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# The Cooking Laboratories of some of our Colleges, Institutes, and Schools.

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A laboratory is a place in which materials are wrought for any purpose. "The stomach, the great Laboratory of the materials of future nutrition." (Daly.)

Cooking may be defined as applying heat to an article of food in such a way as to (1) render it more digestible, (2) to render it more appetizing by the development of its flavors, (3) to combine different kinds of food materials in such a way as to make the other more palatable, (4) to remove indigestible portions as bone, (5) and to add the essential salts and spices to bring out the flavors.

A cooking laboratory would therefore be a place where foods were changed in the above way.

Man is a cooking animal, the more he advances in civilization, the more he cooks, and vice versa, the more he cooks, the more he advances in civilization.

Some one says, "Education is life." Certainly it should be life, and therefore we should make the most of our education.

If it is proper and desirable to educate boys in the use of hand tools, it certainly is equally proper and desirable, if not more so, to educate girls in the science of cooking. This is done by putting a course in cooking within their reach. Girls should be educated in Domestic Science as well as other sciences. Their life is not complete without this, their ideals cannot be as high as they would be with this.

The question now before so many women is. "What am I fitted for, what can I do, and how shall I do it." There are two questions which confront us:

First-

We want to do something that will not effect our social standing.

Second-

When we do make a start and stop to look at some one else who is just completing some great work, we become awed, and think there is no use to try, we can never become as great as he is. We become downcast and cannot go at our work with the same

hopeful and inspiring feeling. This of course is not the proper spirit and under such a condition we can never attain success. Stand out alone. Be willing to consider the beginning without reference to the end. It is desirable never to let trials be given up till complete success has followed.

The true way of teaching the peasantry to cook and to eat cooked dishes is to begin with the children. The work of cooking schools in New York has been highly successful. In them several hundred children get instruction in plain cooking every year. The aim is not only to make better cooks, but more economical ones.

This idea of teaching the children in this science is one of only a few years standing. But, we often hear persons say, (and it is true) "Here are the future citizens of America, in fact, here lies future America itself. Therefore should not the girls of today who are the future housewives and mothers of America, be so instructed that they

may be able to make the future homes better than now? The food characterizes the man, if his food is properly cooked, he will not be one of the many we see now, who have poor digestion, stomach and liver troubles.

The work of the New York association for technical eduction shows what can be done in this line. The school girls get instruction in this as a regular part of their school training. Servants are also given a course in training here. The Working Women's Clubs, of which there are a dozen or more in New York, all have instruction in cooking.

We have in America the raw material of provision in greater abundance than any other nation. Mrs Stowe says, "The American table presents a fine abundance of material carelessly and poorly treated. Everything betokens that want of care that wails on abundance; there are capabilities and poor execution. She says, Bread, what aught it to be? It should be light, sweet and tender."

The true housewife makes her bread the ruler of her kitchen. The light snowy mass can be left till the air cells must be fixed by baking, if left longer than this, fermentation begins and the result is not what it was meant to be.

The German does not have fresh meat every day but what other dishes he does have are properly cooked. His bread is made from good wholesome rye flour, his pancakes are not baked in rancid lard, but in sweet wholesome oil obtained from seeds.

Cooking is an art and a science. It is an art because it is capable of growth, it takes in the study of form, color, and must be thoroly studied to make perfect combinations. To cook perfectly one must know just when he has enough of anything, not putting in a grain too much of pepper or too less of salt. The individual who is to be served must be studied. Cooking is a dignified art and its place is in the present day.

It is a science because we must have continually with us: Chemistry. We must learn the composition of the foods, making a study of the animal, mineral, and vegetable kingdoms.

Among those who have honored cooking are scientists, artists, philosophers and poets. It may be used as an honorable and practical means of livelihood. The subject of cooking should never be limited to the combining of foods into fancy dishes, but should include the knowledge of the elements, composition of foods; their digestibility; value as a tissue builder, and heat-producers; how they are changed in different ways of preparation; and how to serve attractively. It should include the chemistry of nutrition and teach how foods during illness, can be made more digestible.

In Cooking laboratories, as well as other laboratories, there is a difference. For the public schools they are, as a usual thing not so large and well equipped, as those in colleges and

other institutions. Do have those in the manual training schools, the public schools, in the institutions for the deaf and dumb; special laboratories provided by club women and associations; and those of higher institutions. They may be meagerly, or very extensively equipped.

The next question that presents itself, is, "What is the object of a laboratory? My idea of its object is; in a laboratory we can carry on the work more extensively than in a common kitchen. More students can be taught at the same time. Just we learn how to carry out the practical, intellectual, and scientific points in cooking. The laboratories are equipped similar to a kitchen and the students can be taught how to take care of everything in it as well as learn to cook in a way that makes the food more wholesome and more easily digested.

In the following few paragraphs I will try to give in a concise way, the equipment of the laboratories of a few

institutions in the United States.

The Domestic Science department of the college in Bozeman, Montana, has a kitchen laboratory twenty by twenty seven feet. This contains twelve individual work desks, a range, two sinks, an Aladdin oven, two tables, and cupboards.

The department there has grown so much that there was not room enough in the laboratory and so a range and tables have been placed in the students lunch room which adjoins the kitchen. Opening from the kitchen is a dining room, with a side board well supplied with table linen, dishes, and silver.

The first preparatory students in this school study sewing; the second, cooking, and the college has a four years course in Domestic Science.

At Pratt, the hollow square arrongement is used. This contains twenty desks arranged for individuals work. These are provided each with a drawer for utensils and an individual gas burner. There is also one large coal range for baking, with two ovens.

and a large gas range with two ovens.

At the Teacher's College in New York, the table tops are made of white vitrified tiling, which costs from forty to forty five cents a square foot. This tiling is entirely non absorptive and is not permanently stained by any substance; the only objection to this form of table top is the noise.

The State Agricultural College at Ames, Iowa has in its Domestic Science Department, a kitchen, pantry, dining room, class room, and store rooms. These are all conveniently furnished and equipped for recitations, demonstrations and practice work.

The laboratory has laboratory tables, supplying table room for sixteen ladies, each having a set of five drawers, containing small utensils and supplies, a moulding board, and a board on which to hang some of the larger utensils.

The kitchen also has tables for laboratory supplies, a range with a hood, gasoline stoves and an Aladdin

oven. The sinks are furnished with hot and cold water supply and open plumbing, a towel rack, an oak chest for the kitchen linen, a large cupboard for utensils and supplies, wood box, closet for cleaning supplies, chairs and a complete set of the Pratt Institute Meat Cutting Charts. Adjoining the kitchen is the pantry provided with a dumb waiter, flour chests, shelves for supplies, and other modern and convenient articles.

Between the kitchen and the class room is a room containing a large case for food exhibit, Pratt Bottle Museum of Food Materials, Pratt Blocks representing a normal man, and a set of Pratt Food Charts. The dining room contains a table, side board, and china closets in which are breakfast, dinner, tea sets, glass ware etc.

At Drexel we find a course in General Cookery, Invalid, Housekeepers course, Course for waitresses, Course in Laundry work, normal course in Domestic Science. There is also an evening class in general cookery and

and a Children's Saturday morning class, also a course of Talks on Food materials and other matters relating to the Household. This course occupies one term. The instruction embraces. Composition and Nutritive value of Foods, Comparative value of animal and vegetable foods, home kitchen and public kitchen, use of coal stoves, and ranges, oil and gas stoves, Aladdin oven, buying of supplies, cold storage, marketing, laws regarding inspection of meats, canned goods, food adulterations, water filters, tea, coffee, cocoa and other beverages, cereals, vegetables, fruits, breads, flour, yeast and dairy products.

In the course for waitresses, they are trained in the care of the dining room and pantry, care of the silver and cutlery, serving of breakfast, luncheon, and dinner, washing dishes, washing and ironing table linen, and removal of stains.

For the laundry course, they have a large and beautifully equipped laundry for the classes. Soaps, washing

fluids, bleaching powders, blueings, and starch are discussed in their scientific and practical relation to laundry work.

They have two large kitchens in which the desks are arranged in horse shoe style. The equipment is excellent and they have everything in linen and china for the waiters course.

They have a coal and gas range in each room; gas on the desks; dressers, food museum etc.

The kitchen in Deaf and Dumb school at Olathe, Kansas, is plain and simple, looking more like an ordinary kitchen than a laboratory. It is situated in the basement, with a dining room adjoining it. A common ordinary stove with six lids is used. Back of this is a shelf on which are labeled jars containing baking powder, soda, corn starch, etc. Below this hang the poker, dust pan etc. The wood box is near the stove. A sink with hot and cold water faucets is in the kitchen. There is a small table containing drawers in which are kept the towels; under this are the flour

chests. There is also a long table with zinc on each end where hot dishes can be set. The girls work at this table.

The cupboard is plain wood and home made. In this are kept the china dishes used in the kitchen, double boilers etc. In the dining room is a large cupboard with glass doors, containing the finer dishes. Below the doors are drawers where the linen and the girls clean aprons are kept. The floors are paraffined.

The above are only a few of the many cooking laboratories in the United States, but we can see the difference in equipment from them.

In providing for a laboratory we must take into consideration the location, the equipment, light, heat, ventilation, and water supply.

The work in a laboratory depends a great deal upon its location. The dining room should be next to the kitchen, we should have ready access to the pantry, cold storage room, and china closet.

The success of the whole work depends on the equipment of the kitchen. Try to use the best of everything, if the genuine article is not obtainable get the best substitute possible. The essentials of a laboratory are the work tables, stove, pantry, sink, wood box, chairs, ice box, and supply table. The work tables may be arranged in the horse shoe style, in the hollow square, as it is here, or have individual work desks.

Sunshine is the best kind of medicine. In the kitchen as well as any other part of the house we require plenty of light. It makes the room more pleasant as well as easier to work in. Proper amount of heat must also be supplied.

Ventilation is essential in a laboratory; first. because it is essential in every room, second, because there are so many odors from cooking that must be carried out.

If possible have a hot and cold water supply.

The work in a cooking laboratory as compared with other branches.

Why must we take Physics? To learn certain laws. Why do we take Botany? English, Music, Chemistry, Psychology, etc? Either for our advancement in a particular one of these or for a general knowledge.

Why can't boys learn farming at home, or carpentering, dairyingetc? First, the conditions may not be suitable, the practical and scientific points are not brot out, its valuable relation to the rest of our education is not put plainly before us. So it is with cooking, and all work in Domestic Science.

at home we learn ~~st~~hat we must do certain things or the end will not be what it should be, but we are not taught the why and wherefore of each act performed.

In the laboratory we learn why a cereal is cooked a definite length of time, why hot water is used in one instance and cold in another.

Can a girl who has had

a course in literature, music, etc go home and cook a meal unless she has first been taught how? Certainly not. She would not understand why her bread was soggy, why her potatoes are watery and not mealy, why her tea or coffee has such a bitter taste. Can she understand why she is troubled with dyspepsia, or why the doctor says she must not eat fried meat, but broiled, when she likes fried the best?

Ah, can you now see the comparison and the necessity of having our girls taught this great work? You do a thing because your mother did it and because your mother's mother did it; we do it because we know how and why. we have been taught its value in every sense of the word.

## An Ideal Laboratory.

In the matter of conveniences and comforts in the work of the kitchen, the present generation is growing up in what may be called a state of luxury in comparison with that which

obtained a generation or two ago.

The size of this laboratory is 30 x 30. There are three doors, two into the pantries and one into the cold storage room. There is a transom over this one. The doors are simple white pine, hard oiled. The room is 19 ft. high.

In a building or rather room of this kind good light is desirable. Large windows are used more now, and fewer of them. For this purpose large windows are used in this room, of two panes of glass. House plants are kept in some of them.

The walls are finished with large plates of opalite. This is now just coming into use. For a room in which many students work, it seems to me nothing could be better, as this is so easily cleaned, no dirt remains on it as on a papered, painted, or hard finished wall. Water does not injure it in any way.

The floor is of 4 in. hard pine which is oiled. The casings and mop board are made of yellow pine and hard

oiled.

In this laboratory are two stoves; an Aladdin oven and a gasolene stove. A few sentences on stoves would here be in place.

The old fashioned fire place and brick oven have given way to the modern cooking stove. The oil stove is nearly as common as sewing machines. Gas stoves are not so widely known as yet. The newest thing now is the Aladdin oven. The advantages claimed for this oven are 1st. Bread is baked to the very core and center of the loaf without hardening the crust. 2nd. The meals are cooked in a more nutritious manner.

Over the gasolene stove is a ventilating hood. You ask me what this is for. Ventilating hoods are connected with the chimney by a stove pipe and the odors are thus carried out.

The wood box is divided in three parts. In it are also some hooks where the dust pan, brush, etc can be hung. The ice chest is a

modern refrigerator. There is a sink on each side of the room, having a hot and cold water faucet.

The working desks are arranged in a circular form, a semi circle on each side with an opening at each end. In the center of this circle is a circular case with glass doors on the upper part; in this are kept prepared foods of different kinds.

The utensils are those which should be found in every cooking laboratory, tho perhaps more of them, and of better quality. The cupboards are large containing about six shelves apiece. In the upper part the kitchen linen and aprons are kept; in the lower, the flour and sugar.

The pantries are provided with shelves in the upper part and hooks in the lower. On the shelves are kept the pans, crocks, double boilers, bowls, etc, and on the hooks are the utensils that should be hung

up. The shelves are covered with heavy paper which is changed every week, so all is neat and clean.

There is also a food museum which to me seems essential in a cooking laboratories. In this we can show much better the composition of different foods.

The china closet is located so it is accessible from both dining room and kitchen. It is furnished with large glass doors. The shelves are all hard oiled. There are hooks for the tea cups and sherbet cups. Some of the prettiest dishes are set up at the sides. The articles most seldom used are kept on the upper shelves. This is one of the most beautiful pieces of furniture, it may be called, in the department. There are sliding doors between the dining room and kitchen.

The laboratory is built with a balcony at one end, for visitors and the audience at large.

The a detailed description

has not been given, the reader can see what work could be carried on in such a laboratory.

The writer has seen but one laboratory, and that is in the Domestic Science department at our own college. We can see that the building of such a place needs very careful that and should be given more than it has been heretofore.