter of Markham’s Description of Homewoode (1624). See A Bibliography of German Markham, 1587–1637 (Oxford Bibliographical Society, New Series, Vol. 21) (Oxford: Oxford Bibliographical Society, 1982), 16, 19, 14. Not only are the fonts not the same but there are fundamental differences in literary style and in the two home-baking contexts. Unlike the broads in Complete Jolyet are based on wheat as the sole grain, which is not a characterist of Markham’s early bakers. Markham introduced bread made of wheat and bran flour in the two recipes published in Gervinus Markham, Cheape and Good Houselandy, Printed for Roger Jackson, 1678, 57, 58. The sheet bread recipes are part of material added to the 1697 edition and do not appear in the 1694 edition. Much of the Complete Jolyet text exactly mirrors the text of Hallipenny’s work, either verbatim or as a simple reworking. The Complete Jolyet broad recipes, though slightly different from those of Hallipenny, closely follow Hallipenny’s structure and language and copy its most unique features. In terms of literary style, The Complete Jolyet uses words and phrases never found in Markham, for example, “vine” for tough, which is either an obscure regional term or an unusual spelling. By tracing published home-bread recipes subsequent to the publication of The Complete Jolyet, it’s clear that this work was ignored. It is Hallipenny’s recipes, not in “lightening” and in broads drying, botched side up, that found favor with authors of home-breads well into the eighteenth century, suggesting that Hallipenny’s contemporaries twisted his text at the original one and the Jolyet text at ease.

46. Grover, and is, sold in different grades. The wheat purchased by commer- cial bakers was not necessarily the least wheat. John Penderikin, in his work on the English amateur late, stipulates second-grade wheat for bakers. See John Penderikin, Unapproved, or, a New Book Declaring the Jolyet of Wheat and Bread Not Dothy by Troy Weight, but by Doublepound Weight, and Containing Ovens, Order and Articles Made and Set Forth by the Lord and Officers of the Magna Prise Council-London: E.G. for R.B. and T.B, 28. By specifying “fine” wheat, Hallipenny signals, as Markham did before him, that this last boller is made of the least ingredients.

47. The emphasis here on graining with a powder coupled with the specification to use a mill with black stones reinforces the message that he wants the best flour possible.

48. Burns, which is the sedentary thorn on wheat bread and ale, was used as an ingredient in the preparation of fifty-per-cent yeast in the sixteenth century. As was top fermenting, it was made without hops, or at least with fewer hops than beer, so ale barns was a bit bitter and preferred by bakers. By emphasizing that the ale be “sweet” Hallipenny is, again, emphasizing the use of the best ingredients. The flaker the barn, the more certain one could be of the strength of the yeast culture, and thus confident of predictable results. Hallipenny is also killing the barn out to the family yeast just because he is looking for a home. This, and other details, are signs of the home’s high status.