about seven pounds, roasted one hour; squash cooked in its own juce, with but very little water, one and three fourth hours; stuffed tomatoes cooked three quarters of an hour; a large apple *soufflé* pudding baked one hour.

The oven having been previously heated one hour, the lamb and the squash were first put in; later the fish was added; while these were being served, the ducks and the pudding were being cooked; the use of the lamp for the whole service was four hours; the oil consumed, one pint, cost less than two cents; the cook's estimate of the coal which would have been required for the dinner, had it been cooked in the large stove, which has been used in other years, at one and a half to two ordinary hodfuls.

This was an every-day dinner, to which my guests had been invited in order that they might test our common practice.

I assume that the effect of heat upon food material is what may be called chemical conversion, accompanied, when the heat is applied at a low degree only, by partial evaporation of water, but when applied at a high degree, by partial distillation of the juices, by the cracking or dissociation of the fats, and by the diffusion of the volatile parts of the food in bad smells and loss of flavor and waste of some of the nutritious properties of the material. If the cracking or dissociation of the fats is carried to a point which is very common in iron stoves and ranges, the residuum of the fat becomes very indigestible and positively unwholesome. When rightly cooked and not cracked or dissociated, a certain portion of fat is absolutely necessary to adequate nutrition. Is it not true that we take into our stomachs a great deal too much fat, and that it is eaten in the most injurious form?

The preparation of the coffee-berry is the most familiar example of the development of its properties by the right application of heat. If the berry is dried, ground, and made into an infusion without being roasted, no true drinkable coffee can be made from it. If overheated and burned, the infusion is acrid and unwholesome. But when the berry is carefully roasted and ground the infusion makes true coffee. The flavor and other properties are the actual product of the heat, when scientifically applied. The flavor of the pea-nut is developed in the same way. In the treatment of grain, none yields so great a difference in flavor, according to the method of cooking, as the meal of maize or Indian corn; but I find the wheaten bread, whether made of whole or bolted flour, yields a much finer flavor when baked two or three hours in my pulp oven at 250° to 300° Fahr., than when quickly baked in a common stove or range in one hour at an unknown but admittedly much higher degree of heat. The flavors of the white kinds of fish, such as cod, haddock, flounder, scup, and the like, which are much impaired by the ordinary methods of cooking, are very finely developed when slowly cooked in my oven; and, lastly, all kinds of meat and poultry develop their respective flavors in the most appetizing manner when roasted in my pulp oven at such low degrees of heat as not to give off any smell or to dissociate any of the volatile elements of the juices of fats, while for game nothing can equal it. Quail and partridge come out rich, juicy, and of almost too full a flavor.

I have frequently served dinners or lunches of four or five courses—soup made the day before, reheated; fish, meat, game, potatoes, cauliflower, asparagus, onions, tomatoes, and custard puding—all cooked in the same oven at the same time in the dining-room, and served from the oven to the table in the china or earthen dishes in which each had been cooked; the only difference between one dish and another being in respect to the time in which it had been subject to the heat of the lamp or lamps, yet without the least flavor or taint being carried from one kind of food to the other.

It will be apparent that, if cooking can be done in this way, the whole art will consist in preparing the food according to written or printed receipts, and in determining the degree of heat and the time to