

Pyes de Pares

An army marches on its stomach

-- Napoleon Bonaparte

Food on the Campaign Trail

Food on the campaign trail even today is a complex matter. The soldier on the march needs to be kept supplied and fed with food that will still be edible some number of days or weeks after preparation. With modern preservation techniques this is much simpler than it was 500 years ago, however. Food today will be frozen, tinned, dried, or preserved in any number of different ways.

Prior to the invention of many of the food preservation technologies that we use today, the primary means of keeping food fresh and edible were:

- Leaving it alive
- Salting
- Smoking
- Cooking in crusts, known as “coffins” or “pies”.

Keeping meat alive was one of the primary means of preservation – when organising a large tournament for many hundreds of guests, one medieval manuscript describes the number of farm animals that would be brought along to provide food. Similarly, an army on the march would either carry a certain amount of livestock “in tow” with the baggage train, or forage for food, including livestock, while travelling. Fresh food could then be prepared when needed by slaughtering whatever beasts were required.

Salted or smoked meats were quite common, and used when required. Salted and smoked meat is often depicted in kitchen woodcuts of the period. The fragment to the right is from *Il Cuoco Segreto Di Papa Pio V* (The Private Chef of Pope Pius V), by Bartolomeo Scappi, Venice, 1570. This picture shows several different types of (presumably) smoked or preserved meats hanging in a kitchen, including sausages, a haunch of meat of some kind, and some ducks or other fowl.



Preserving meat in this way enabled it to be kept in the kitchen for use whenever required, and used in whatever portions were needed (rather than, say, a whole animal).

When moving quickly or on the campaign trail, however, neither of these methods were always suitable. Recipes can be found for meat cooked in crusts, however, and this appears to be not only a common means of preserving meat, but quite effective as well.

A crust is essentially the early equivalent of canning or tinning food – by storing cooked food in a sealed environment where airborne pathogens and other organisms that have the potential to spoil food cannot gain access.

Coffins

A pie crust, commonly referred to as a “coffin” in the middle ages and renaissance, works quite well as a preservation method if it is well sealed, slightly salted, and thick enough to be impervious to airborne food pathogens. If the meat or other ingredients are cooked, sealed inside

the coffin, and the entire thing heat treated, it will last for two weeks or longer. Effectively, this is “tinned meat” or “tinned stew”, with the pastry taking the place of a tin.

Pies of Paris (Pyes de Pares) are one such recipe which I have recreated here.

Original Recipe

The original source for this recipe is Harleian MS. 279, in the section titled “Dyuerese Bake Metis”, as reproduced by Cindy Renfrow in “Take a Thousand Eggs or More”. An almost identical recipe occurs in Harleian MS. 4016, as well as a number of similar recipes with titles such as “Tartes de chare” and “Another manere [of tartes]” and “Doucettes” in MS. 279, and Douce MS.

My contention is that this and its derivatives are a relatively common recipe.

xxxvij. Pyes de pares. Take & smyte fayre buttys of Porke, & buttys of Vele, to gederys, & put it on a fayre potte, & do ther-to Freyssche brothe, & quantyte of wyne, & lat boyle alle to-gederys tyl yt be y-now; than take it fro the fyre, & lat kele a lytelle; than caste ther-to yolkys of Eyroun, & powder of Gyngere, Sugre, & Salt, & mynced Datys, & Roysons of Coruance; then make fayre past, and cofynnys, & do ther-on; kyuer it, & let bake, & serue forth.

The other recipes in the collection have similar features in that:

- They all call for pork meat, veal meat, and or “flesh”, which appears to have been cooked in broth (for this I used chicken stock).
- The meat is (in some recipes: pre-cooked in broth), minced, combined with the other ingredients, cooked some more, placed into a coffin, and baked.
- They nearly all use dates, and raisins of corinth (for which I have used modern dried currants).
- The common spices used are salt, sugar, ginger, with occasionally pepper, saffron, and cinnamon.
- Other ingredients vary but include pine nuts, wine, egg yolks, whole eggs, and small birds.

The Coffin

For “coffins of fair paste” I have used a thick hot water crust pastry, made with white flour, beef dripping and hot water mixed with salted flour and whole eggs. I noted Cindy Renfrow's interpretation of this recipe uses flaky pastry with steam vents cut in the top crust, however I reject this for a number of reasons:

- Gervase Markham's book *The English Housewife* refers to “puff paste” in a few places but rarely in dishes of this type. When Markham refers to coffins he usually only states “coffins of puff paste” or similar low-density pastries when he means to do so. In *The English Housewife* he advises that “red deer venison, wild boar, gammons of bacon, swans, elks, porpoies, and such like standing dishes, which must be kept long, should be baked in a moist, thick, tough, coarse and long-lasting crust”. Dishes such as lamb and waterfowl should be baked in a good white crust.
- The flaky pastry as described by Renfrow would not have kept, and would not have enabled the dishes contained therein to keep long. The coarse pastry, on the other hand, is an excellent preservative and also keeps the ingredients sealed therein. For this reason as well I have elected not to cut steam vents in the crust.
- I can find no specific references to flaky pastry in period. The closest would have been puff pastry.

The coffins are made in layers, with the bottom, sides and top being “glued” together with a flour and water paste. This has the effect of further sealing the contents inside.

The coffins are not always intended to be eaten. Alison Sim contends that puff paste would have been eaten, but not the coarse pastry. I have made this pye using my interpretation of Markham's "fair white crust" which could have been eaten or discarded depending on its condition and the pleasure of the diners. The coarse crust would have been made from whole flour and possibly heavily salted, and would not have been pleasant to eat.

Experimenting with this sort of coffin has been very successful over the last few years at festival. My campsite has elected to camp for the duration of festival without refrigeration or eskies or any other modern equipment, and we find that meat cooked inside one of these coffins is essentially hermetically sealed, and remains pleasant smelling and edible throughout the event, even having been kept at a somewhat fluctuating room temperature and exposed to the elements for a week or so.

I have used various different combinations of ingredients in such a coffin, including chicken meat, vegetables, legumes, beef, mushrooms, herbs, etc. All of these seemed perfectly edible when the coffin was opened.

Salted beef kept inside a coffin was still edible and showed no sign of deterioration (apart from dryness from the added salt) after 2 weeks of being kept at room temperature. In this case the coffin was made with $\frac{1}{2}$ cup salt to 4 cups flour, and the pastry was as a result very salty and fairly inedible, although showed no signs of deterioration or fungal growth.

The ingredients that I have used for the coffin are:

- 4 cups flour
- 200g dripping
- $\frac{1}{3}$ cup water
- 2 tblspns salt
- 2 eggs
- some extra flour and water mixed together into a thick paste.

Sift the flour and salt into a mixing bowl. Add the water and dripping to a saucepan and simmer, until the dripping has melted. Pour this mixture into the flour and salt, and stir until mixed. Add the eggs, stirring until the pastry forms a heavy dough.

Roll out the pastry and cut a 20cm circle to fit in the bottom of a pie tin. Cut walls for the pie tin from the pastry and seal the walls to the base with the flour and water paste, making sure that all air gaps are well covered and sealed.

Cut another circle to fit over the top of the coffin, but do not seal the coffin yet.

Blind bake the coffin in the oven at 180C for 20 minutes or so, until the pastry hardens. Remove from the pie tin.

The Meat

Several of the related recipes seem to call for scalding the meat in broth rather than the more modern approach of dicing it and frying it. I have done this by making a quantity of chicken stock and bringing the meat to a boil for about 10 minutes in the stock.

After removing the meat from the stock, I chopped it finely, and returned it to a pot containing a smaller amount of stock, and brought it back to a simmer before adding the remaining ingredients.

The method of making the filling was:

- 500g chicken, bone off (thighs and/or breasts)
- 300g veal
- 150g currants
- 250g dates
- 2 eggs

- 4 cups chicken stock.
- 2 teaspoons ginger
- 1 teaspoon salt
- 2 teaspoons sugar
- 1 cup sweet wine.

Bring the stock to the boil, add the meat, cover with additional water if necessary, and boil for about 10 minutes until the chicken is cooked and begins to separate.

Remove the meat from the stock, preserving a cup or so of stock. Chop the meat finely, return to the stock, add the wine and bring back to the boil. Add the finely chopped dates, currants, eggs, ginger, salt & sugar, adding extra to taste if required. Simmer for about 10-20 minutes further.

The Pye

For maximum sterility do this fairly quickly, in a clean kitchen with clean hands.

Take the blind-baked coffin out of the oven. Fill it as full as it will go with the meat filling. Wet the underside of the coffin lid with more of the flour and water paste, and seal the coffin. Use the upturned pie tin to help seal the coffin if necessary. Make sure there is plenty of flour and water paste sealing all of the edges of the coffin.

Return the coffin to the oven and bake at about 180C for 30 minutes or so, until the top crust is well cooked.

If this is done correctly, the pye will keep for some time.

Microbiology

I first approached the microbiology staff at a reputable Sydney pathology laboratory with the story of having made a pie, kept it in outdoor conditions for a week or so, and then eaten it. The initial reaction was one of complete horror. "You will die" being the almost unanimous verdict amongst the senior staff.

After examining the methods that I used to prepare these pies, the staff concluded that there was an element of doubt. Because the meat was cooked and sealed inside the pie crust, the conclusion was that if the pie crust was thick enough, dry enough, and contained some form of natural preservative (in this case salt), the meat inside would not be able to be acted on by the normal food pathogens and would be preserved for some time.

Additionally, the senior microbiologist provided me with the information that the oils contained in various of the spices, in particular cinnamon, were "bacteriostatic", which means that in the presence of these oils bacteria would not breed or would be inhibited from breeding.

After some discussion I managed to convince the senior microbiologist to conduct an experiment on one batch of these pies, to determine how long they would be preserved for, and at what stage they would deteriorate to the point of being inedible.

The main danger from these pies would be salmonella typhimurium spores existing within the meat, or clostridium spores landing on the meat from the air if the meat is left exposed to the air for too long before sealing. The cooking process should be sufficient to destroy any campylobacter in the meat. Other bacteria may survive the process, and the other major issue will be fungal spores entering the meat through the walls of the pye, which will occur as the pastry deteriorates.

The experiment was conducted, and the results from the laboratory are quoted directly, below. Additionally, the laboratory obtained three "meat pies" of an unspecified brand from a local service station, and tested these as a control.

The pies were opened and tested at regular intervals during the four week testing process. This is because one of the main contaminants, salmonella, has the potential to breed within the food, contaminate the food, and then die, leaving no trace that can be determined using microbiological testing methods, but still having contaminated the pie.

TESTING OF PIE CONTENTS FOR MICROBIAL CONTAMINATION AND FOOD PATHOGENS

Materials and methods

1. 12 pies, prepared according the Medieval “Pyes de Pares” recipe, were submitted for analysis on 5 August 2003. These were placed in a wooden bowl, covered with a clean cloth and kept at room temperature. Three meat pies were purchased from the local service station and kept at room temperature in the paper bags in which they were purchased.
2. The pies were sampled on the dates shown in the results table.
3. The pastry was removed from the bases of the pies using a sterile blade.
4. 1g samples of filling from the centre of each pie were placed in sterile containers.
5. Samples were minced using sterile blades.
6. Minced samples were added to tubes containing 6 ml sterile normal saline and vortex mixed for 1 minute each.
7. The samples were allowed to settle and 0.1 ml of the supernatants were surface plated using sterile disposable plastic loops on the following media:
 - Horse blood agar – incubated aerobically at 35°C.
 - Horse blood agar – incubated anaerobically at 35°C.
 - MacConkey agar – incubated aerobically at 35°C.
 - Charcoal campylobacter medium – incubated microaerophilically at 35°C.
 - Sabaraud agar – incubated aerobically at 24°C.
8. 0.1 ml samples were also added to:
 - Cooked meat broth medium – incubated at 35°C.
 - Rappaport broth medium – incubated at 35°C.
9. Smears were prepared from each sample and Gram stained.
10. Plates and broth media were checked for growth after 1 and 2 days incubation.
11. The cooked media were subcultured to two horse blood agar plates after 2 days incubation. These plates were incubated aerobically and anaerobically at 35°C for a further 2 days and examined for growth.
12. The Rappaport broths were subcultured to MacConkey agar after two days incubation. These plates were incubated aerobically at 35°C for a further 2 days then examined for growth.

Results

Pie ID	Source	Date submitted	Date examined	Result
1	Del	05-Aug	11-Aug	No organisms isolated
2	Del	05-Aug	11-Aug	No organisms isolated
3	Del	05-Aug	11-Aug	No organisms isolated
4	Del	05-Aug	18-Aug	No organisms isolated
5	Del	05-Aug	18-Aug	No organisms isolated
6	Del	05-Aug	18-Aug	No organisms isolated
7	Del	05-Aug	21-Aug	"Taste tested" - good
8	Del	05-Aug	25-Aug	No organisms isolated
9	Del	05-Aug	25-Aug	No organisms isolated
10	Del	05-Aug	01-Sep	No organisms isolated
11	Del	05-Aug	01-Sep	No organisms isolated
12	Del	05-Aug	01-Sep	No organisms isolated
S1	Servo	11-Aug	18-Aug	Bacillus sp. 1,000,000 cfu/gram
S2	Servo	11-Aug	25-Aug	Bacillus sp. >1,000,000 cfu/gram
S3	Servo	18-Aug	18-Aug	No organisms isolated

Summary

All 12 pies submitted for testing remained fresh, with no microorganisms isolated within the pie filling, after 4 weeks at room temperature.

The meat pies purchased from the service station showed obvious signs of contamination, and would not have been safe to eat after a period of one week from purchase.

Enjoy!

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Bibliography

Cindy Renfrow, *Take a Thousand Eggs or More*, privately published 1991.

Alison Sim, *Food and Feast in Tudor England*, Sutton Publishing, UK, 1997.

Gervase Markham, *The English Housewife*, Michael R. Best (ed), McGill-Queens University Press, Montreal, 1986.