

Public School HOUSEHOLD SCIENCE

PRICE, 50 CENTS





M B O H Farley

PUBLIC SCHOOL

HOUSEHOLD SCIENCE

BY

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P R E F A C E

I N revising the text-book for elementary classes in Household Science changes have been made adapting the book to present conditions. Now that special provision has been made for the training of teachers of household science, those parts of the first edition which were intended chiefly for the teacher have been omitted, and the remainder revised in conformity with the course in household science prescribed by the Department of Education for the public schools of Ontario.

This book is prepared for the pupils and not intended in any way to take the place of the teacher, but to furnish a book of reference, recipes, and formulas suitable for school or home work. The use of a printed recipe insures correctness of language and quantity of material, which is often confused in a hurried copying from the blackboard, or from dictation, and allows more time for practice work under the direction of the teacher.

Most of the recipes are made out in quantities suitable for a family, but are easily divided for individual work in the schoolroom. The cookery is simple and suited to beginners, but when the pupils have mastered the "why and wherefore" of the different processes, they will have little difficulty in carrying out the more elaborate recipes of any cook-book.

Only elementary work is attempted in this book. To enter more fully into the chemistry of food, bacteriology, etc., would create confusion in the mind of the average school girl, and tend to cause dislike of the subject.

This little book will have served its purpose if it helps to arouse an interest in the noble art of home-making among the young girls of our country, and to bring the home and school into closer touch through this practical branch of education.

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INTRODUCTORY CHAPTER.

The Home.

A history of the Home from the time when caves, or any other protection afforded by nature, served as a shelter for the family, to the modern home with all its conveniences and luxuries, is beyond the scope of an elementary text-book.

Through all the ages women have been the home-makers. While the men were employed in hunting, fighting, and, in the newer countries, clearing the land, the women were occupied in the preparation, spinning, weaving, and making of flax and wool into clothing for their families; making the butter, cheese, candles, etc., gathering and preserving fruits, herbs, and other products of nature for family use. Factory-made garments, canned goods, gas, electricity, and the numerous modern conveniences were unknown. The home, with its various occupations, was the only system of education known to the majority of girls. Few girls were employed in other than the household industries.

The removal of many home industries to the shop and factory, larger and more elaborately-furnished houses, increased facilities for education and travel, and many other influences have made the work of modern houses very different from that of earlier days. The two important industries, which affect the physical welfare of humanity to a large degree, viz., cleaning and the preparation of food, are left to the home, and the success

of the homemaker depends largely upon her control of these industries.

Nearly every woman is called upon, at some time, to direct the affairs of a household. Therefore, a systematic study of household operations will enable girls to obtain knowledge which will greatly conduce to the physical, mental and moral well-being of a people.

NOTE.—The teacher should endeavor to interest the class in the study of the home as a social institution, and the importance of following sound principles therein. She should also have the pupils draw plans of a house, with the various rooms, explain the situation, etc., and discuss the furnishing and decoration of an inexpensive house, etc.

CHAPTER I.

Food.

The course of study in physiology prescribed for the public schools will have given the student some information about the structure of the body and a primary knowledge of the food-stuffs and their digestion.

The living body may be roughly compared to a very delicate and complicated engine which, in order to be kept efficiently at work, must be constantly undergoing repair, and must be supplied continually with fuel of the right kind and in the right amount. Certain of our food-stuffs, such as fats, starches and sugars, serve mainly as fuel: that is to say, they are burned within the body, and so enable it to do work—to move itself from place to place, for example—and to keep warm. Other foods, of which lean meat is a good example, are largely made use of to effect repairs in the complicated machinery of our bodies; though they too may be made use of as fuel. Our bodies are, in this respect, much more perfect than any engine, for they are able so to prepare, by the processes of digestion and absorption, such food as lean meat, that it may be built up into the tissues of the body and thus allow its growth or repair. Even the foods that are used principally as fuel must undergo changes in digestion before the body can absorb them and make use of them.

We may distinguish different constituents in our foods which may be classified as follows* :—

I. NITROGENOUS COMPOUNDS.

1. PROTEIDS.

- (1) Higher Proteids—these are coagulated by heat. White of egg consists largely of proteids of this kind, and hence when boiled is set and firm. Lean meat, fish and eggs contain considerable percentages of higher proteids and somewhat smaller amounts of them are found in milk, legumes and cereals.
- (2) Albuminoids. These yield gelatin on boiling, which dissolves in the water. Connective tissue, bones and cartilage contain them most abundantly.

2. NON-PROTEIDS.

They may be roughly termed extractives. They are soluble in water, and aid in giving flavor to food-stuffs, especially meat. To them in a large measure is due the flavor of meat soups.

II. CARBO-HYDRATES.

- (1) Starches are soluble only in hot water, and are contained in large amounts in potatoes, cereals, etc.
- (2) Sugars are readily soluble in cold water. Considerable amounts are found in sugar cane, maple sap, beets and some other vegetables, fruits and milk.
- (3) Gums and dextrins are not so readily soluble in water as sugars. They occur in fruits and vegetables.
- (4) Cellulose is insoluble in even boiling water. It forms the framework of all plants.

*The classification used in the former edition of this book was that proposed by W. O. Atwater, and adopted by the American Bureau of Agriculture. In it the term "Albuminoids" was used in place of what are termed "Higher Proteids" in the above, and "Gelatinoids" in place of what are here termed "Albuminoids."

III. FATS.

Fat, as it occurs in our foods, in meat for example, is a mixture of two or three different fats; of these one is a liquid at ordinary temperatures, and is the main constituent of olive oil. The other two are solid, but also differ from each other. The differences in the fat of different animals depends on the varying mixtures of these fats.

IV. MINERAL MATTER AND ACIDS.

Mineral matter, that is, the salts of various chemical elements, is found in smaller or larger proportions in all foods.

Organic acids occur in fruits and aid in giving them their characteristic flavors.

V. WATER.

Forms the largest constituent, by weight, of many of our foods—for example, fruit, vegetables and meat—and also a large proportion of all but such dried foods as peas, beans, rice, etc., in which only ten per cent. to fifteen per cent. is found.

We have gradually found out that these various constituents of our food-stuffs are used in different ways by our bodies, and that, in order to live properly, most of these constituents must be eaten. The higher proteids are essential. No amount of the other foods will prevent the animal dying of starvation if no higher proteids are eaten. After being digested, they are absorbed and built up into our tissues as needed for growth and repair of the body. They may be used as fuel, that is, as a source of energy in the form of heat or of motion. The albuminoids cannot replace the higher proteids and are probably used as a source of

energy only. The carbo-hydrates are not of value in tissue-building or repair; but, when digested and absorbed, serve as a source of energy. They may, to a certain extent, be stored up in the form of a carbo-hydrate, called glycogen, or they may be converted into fat, and stored away as such. Cellulose is almost indigestible and is hence absorbed in but minimal amounts.

Fats, when digested and absorbed, form a most valuable source of energy, as when burned they yield about two and a quarter times the amount of energy yielded by an equal weight of carbo-hydrate or of proteid. Consequently, when our bodies have to produce much heat, they can make use of more fat than usual. Fat is, therefore, a more important article of diet to those who live in cold climates—the Esquimaux, for example—than for those who live in the tropics. Even here fat is of more value as a food in the cold of winter than during the summer. Fat meat or things fried in fat are also somewhat slowly digested. The acrid substances contained in overheated fat irritate the mucous membranes and hence interfere with digestion.

Many mineral matters are also absolutely essential for the growth and repair of our tissues (iron is, for instance, quite indispensable). They are, however, contained in ample amounts in our food, when we live on a mixed diet of meat and vegetables. If we confined ourselves exclusively to a vegetable diet, common table salt would be necessary. This necessity of adding common salt to vegetables has so affected our appetites, that it has become a recognized custom to add

salt when cooking our food, to give it what we term flavor.

Two thirds of the weight of our body is due to the water which it contains. In the urine, the sweat and the breath, a healthy man loses about four and a half pints of water every day. If the body is to remain healthy and to do the work that is demanded of it, this loss must be continually made good. This is done in part by our food, which also, as was pointed out above, consists to a very large extent of water. Somewhat more than half of the weight of our food is due to the water it contains. But this is not sufficient to replace the water lost, and hence the natural desire for beverages. To make good the loss, we should drink about two and a half pints, or five large tumblers full, of fluid each day.

CHAPTER II.

The Cooking of Food.

FUEL.

The first requisite for cooking purposes is heat; this necessitates the use of fuel. The fuels chiefly used for household purposes are wood, coal, kerosene oil and gas. Soft woods, such as pine or birch, are best for kindling and for a quick fire. Hard woods, beech, maple, etc., burn more slowly, retain the heat longer, and are better adapted for cooking purposes. Coal (anthracite) is about ninety-five per cent. carbon. It kindles slowly, gives a steady heat, and burns for a longer time without attention than wood. Oil is considered to be the cheapest fuel. Gas is a very satisfactory and convenient fuel for cooking purposes, but can only be used in certain localities.

Coal and gas are the chief fuels used in this country. The stoves and ranges used for cooking purposes, in which coal and gas are burned, vary greatly, and it is necessary to study each by itself to obtain the best results with a minimum expenditure of fuel.

A good coal stove or range should have:—

1. A fire-box large enough to admit coal to at least the depth of seven inches.
2. Grate, as a bottom to the fire-box (a duplex grate is the best).
3. Checks and dampers so that the fire may be readily controlled.

4. Drafts perfect.

5. Large oven space for size of range.

6. A hot-water back, or, where this is not possible, a box for water at the back of the stove.

7. Ash-pan.

8. Stove-pipe.

An oven for warming dishes is a desirable addition to a range.

The construction of the range must be studied in detail to understand the arrangement of dampers, places to be cleaned, etc.

To Make and Care for Fire in a Coal Range.

1. Close all but the damper which gives a direct draft to chimney.

2. Brush the ashes from the top of the oven into the fire-box and put the lid on.

3. Empty the grate into the ash-pan (save all unburned coal and cinders).

4. Lay the fire.

(a) Put in shavings or crushed paper.

(b) Then small pieces of kindling, laid crosswise so as to allow plenty of air space.

(c) Add a little hardwood and a single layer of coal.

(d) Put on the covers, see that the direct draft and oven damper are open.

(e) Light the shavings or paper.

When the wood is thoroughly kindled, and the first layer of coal heated, fill the fire-box with coal even with the top of the oven. When the blue flame disappears close the oven damper, and when the coal is burning freely close the direct draft.

When coal becomes bright red all through it has lost most of its heat. A great deal of coal is wasted by filling the fire-box too full and leaving the drafts open till the coal is red. There should always be black coal on top.

To keep a steady fire it is better to add a little coal at a time rather than to add a large quantity and to let it burn out. Never allow dust or cinders to accumulate around a range, inside or out. Learn to open and to shut the oven door gently and quickly.

To heat the oven, open the lower front damper and keep all others closed.

To check the fire, open the slide in the check damper in front; if not sufficient open the check in the pipe.

To Clean the Range.

After the fire is laid, and before lighting, if at all greasy wash the top of the range with warm soap-suds, wipe dry and with a dauber apply the stove polish. Rub slightly, then light the fire, and, as the iron heats, polish with a brush or stove mitten. When necessary to rub off the stove during the day use soft paper.

THE GAS RANGE.

A gas range should have :—

1. At least four top burners (six are better).
2. One or two sets of oven burners, for heating the oven.

3. A baking oven.
4. A broiling oven.
5. Gas-cocks, one to each top burner, two to the oven burner so as to regulate the supply of gas.
6. An oven lighter, or pilot light, at the right-hand side of the oven for lighting the oven burners.
7. A stove-pipe connected with the chimney so as to carry off gases and odors.

Study the arrangement of each gas-cock, how to light, etc.

When the burners are not in use see that all gas-cocks are closed. If the gas is turned off at the connecting pipe, and not at each gas-cock, when next turned on it will escape, and if allowed to escape into the oven a dangerous explosion is likely to occur when the oven burner is lighted.

To light a gas range, or to light a top burner, open the cock in the connecting pipe, then the one in the pipe supplying the burner, and apply a lighted match. If a double burner the first one when lighted will light the other when the cock is turned. To light the oven, first see that all the stop-cocks which control the supply of gas to the oven burners are closed, and both oven doors open. Open the pilot-light cock and light from the outside through the hole made for the purpose. Then open first one oven cock, then the other; one set will light the other.

If the gas burns with a roaring noise turn off at once and re-light.

For baking, light the oven burners and close the door ten or fifteen minutes before using. For broiling or toasting, light oven burners at least five minutes before required. Place the rack and pan close under the burners.

To save gas. As soon as the contents of a kettle or saucepan come to the boiling point, turn down the gas as a much smaller flame will keep the pot boiling.

The Effect of Heat upon Food-Stuffs.

As our food-stuffs contain in almost all cases such considerable amounts of water, the heat to which they are exposed in cooking, is, in almost all cases, a moist heat. As was noted above the higher proteids are coagulated by boiling (212° F.), and many of them at lower temperatures, the chief proteid of beef at 133° F., for example. Proteids coagulated by heat are less easily digested than before being coagulated. The albuminoids on heating, and especially on boiling, yield gelatin, and this is readily soluble in hot water. Water containing much gelatin (5%) sets to jelly when cooled. The connective tissue which contains much albuminoid serves to bind meat together. Owing to the change in the albuminoid in cooking, the meat is held less firmly together, is more easily broken up in the process of digestion, and the higher proteids more readily got at and digested. Cooking thus probably helps rather than hinders the digestion of meat, but not of eggs where there is little or no albuminoid.

Starch is dissolved by boiling water, and in the process becomes changed so that it remains in solution

when cool. Some starches do not need the water to boil in order to be dissolved, a heat of 149-185° F. being sufficient. Long heating, when moist or boiling, will change a small per cent. of the starch present into dextrins or sugars. The cellulose framework of vegetables and fruit is softened and somewhat broken down by cooking, but still remains almost entirely indigestible.

The various methods of cooking food develops certain flavors which are agreeable to the palate, offer variety in taste, and destroy many germs contained in the food which might otherwise be very injurious.

CHAPTER III.

Methods of Cooking.

Heat may be applied to food directly, through the medium of metal, or through the medium of fat. In these cases the cooking is said to be in dry heat. When heat is applied through the medium of water it is called cooking in moist heat. The following are the chief methods employed:—

DRY HEAT.	MOIST HEAT.
Broiling.	Simmering.
Pan-Broiling.	Boiling.
Roasting.	Steaming.
Baking.	Steeping.
Frying.	
Sauteing.	

COMBINATION OF DRY AND MOIST HEAT.

Braising.
Fricasseeing.

BROILING.

Broiling is cooking directly over hot coals or gas. The cut surfaces are seared, preventing the escape of juices, and especially palatable flavors are developed in the browned surfaces. Fish and tender meat only are suitable for broiling, *e.g.*, porter-house steak, sirloin steak, young chicken, bacon and ham.

Directions for Broiling over Coals.

Have a clear, hot-coal fire. Grease the wires of the broiler with a piece of fat, place in it the meat and hold

close to the fire for ten seconds, or, while counting ten slowly, turn and hold the other side over the fire for the same length of time. Continue turning the meat every ten seconds until well seared, then hold it a little farther from the fire and turn less frequently, until the article is cooked. For meat one inch thick eight minutes should be long enough, and if one and one-half inches ten minutes. (Illustrated by recipe No. 38.)

PAN-BROILING.

Pan-broiling is cooking on a *very* hot frying-pan.

Directions for Pan-broiling.

Have the steak or chops neatly trimmed, place on the hot pan so that the whole surface of the meat touches the pan, turn immediately (with the fingers) the first two or three times, and turn every ten seconds until the meat is seared, then turn less frequently until done. It will take about two minutes longer than broiling over the coals. (Illustrated by recipe No. 47.)

ROASTING.

Roasting, properly speaking, is cooking before a fire. A "Jack" is required which, being wound up, causes the joint to revolve slowly before a bright fire. It is the same in principle as broiling, but is used only for larger cuts of meat.

NOTE.—When we speak of "roast beef," etc., in this country it usually means cooking in an oven, or baking.

BAKING.

Baking is cooking in the dry heat of an oven, a method by which almost every kind of food may be cooked. (Illustrated by recipe Nos. 69 or 93.)

FRYING.

Frying is cooking by immersing in hot fat at a temperature of 380° to 400° F.

Directions for Frying.

1. The best frying kettle is of iron or steel, and should be about six inches deep.

2. Various fats are used, such as olive oil, cottolene, lard and dripping. A combination of beef, mutton and pork fat makes an excellent fat for frying.

3. The kettle should not be more than half full of fat. An eight-inch kettle will require about three pounds of fat.

4. The fat must be the right temperature. This will be shown by the bubbles disappearing (bubbles indicate water), the surface becoming still, and a very faint smoke rising. It may be tested by dropping in an inch cube of bread, from the crumb: if it turns golden brown in sixty seconds it is suitable for uncooked mixtures: if in forty seconds for cooked mixtures.

5. The articles should be lowered gently into the hot fat, a few at a time. A wire spoon or basket is generally used to put in articles which will not float.

NOTE.—Should a drop of water be allowed to fall into the hot fat an explosion may follow.

6. When the frying is finished, the fat should be cooled a little, then strained through a fine sieve and set aside to cool. The same fat may be used over and over unless it is spoiled by burning. It should be clarified occasionally. (Illustrated by recipe Nos. 109 or 71.)

SAUTEING.

Sauteing is cooking on a metal pan greased sufficiently to prevent the article from sticking to it.

Directions for Sauteing.

1. Various fats may be used to grease the pan. A bit of bacon rind, meat fat, dripping or butter.
2. The pan should be heated *hot* and greased thoroughly, but the fat should not burn.
3. The food should be cooked on one side then turned over and browned on the other side. (Illustrated by recipe Nos. 65 or 23.)

SIMMERING.

Simmering is cooking in liquid at a temperature of 180° F. to 196° F. This method is used to soften connective tissues and cellulose; to extract mineral and other matter. (Illustrated by recipe No. 45.)

BOILING.

In this method the food is surrounded by boiling liquid, which is kept boiling until the article is cooked. (Illustrated by recipe No. 19.) Rapidly-boiling water is no hotter than water boiling gently, and only foods which must be kept in motion should boil rapidly, *e.g.*, rice, macaroni. (Rapid boiling is illustrated by recipe No. 37, and gentle boiling by recipe Nos. 16 or 19.)

STEAMING.

Steaming in the ordinary household is cooking in the steam from boiling water.

Directions for Steaming.

1. See that the steamer is provided with a close-fitting, pointed cover, and that it fits the kettle closely.
2. Fill the kettle half full of boiling water and keep it boiling *rapidly* the whole time the article is being cooked.
3. Keep a kettle of boiling water ready to replenish the steamer-kettle when necessary.
4. Keep the steaming food or dish inside away from the sides of the steamer.

STEEPING.

Steeping is a method of extracting the flavor from substances. (Illustrated by recipe No. 5.)

Directions for Steeping.

1. Place the substance in a pan, add the necessary quantity of boiling water and cover closely.
2. Keep in a warm place until the solution is of the desired strength.

BRAISING.

Braising is a combination of baking and steaming.

Directions for Braising.

1. A closely-covered and deep pan is necessary.
2. The meat is placed on a bed of vegetables such as turnips, carrots, onions, etc. Enough water is added to nearly cover the vegetables and the pan covered closely.

3. The pan is placed in a moderate oven and the food allowed to bake three or four hours.

4. This is an economical and palatable way of cooking tough cuts of meat. (Illustrated by recipe No. 44.)

FRICASSEEING.

Fricasseeing is a method of cooking meat which combines sauteing and simmering.

Directions for Fricasseeing.

1. Cut the meat in suitable pieces and saute them.
2. Remove the pieces to stew-pan, make a flour gravy in the saute-pan, add it to the meat and cover closely.
3. Simmer, until the meat is tender (from two to four hours).
4. This is an excellent and palatable method of cooking tough meat. (Illustrated by recipe No. 42.)

NOTE.—While some of the recipes indicated may seem somewhat advanced for beginners it must be remembered that the interest of the pupil should be aroused at an early stage. And the recipes are chosen for the purpose of comparing the different ways of applying heat to food.

Time-table for Cooking.

COOKING IN WATER.

	Hours.	Minutes.
Asparagus		25 to 30
Brussels sprouts		15 " 20
Beets (young)		40 " 50
" old	3 to 4	
Chicken	1½ " 1½	
Coffee		2 " 3
Corned beef	3 " 4	
Cod (4 or 5 lbs)		25 " 35
Cabbage		40 " 60

	Hours.	Minutes.
Cauliflower		25 to 30
Eggs (soft)		6 " 8
" hard		35 " 40
Fowl, 4 to 5 lbs.	2 to 3	
Green Corn		15 " 20
Ham, 12 to 14 lbs.	4 " 5	
Halibut, 2 to 3 lbs.		30 " 35
Lobster		25 " 30
Lima beans (any shelled beans)	1½ " 1½	
Mutton, leg	2 " 3	
Macaroni		25 " 30
Onions		40 " 50
Peas		30 " 60
Parsnips		35 " 45
Potatoes		25 " 30
Plum pudding	4 " 5	
Rice		20 " 30
Spinach		25 " 30
Salmon, 2 or 3 lbs		35 " 40
String beans	1 " 1½	
Turnips		40 " 50
Turkey, 9 or 10 lbs	2 " 3	
Tomatoes		15 " 20

NOTE—The difference in time is allowed for quality and age.

BROILING.

	Minutes.		Minutes.
Chickens	20 to 25	Small fish	6 to 8
Lamb chops	8 " 10	Steak, one inch thick ...	6 " 8
Liver	6 " 8	Steak, one and one half	
Slices of fish	12 " 15	inch thick	8 " 10

BAKING.

	Hours.	Minutes.
Beef, rump, rare, 10 lbs	1 and	35
" " well done	2	
" sirloin " 10 lbs	2	
" " rare, 10 lbs	1 " "	30
" " 5 lbs., rare	1 " "	8
" " well done	1 " "	25

	Hours.	Minutes.
Braised beef.....	3½ to 4½	
Beans (baked).....	5 " 7	
Bread (white) according to size of loaf.....		40 to 60
" (whole wheat) according to size of loaf....		40 " 50
Biscuits or Rolls (raised).....		15 " 25
" (baking powder).....		15 " 20
Bread pudding.....		40 " 50
Batter pudding.....		40 " 50
Chicken, 4 lbs.....	1½ " 1½	
Custard.....		30 " 45
" in cups.....		20 " 25
Cake (sponge).....		45 " 60
" (layer).....		20 " 25
" (pound).....	1½ " 1½	
" (fruit).....	1½ " 2	
Cookies.....		6 " 10
Corn cake (thin).....		15 " 20
" (thick).....		30 " 35
Cheese straws.....		8 " 10
Duck....	1½ " 1½	
" (wild).....		30 " 40
Fish, 3 or 4 lbs.....		50 " 60
" small.....		25
Gems.....		20 " 25
Gingerbread.....		20 " 30
Goose, 8 or 9 lbs.....	2	
Indian pudding.....	2½	
Lamb (leg).....	1½ " 2	
" (fore-quarter).....	1 " 1½	
" (chops).....		10 " 12
Mutton (leg).....	1½ " 2	
Muffins (raised).....		25 " 30
" (baking-powder).....		20 " 25
Pork, 5 or 6 lbs.....	2½	
" spare-ribs.....	2	
Patties.....		20 " 25
Plum pudding (steam).....	3 " 4	
Partridge.....		45 " 50
Pies.....		35 " 50
Rice pudding.....	2	

	Hours.	Minutes.
Rice pudding (with eggs).....	1	
Scalloped oysters		25 to 30
Tarts.....		15 " 20
Tapioca pudding.....		40 " 60
Veal (fillet)	2 $\frac{3}{4}$ to 3	
" (loin).....	2 $\frac{1}{2}$ " 2 $\frac{3}{4}$	

FRYING.

	Minutes.		Minutes.
Breaded chops..	6 to 8	Fritters and doughnuts...	3 to 5
Croquettes	2	Potatoes (raw).....	5 " 8
Fishballs	1 " 2	" (croquettes)....	2
Fillets of fish.....	5 " 7	Smelts.....	3 " 5

Steaming requires about the same time as boiling.

TABLES OF MEASUREMENT, ETC.

Measurements for Cooking.

(All measures are level.)

4 gills	1 pint.	60 drops.....	1 teaspoonful.
2 pints	1 quart.	3 teaspoonfuls ..	1 tablespoonful.
4 quarts	1 gallon.	16 tablespoonfuls.	1 cupful.
2 gallons....	1 peck.	2 cupfuls.....	1 pint.

Table of Abbreviations.

Saltspoon	ssp.	Pint	pt.
Tablespoon	tbsp.	Quart.....	qt.
Teaspoon	tsp.	Peck	pk.
Cupful.....	cup.	Gallon	gal.
Pound.....	lb.	Minute	min.
Ounce.....	oz.	Hour	hr.

Speck . . . spk. (what can be put on a quarter inch surface).

Table for use Without Scales.

4 cups of flour.....	1 lb. or 1 qt.	4 cups of flour....	1 lb. or 1 qt.
2 " solid butter..	"	9 large, 10 med. eggs..	1 "
2 " gran. sugar..	1 "	2 tablespoons butter..	1 ounce.
2 $\frac{1}{2}$ " powd. sugar..	1 "	4 " flour ..	1 "
2 $\frac{1}{2}$ " brown sugar..	1 "	2 " sugar..	1 "
2 $\frac{1}{2}$ " oatmeal....	1 "	4 " flour .	1 "
4 $\frac{1}{2}$ " rolled oats..	1 "	4 " powd. sugar..	1 "

CHAPTER IV.

The Cooking of the Common Food Substances.

WATER—BEVERAGES.

Pure drinking water is that which does not contain disease germs or other injurious matter. The chief characteristic of water is its solvent power. Rain or soft water has greater solvent power than hard water. This fact must be remembered in the cooking of vegetables and in the preparation of beverages. Great care should be taken to secure pure water for drinking and cooking purposes (especially the former).

Should there be any doubt as to the purity of the water used for drinking purposes it should be boiled and kept closely covered to prevent impurities from the air getting into it. Boiled water tastes very flat, and in order to restore the flavor it should be poured back and forth several times from one pitcher to another, or shaken in a large bottle.

Great care must be taken of the vessels in which water is kept, especially for drinking purposes, and when used from pipes it should be allowed to run for some time before using.

A beverage is the term applied to any liquid used as a drink, and to quench thirst. Water is the beverage provided by nature, and supplies the demand of the body perfectly if taken in sufficient quantity. Any other beverage satisfies thirst simply by means of the water it contains. Many are only palatably-flavored

water, while others are more or less nourishing or stimulating.

They may be classified as :

1. Refreshing, *e.g.*, lemonade and other fruit drinks.
2. Nourishing, *e.g.*, milk, cocoa, etc.
3. Stimulating, *e.g.*, wines, beef tea, coffee, tea.

1.—LEMONADE.

$\frac{1}{2}$ lemon.		3 tps. sugar.
$\frac{3}{4}$ cup ice cold water.		

Cut a thin slice off the lemon and squeeze the juice from the rest. Put the juice and sugar in a glass (removing all seeds), add the slice of lemon and the cold water. Stir well immediately before serving.

NOTE.—Lemons are a desirable addition to the diet owing to the mineral matter and acids they contain. Lemonade taken in moderation and not too sweet is a cooling and refreshing drink, especially in cases of fever. Sometimes the addition of a little lemon juice to an article of food, such as vegetables, fish, etc., renders them more palatable.

2.—COCOA.

1 to 2 tps. cocoa.		1 tsp. sugar.
$\frac{1}{2}$ cup water.		$\frac{1}{2}$ cup milk.
Pinch of salt.		

Mix the cocoa, sugar, salt and water in a saucepan or inside part of double boiler. Boil gently ten minutes, closely covered. Add the milk and bring to scalding point; beat thoroughly with a Dover egg-beater; re-heat and serve.

NOTE.—This is much improved if cooked two or three hours in a double boiler before the milk is added.

The nutritive value of cocoa is little more than that of tea or coffee, but as it is less stimulating may be

taken by children and young people with less harm than either tea or coffee. The composition of cocoa and chocolate are similar, although chocolate contains a little more fat than cocoa, and is, therefore, a little more difficult to digest. The chief nutritive value is in the milk used in the preparation of cocoa or chocolate.

3.—BOILED COFFEE.

1½ tbsps. coffee.	2 tbsps. cold water.
1 tsp. egg, white ; or	¾ cup boiling water.
½ eggshell.	

Scald a granite or earthenware coffee-pot, add the cold water and the crushed shell of the egg and mix with the coffee. Put the mixture into the coffee-pot, pour on the boiling water and stir thoroughly. Boil three minutes, then move to the back of the stove. If not boiled the coffee will not be clear, and if boiled too long the tannic acid is extracted. Stir and pour some into a cup so as to clear the spout from grounds. Return to the coffee-pot and repeat. Then add a tablespoon of cold water which will help to clear. Cold water being heavier than hot water sinks to the bottom, and carries the grounds with it. Stand where it will keep hot, but not boil, for five minutes and serve at once. If it must be kept longer, strain into another hot pot. No coffee is good that is kept long after it is ready.

4.—FILTERED COFFEE.

2 tsps. finely-ground coffee.	¾ cup boiling water.
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A French coffee-pot is the best for this method of preparing coffee. Put the coffee in a strainer (a piece of cheesecloth may be fastened inside a coffee-pot to serve as a strainer), place the strainer in coffee-pot, set

on warm part of stove, add gradually boiling water and allow it to filter. After the water has all filtered through the strainer pour the liquid again over the coffee grounds and filter a second time. If desired very strong it may be filtered a third time. Serve *very hot*. Put sugar and cream in cup before the coffee. If cream is not available use hot milk instead.

The stimulating property of coffee is due to the alkaloid caffeine. When drunk in moderate quantities it acts as a mild stimulant to the nervous system, and indirectly aids the digestion slightly. An excessive use of caffeine, like that of many other drugs, leads to a chronic poisoning, and to an unhealthy nervous state. A moderate use of coffee is perhaps of dietetic value to adults, but children should not get into the habit of drinking it. The flavor of coffee is largely due to an essential oil.

5.—TEA.

2 or 3 tsps. tea.

2 cups *boiling* water.

Or 1 tsp. for $\frac{3}{4}$ cup

boiling water.

Scald an earthen or china teapot. Put in the tea and pour on boiling water, cover closely and steep four or five minutes in a warm place (the lid of the tea-kettle may be lifted and the teapot set over the steam) and serve at once. If it cannot be used immediately pour it off the leaves into another hot teapot.

Tea, like coffee, is a stimulant and not a nutrient. It contains an alkaloid theine, which is chemically identical with caffeine from coffee, and which has the same mildly stimulant properties. It contains further, a volatile oil, to which the flavor is due, and an astringent substance, tannin. This latter, is not as soluble as the other two in

water, but goes gradually into solution when the tea is allowed to infuse for some minutes, and causes the bitter unpleasant taste in tea which has stood upon the leaves. Green tea contains more than twice as much of the astringent tannin than black tea, and is generally considered less wholesome than the latter.

The character of the water is of great importance. It should be freshly boiled, as prolonged boiling makes the water flat and affects the flavor. If the water is very hard, a tiny pinch of soda may be added to the teapot.

Water should always be poured on tea at the boiling point, as it is only at the boiling point that some of the constituents can be extracted to which the beverage owes its aroma. Allowing tea to steep longer than five minutes, or to boil, extracts the tannic acid and makes it very injurious.

While of little or no nutritive value, tea is useful in other ways. When properly made it aids in the assimilation of food, is refreshing and relieves bodily fatigue, it introduces considerable hot water into the system, which is beneficial when taken at the proper time. Tea, if taken in excess, has the same consequences as excess of coffee. Large quantities of tea, as of any fluid taken with the meals, retards the digestion. If tea is infused too long, it will contain much of the astringent tannin, and is undoubtedly injurious, as the tannin interferes with the digestion and tends to constipation. Cheap teas are more apt to produce injurious effects than the more expensive varieties.

Children and young people should not drink tea, as like coffee, it is too stimulating for young nerves.

CHAPTER V.

The Cooking of Fruit—Vegetables—Breakfast Cereals.

FRUIT.

Fresh fruits consist chiefly of water, but they contain valuable mineral matter and acids. Some fruits contain a considerable amount of carbo-hydrates, principally sugar and gum, *e.g.*, apples, grapes and bananas.

Dried fruits contain a much larger percentage of sugar and less water.

When perfectly ripe and sound fresh fruit is more wholesome than when cooked.

GENERAL RULES FOR COOKING FRUIT.

A. FRESH FRUIT.

1. *Stewed*.—Put the prepared fruit in a saucepan with enough water to keep it from burning. Cover closely and boil gently until tender, stirring often. Add the sugar and let it boil a minute more.
2. *Cooked in Syrup*.—Make syrup of one part sugar to two or three parts water. Put the prepared fruit in the hot syrup, cover closely and simmer until tender.

B. DRIED FRUIT.

Wash the fruit thoroughly. Cover with cold water and soak twenty-four hours. Put on to cook in the same water in which it was soaked. Add spices if

desired. * Cover closely and simmer until tender. Add the sugar and simmer ten minutes longer. Take out the fruit and if necessary boil down the syrup, then pour it over fruit.

6.—STEWED PRUNES.

8 prunes.		$\frac{1}{2}$ in. stick cinnamon.
1 whole clove.		$\frac{1}{2}$ tbsp. sugar.

Follow the rule for dried fruit given above. With so small a quantity it will be necessary to boil down the syrup.

7.—BAKED APPLES (PLAIN).

Choose firm, perfect apples. Wash and wipe them. Put them in a shallow baking pan, and bake in a moderately hot oven until tender to the centre. Remove carefully to the serving dish, and serve hot or cold.

8.—BAKED APPLES (SWEETENED).

Pare and core, without breaking, tart apples. Put them into a shallow earthen dish, fill the cavities with sugar, add water to cover the bottom of the dish. Bake in a quick oven until soft, basting often with the syrup. (Quinces may be baked in the same way.)

9.—Coddled Apples.

1 apple.		$\frac{1}{2}$ cup water.
$\frac{1}{4}$ cup sugar.		

Wash, core and pare the apple, keeping the apple whole. Put the sugar and water in a saucepan and boil two minutes. Add the fruit, cover closely and simmer until tender, turning occasionally. Take out the fruit carefully, pour the syrup over, and serve hot or cold.

NOTE.—One cup of sugar will do six or seven apples.

10.—CRANBERRY SAUCE.

1 cup cranberries.
 $\frac{1}{2}$ cup sugar.

$\frac{1}{4}$ cup boiling water.

Pick over the berries, removing any imperfect ones. Put them in a saucepan, cover with boiling water and let stand a moment, then drain away all this water. Then add the quarter cup of boiling water and cover closely. Boil until the berries burst well, stirring occasionally; add the sugar and boil three minutes. Turn into a mold and stand away to cool.

11.—CRANBERRY MOLD.

Pick over and wash four cups of cranberries. Put in a stew-pan with one cup of boiling water and boil twenty minutes. Rub through a sieve, then add two cups of sugar and cook slowly ten minutes. Turn into a mold or glasses.

12.—FRUIT SALAD.

Arrange alternate layers of shredded pineapple, sliced banana and sliced oranges, sprinkling each layer with powdered sugar.

TO PREPARE FRUIT FOR THE SALAD.

1. *Pineapple*.—Pare and cut out the eyes and pick off in small pieces with a silver fork.
2. *Oranges*.—Remove skin and white covering, slice lengthwise so that the tough centre may not be served.
3. *Grapes*.—Cut in halves and remove seeds. Chill before serving.
4. *Strawberries, apples, or malaga grapes* may be used in fruit salad.

VEGETABLES.

Dry vegetables contain a large percentage of albuminoids and starch. The root vegetables contain a considerable amount of carbo-hydrates in the form of starch, sugar and gum. Each has its special value. They may be classified as follows:—

1. FRESH.

(a) Starchy, *e.g.*, potatoes and parsnips.

(b) Non-starchy, *e.g.*, turnips, carrots, cabbage, tomatoes, celery, lettuce.

2. DRIED, *e.g.*, peas, beans and lentils.

GENERAL RULES FOR COOKING VEGETABLES IN WATER.

A. PREPARATION.

1. Wash and pare, peel or scrape the vegetable and cut it into convenient pieces.
2. Unless fresh vegetables are taken right from the garden they should soak in cold water fifteen minutes to one hour before cooking.
3. Dried vegetables should soak in cold water at least twelve hours before cooking.

B. COOKING.

1. Put all fresh vegetables on to cook in boiling water.
2. Put all dried vegetables on to cook in cold water.
3. Strong smelling vegetables must cook at simmering point; the others may boil gently.

4. Salt the water for vegetables that grow above ground, including onions—one teaspoonful to one pint.
5. Do *not* salt the water for vegetables that grow underground.

C. The vegetable water, excepting from potatoes and dried peas and beans, should be saved for soups and sauces, as it contains most of the valuable mineral matter of the vegetable.

13.—STEWED TOMATOES.

Wash, cover with boiling water and peel the tomatoes; put them in a stew-pan (without water) and boil gently twenty minutes, stirring often to prevent burning. Season with butter, pepper and salt. Serve hot.

14.—ONIONS.

Peel under cold water. Put in a saucepan, measure and put in enough boiling water to cover. Add a teaspoonful of salt to every pint of water and simmer until tender, from one to three hours, according to size. Drain off the water, put them in a hot vegetable dish, cover with cream sauce, or add butter, pepper and salt to taste.

15.—CABBAGE.

Take off the outside leaves, cut in quarters and remove the core, leaving enough to hold the leaves together. Soak until crisp in cold water. Drain and place in a kettle, measure and put in enough water to cover. Add a teaspoonful of salt to every pint of water. Simmer thirty to sixty minutes according to size. Drain and

place carefully in a hot vegetable dish. Season with butter, pepper and salt.

16.—CARROTS.

Wash, scrape and cut the carrots into suitable pieces, place them in a pot and boil gently until tender. Drain and place in a hot dish; season with butter, pepper and salt.

17.—GREEN PEAS.

Wash and shell the peas, rejecting all wormy ones. Cover with cold water and let stand fifteen minutes if at all wilted. Skim off those which rise to the top and drain the rest. Measure and put in enough boiling water to barely cover, add one teaspoonful of salt to each pint of water; boil gently until tender. Drain. Season with butter, pepper and salt and serve in a hot dish.

18.—SPINACH.

Pick over the leaves, rejecting all bad ones, drop into cold water, shake them out of the water by handfuls, and drop them into another pan of cold water; shake them out of this water and place in a kettle. Cover closely and cook in their own juice until tender (about twenty minutes). Stir occasionally to prevent burning. Drain thoroughly, add pepper, salt and butter and pack solidly into a *hot* vegetable dish. It may be garnished with slices of hard-boiled eggs.

19.—BOILED POTATOES.

Select potatoes of uniform size. Wash, pare and drop at once into cold water to prevent discoloring. (Towards spring potatoes will need to be soaked *at least* two

hours.) Cover with boiling water and boil gently until they can be easily pierced with a knife point or fork. Drain at once, dredge with salt, and shake over the fire for a moment to dry. Stand in a warm place, uncovered, for a minute or two. Serve in a hot vegetable dish covered with a napkin.

20.—BAKED POTATOES.

Select medium-sized potatoes, as uniform in size as possible. Wash and scrub with a vegetable brush. Place in a dripping pan, or on a rack, and bake in a hot oven for forty minutes, or until soft. When cooked break the skins so as to allow the steam to escape, else they will become soggy. This is the most digestible way of cooking potatoes.

21.—MASHED POTATOES.

Boil potatoes—without skins—and mash in the kettle in which they are boiled. When free from lumps add to each cup of mashed potato

1 tsp. butter.

2 tbsps. hot milk.

½ tsp. salt.

A spk. white pepper.

Beat all together until light and creamy. Re-heat and pile lightly without smoothing in a hot dish.

22.—POTATOES BAKED WITH MEAT.

Pare and par-boil potatoes ten minutes. Drain and place around the roast in the pan. Bake until tender, basting and turning occasionally. Ordinary potatoes require about forty minutes.

23.—SAUTED POTATOES.

Cut cold-boiled potatoes in one-fourth-inch slices, sprinkle with pepper and salt, put in a hot, well-greased frying-pan, brown on one side, turn and brown the other, and serve at once.

24.—BOILED BEANS (WHITE OR LIMA).

1 cup beans.

 $\frac{1}{2}$ cup milk.

1 tbsp. butter.

1 tsp. salt.

Pick over one cupful of beans, soak in a quart of cold water over night. Drain off the water, add one quart of cold water and quarter teaspoonful of baking soda. Bring to boiling and let simmer for two hours. Drain, add the butter, salt and milk and stand on the back of the stove ten minutes.

25.—SUCCOTASH OF DRIED BEANS AND
CANNED CORN.*

1 cup dried beans.

 $\frac{1}{2}$ can corn.

1 cup milk.

1 $\frac{1}{2}$ tsps. salt.

2 tbsps. butter.

Cook the beans as in above recipe, drain and add the seasoning, milk and corn. Cook for three minutes after they begin to boil.

* This is better made with Lima beans.

BREAKFAST CEREALS.

Cereals take the first place among vegetable foods, owing to their cheapness and great nutritive value. They contain 65-70% starch, 10-12% water, 10-12% proteids, $\frac{1}{2}$ -8% fat, and 2% mineral matter. The chief cereals are wheat, oats, barley, rice, corn and rye, and from them are produced the various flours, meals, breakfast cereals and patent breakfast foods.

The nutritive value of breakfast cereals depends very much upon the manner of cooking.

GENERAL RULES FOR COOKING BREAKFAST CEREALS.

1. Cook in boiling salted water—one quarter teaspoonful to every cupful of water.

2. Quantity of dry cereal to one cupful of water.

(a) One quarter cup of oatmeal, rice, or cracked wheat.

(b) One half cup of rolled oats, or any flaked cereal.

(c) Three tablespoonfuls cornmeal, farina or any granular cereal.

3. Methods of cooking breakfast cereals.

(a) *Whole or Cracked Grains*.—Put the salt and water in the top part of a double-boiler. Place it directly over the fire. When it boils add the cereal and stir it frequently until it has boiled ten minutes. Cover closely and set the top in the lower part of the double-boiler. Cook from three to twelve hours.

NOTE.—Rice will cook in three-quarters of an hour.

- (b) *Flaked Cereals*.—Put the salt and water in a pot. When it boils add the cereal. Stir constantly until it thickens, then boil gently half an hour, stirring often to prevent burning.

NOTE.—These are much nicer cooked like whole grains.

- (c) *Granular Cereals*.—Put the salt and water in the top part of a double-boiler, and place directly over the fire. When it boils hard, sprinkle in the cereal, stirring quickly all the time. Stir and boil until it thickens. Cover closely and set the top in the lower part of the double-boiler. Cook from one to four hours.

4. Breakfast cereals may be cooked the day before they are to be used, but should be left in the pot and should not be stirred while re-heating. A tablespoonful or two of water poured over the top after it is cooked will prevent a skin forming over the top.

CHAPTER VI.

The Cooking of Eggs—Milk—Cheese.

EGGS.

Eggs are one of the most valuable tissue-building foods, and either raw or properly cooked are easily digested.

26.—EGGS COOKED IN THE SHELL.

Allow one cup of boiling water for each egg to be cooked, and one extra for the pot. Put the water in the pot and bring to boiling point. Put in the eggs, cover closely and stand on a part of the stove which may be touched by the hand.

In 10 minutes the egg will be cooked soft.

" 15	"	"	"	"	medium.
" 20	"	"	"	"	firm.

27.—POACHED EGGS.

Measure water into a frying-pan until it is one and one half inches deep. Add half a teaspoonful of salt for each cupful. Bring to simmering point. Break each egg carefully into a saucer and slip it gently into the water. When the white is set lift the egg on a cake-turner and slide it on a hot plate, or on a piece of buttered toast that has been dipped in hot water and kept warm while the egg was poaching.

28.—SCRAMBLED EGGS.

1 egg.
 $\frac{1}{2}$ tbsp. milk.
 $\frac{1}{8}$ tsp. salt.

A speck of pepper.
1 tsp. butter.

Beat the eggs enough to mix the yolks and whites well. Stir in the salt, pepper and milk.

Put the butter in an omelet or frying-pan, let it spread over the bottom of the pan, then turn in the egg mixture. Cook until creamy, stirring and lifting from the bottom of the pan. Serve on toast or surrounded by crisp bacon.

29.—FRENCH OMELET.

1 egg.
1 tbsp. boiling water.

$\frac{3}{4}$ tsp. butter.
Salt and pepper.

Scour out the frying-pan with a teaspoon of salt and a bit of paper. Put the serving dish to warm, and put a flat-bladed knife and salt and pepper shakers near the stove. Beat the egg in a bowl with a fork, just enough to mix the yolk and white. Stir in the hot water. Melt the butter in the frying-pan and let it spread over the bottom and sides. Pour in the egg and cook it over gentle heat; when it begins to set raise it around the edges with the knife and let the liquid part run under. When no more will run under dredge the top with salt and pepper, loosen from the pan, fold it and turn on to the serving dish.

If cooked at the proper temperature this omelet will be of a jelly-like consistency.

MILK.

Milk is a food rather than a beverage. It contains all the food substances. But as such a large percentage of milk is water (87 to 88 per cent.) it would have to be taken in enormous quantities to supply the necessary nutrition for a healthy adult. Therefore, while a complete food for infants, it requires the assistance of other foods, especially of carbo-hydrates, in supplying sufficient nourishment for a healthy person.

Skim milk is important as a cheap source of albuminoids.

Cream is the top layer of milk which has stood for some time. It contains most of the fat of the milk. Cream is very easily digested and is useful where fat is especially required in the system. It must, however, be considered a luxury in the ordinary diet.

Butter is made by churning cream until all the little fat globules have run together and separated from the milk. What is left is called buttermilk and contains most of the water, sugar, casein and mineral matter. Butter is an easily-digested fat and one of the most valuable foods. Cooked butter is less digestible; it burns more readily than other fats.

If there is any doubt as to the purity of milk, or if it has been exposed in any place where it would be likely to become contaminated (milk absorbs odors and impurities very quickly)—and as milk is more liable than almost any other food to contain disease germs—it is always safe to sterilize it, that is, heat it to the boiling point (212°F.).

30.—STERILIZED MILK.

Fill small-necked bottles to within one and one half inches of the top with milk, and cork with absorbent cotton. Stand in a steamer of cold water, having water three fourths of the height of the bottle. Heat the water gradually until it reaches boiling point, then move back on the stove and let stand for ten minutes, just below boiling point. If the milk is to be preserved for some time it should be kept at boiling point from five to ten minutes. Put in a cool place and keep tightly corked until used.

31.—PASTEURIZED MILK.

While sterilization is the most efficient way of dealing with milk germs, it has its drawbacks. It alters the taste of the milk and renders the casein less easy of digestion. Therefore pasteurization is often substituted in the treatment of milk. This consists in keeping the milk at a temperature of 158°F. for twenty minutes or half an hour. While this method may kill most of the germs usually found in milk it does not destroy the tubercle bacillus or some bacteria which will cause diarrhea. In pasteurizing milk use the same method as in sterilizing, only changing the temperature.

32.—JUNKET.

1 cup milk.

1 tbsp. sugar.

| ¼ junket tablet.

| 1 tsp. cold water.

A little flavoring.

Put the tablet to soak in the cold water. Put the sugar and milk in a pan and stir over the fire until it reaches blood heat. Be careful that it gets no hotter, or

it will not coagulate. When it reaches blood heat, take off the fire at once, and add the flavoring. Crush and dissolve the tablet in the water, then stir it into the milk, and at once pour it into the serving dish. Let it stand in a warm room until it sets, then move it carefully to a cold place to chill before serving. If it is jarred while coagulating, or after, the curds and whey will separate.

33.—CORN-STARCH MOLD.

1 cup milk.		2 tbsps. corn-starch.
2 tbsps. sugar.		A pinch of salt.
A little flavoring.		

Mix one tablespoonful of milk with the corn-starch while the rest of the milk is heating in the double-boiler. When the milk is hot stir in the corn-starch and stir until it thickens and cook a few minutes. Stir in the salt and sugar and turn it into a wet mold. Set away in a cold place. When cold turn it out and serve.

34.—BAKED CUSTARD.

1 egg.		1 tbsp. sugar.
$\frac{3}{4}$ cup milk.		Flavoring to taste.

Beat the egg until well mixed. Add the other ingredients and stir until the sugar is dissolved. Turn the mixture into a pudding dish or custard cups. Stand the dish in a pan, pour boiling water around it and bake in a moderately hot oven until set in the centre.

35.—CUSTARD SAUCE.

1 egg.		1 tbsp. sugar.
$\frac{1}{2}$ cup milk.		Flavoring to taste.

Put the milk to heat in a double-boiler. Beat the egg and sugar until well mixed. Stir the hot milk into the

egg and sugar. Turn the mixture back into the double-boiler and stir constantly until it thickens and forms a coating on the spoon. Take off the fire immediately and at once turn the sauce into a cold bowl. Stir in the flavoring and set aside to cool.

CHEESE.

Cheese when made from whole milk consists chiefly of the casein and fat, and contains comparatively little water. It is exceedingly nutritious, and is one of the most valuable of foods. One pound of cheese is equal in proteid to two pounds of beef, and serves as an excellent substitute for those engaged in active labor. It is somewhat difficult of digestion, as the fat forms a coating for the proteids which makes it difficult for the digestive juices to penetrate. It should be well masticated before entering the stomach, and for this reason the more solid varieties of cheese are more apt to be pulverized in eating than the softer makes. The most wholesome form of serving cheese is in combination with other foods. By adding as much bicarbonate of potash as will lie on a ten-cent piece, to a quarter pound of grated cheese, and combining with milk and eggs, macaroni, etc., most nutritious and savory dishes may be prepared at a small cost.

36.—CHEESE CRACKERS.

1 cracker.

$\frac{1}{4}$ tsp. butter.

1 tbsp. grated cheese.

$\frac{1}{8}$ tsp. salt.

A few grains cayenne pepper.

Spread the butter on the cracker, mix the remaining ingredients in a small bowl and cover the cracker with

it. Place on a pan and heat in a hot oven until the cheese is melted. Serve hot or cold.

NOTE.—The above cheese mixture may be used as a sandwich filling.

37.—MACARONI AND CHEESE.

$\frac{1}{2}$ cup. macaroni.		$\frac{1}{4}$ cup. dried bread crumbs.
$\frac{1}{2}$ cup. grated cheese.		$\frac{1}{2}$ tsp. butter.
1 cup cream sauce. (See page 94.)		

Put three cupfuls of water and three-quarters of a teaspoonful of salt on to boil. Break the macaroni into inch pieces. When the water boils hard drop in the macaroni and keep it boiling hard until the macaroni is tender—about thirty or forty minutes. Put butter and crumbs into a saucepan and stir until the butter is mixed through. Grate the cheese. Make the white sauce.

When the macaroni is tender drain in a colander, and rinse with cold water. Mix the cheese with the sauce, stir in the macaroni and pour it into a baking dish. Cover with the crumbs and bake fifteen or twenty minutes to brown the crumbs.

NOTE.—This may be prepared some time before it is to be baked.

CHAPTER VII.

The Cooking of Meat—Poultry—Fish.

MEAT.

Meat is composed of the several nitrogenous compounds—more or less fat, water and mineral matter. It is one of the most important sources of higher proteid. Its substance, when changed to gelatin albuminoid has considerable nutritive value. The digestibility of meat depends upon the variety, the feeding and the age of the animal, and often upon the way in which it is cooked.

Beef is the most largely consumed variety of meat and is probably the most nutritious.

Tongue is a tender form of meat when properly cooked, but contains too much fat to agree well with people of delicate digestion.

Veal, when obtained from animals killed too young, is apt to be tough, pale and indigestible, but good veal is considered fairly nutritious. It contains more gelatin than beef, and in broth is considered valuable especially for the sick.

Mutton is considered to be more digestible than beef, that is, well-fed mutton, from sheep at least three years old, but, as it is more difficult to obtain tender mutton than beef, the latter is more generally preferred. Mutton broth is wholesome and valuable in sickness.

Lamb, when tender and of the right age, is quite as digestible as beef or mutton, but the flesh contains too large a proportion of fat.

Venison is a tender meat with short fibres, which is very digestible when obtained from young deer. Its chemical composition is similar to lean beef.

Pork is tender-fibred meat, but is very indigestible owing to the high percentage of fat, which is considerably more than the nitrogenous material it contains. Pork ribs may have as much as forty-two per cent. of fat.

Ham is more digestible when well cooked and eaten cold. Bacon is more easily digested than either ham or pork; when cut thin and cooked quickly—until transparent and crisp—it can often be eaten by dyspeptics, and forms an excellent food for consumptives.

Sweetbread, which is the thymus gland of the calf, is a delicate and agreeable article of diet, particularly for invalids. Tripe, heart, liver and kidneys are other forms of animal viscera used as food, valuable chiefly as affording variety.

GENERAL RULES FOR COOKING MEAT.

1. BAKING.

Put the roast in a very hot oven with pieces of the fat or some good beef dripping in the roasting pan. Baste every ten minutes. Keep the oven very hot for a small roast. For a large roast lower the heat after the first fifteen minutes. Allow fifteen minutes for each pound of the roast if it is thick and compact; long, narrow roasts will take a little less time.

2. BROILING.

(a) *Over the Coals.*—Put the trimmed meat between the hot greased wires of a broiler. Place over a very hot, clear fire, holding close to the heat. Turn the broiler every ten seconds. Beef one inch thick cooks rare in eight minutes.

(b) *Pan-broiling.*—Heat a frying-pan smoking hot. Lay the meat in flat and turn immediately. Keep turning every ten seconds, but take care not to stick the fork into the lean part. Beef one inch thick cooks rare in ten minutes.

3. BOILING.

Cover the meat with boiling water. Boil five minutes, then simmer until done. Tender meat takes twenty minutes to the pound; tough meat takes from three to five hours, no matter what the size.

4. STEWING.

Cut the meat in suitable pieces. Cover with cold water. Bring slowly to simmering point, and simmer until tender, usually three or four hours. Keep the pot covered closely.

5. CHOICE OF MEAT.

(a) For baking and broiling use tender meat only.

(b) For boiling use either tender or tough meat.

(c) For stewing tough meat is most commonly chosen.

38.—BROILED STEAK.

Tender steak, cut one
inch thick.

Butter.
Salt and pepper.

Have a clear, glowing, hot fire. If necessary trim the steak and put it together as compactly as possible. Put the platter to warm, and place the butter, salt and pepper at hand. Grease the wires of the broiler with a bit of fat, and lay the meat between the wires. Hold one side near the coals and count ten slowly; turn and count ten; continue turning thus for one minute, then hold a little farther from the fire and turn less frequently until cooked. Just before taking from the fire dredge salt and pepper on both sides. Lift to the platter, spread on the butter and serve at once. The steak should cook rare in eight minutes, should look puffy and be red, but not purple inside.

NOTE—The butter is not always used, but is a great improvement, as is also a garnish of parsley or watercress.

39.—BEEF LOAF.

1 lb. lean beef, chopped fine.
1 tbsp. chopped parsley.
1 egg, yolk.

1 tsp. salt.
 $\frac{1}{2}$ tsp. pepper.
2 tbsps. bacon dripping.

Put everything but the egg and dripping in a bowl. Beat the egg enough to mix the yolk and white, pour it over the meat and mix the whole thoroughly. Wash the hands carefully, leave them wet, and form the meat into a compact roll about six inches long.

Melt the dripping in a small baking pan, put in the meat roll and bake it in a hot oven thirty minutes. Baste it every ten minutes. Take it up on a hot dish and keep it hot while making the gravy.

Add two tablespoons of flour to the fat in the pan and stir until smooth and frothy. Add one cupful of warm water and stir over the fire until it thickens and boils. While stirring be careful to scrape up all the brown stuff, as it flavors the gravy. Season with a little pepper and more salt if necessary. Pour the gravy over the meat and serve hot.

NOTE.—Strained tomatoes may be used instead of part of the water, and onion juice may replace the parsley.

40.—HAMBURG STEAK.

1 lb. of lean beef chopped fine.		$\frac{1}{8}$ tsp. pepper.
1 tsp. salt.		1 tsp. onion juice.

Mix all together in a bowl, wash the hands carefully, and shape the meat with wet hands into six flat round cakes three quarters of an inch thick. Care must be taken to have them as compact as possible. Saute about eight minutes, and remove to the hot serving dish.

Make a gravy as for beef loaf.

41.—ROAST BEEF.

(See Part I General Rules for Cooking Meat.)

42.—BROWN STEW.

1 lb. beef.		1 very small onion.
1 cup cold water.		$\frac{1}{4}$ cup carrots (cubed).
2 tbsps. flour.		$\frac{1}{4}$ cup turnips (cubed).
$\frac{3}{4}$ tsp. salt.		$\frac{1}{8}$ tsp. pepper.

Cut the fat off the meat and put it in a stew-pan to fry out. Cut meat into pieces about two inches square and roll it in the flour. Put it in the hot fat and stir over the fire until nicely browned; add the water, cover closely and simmer. Prepare the vegetables; cube

carrots and turnips and cut the onion into thin slices. Add the vegetables, salt and pepper to the stew and simmer two and one half hours.

Serve on a hot platter.

43.—DUMPLINGS (FOR THE STEW).

1 cup flour.	2 tsp. baking-powder.
$\frac{1}{4}$ tsp. salt.	$\frac{1}{3}$ cup milk (about).

Put all the dry ingredients into a sifter and sift into a bowl. When stew is cooked quickly stir the milk into the flour, using enough milk to make a very soft dough. Drop by spoonfuls into the hot stew, cover at once, and boil gently for fifteen minutes.

NOTE.—The pot must not be uncovered while the dumplings are being cooked.

44.—BRAISED BEEF.

3 lbs. lean beef.	$\frac{1}{4}$ cup each, cut in dice,
2 slices fat salt pork.	carrot, turnip, onion,
$\frac{1}{2}$ tsp. peppercorns.	celery. Pepper and salt.

Try out the pork and remove scraps. Wipe the meat, sprinkle with salt and pepper, dredge with flour and brown the entire surface in the hot pork fat. When turning the meat do not pierce with a fork which will allow the juice to escape. Place on a rack and surround with the vegetables and three cups of boiling water. The meat may be placed on a bed of vegetables if there is no rack. Cover closely and bake four hours in a moderate oven, basting every half hour. Turn the meat after two hours. This method of cooking meat is most desirable when the fire is not in use for other cooking, and when other household duties demand absence from the kitchen.

45.—MUTTON STEW.

1 lb. neck of mutton.
1 cup cold water.
 $\frac{1}{2}$ a very small onion.

2 large potatoes.
1 tsp. salt.
 $\frac{1}{8}$ tsp. pepper.

Wipe the meat carefully. If it is very fat trim some of it off. Cut it into pieces about three inches square, or into suitable-sized pieces for serving without cutting. Put them into a stew-pan with the water and the onion peeled and cut in slices. Simmer two and one half hours, then add the potatoes cut into inch cubes, then add salt and pepper. Simmer until the potatoes are cooked, about thirty minutes. Serve on a hot platter.

NOTE.—Other vegetables may be used in place of the potatoes and onion, in which case the gravy must be thickened with flour.

46.—JELLIED VEAL.

1 knuckle veal.
1 blade mace.
12 whole cloves.
 $\frac{1}{2}$ cup vinegar.

1 onion.
1 bay-leaf.
6 peppercorns.
Salt and pepper to taste.

Wipe the knuckle and cut it into pieces. Put into a kettle with two quarts of cold water, bring slowly to simmering point, skin and simmer gently for two hours, then add the onion, mace, bay-leaf, cloves, peppercorns, and simmer one hour longer. Take out the knuckle, carefully remove the bones and put the meat into a mold or square pan. Boil the liquor until reduced to one quart, add the vinegar, pepper and salt to taste, strain and pour over the meat. Stand away until cold, when it may be turned out and garnished with parsley and lemon.

47.—BACON.

Cut bacon in thin slices and remove the rind. Pan-broil until the fat is clear (no longer). Put on a hot plate and serve at once.

A better way to cook bacon is to place thin slices of bacon (from which the rind has been removed) closely together in a fine wire broiler, place broiler over dripping pan and bake in a hot oven until crisp, turning once. Use the fat which has dripped into the pan for frying liver, potatoes, etc.

48.—LIVER AND BACON.

Prepare the bacon as directed above. Cut the liver into slices one half inch thick, cover with boiling water, and let stand for five minutes to draw out the blood. Drain, wipe, sprinkle with salt and pepper, dredge with flour and fry in the fat from the bacon. Care must be taken that the fat is not too hot. Serve with or without brown gravy.

POULTRY.

Chicken is one of the most digestible of meats, and is particularly valuable as food for invalids. Turkey is somewhat less digestible than chicken. Ducks and geese are difficult of digestion, unless quite young, on account of the fat they contain.

The best chickens have soft, yellow feet, short, thick legs, smooth, moist skin and plump breast; the cartilage on the end of the breast bone is soft and pliable. Pin feathers always indicate a young bird and long hairs an

older one. All poultry should be dressed as soon as killed. Cut off the head, and if the fowl is to be roasted, slip the skin back from the neck and cut the neck off close to the body, leaving skin enough to fold over on the back. Remove the windpipe, pull the crop away from the skin on the neck and breast, and cut off close to the opening in the body. Cut through the skin about two inches below the leg joint, bend the leg at the cut by pressing it on the edge of the table and break off the bone. Then pull out the tendon. If care be taken to cut only through the skin, these cords may be pulled out easily, one at a time, with the fingers; or by putting the foot of the fowl against the casing of a door, then shut the door tightly and pull on the leg. The drumstick of a roast chicken or turkey is greatly improved by removing the tendons. Cut out the oil bag in the tail, make an incision near the vent, insert two fingers, keeping the fingers up close to the breast-bone until you can reach in beyond the liver and heart, and loosen on either side down toward the back. Draw everything out carefully. See that the kidneys and lungs are not left in, and be very careful not to break any of the intestines. When the fowl has been cleaned carefully it will not require much washing. Rinse out the inside quickly and wipe dry. In stuffing and trussing a fowl, place the fowl in a bowl and put the stuffing in at the neck, fill out the breast until plump. Then draw the neck skin together at the ends and sew it over on the back. Put the remainder of the stuffing into the body at the other opening and sew with coarse thread or fine twine. Draw the thighs up close to the body and tie the legs over the tail firmly with twine. Put a long

skewer through the thigh into the body and out through the opposite thigh, turn the tips of the wings under the back of the fowl, put a long skewer through from one wing to the other. Wind a string from the tail to the skewer in the thigh, then up to the one in the wing across the back to the other wing, then down to the opposite side and tie firmly round the tail. If you have no skewers, the fowl may be kept in shape by tying carefully with twine. Clean all the giblets, cut away all that looks green near the gall bladder, open the gizzard and remove the inner lining without breaking. Put the gizzard, heart, liver, and the piece of neck which has been cut off, into cold water, wash carefully, put in a saucepan, cover with cold water, place on the back of the stove and simmer till tender. Use the liquid for making the gravy; the meat may be chopped and used for giblet soup.

49.—ROAST CHICKEN (OR TURKEY).

Singe carefully, remove the pin feathers, draw as directed above. Wipe, stuff, sew and tie or skewer into shape, dredge with flour, cover with plenty of dripping; roast in a hot oven. When the flour is brown check the heat, baste frequently with the fat, and when nearly cooked dredge with pepper and salt and again with flour. Bake a four-pound chicken one and one half hours, or until the joints separate easily. If browning too fast, cover with paper. (Roast chicken is considered to be more wholesome and to have a better flavor when cooked without stuffing.)

50.—STEWED CHICKEN.

The first attempt of an inexperienced cook in the preparation of a chicken should be a stew, as it will provide an opportunity for her to study the anatomy of a chicken while cutting it in pieces, and also show her the position of the intestines, so that when she attempts to draw a fowl she will know just where to place her hand so as to remove them without breaking.

To prepare a chicken for a fricassee, clean and singe. Cut the chicken at the joints in pieces for serving. Place in a kettle, cover with boiling water, add two level teaspoons of salt, a speck of pepper (some like a small piece of salt pork). Simmer until tender, reducing the water to a pint or less, lift the chicken, melt one tablespoon of butter in a saucepan, add two tablespoons of flour, and when well mixed pour on slowly the chicken liquor. Add more salt if needed, pepper, one half teaspoon of celery salt, one teaspoon of lemon juice (an egg may be used by beating and pouring the sauce slowly on the egg, stirring well before adding it to the chicken). Pour this gravy over the chicken and serve; dumplings may be added if desired, or it may be placed in a deep dish, covered with pastry and baked for chicken pie.

FISH.

Fish is an invaluable article of food. It provides variety in diet, and, while less stimulating than meat, is usually more easily digested. Fish should be perfectly fresh and thoroughly cooked. The most wholesome as well as the most palatable methods for cooking fish are broiling and baking. The flesh of fresh fish is firm and

will not retain the impress of the finger if pressed into it. The eyes should be bright and glassy, the gills red and full of blood. Fish should be cleaned as soon as possible and thoroughly wiped with a cloth wet in salt water, and should be kept in a cool place. Do not put it near other food such as milk, butter, etc., as they will absorb the odor.

DIRECTIONS FOR CLEANING FISH.

To scale Fish.—Lay fish on side, scrape with a sharp knife from tail towards head. Rinse the knife frequently in cold water to remove scales.

To clean Fish.—Rest it on the back, make an incision from anus to a point between gills. This exposes the whole body cavity, containing the internal organs. Remove these, taking care not to break gall-sac. The kidneys must be scraped away, wash quickly, not allowing the fish to soak, wipe dry.

51.—BROILED FISH.

Rub a double-broiler well with a piece of suet before putting in the fish. Lay the fish flat so that the flesh side will be exposed on one side of the broiler and the skin on the other. Broil carefully, as the skin side burns very quickly. A fish weighing three pounds will take about twenty-five or thirty minutes to broil. When cooked sprinkle with salt and pepper, and serve very hot.

52.—BAKED FISH.

1 cup of cracker or bread crumbs.	1 tsp. chopped parsley.
1 tsp. salt.	1 tsp. pepper.
1 tsp. chopped onion.	$\frac{1}{2}$ cup melted butter or dripping.

Clean, wipe and dry the fish, rub with salt; fill with stuffing and sew or tie carefully. Rub all over with

butter (or dripping), salt and pepper, dredge with flour, put it into a hot oven, baste when the flour is brown, and often afterwards. Remove carefully from the pan and place upon a hot platter.

53.—SCALLOPED FISH.

Pick over carefully any remnants of cold, boiled or baked fish, put it into a shallow dish in alternate layers with bread crumbs and cream sauce. Cover with crumbs and bake till brown.

54.—BOILED FISH.

Salmon, halibut, cod or haddock are suitable for boiling. Place the fish, after cleaning and scraping, on a fish rack, coil in a frying basket, or on a plate tied up in cheese-cloth, and cover with boiling water, to which has been added salt and lemon juice or vinegar. The acid keeps the flesh white, and the salt improves the flavor. Boil from twenty to forty minutes (the coarser-grained fish require more time than the finer-grained). Serve with parsley or egg sauce.

55.—PARSLEY SAUCE.

1 cup water.	1 tbsp. parsley.
1 tbsp. flour.	$\frac{1}{4}$ tsp. salt.
1 tbsp. butter.	

56.—EGG SAUCE.

1 cup water.	$\frac{1}{4}$ tsp. salt.
1 tbsp. flour.	Spk. pepper.
1 tbsp. butter.	1 hard-cooked egg, chopped fine.

57.—SCALLOPED SALMON.

1 can salmon.		$\frac{1}{2}$ tsp. salt.
1 cup. fine bread crumbs.		$\frac{1}{4}$ tsp. pepper.
2 tps. butter.		$\frac{3}{4}$ cup milk.

Open can and turn salmon into a dish at once. Pour off all the oil into a clean bowl; remove the bones and skin from the fish and flake it. Put a layer of crumbs in the bottom of a buttered baking-dish; then add a layer of salmon, sprinkle with pepper and salt and cover with bread crumbs, then add another layer of salmon and repeat till the salmon is all used. Pour milk over the salmon, cover the top with crumbs and dot with the butter.

Bake for twenty minutes in a moderate oven. Serve hot, with or without sauce.

CHAPTER VIII.

The Combination of Food Materials.

SOUPS.

Soups may be divided into two classes, soup made with stock, and with milk. As soup should form part of the regular daily diet, and may be made from the cheaper materials, it is absolutely necessary that every housekeeper should understand the art of making it properly.

MEAT STOCK FROM LEFT-OVERS.

In the first place it is well to know what may be used in the process of soup-making. The first and most important step is to prepare the stock. For this purpose have a large earthen bowl or crock. Into this put all the bones, trimmings, bits of steak or chop and gravy which has been left over. Keep in a cold place. When needed, cover with cold water or water in which vegetables have been cooked, and simmer four or five hours; strain and set away to cool. One eighth bay-leaf and six peppercorns may be added to each quart of liquid for flavoring. When cold, remove the fat which will have formed a solid coating on the top. The stock is now ready for use. By saving the remains of vegetables cooked for the table, the outer stocks of celery, a hard-boiled egg, etc., a very palatable and nutritious soup may be made at a trifling cost. In families where large quantities of meat are used, there should be sufficient material without buying meat for soup. It is

not necessary to have all the ingredients mentioned in some recipes in order to secure satisfactory results. It will, however, be necessary to understand soup flavorings, so as to know which ones may be left out.

MEAT STOCK FROM FRESH MEAT.

Stock made from the shin of beef, or from the cheaper pieces which contain the coarser fibre and gristle, require long, slow cooking. Wipe carefully with a damp cloth before cutting or preparing for use. For soup break or saw the bones into small pieces, and for each pound of meat and bone allow one quart of cold water. Add flavoring as above. Cover the kettle closely and let it heat slowly until it reaches the simmering point, when it should be moved back and kept at that degree for several hours. Soup should never be allowed to boil hard. The scum which rises to the surface is the albumen and juices of the meat, and should not be skimmed off. If the kettle is clean, and all impurities removed from the meat, there will not be anything objectionable in the scum. Stock must always be allowed to remain until cold, so that the fat may be removed before using. A strong, greasy soup is rarely relished, and is one of the principal reasons why so many people dislike this valuable article of diet. Do not add salt to the meat which is being prepared for stock until a few minutes before removing from the fire. Salt hardens the water if added at first and makes the tissues more difficult to dissolve. Stock may be kept for several days by occasionally bringing it to the boiling point. This is not necessary in winter if it is kept in a cold place.

58.—VEGETABLE SOUP.

1 lb. beef.
 $\frac{1}{2}$ cup minced carrot.
 $\frac{1}{4}$ cup minced onion.
 $\frac{1}{2}$ cup minced turnip.
 2 tbsps. minced celery.
 $1\frac{1}{4}$ tsp. salt.

2 qts. water.
 $\frac{1}{2}$ cup potato cubes.
 2 tbsps. rice.
 2 tbsps. flour.
 $\frac{1}{8}$ tsp. pepper.

Cut the meat into half-inch cubes, put it in a stew-pan with the cold water and bring to a boil. Mix the flour with half a cup of cold water and stir into the boiling stock. Add the rice and simmer one hour, add the onion, celery and carrot, cook for one hour longer, then add the turnips, potatoes, salt and pepper, and simmer for half an hour longer. Serve hot.

NOTE.—Two quarts of stock from left-overs may be substituted for meat and water.

If liked, half a cup of finely-shredded cabbage may be added with the carrots and onions.

59.—MACARONI SOUP.

$1\frac{1}{2}$ pts. clear soup stock.
 4 sticks macaroni.

1 tsp. salt.

Break the macaroni into small pieces and throw it into one quart of boiling, salted water. Boil for twenty-five minutes with the cover off the stew-pan. Drain off the water and add the macaroni to the stock which has been heated. Cover and simmer for fifteen minutes. Season to taste with salt and pepper.

60.—CREAM OF VEGETABLE SOUP.

1 cup cooked vegetable (non-starchy).
 2 cups vegetable water.

2 cups milk.
 4 tbsps. flour.
 2 tbsps. butter (or sweet dripping).

Salt and pepper to taste.

Press the vegetable through a sieve, or chop it finely; put the vegetable water on to boil. Mix the flour smoothly with an equal measure of milk and thin it with a little more of the milk. Stir with the boiling liquid, and stir constantly until it thickens and boils two minutes. Stir in the butter or dripping, vegetable pulp and remaining milk, and bring to simmering point. Season to taste and serve hot.

61.—POTATO SOUP.

4 small potatoes.	1 qt. milk.
2 slices of small onion.	2 tbsps. flour.
2 or 3 sprigs parsley.	2 tbsps. butter.
1 stalk celery.	1 tsp. salt.
1 <i>small</i> piece bay-leaf.	$\frac{1}{2}$ tsp. pepper.
$1\frac{1}{2}$ pts. boiling water.	

Put the potatoes, celery, onions, parsley and bay-leaf into a saucepan; cover with the boiling water and boil until potatoes are soft. Thicken the milk with the flour and butter, add the seasoning, rub potatoes and water through a sieve into the white sauce. Serve hot.

62.—CREAM OF TOMATO SOUP.

1 pt. stewed tomatoes.	$\frac{1}{2}$ tsp. soda.
1 pt. milk.	$\frac{1}{4}$ tsp. pepper.
1 tbsp. flour.	1 tsp. salt.
1 tbsp. butter.	A spk cayenne.

Put the tomatoes on to cook in a stew-pan. Reserve half a cup of the milk and put the remainder on to cook in the double-boiler. Mix the flour into a smooth paste with the cold milk, and stir into the hot milk. Cook for ten minutes, then add the salt, pepper and butter. Stir the soda into the hot tomatoes and stir for half a minute,

then rub the tomatoes through a strainer and add to the thickened milk.

Do not add the tomatoes to the milk until just before serving.

63.—DRIED PEA SOUP.

$\frac{1}{2}$ pt. peas.	1 oz. ham or ham bone.
2 qts. water.	$\frac{1}{2}$ lb. cold meat.
4 tbsps. minced onion.	1 tbsp. flour.
1 tbsp. minced carrot.	$\frac{1}{2}$ tsp. pepper.
1 tbsp. minced celery.	1 tsp. salt.
1 tbsp. dripping or butter.	

Soak the peas over night in a quart of cold water. In the morning pour off the water and put the peas, the meat and bone and two quarts of fresh cold water in a kettle and place on the fire. Cook slowly for two hours. Put the drippings and vegetables in a small saucepan and cook slowly for half an hour, press the vegetables against the side of the saucepan so as to squeeze out the fat, then add them to the soup. Into the remaining fat put the flour and stir until smooth, then stir this into the soup. Add the salt, pepper and bay-leaf, cover and cook slowly for two hours. Strain through a coarse wire strainer re-heat and serve with croutons.

Stock may be used instead of water when the meat is omitted.

NOTE.—Bean soup may be made in the same way.

CHAPTER IX.

Flour-Mixtures.

Most of the flour used in this country is made from wheat, and is one of our most valuable food materials owing to its cheapness, and to its richness in carbohydrates and proteids. There are many kinds and grades on the market which are classified by the housekeeper as :—

WHITE FLOUR.—That made from the central part of the grain.

(1) Strong white flour.—Most suitable for bread, biscuits, etc.

(2) Weak white flour.—Most suitable for pastry, cake, etc.

WHOLE WHEAT FLOUR.—Supposed to contain the whole of the grain, except the outer lay of bran.

GRAHAM FLOUR.—Is nowadays usually a mixture of white flour, bran and middlings.

The nutritive value and digestibility of flour-mixtures depend not only upon the quality of the flour, but also upon the skill with which it is combined with other food materials, and the care with which they are cooked. The object aimed at is to produce an article that is light, that is, porous enough to be easily mixed with the saliva in the process of mastication. This is secured by the methods of mixing and the lightening agents used to make the mixture more or less porous.

THE FLOUR MIXTURES are classified as :—

1. BATTERS.

(a) Pour batters, *e.g.*, popovers, griddle cakes.

(b) Drop batters, *e.g.*, muffins, gingerbread and many cakes.

2. DOUGHS.

(a) Soft doughs, *e.g.*, milk biscuits, dumplings.

(b) Stiff doughs, *e.g.*, pastry, bread.

1. THE METHODS OF MIXING.

1. *Stirring*.—A circular or figure-eight motion, with the object of thoroughly mixing the material.
2. *Beating*.—A cartwheel motion, with the object of entangling air in the mixture.
3. *Folding*.—A light, delicate motion, rather triangular in shape, used when it is necessary to avoid breaking air-cells.
4. *Cutting*.—Used for cutting shortening into flour for pastry or doughs.
5. *Kneading*.—The motion required to make bread smooth and elastic.
6. *Rolling*.—The even but light rolling pressure of a rolling-pin upon doughs.

2. THE LIGHTENING AGENTS.

1. AIR.

- (a) Incorporated by beating the flour-mixture, *e.g.*, popovers, etc.
- (b) Incorporated by adding beaten egg to the flour-mixture, *e.g.*, sponge cake, etc.

2. STEAM.—Obtained in certain mixtures by exposing the mixture to strong heat, when the water in it suddenly expands to steam, thus lightening the mixture.

3. THE GAS CARBON DIOXIDE $\left(\text{CO}_2\right)$.

- (a) Generated in the flour-mixtures by the action of an alkali upon an acid in the presence of moisture.

1. Soda and the acid of sour milk, *e.g.*, griddle cakes, etc.
2. Soda and the acid of molasses, *e.g.*, gingerbread, etc.
3. Soda and the acid of cream of tartar, *e.g.*, cakes, etc.
4. Soda and acid of baking powders, *e.g.*, cakes, etc.

- (b) Generated in the mixture by the action of yeast, *e.g.*, bread.
- (c) Generated in the flour-mixture, and forced into it by machinery, *e.g.*, aerated bread.

NOTE.—Frequently two or more agents are used in the same mixture.

3. GLUTEN.

When wheat flour is made into a dough, kneaded thoroughly, and the starch taken out of it by washing in several waters, there remains a gray, tough elastic substance. It is this substance gluten which stretches like rubber that holds the gas in the flour-mixtures until the mass is light and porous. In the process of baking the gluten stiffens and the mass retains its porous, spongy shape.

GENERAL DIRECTIONS FOR FLOUR MIXTURES.

1. PREPARATION.

- (a) Attend to the fire. If the fuel is coal, see that the fire will not need fresh coal while the article is cooking.
- (b) Collect necessary utensils and ingredients.
- (c) As a rule, line pans and grease tins before beginning to mix.
- (d) Fruit should be cleaned, thoroughly dried, and well floured before being added to flour-mixtures.

2. THE MIXING.

Use an earthen bowl and a wooden spoon for mixing. Measure dry ingredients, then butter, then liquids. If butter is very hard cover with tepid water and wash it with the spoon until creamy, then pour off the water.

When the yolks and whites are beaten separately, beat the whites until stiff but not dry and add to the mixture

after the flour. Never stir batters after the final beating, because the stirring takes out the air which has been drawn in by the beating.

Cake pans should be filled nearly two-thirds full and the mixture spread evenly over the pan.

3. BAKING.

As a general rule the depth of batter or thickness of dough determines the temperature of the oven. A thin cake requires a hot oven and a thick loaf a moderate oven.

Cake should be looked at frequently while baking. By opening the oven door a short distance only and closing quickly without jarring the oven, there is no danger of causing the cake to fall. Cake should not be moved in the oven until it has risen to its full height, which should be when about half baked.

Test cake, muffins, etc., by pressing gently with the tip of the finger; if baked no impression of the finger will remain. Light cake shrinks from the pan when baked, but pound cakes do not.

64.—POPOVERS.

1 cup flour.
1 cup milk.

1 large egg.
 $\frac{1}{4}$ tsp. salt.

Grease six popover cups, place on a baking sheet or pan in the oven. Break the egg into a pitcher, add salt and beat until light with a Dover beater. Add the milk and beat until perfectly smooth. Pour the batter quickly into the hot cups and bake in a hot oven about thirty minutes. Look at them about ten minutes after placing in the oven, and if browning reduce the heat.

65.—GRIDDLE CAKES.

2 cups flour.

1½ cups sour milk.

1 tsp. salt.

1 tsp. soda.

4 tps. melted fat.

Sift the flour, salt and soda together, add half the milk and beat until smooth, stir in the remainder of the milk, add the fat and beat the mixture well. Pour it by spoonfuls on a slightly-greased, smoking-hot griddle. When lightly browned on one side turn and cook on the other side; serve very hot.

NOTE.—1 cup white flour and 1 cup cornmeal, or 1 cup white flour and 1 cup Graham flour may be used instead of 2 cups of white flour.

NOTES.

1. When making griddle cakes, the batter must be beaten before pouring a fresh batch of cakes on to the griddle.
2. If large bubbles rise at once to the top of the cakes, the griddle is too hot.
3. If the top of the cake stiffens before the underside is brown, the griddle is not hot enough.
4. Never turn a cake twice; it will make it heavy.
5. Use a piece of pork fat with the rind on it, or a piece of beef suet on a fork, to grease the griddle.
6. If cakes should stick, scrape the griddle clean before greasing it again.

66.—WHOLE WHEAT GEMS.

3½ cups whole wheat flour.

2 cups ice water.

½ tsp. salt.

Grease iron gem pans, and put in the oven in time to be very hot when the batter is ready. Sift the flour into a dish, and put the salt and water into a large bowl. Stand the bowl in a current of air; take the flour in handfuls, hold it high over the bowl and sprinkle slowly into

the water, beating all the time. Quickly pour the batter into the hot gem pans, and bake in a very hot oven about thirty minutes.

NOTE.—Success depends upon thorough beating, hot pans, and hot oven.

67.—GRAHAM GEMS.

2 eggs.	1 cup sour milk.
3 tbsps. sugar.	$\frac{1}{2}$ tsp. soda.
4 tbsps. shortening.	About 2 cups Graham flour.
$\frac{1}{2}$ tsp. salt.	

NOTES.

1. $\frac{1}{2}$ cup white flour and $\frac{1}{2}$ cup Graham may be used instead of 1 cup of Graham.
2. Use whole wheat flour instead of Graham.
3. Substitute ryemeal for Graham.
4. Substitute cornmeal for Graham.

68.—CORN BREAD.

1 cup cornmeal.	1 cup milk.
1 cup flour.	1 tbsps. fat.
$\frac{1}{4}$ cup sugar.	1 egg.
$\frac{1}{2}$ tsp. salt.	4 tsps. baking powder.

Put the cornmeal, flour, sugar and salt into a bowl and mix thoroughly; stir in the milk and give the batter a good beating. Melt the fat in the baking tin and stir it into the batter. Grease the baking tin. Beat the egg very light and mix it with the batter; add the baking powder and mix it in quickly. Pour into the baking tin and bake in a hot oven. If thin it will bake in about twenty minutes; if deep, in about thirty minutes.

69.—MUFFINS.

2 cups flour.	1 cup milk.
4 tsps. baking powder.	2 tbsps. melted butter.
$\frac{1}{2}$ tsp. salt.	1 egg.
2 tbsps. sugar.	

Put the sugar, melted butter and egg in a bowl and beat until light; stir in the milk, sift the flour, salt, and baking powder together into the mixture, beat thoroughly and bake in gem pans about thirty-five minutes in a rather hot oven.

70.—APPLE FRITTERS.

$\frac{1}{2}$ cup flour.	$\frac{1}{4}$ tsp. salt.
2 tsps. baking powder.	$\frac{3}{4}$ cup milk.
2 medium-sized apples (sour).	Powdered sugar.

Mix and sift dry ingredients, add milk gradually, then well-beaten egg. Pare, core and cut apples into eighths, cut again and stir into the batter. Drop by spoonfuls into deep, hot fat (see rules). Drain on paper, sprinkle with powdered sugar, and serve hot on a folded napkin.

71.—DROP DOUGHNUTS.

1 cup flour.	$\frac{1}{4}$ cup sugar.
2 tsps. baking powder.	$\frac{3}{4}$ cup milk.
$\frac{1}{4}$ tsp. salt.	1 small egg.
$\frac{1}{2}$ tsp. melted butter or lard.	

Beat the egg and sugar until light, add the milk, then sift in the flour, salt and baking powder together, beat thoroughly. Beat in the melted butter and drop by teaspoonfuls into hot, deep fat; fry until light brown and cooked through; skim out of the fat, drain carefully, and roll in powdered sugar.

72.—MILK BISCUITS.

1 cup flour.		$\frac{1}{2}$ tbsps. shortening.
$\frac{1}{4}$ tsp. salt.		$1\frac{1}{2}$ tsps. baking powder.
About $\frac{1}{3}$ cup milk.		

Sift salt and flour into a bowl. Rub in the shortening. Sift in the baking powder and mix it through. Mix into a soft dough with the milk, using a broad-bladed knife. Flour the board lightly, turn the dough out and roll it around to coat it with flour. Knead just enough to make the outside smooth. Roll or press out about three-quarters of an inch thick and cut into small biscuits. Knead the scraps lightly together and cut more biscuits. Place them in a baking pan, wet the tops with milk, and bake in a hot oven about twenty minutes.

Success depends upon mixing quickly and handling as little as possible.

73.—SOFT GINGERBREAD.

1 egg.		$1\frac{1}{2}$ cups flour.
$\frac{1}{2}$ cup brown sugar.		2 tsps. soda.
$\frac{1}{2}$ cup sour milk.		1 tsp. ground ginger.
$\frac{1}{2}$ cup molasses.		1 tsp. mixed spices.
2 tbsps. lard or butter.		

Measure the flour into the sifter. Measure the molasses and stand the cup in boiling water. Break the egg into the mixing bowl, add sugar and beat well with a wooden spoon. Measure lard into the baking tin and place where it will melt. Add the spices to the bowl. Stir half the soda into the warm molasses, and stir it into the bowl, stir other half of soda into the sour milk, and add it. Sift in the flour and beat thoroughly. Stir in the lard, grease the tin, pour in the batter, and bake in a hot oven about twenty-five minutes.

74.—SPONGE CAKE.

1 egg.
Flavoring.

2 $\frac{3}{4}$ tbsps. sugar.
Flour (about $\frac{1}{2}$ cup).

Beat the egg very light. Add the sugar, and beat until the sugar is dissolved and the whole is thick and foamy. Sift in the flour and fold it in. Do as little mixing as possible after the flour goes in, but be sure it is evenly mixed through. Add the flavoring while mixing in the flour. Pour the batter into a well-greased pan, and bake in a moderate oven. The cake is baked when a slight pressure with the finger will not leave a dent in it.

75.—STANDARD CAKE.

$\frac{1}{4}$ cup butter.
 $\frac{3}{4}$ cup sugar.
2 eggs.

$\frac{1}{2}$ cup milk.
 $1\frac{1}{2}$ cups flour.
 $1\frac{1}{2}$ tsps. baking powder.

$\frac{1}{2}$ tsp. vanilla essence.

Grease the sides of the cake tin and cover the bottom with a greased paper. Cream the butter and sugar in a bowl until the sugar is partly melted. Separate the eggs, put the yolks into the bowl and the whites away in a cool place. Beat the yolks into the butter and sugar very thoroughly. Add the milk and continue beating until the sugar is dissolved. Add the flour and beat thoroughly. Beat the egg whites stiff. Sift the baking powder into the batter and beat it in. Mix in the beaten egg whites and flavoring thoroughly, but with little stirring as possible. Spread the batter evenly in the cake tins and bake.

If baked in layers a hot oven is necessary; if in loaves a moderate oven.

76.—PLAIN FRUIT CAKE.

3 eggs.		1 cup seeded raisins.
$\frac{3}{4}$ cup milk.		$\frac{1}{4}$ cup candied peel (shredded)
$\frac{3}{4}$ cup butter.		3 cups flour.
1 cup sugar.		4 tsps. baking powder.

Cream the butter and sugar. Beat the eggs until very light, add to the butter and sugar; stir in the milk gradually. Sift the flour and baking powder together and mix with the fruit, then add to the mixture. Beat all thoroughly, then pour into a well-greased deep cake tin and bake in moderate oven.

NOTE.—For cake icing see page 96 in miscellaneous recipes.

77.—GINGER SNAPS.

1 cup molasses.		$\frac{1}{2}$ tsp. soda.
$\frac{1}{2}$ cup fat.		1 tbsps. ginger.
$3\frac{1}{4}$ cups flour.		$1\frac{1}{2}$ tsps. salt.

Stand the molasses in boiling water. When warm pour over the fat and stir until smooth. Sift in the dry ingredients and mix thoroughly. Stand in a cold place for some time.

Toss mixture on a floured board and roll with floured rolling-pin as thinly as possible: shape with a cutter first dipped in flour. Place close together on a buttered sheet and bake in a hot oven. Gather up the trimmings and roll with some more dough until all is used.

78.—PLAIN PASTRY.

2 cups flour.		$\frac{3}{4}$ cup butter.
2 tbsps. lard.		$\frac{1}{4}$ tsp. salt.

Cold water.

Mix salt and flour, put in chopping tray, add lard and butter, and chop until well mixed. Moisten to a stiff

dough with cold water. Toss on floured board, pat into a ball and roll out. Fold in three layers and roll again. Set in a cold place for an hour.

NOTE.—Pastry, unless light and tender, should never be eaten ; even then it should be avoided by people with poor digestion. There are so many food preparations superior to pastry in both nutritive value and cost of time and material, that it will be wise to give it a very secondary place in the training of a culinary artist. However, as it is still a popular fancy with many, we may as well make the best of it. Butter is more wholesome in pastry than lard, although the latter makes a light crust. In order to secure satisfactory results in pastry making—especially puff pastry—three things should be observed : (1) have all the materials cold ; (2) use as little liquid as possible ; (3) handle lightly and quickly. Pastry should be very cold when it is put into the oven. Have the oven very hot.

CHAPTER X.

Flour-Mixtures (continued).

BREAD.

The most valuable food product manufactured from flour is bread. As one of the most important articles of the daily diet it naturally follows that special attention should be given to the process of making and care.

Bread is made from a mixture of flour, yeast, water and salt; other ingredients are frequently used with them, but are not essential. They merely serve to vary the flavor and texture.

FLOUR.

The best bread flour is slightly granular, creamy in color, and will not retain the impression of the fingers when pressed in the hand, and can be kneaded into a firm, elastic dough.

YEAST.

Yeast consists of tiny plants which can only be seen under the microscope, and belongs to the fungus family. These plants have the power of changing dextrin* and sugar into alcohol and the gas carbon dioxide (CO_2). The process is one of fermentation, and the gas produced makes bread light and porous.

The temperature at which fermentation takes place and when to check it are important features of bread-making. The temperature best suited for the growth of

* It is not perhaps a closed question whether yeast can act directly upon starch.

yeast is between 70° and 90° F. Its activity is suspended at 32° F., and is killed at 212° F.

Liquid, dry, or compressed yeast may be used for raising bread. The compressed yeast cakes, if obtainable, are the most satisfactory for beginners, as the strength of yeast cakes varies less than liquid or dry yeast.

A fresh yeast cake has a nutty smell, breaks readily, and is creamy in color. If soft it should not be used.

The amount of yeast used depends upon the time allowed for rising. For bread allowed to rise over night, use one-quarter yeast cake to one pint of liquid. Bread mixed and baked during the day, one yeast cake to one pint of liquid; even more may be used, but it requires very careful watching.

PROCESS OF BREADMAKING.

The flour, liquid yeast, salt, and other ingredients are mixed into a dough, which is kneaded until the whole mass is elastic and velvety. It is then covered and allowed to rise until it has doubled its bulk. This increase in bulk is caused by the gas produced in fermentation trying to escape from the glutinous mass of dough. The dough is kneaded a second time to break the gas bubbles into small portions so that there may be no large holes and the fermentation be equal throughout. It is moulded into loaves which should half fill the bread pans, and allowed to rise again until double its bulk in the same temperature as for the first rising; if allowed to rise too long the bread will be full of holes, and if not long enough it will be sodden. The loaf is baked in order to kill the ferment, to render

the starch soluble, to expand the gas and drive off the alcohol, to stiffen the gluten and to form a crust which shall have a pleasant flavor. Much of the indigestibility of bread is owing to the imperfect baking. The scientific method of baking bread is to fix the air cells as quickly as possible at first. This can be done better by baking the bread in small loaves in separate pans, thereby securing a uniform heat and more crust, which is considered to be the most easily digested part of the bread. Some cooks consider that long, slow baking produces a more desirable flavor and renders bread more digestible.

The custom of baking several loaves together in one large pan is contrary to all scientific rules of bread-making. The oven should be hot enough to brown a spoonful of flour in five minutes, for bread. The dough should rise during the first fifteen minutes, then begin to brown; keep the heat steady for the next fifteen or twenty minutes, then decrease it. If the oven is too hot a hard crust will form and prevent the dough from rising, which will not only cause the bread to be heavy, but will prevent the gas from escaping. If, on the other hand, the oven is not hot enough, the bread will go on rising until it becomes sour. A loaf, the size already mentioned, should take from fifty-five to sixty minutes to bake, and should give a hollow sound, if tapped, when removed from the oven. Better take too long than not long enough, as doughy bread is most objectionable and unwholesome. If the crust is beginning to burn, cover the loaf with brown paper, and reduce the heat, but have a brown crust, not a whity-brown, which is usually hard and without flavor. Upon removing the loaves from the pan, place them on a rack or across the top of the pan

where the air may circulate freely. Never leave warm bread on a pine table, or where it will absorb odors. When cool keep in a tin box or stone jar closely covered. Never wrap in a cloth as it affects the flavor of the bread. The breadbox should be washed and scalded twice a week in winter, and every other day in summer.

79.—PLAIN BREAD.

1 pint lukewarm water.
1 tsp. salt.

2 to 2½ quarts of flour.
1 yeast cake.

Put the yeast to dissolve in half cup of the lukewarm water. Put the remaining water and salt into a kneading pan or large bowl, and sift in about half the flour, or enough to make a drop batter. Beat this batter until it is full of bubbles, then stir in enough flour to make a soft dough. Flour the kneading board thickly and turn the dough on it; roll the ball of dough in the flour before beginning to knead. Knead the dough until it does not stick to the hands or board, using as little flour during this process as possible. The dough should be smooth on the surface, feel spongy and elastic, and rise quickly after pressure. Put the ball of dough back in the bowl, brush the top with water, cover closely with a plate or tin cover, and keep at a temperature of 70° to 90° F. When it has doubled in bulk, divide into four pieces; mould each piece into a loaf, handle lightly, using little or no flour. Place each loaf in a greased bread-pan and cover with a clean towel. Keep at a temperature from 70° to 90° F., until it has again doubled in bulk; then bake in an oven hot enough to brown a teaspoonful of flour in five minutes, from forty to fifty minutes.

NOTE.—This dough may be prepared at night by using a quarter instead of a whole yeast cake and kept at a temperature of 68° F., when it will be ready to mould into loaves before breakfast.

80.—MILK BREAD.

1 pint of milk.	1 tbsp. of butter, dripping or lard.
1 tbsp. sugar.	1 tsp. salt.
1 cake compressed yeast.	About 2 qts. of flour.
Dissolved in $\frac{1}{2}$ cup lukewarm water.	

Put the salt, sugar and butter into a large bowl. Scald the milk and pour over them; when lukewarm stir in the dissolved yeast and proceed as directed for plain bread.

81.—LIQUID YEAST.

$\frac{1}{2}$ cup loose hops.	$\frac{1}{2}$ cup cold water.
1 qt. boiling water.	1 tbsp. salt.
$\frac{1}{2}$ cup flour.	2 tbsps. sugar.
$\frac{1}{2}$ cup liquid yeast or $\frac{1}{2}$ cake of compressed yeast.	

Put the hops and boiling water into a saucepan and boil five minutes. Strain off the water, rinse out the saucepan, put in the flour and cold water, and mix into a smooth paste; add the hop water, stirring constantly, then boil two minutes. Turn into a crock or large bowl and stir in the salt and sugar. When this cools to lukewarm stir in the liquid or dissolved compressed yeast; cover closely and keep at a temperature of 70° to 90°, five or six hours. Then give the foamy mixture a good beating which will cause it to settle. Repeat the beating several times during the day, when the yeast will be quiet enough to be poured into a jar, cover and set away in a cool place. One cupful of liquid yeast is equal to one yeast cake.

82.—ROLLS.

2 cups scalded milk.	1 tsp. salt.
2 tbsps. butter.	1 compressed yeast cake.
2 tbsps. sugar.	$\frac{1}{2}$ cup lukewarm water.

About six cups of flour.

Put the butter, sugar, salt and milk into a large bowl. When lukewarm add the yeast dissolved in the water and half the flour. Beat well until it bubbles, cover closely and let rise in a temperature of 70° to 90° F., about two and one-half hours. Beat again, add flour to make a stiff dough, and knead about twenty minutes. Return the dough to the bowl, cover closely, and let rise again until more than double in bulk (which will take about three hours). Turn out on a *very lightly*-floured board, and roll out, without kneading, one-third of an inch thick. Cut with a floured biscuit cutter; crease through the centre of each roll with a floured knife handle; brush one-half of each piece with melted butter; fold and press together. Place in a greased pan one inch apart, cover, let rise in a warm place until double in bulk. Bake in a moderate oven about twenty minutes.

83.—DRY TOAST.

Cut bread at least one day old, better if two days old, into slices one-third of an inch thick. Have a clear, hot fire. Put the slices between the wires of a toaster, and hold one side a little distance above the fire, and move from side to side over the heat that all parts may dry alike. Dry the other side similarly. Then hold the first side nearer to the heat until colored a golden brown. Color the other side in the same way and serve at once *standing on edge*.

84.—BUTTERED TOAST.

Cut stale bread in slices about one-half inch thick, toast as for dry toast. Dip quickly in melted butter, or spread evenly with soft butter and *serve at once*.

CHAPTER XI.

Simple Salads.

Salads are valuable chiefly for the mineral matter which they contain and for their refreshing, appetizing qualities. The chief salad plants are lettuce, celery, watercress, cucumbers, etc., but may be made of almost any cold meat, or vegetable (canned or fresh). The dressing may be added at the table, or just before sending to the table.

GENERAL DIRECTIONS FOR SALAD-MAKING.

The leaves of salad plants must be thoroughly washed, crisped, in cold water, then drained, put in a wet cloth and kept in a cool place until wanted.

Cooked vegetables are cut into suitable pieces, thoroughly chilled, and mixed with the dressing just before serving.

Meats should be freed from skin and gristle, cut into cubes and thoroughly chilled before mixing with the dressing.

Fish should be flaked and all bones carefully removed and thoroughly chilled; cover with the dressing without mixing.

85.—COOKED SALAD DRESSING (No 1).

1 cup milk.	1 cup vinegar.
3 tbsps. flour.	4 tbsps. sugar.
2 tbsps. butter.	3 tps. mustard.
3 eggs.	2 tps. salt.
$\frac{1}{8}$ tsp. cayenne.	

Rub the flour and three tablespoonfuls of milk to a very smooth paste. Scald the remaining milk, then stir it gradually into the flour paste. Return to the double-boiler and stir constantly until very thick and smooth; cover and cook while preparing the other ingredients. Mix the salt, sugar, mustard and cayenne in a bowl, stir in the vinegar. Beat the eggs and stir into the vinegar and spices. Stir the butter into the sauce, then add the vinegar mixtures gradually, stirring quickly all the time. Cook until smooth and velvety. Turn into a cold bowl and stir occasionally until cool. If too thick for serving add cream, either plain or whipped, until it is of the consistency of good cream.

86.—COOKED SALAD DRESSING (No 2).

1 tbsp. sugar.		$\frac{1}{4}$ cup vinegar.
$\frac{1}{2}$ tsp. salt.		$\frac{1}{4}$ cup water.
$\frac{1}{2}$ tsp. mustard.		2 eggs.
$\frac{1}{8}$ tsp. white pepper.		1 tbsp. butter.

Mix the dry ingredients in a small saucepan, add the water and vinegar and put over the fire to heat. Measure the butter and put a large saucepan over the fire with two inches of boiling water in it. Beat the eggs in a round bottomed bowl until very light, stir in the vinegar mixture, and stand the bowl in the boiling water. Stir constantly until it thickens and coats the spoon, then remove at once from the hot water, stir in the butter and stand away to get perfectly cold.

One half cup cream (whipped) may be added when cold.

PREPARATION OF LETTUCE FOR SALADS.

Choose fresh, crisp lettuce. When it comes from the garden or market get two pans of cold water. Pick the

lettuce leaves apart, washing each carefully in one pan and dripping it into the other. Let them lie in the cold water about fifteen minutes, then shake as free from water as possible and roll them lightly in a clean towel. There should be enough water on the leaves to wet the towel, but if not see that it is wet but not dripping. Keep in the refrigerator or in a cold place. Treated in this way lettuce will keep for a day or two, and the nice inner leaves used whole for one meal, leaving the larger outer leaves to be shredded before serving.

87.—LETTUCE SALAD (No. 1).

Choose the nice heart leaves, arrange prettily in a salad bowl, and serve with any dressing preferred.

88.—LETTUCE SALAD (No. 2).

Shred the large leaves, mix with dressing, and serve on a single large leaf. This shredded salad may also be used to decorate salads made of other vegetables or meats.

89.—POTATO SALAD.

1 cup cold iced potatoes.	$\frac{1}{4}$ cup salad dressing (cool).
$\frac{1}{2}$ tsp. salt.	A little cream or milk.
$\frac{1}{2}$ tsp. onion-juice, or 2 green onions chopped fine.	$\frac{1}{16}$ tsp. pepper.
	A few sprays of parsley.

Prepare the potatoes. Add the onion-juice, salt and pepper, and mix with as little breaking of the potatoes as possible. Allow them to stand for an hour. Thin the dressing with the cream or milk to the consistency of thick cream, and mix carefully with the potatoes just before serving. Pile lightly into the serving dish and garnish with a little parsley, if it is to be had.

90.—FRENCH DRESSING.

3 tbsps. of olive oil.

 $\frac{1}{4}$ tsp. of salt.

1 tbsps. vinegar.

 $\frac{1}{2}$ ssp. of pepper or speck of
cayenne.

Mix these ingredients together and serve. This makes a particularly good dressing for lettuce or vegetable salads.

SIMPLE PUDDINGS.

91.—DUMPLINGS WITH FRUIT.

1 pt. stewed fruit.

1 cup flour.

 $\frac{1}{2}$ tsp. salt. $\frac{1}{2}$ tbsps. baking powder. $\frac{2}{3}$ cup milk (about).

Put the fruit on to stew in time to have it nearly tender when you are ready to drop in the batter. Sift the flour, salt and baking powder into a bowl, and mix to a stiff batter with the milk. Have the stewing fruit gently boiling. Quickly drop the batter in by small spoonfuls, cover the pot closely and boil fifteen minutes. Be sure the fruit has water enough to prevent burning and do not uncover the pot while the dumplings are cooking. Serve at once.

92.—APPLE PUDDING (BAKED OR STEWED).

1 pint flour.

 $\frac{1}{2}$ cup butter or dripping.

1 cup milk.

1 tsp. cream of tartar.

3 tbsps. sugar.

 $\frac{1}{2}$ tsp. salt.

1 egg.

 $\frac{1}{2}$ tsp. soda sifted into the flour.

6 tart apples.

Mix the dry ingredients, as in biscuits, beat the egg and mix it with the milk, stir this into the dry mixture. Core, pare and cut the apples into quarters (if large into

eighths). Place in the bottom of a pudding dish, sprinkle over them the sugar; a little nutmeg or cinnamon may be added if desired. Put the mixture over this, lifting the apples with a fork or spoon so as to let the mixture penetrate to the bottom of the pan. Bake in a moderately-hot oven about thirty minutes, or steam one hour. Serve with lemon sauce or thin custard.

93.—COTTAGE PUDDING.

$\frac{1}{2}$ pint sifted flour.
 $\frac{1}{2}$ cup sugar.
 $\frac{1}{4}$ tsp. salt.
 1 egg.

$\frac{1}{4}$ cup milk.
 1 tbsp. butter.
 2 tsps. baking powder.

Beat the butter and sugar to a cream, add the unbeaten egg, beat vigorously for three or four minutes, add the salt, then the flour, with which the baking powder should be mixed. Beat for a few seconds, then turn the batter into a small, buttered pudding dish, bake about twenty-five minutes in a moderate oven; serve with lemon sauce.

94.—CUP PUDDING.

2 cups flour.
 $\frac{1}{2}$ tsp. salt.

4 tsp. baking powder.
 $\frac{3}{4}$ cup milk.

Some jam.

Grease eight small cups. Sift the flour, salt and baking powder into a bowl. Stir in the milk, mixing it evenly as quickly as possible. Put a little batter into each cup, spreading it up on the sides to make a well. Put a generous teaspoonful of jam in the well and cover over with batter. Steam thirty-five minutes; turn out; serve hot with milk or sauce.

95.—SNOWBALLS.

 $\frac{1}{2}$ cup butter.

1 cup sugar.

 $\frac{1}{2}$ cup milk.2 $\frac{1}{4}$ cups flour.3 $\frac{1}{2}$ tsps. baking powder.

Whites of four eggs.

Cream the butter, add sugar gradually, then the milk. Sift flour and baking powder together and add to the mixture, then add the whites, which have been beaten stiff. Steam thirty-five minutes in buttered cups. Serve with preserved fruit or lemon sauce. The steam cover must not be lifted while the puddings are cooking.

96.—CARMEL PUDDING.

1 cup milk.

 $\frac{1}{4}$ cup sugar.

3 tbsps. cornstarch.

1 $\frac{1}{2}$ tbsps. caramel.

Heat the milk and caramel in a double-boiler. Mix the sugar and cornstarch thoroughly in a bowl, and stir the hot milk gradually into it. Pour back into the double-boiler and stir constantly until it thickens. Cook two or three minutes longer, stirring occasionally, then pour into wet moulds. Stand in a cold place to stiffen.

NOTE.—A little vanilla flavoring may be added if liked.

97.—BREAD PUDDING.

1 qt. milk.

 $\frac{1}{2}$ cup sugar.

2 eggs.

 $\frac{1}{4}$ tsp. salt.

2 cups stale breadcrumbs, or $\frac{1}{2}$ -inch bread cubes, or 1 cup dried crumbs.

Beat the eggs slightly and stir in the sugar, milk, and salt. When the sugar is dissolved stir in the bread and turn into a greased baking dish. Soak one hour and bake in a moderate oven until set in the centre.

98.—BAKED RICE.

1 qt. milk.

 $\frac{1}{2}$ cup rice. $\frac{1}{4}$ tsp. salt.

Wash the rice thoroughly and turn into a baking dish. Add the milk and salt and bake in a slow oven three hours, keeping the dish covered the first two hours.

NOTE.—One-half cup sugar and one-half cup raisins and a little nutmeg may be added one hour before removing from the oven.

99.—SUET PUDDING.

 $\frac{1}{2}$ cup suet. $\frac{1}{2}$ cup molasses. $\frac{1}{2}$ cup milk. $\frac{1}{2}$ tsp. baking soda. $\frac{1}{2}$ tsp. cinnamon. $\frac{1}{4}$ tsp. allspice. $\frac{1}{4}$ tsp. salt. $\frac{1}{2}$ cup stoned raisins and currants (mixed). $1\frac{1}{2}$ cups flour.

Free the suet from membrane, chop it fine and mix with the milk and molasses. Sift the flour and soda into a bowl, mix in the spices and fruit, add the molasses, etc., and give a thorough beating. Turn into a greased pudding mould and steam for three hours.

100.—TAPIOCA CUSTARD PUDDING.

4 cups scalded milk.

 $\frac{3}{4}$ cup pearl tapioca.

3 eggs.

 $\frac{1}{2}$ cup sugar.

1 tsp. salt.

1 tsp. butter.

Soak the tapioca one hour in enough cold water to cover, drain, add tapioca to the hot milk, and cook in a double-boiler thirty-five minutes. Beat the eggs slightly, add sugar and salt. Stir quickly into the hot mixture, turn into a buttered pudding dish, add butter, and bake thirty minutes in a slow oven.

101.—APPLE SNOW.

Whites of 3 eggs.		$\frac{3}{4}$ cup apple pulp.
Powdered sugar.		

Pare, quarter and core four sour apples, steam until soft, and rub through a sieve. There should be three-fourths cup of apple pulp. Beat on a platter the whites of eggs until stiff; add gradually apple sweetened to taste and continue beating. Pile lightly on a glass dish, and serve with custard sauce.

102.—SNOW PUDDING.

$\frac{1}{4}$ box gelatine.		2 tbsps. cold water.
1 cup boiling water.		Juice of 1 lemon.
1 cup sugar.		Whites of 2 eggs.

Soak the gelatine in cold water for two hours. Pour upon this the boiling water and stir until the gelatine is dissolved; then add the sugar and lemon juice, stirring until the sugar is dissolved. Set the bowl in a pan of cold water, or broken ice. Stir frequently; when it begins to thicken stir in the beaten whites of the eggs, pour into a mould and set away until firm. Serve with boiled custard.

PUDDING SAUCES.

103.—PLAIN SAUCE.

1 tbsp. cornstarch.		1 cup boiling water.
$\frac{1}{2}$ cup sugar.		Flavoring.

Put the cornstarch and sugar into a saucepan and mix thoroughly. Stir in the boiling water gradually and boil two minutes gently. Take from the fire, flavor with vanilla or lemon juice, and serve.

104.—LEMON SAUCE.

1 tbsp. cornstarch.
 $\frac{1}{2}$ cup sugar.
1 cup boiling water.

2 tbsps. butter.
1 lemon (grated rind and juice).

Mix the sugar and cornstarch and stir into it the boiling water. Boil five minutes. Remove from the fire and stir in the butter and lemon. Serve hot.

105.—CARAMEL SAUCE.

This sauce is made the same as lemon sauce only substituting two tablespoons of caramel for the lemon,

106.—VANILLA SAUCE.

1 cup milk.
2 tbsps. sugar.
2 egg yolks.

$\frac{1}{8}$ tsp. salt.
 $\frac{1}{2}$ tsp. vanilla.

Scald the milk, beat the yolks and sugar until very light, and stir into the scalding milk. Stir over the fire until slightly thickened; pour at once into the serving dish, and serve either hot or cold.

107.—FOAMY SAUCE.

Beat the above sauce, while hot, into the stiffly-beaten whites of two eggs and serve at once.

CHAPTER XII.

Miscellaneous.

108.—HASH CAKES.

2 cups cold mashed potatoes.	A little pepper.
1 cup cold meat minced.	1 egg.
$\frac{3}{4}$ tsp. salt.	1 tbsp. fat

Beat the egg until well mixed. Add the potatoes, salt and pepper, and mix thoroughly. Mix in the meat. Wash the hands and form the mixture into flat, round cakes three-quarters of an inch thick.

Put two-thirds of the fat in the frying-pan, and put over the fire. When hot, put in the cakes and brown one side; add the remaining fat, turn the cakes and brown the other side. Serve on a hot dish.

109.—CODFISH BALLS.

1 cup salt codfish.	1 tsp. good dripping.
3 cups potatoes.	$\frac{1}{2}$ tsp. pepper.
1 egg.	

Wash the codfish well in cold water and cover it with warm water. Then pick it apart, removing all bones, and put it into a saucepan. Pare the potatoes, cut them in quarters, add them to the codfish and cover the whole with boiling water. Boil until the potatoes are tender, then drain off the water, add the dripping and pepper, and mash and beat them in the pot until very light. When slightly cooled mix in the well-beaten egg. Drop by spoonfuls on a greased pan and brown in a very hot oven, or sauter with a little good bacon dripping.

NOTE.—These are delicious fried in deep fat; the mixture is gently dropped in by spoonfuls.

110.—CREAMED CODFISH.

 $\frac{1}{2}$ cup codfish.

1 cup milk.

2 tbsps. flour.

2 tbsps. dripping.

Put the fish into a stewpan, cover with cold water and bring to boiling point. Drain, cover again with water and bring to boil. Melt the dripping in a saucepan, add the flour and stir over fire until smooth and frothy. Add the milk, and cook until it thickens. Drain water off fish, re-heat in saucepan, and place on toast. Serve on hot plates.

111.—FRIED POTATOES.

1 tsp. fat.

1 cup cold boiled potatoes
(sliced). $\frac{1}{4}$ tsp. salt.

A little pepper.

Put the fat in the frying pan. When hot, turn in the potatoes, and sprinkle over them the salt and pepper. Turn the potatoes often enough to prevent them burning. and cook until nicely browned. Serve at once in a hot dish. The potatoes may be chopped with the knife while cooking.

112.—PORK AND BEANS.

Soak the beans over night in cold water. In the morning wash them well in a colander, put them on to boil in cold water, at the first boil drain this water off and cover with fresh boiling water. Score the rind off the pork and put it in with the beans. Simmer gently until you can blow off the skin of the beans. To do this, take three or four beans in your hand, blow hard on them, and if the skin cracks they are done. Take out

the pork and drain. Put the beans into an earthen pot or granite kettle with a cover; almost bury the pork in the centre of the beans. Add one tablespoonful of salt to one pint of the water in which the beans were boiled, pour this into the pot, sprinkle with pepper, pour over the beans one large spoonful of molasses, put on the lid, bake in a moderate oven for six or eight hours. If baked in an ordinary iron baking pan they must be covered with another on which has been placed a weight, carefully watched, and baked only three hours.

113.—FRENCH TOAST.

1 egg.

1 cup milk.

1 ssp. salt.

4 or 6 slices of stale bread.

Beat the egg lightly with a fork in a shallow dish, add the salt and milk. Dip the bread in this, turn; have a griddle hot and well-buttered, put the dipped bread on the hot griddle, brown, then put a little piece of butter on the top of each slice, turn and brown on the other side. To be eaten hot with jelly or with butter and sugar.

114.—SANDWICHES.

Chop very fine cold ham, corned beef or tongue, adding a little of the fat. Mix one teaspoonful of dry mustard, one saltspoonful of salt, a few drops of lemon juice with cold water, to a stiff paste; add to it one-quarter of a cup of butter creamed. Cut bread—at least one day old—in very thin slices, spread with the mustard and butter paste, then with the meat. Put two slices together and cut into any shape desired. (Chicken or veal sandwiches may be made by chopping the meat very fine, and adding to it a little of the cooked salad dressing or mayonnaise.)

115.—STUFFED TOMATOES.

Take six large, smooth tomatoes, half a teaspoonful of salt, half a saltspoonful of pepper, half a tablespoonful of butter, half a tablespoonful of sugar, half a teaspoonful of onion juice, half a cupful of bread crumbs. Arrange the tomatoes in a baking pan. Cut a thin slice from the smooth end of each. With a small spoon scoop out as much of the pulp and juice as possible without injuring the shape. Mix the pulp and juice with the other ingredients and fill the tomatoes with this mixture. Put on the tops and bake slowly three-quarters of an hour. Lift the tomatoes carefully and place on a hot, flat dish, garnish with parsley, and serve.

116.—SHEPHERD'S PIE.

1 cup cold minced meat.
1 small piece onion.
 $\frac{1}{2}$ cup gravy.
 $\frac{1}{2}$ tsp. salt.

1 cup mashed potatoes.
 $\frac{1}{4}$ cup boiling milk.
 $\frac{1}{2}$ tsp. butter.
Pepper.

Chop the onion fine, and mix it with the meat, gravy, half the salt and a little pepper. Put it into a small baking dish. Heat the milk and butter, and beat them into the mashed potatoes. Cover the meat with the potatoes, smoothing it with a wet knife. Bake in a moderate oven until it is brown.

NOTE.—This may be prepared some hours before it is baked.

117.—SCALLOPED POTATOES.

1 cup cold potatoes cut in
half inch dice.
1 cup white sauce. (see page
94.)

$\frac{1}{4}$ cup dry breadcrumbs.
 $\frac{1}{2}$ tsp. butter or nice bacon
dripping.

Prepare the potatoes. Put the butter and crumbs in a saucepan and stir them over the fire until the butter is thoroughly mixed. Make the white sauce. Put one-third of the sauce in a small baking dish, cover it with half of the potatoes; put in another third of the sauce, then the remainder of the potatoes; and cover all with the rest of the sauce. Sprinkle the crumbs evenly over the top, and bake in a moderate oven until brown.

NOTE.—Equal quantities of fish or meat may be substituted for the potatoes.

Other vegetables may be used instead of potatoes.

The dish may be prepared some hours before it is to be baked.

118.—WHITE SAUCE

1 cup milk.	1	$\frac{1}{2}$ tbsp. butter.
2 tbsps. flour.	2	$\frac{1}{4}$ tsp. salt.
Pepper to taste.		

Put three-quarters of the milk to heat in a saucepan, stirring often to prevent burning. Mix the flour in a small bowl with two tablespoonfuls of the cold milk, and thin it down with the remainder. Stir this gradually into the hot milk, and stir it constantly until it thickens and boils a minute. Stir in the butter, salt and pepper, and it is ready to serve. If it must stand, cover the saucepan closely and stand it in a pan of hot water or over steam.

119.—CREAM SAUCE.

1 cup milk.	1	$\frac{1}{4}$ tsp. salt.
2 tbsps. butter.	2	$\frac{1}{16}$ tsp. pepper.
2 tbsps. flour.	2	

Melt the butter, add the flour and stir over the fire until frothy. Add the milk and stir constantly until it

thickens and boils a minute. Stir in the seasoning and it is ready to serve.

The milk may be heated before it is added, in which case it must be stirred gradually into the flour and butter. This is probably the better way when a large quantity is being made.

120.—BAKED BEANS.

2 cups white beans.

$\frac{1}{2}$ lb. salt pork.

1 tsp. mustard.

2 tsps. sugar.

$\frac{1}{8}$ tsp. pepper.

1 tbsp. salt.

$\frac{1}{2}$ tsp. molasses.

Pick over, wash, and soak the beans, as if for "boiled beans." Drain, rinse, and put on to simmer in soft water. Wash off the pork, score the rind, and put it into simmer with the beans.

Simmer until the bean skins crack open, when one is taken out and blown upon. Drain the water off and put into the bean pot, with the pork in the middle, showing only the rind.

Put the mustard, sugar, pepper, salt and molasses in a cup, add boiling water and mix and pour over the beans. Add enough more boiling water to just cover the beans. Cover closely and bake ten hours or more in a slow oven.

Keep the water just to the top of the beans, and never let it bubble.

An earthen pot is best.

121.—DRIPPING.

Cut beef, mutton or pork fat into small pieces, put them into an iron or graniteware pan, cover with cold water and cook slowly over a moderate fire four or five

hours, stirring frequently to prevent fat sticking to the pan. When all the water has passed off and the fat is still, remove from the fire. When slightly cooled strain through cheesecloth. When quite cold cover tightly.

122.—TO TRY OUT FAT.

Cut the fat into bits and put into a pan in the oven with enough cold water to cover, and simmer for several hours. When the fat is melted, and nearly free from water, strain it, pressing with a spoon to get all the fat.

123.—TO CLARIFY FAT.

Melt drippings or tried-out fat and add to it a few slices of raw potato; heat slowly in the oven until it ceases to bubble. The potato absorbs some of the impurities, the rest will settle to the bottom. Strain the fat through a very fine wire strainer, or cheesecloth, and set away until needed.

124.—CARAMEL.

Put in a smooth granite saucepan or omelet-pan one cup of sugar. Stir constantly over hot part of range until melted and of a deep golden-brown color. Care must be taken to prevent burning and from adhering to the sides of the pan. Add an equal quantity of boiling water and simmer until it forms a thick syrup. Bottle and use for coloring sauces, soups, etc., and for puddings.

125.—QUICK ICING FOR CAKE.

1 cup icing sugar.
1 tbsp. lemon juice.

1 tbsp. boiling water.

Sift the icing sugar into a bowl and stir in the lemon juice and water. Stir in the boiling water, a few drops

at a time until the sugar settles when not stirred. Spread on the cake while the latter is hot.

126.—CHOCOLATE ICING.

1 cup granulated sugar.
2 tsps. of water.

1 oz. unsweetened chocolate.
 $\frac{1}{4}$ tsp. vanilla.

Scrape the chocolate fine, mix it with the sugar and water, and simmer about twenty minutes, or until thick enough to spread. Spread while hot on the cake.

PRESERVING FRUIT.

There are various methods of preserving fruit, but those in most common use are canning and preserving.

CANNING.

Canning fruit is simply sterilizing it and keeping it in air-tight jars. Any fresh ripe fruit may be kept in this way. To can fruit successfully it is necessary to observe the following rules:—

1. Have good fruit, ripe and fresh.
2. See that the jars are air-tight (test by filling with water and inverting).
3. Wash the jars, rubbers, covers and rims thoroughly, then scald.
4. Have the rims and covers at hand so that the jars may be filled immediately the fruit is put into them. Have a pot of boiling water on the stove in which the jar should be dipped before filling.
5. When the fruit is cooked, fill the jars to overflowing and screw on the top at once. Then wipe with a wet cloth and leave inverted until assured that the jar is air-tight.

METHODS OF CANNING FRUIT.

1. Follow the usual method of cooking fruit in syrup (see page 28).
2. Fill the jar with prepared fruit, cover with a syrup of desired consistency. Cover with the glass top. Put a wire frame or perforated board in the bottom of a kettle or the boiler, place the jars and fill the boiler with cold water up to the rim of the jar. Small fruit should remain ten minutes, and peaches, pears, etc., fifteen after the water boils. Remove the tops and fill the jar to overflowing with boiling syrup, and screw on the top immediately. By this method fruit retains the flavor more than by cooking in an open kettle. An average syrup is made by boiling one pound of sugar to one pint of water.
3. When the fruit is cold give the tops a final screw before putting away in a cool, dark closet.

PRESERVING.

Preserving differs from canning, by Method No. 1, only by the amount of sugar used, and the longer cooking required. The proportion of fruit and sugar is usually pound for pound, and the two cooked together from ten to twenty minutes.

CHAPTER XIII.

Marketing.

The ability to purchase food wisely comes only from experience, but the following hints may prove useful to the young housekeeper:

MEAT.—In the selection of meats it is a mistake to think that the higher-priced meats are more nutritious than the cheaper cuts. No doubt a well-broiled steak is more appetizing and delicate in flavor than the less expensive cut, but in proportion to its cost it is not equal in nutritive value. Careful cooking and judicious flavoring will render the cheaper piece equally palatable.

BEEF.—Good beef should be bright red, well marbled with yellowish-white fat. The flesh must be firm, and when pressed with the finger should retain no mark. The suet should be dry and crumble easily.

MUTTON.—The fat of good mutton is clear white and very hard. The flesh fine-grained and bright red. The best mutton is about three years old, and should hang three weeks before using.

LAMB.—When killed from six weeks to three months old is called "spring lamb." Lamb one year old is called yearling. Lamb does not require to be hung like mutton.

VEAL.—The fat of veal should be white and clear and the lean pink or flesh-colored. White lean veal is unfit to eat.

PORK.—Fresh pork should be pale red and firm with white fat. Fat salt pork of good quality is white or faintly tinged with pink.

POULTRY.—Chicken not more than five months old is “spring chicken”; chicken over a year old is “fowl.” The breast-bone of a chicken or young fowl is yielding, and the leg scales yellow and soft. Older fowls have a hard breast-bone, horny leg scales, more fat and a thicker and yellower skin. Full grown poultry is finer in flavor than young chickens, and a young cock is the best for roasting.

TURKEYS.—Good turkeys have smooth, black legs, plump breasts, soft spurs, and white flesh. As a rule, hen turkeys are best.

DUCK OR GOOSE.—The windpipe of a young duck or goose is brittle enough to snap readily between the thumb and finger, and the feet are soft and yellow. Ducks or geese should not be more than a year old.

FISH.—The flesh of good fresh fish is firm and hard, and will rise at once when pressed with the finger. If the eyes be dull and sunken, the gills pale and the flesh flabby or soft, the fish is not fresh and should not be purchased.

EGGS.—Fresh eggs have a thick rough shell, and the contents will not rattle if shaken. The contents are clear if held between the eye and the light, and if dropped into a bowl of cold water it will go to the bottom and lie on its side. Fresh eggs only are suitable for boiling, omelets and other egg dishes. Well preserved may be combined with other materials in cooking.

MILK.—Great care should be exercised in the purchase of milk. Good milk is a yellowish-white, opaque liquid, with a slightly sweet taste; it should have no sediment and should not look blue around the edge. The house-keeper should demand that the milk supply comes from clean stables, is delivered by clean dealers in clean vessels, and covered from the air.

BUTTER.—Good butter is firm, not crumbly or pasty, yields little water when pressed, and foams when heated. It is always an expensive article and should be selected with care. It is wiser to economize by using some cheaper fat, such as good dripping, in cooking, than to buy a poor grade of butter because it is cheap. It is economical to purchase the winter's supply in October, if one can get it from a reliable source, and can keep it in a cool place.

FLOUR.—Flour may be purchased in quantities sufficient for six months if kept in a cool dry place, as age improves it.

CEREALS.—All breakfast cereals are better when fresh, and should be purchased in small quantities.

TEA, COFFEE.—Tea and coffee should be purchased in small quantities, as they lose strength and flavor if kept too long.

SPICES, ETC.—Spices, flavors, etc., should be purchased in small quantities, and it is unprofitable to buy any but the purest.

CANNED GOODS.—In buying canned goods do not buy a can if the ends bulge, as that indicates that the can has not been air-tight, and the contents are probably poisonous.

CARE OF FOOD.

One may purchase food with good judgment and yet fail as an economical housekeeper through the improper care of it. Perfect cleanliness is essential for the best preservation of food. Every place in which food is kept should be frequently inspected and kept thoroughly clean. Heat and moisture tend to cause decay, therefore it is important that all foods should be kept in a cool, clean, dry place. Cooked food, especially animal food, spoils quickly if covered closely while still warm. All soups, meat, bread, etc., should be cooled thoroughly and quickly before being covered and stored away.

In hot weather it is a good plan to put the vessel containing liquids to cool in another pan of cold water.

MEAT.—Meat should be removed from the wrapping paper as soon as it comes into the house, and any parts that are not clean and sweet removed before putting it away. If it is not to be hung, put it on a dish and keep in a cool place. Never put meat directly on the ice. When preparing meat for cooking wipe it off with a clean wet cloth; never allow it to soak in the water.

POULTRY.—If poultry be drawn and a few pieces of charcoal placed in the body, it will keep longer than if hung undrawn. Poultry must not be washed until it is to be cooked.

FISH.—Fish should not be kept long in the house before cooking, as it must be kept cold and is apt to taint other food.

EGGS.—Eggs should be carefully washed when they come into the house. Shells may be saved for clarifying purposes. Keep in a cool, dry place.

MILK.—Milk should be kept in a cool place, and away from all odors and dust. The vessel in which milk is kept should be free from crevices, of such shape as to be easily cleaned and scalded, and have a closely fitted cover. Glass, crockery, bright tin or granite make suitable milk vessels. When emptied they should be soaked in cold water, washed in hot soapy water, rinsed, then scalded in boiling water.

BUTTER.—Butter must be kept in a cool, dry place, covered and away from odors.

BISCUITS, CAKE, ETC.—Should be kept in air-tight tins or boxes.

CEREALS, RICE, ETC.—Should be kept in tin boxes or glass jars, so as to protect them from mice, insects, etc.

FLOUR AND SUGAR.—Should be protected from mice and insects.

CANNED GOODS.—Never leave any tinned food in the can after it has been opened but turn at once into a bowl, and do not keep more than a day or two after opening. Keep in a cold place.

FAT.—If water or any foreign substance be left in fat it will spoil quickly, therefore, all trimmings of fat should be rendered while they are sweet and strained into jars kept for the purpose. Beef, pork, mutton and chicken fat may be put together and kept for deep frying. Ham, bacon and sausage fat may be used together for sautéing. Duck, turkey and all strongly flavored fats may be kept for soap-making.

LEFT OVERS.—It is rarely necessary to waste food if proper attention is given to utilizing food remnants.

Many dainty and healthful dishes may be prepared from these remnants by the exercise of taste and skill. The secret of such cookery lies in proper seasoning and avoiding a "messy" appearance.

Pieces of cold meat or fish may be used for scallop dishes, or combined in baked dishes with rice, hominy, etc.

Bits of cooked ham, sausage and cold meat may be used for hash, and if there is a little gravy it may be used instead of water for moistening the hash.

Tough pieces of meat and bones may be used in making stews or soup stock. All kinds of meat and vegetable water, except potato water, may be used for stock-making.

Gravy, sauces and soups, no matter how small the quantity, may be used for warming over meat, fish and vegetables.

A few spoonfuls of almost any kind of meat, fish or vegetable, may be chopped, heated in a sauce, and spread over a plain omelet.

A soft boiled egg left from a meal, may be boiled until hard and used in salad or egg sauce.

Pieces of bread may be converted into puddings, griddle-cakes, and dried crumbs. Pieces of cake and gingerbread may be used in puddings. A few table-spoonfuls of cold rice or breakfast cereals may be added to muffins or griddle-cakes.

CHAPTER XIV.

Table Service.

A FEW GENERAL HINTS ON SETTING THE TABLE.

Clean table linen—no matter how coarse—is possible for every one. A dish of fruit or flowers, if only a bunch of green foliage, improves the appearance of the table.

When setting the table, cover first with a cotton-flannel or felt cloth, in order to prevent noise and protect the table.

See that the tablecloth is spread smoothly, that the corners are of equal length, that the crease is exactly in the centre. Place the fruit or flowers in the centre of the table.

For each person place knife, spoon and glass on the right, fork and napkin on the left. Place the glass at the point of the knife. Turn the edge of the knife towards the plate and the fork tines up, the spoon with the bowl up. If soup is to be served, place a square of bread or a roll on top of the napkin or between the folds. Place the pepper and salt at the corners of the table, unless individual salts are used, when they should be placed at the head of the plates, where the dessert spoon may be placed—the handle towards the right—for convenience.

SERVING FOOD.

Hot food should be served hot, and on hot plates. Cold food should be served very cold. A little garnish of parsley, hard-boiled egg, sliced lemon, toast, watercress

or centre of a lettuce head adds much to the attractiveness of a dish. Small rolls, a square of bread, or croutons should be served with soup. Sliced lemon with fish. Cold beets, carrots, turnips, and the whites of hard-boiled eggs, stamped out with a fancy vegetable cutter, make a pretty garnish for cold meats. Toast cut into triangles makes a suitable garnish for many dishes.

The general rule in serving simple family meals, with or without a waitress, is for the hostess to serve the porridge and coffee at breakfast; the soup, salad and dessert at dinner, and pour the tea at the evening meal. When luncheon is served in the middle of the day the hostess usually does the greater part of the serving, as luncheon is considered to be the most informal meal of the day.

The daughters of the house should consider it their special privilege to save the mother any annoyance or discomfort during the meal time.

Look over the table and see that everything is in its place before announcing a meal. Fill the glasses with water before the family enter the dining-room.

Lift the covers from the hot dishes and turn over at once in order to prevent the steam from dropping on the cloth. Take the plates from the host or hostess, and place before each person from the right side—keeping the thumb well under the plate. When passing anything from which the persons seated at table help themselves, such as vegetables, sauces, etc., always go to the left, so as to leave the right hand of the one to be served free. When removing plate, etc., go to the right. Keep a watchful eye over the table and pass anything apparently required.

Learn to move quickly and quietly.

Never allow dishes, which have been used, to accumulate on the table or allow the table to become disordered.

Learn to receive instructions from the hostess in an undertone. Do not get excited and try to do too many things at once. It is an accomplishment to be a good waitress, as it requires special refinement and deftness, which are scarcely compatible with an untidy nature.

No matter how simple the meal may be, every housekeeper should see that it is served neatly and on time.

A FEW POINTS TO BE CONSIDERED IN PLANNING MEALS.

Dietetic authorities advise people who are engaged in active muscular work to partake of the more substantial meal in the middle of the day, leaving such articles of food as soup—which is a valuable stimulant after a day of hard work—fruit, cake, etc., for the evening meal when the system is too much exhausted to digest the more concentrated foods. When men are obliged to take cold lunches in the middle of the day the housewife should see that the lunch basket contains the necessary nourishment in the form of cheese, cold meat, meat or fish sandwiches, hard boiled eggs, a fish or vegetable salad, cold pork and beans, rice pudding, whole-wheat bread and butter, a bottle of milk or *strained* tea or coffee, pie, doughnuts, etc.

Remember, a man working in the open air or in a large building requires food which will not oxidize too quickly, or, in other words, food which will keep up the fuel and force necessary for his work. Supper in such cases should consist of a good broth or well made soup, and the

lighter foods; but breakfast and dinner should be more substantial. It is a question of economy to provide suitable food for the wage-earner. The children may be equally well nourished on a less expensive diet, such as whole-wheat bread and butter, milk puddings, fruit, green vegetables, cereals, milk, and meat once a day.

On the other hand, the individual engaged in sedentary employment, such as book-keeping, teaching, needlework, etc., should dine later in the day, as it leaves a longer interval for digestion, which is much slower when the individual is confined in a close office or work-room, and where little exercise is taken.* Care should be taken in planning meals for this class to avoid food which requires much oxygen, such as fresh pork, fried food, sausage, warm bread, pastry, griddle cakes, etc. The mid-day meal of a brain worker or business man should be light; a soup, glass of milk (hot or cold), fruit, bread and butter, vegetable salad, a broiled chop or steak, etc., are suitable for luncheon.

Special attention should be given to the diet of school children.

Students and children who are obliged to study at night should, as a rule, take some light nourishment before retiring; a biscuit, a piece of bread and butter, or a glass of hot milk, is sufficient.

Young girls, who are employed in shops, factories, etc., frequently hurry away to their work in the morning without taking a substantial breakfast. It is needless to say that such action is sure to be followed by a physical

*The teacher may make this clear by comparing the digestion of the two classes to the action of the air upon coal in a range with the draught open and closed, the more rapid combustion, effect of oxygen, etc.

breakdown. A glass of hot milk or an egg beaten and added to a glass of milk will serve as an occasional substitute for a more substantial meal, but is not enough to sustain active exercise for any length of time.

Another point to consider in the planning of meals is economy of fuel. The thoughtful housekeeper will arrange to have food requiring long, slow cooking, such as stews, soup stock, bread, etc., and ironing done by the same fuel. Broiling, toasting, omelets, etc., require a quick fire. It is in the careful consideration of details that economy in both food and fuel may be exercised.

CARING FOR INVALIDS.

One of the first considerations in caring for an invalid is the ventilation of the sick room. Care must be taken that the air is not vitiated by anything in the room, such as a kerosene lamp, wilted cut flowers, soiled clothing, etc. The bed should be so arranged as to avoid a draft—especially when airing the room. If the room is too small to allow this, a very good way to protect the patient is to raise an umbrella and place it over the head and shoulders; over this put a blanket while the room is being aired; allowing it to remain until the room has reached the desired temperature again. Never turn the wick of a lamp below the point of free combustion in the room of either sick or well, as the odor is not only disagreeable but injurious.

One of the most important essentials in a sick room is perfect cleanliness of the room, the bed linen and clothing of the patient. Never air or dry cloths or garments in the sick room. Cover the broom with a damp flannel

cloth in sweeping, so as to avoid noise and prevent the dust from rising. Avoid noise in placing coal on the fire by putting the coal in a paper bag, placing bag and all upon the fire. Do not allow loud talking or discussion in the sick room; neither is whispering desirable, as it is apt to irritate the patient.

One should avoid visiting a sick room when in a violent perspiration, or with an empty stomach, as the system at that time is more susceptible to contagion.

Do not consult the patient about the food, but see that tempting, wholesome varieties are provided, in accordance with the doctor's orders concerning the diet. Serve food in small quantities, and either hot or cold, as the article may require. A warm dish which should be hot, and a tepid drink or food, which should be cold, is one of the most objectionable and unappetizing forms of serving food. Do not allow fresh fruit, which is intended for the patient, to remain in the sick room, but keep in a cool place and serve when needed. In some cases, when the system has been overtaxed, either mentally or physically, a complete rest is necessary, and the diet should be food which merely satisfies the hunger—neither stimulating nor especially nourishing. Such foods come under the head of gruels, soups, jellies, fruit and drinks. On the other hand when a patient has become wasted from a long continued illness and requires building up, more nourishment is required to supply the waste. In some cases the food must be given in concentrated form. Milk is one of the most valuable foods in this class; sometimes it requires the addition of a little pepsin in order to facilitate digestion; sometimes the addition of a pinch of salt makes milk not only more agreeable to the patient, but

aids digestion. Eggs, either lightly boiled or in egg-nog, are easily digested and very nourishing. Meat and milk soups, farina and oatmeal gruel, port wine jelly, albumen and milk (which is the white of egg and milk shaken together), and in some cases a bit of carefully broiled steak or chop, with dry toast, are suitable foods for this class of patient. In convalescence, any well cooked, easily digested food may be given. Fried food, rich puddings and pastry must be carefully avoided.

People with consumptive tendencies should eat wholesome, easily digested food, with plenty of fat such as cream, butter, fat of bacon and of roast beef, mutton, olive oil, salads, cornmeal and cereals, and take plenty of outdoor exercise. A few simple recipes are given, which are suitable for invalids.

BEVERAGES.

1.—*Barley Water*.—Take two ounces of pearl barley and wash well with cold water at least two or three times. Put into a saucepan with one and-a-half pints of water, and allow it to boil for twenty minutes closely covered. Strain and sweeten, and flavor with lemon juice; a little lemon peel may be added while boiling if desired.

2.—*Apple Water*.—Take two or three tart apples. After baking, put them in a bowl and pour over them one cup of boiling water, strain and sweeten to taste; serve when cold.

3.—*Flax-Seed Tea*.—One-half cupful of flax-seed—which has been carefully washed in cold water—to one quart of boiling water; boil slowly thirty minutes, move to the back of the stove and allow it to remain ten or

fifteen minutes longer. Strain, and flavor to taste with lemon juice and sugar.

4.—*Lemonade*.—Slice one lemon, add one tablespoonful of sugar, press the lemon and sugar, add one cup of boiling water. Strain and serve hot or cold as required.

5.—*Orange Water*.—Made the same as lemonade.

MEAT EXTRACTIVES.

6.—*Beef Juice* is prepared by broiling until the meat is heated through, then placing it in a lemon squeezer and pressing until all the juice is extracted. Heat until warm enough to be palatable, add a little salt, and by way of variety it may be poured over a slice of hot dry toast.

7.—*Beef Tea*.—Cut juicy pieces of steak—the round steak is the best—into small pieces, cover with cold water and heat gradually to 160 F. Allow it to remain at this temperature ten or fifteen minutes. Press, strain, and flavor with salt and pepper.

8.—*Beef Tea (No. 2)*.—Put a pound of finely minced beef into a glass fruit jar, add a pint of cold water. Let it stand for an hour, stirring and pressing occasionally. Place the jar in a kettle of water; place over the fire and allow the water to reach boiling point. Move back where the water will just simmer for an hour, keeping the jar closely covered. Strain the beef tea through a fine wire strainer; allowing the fine sediment to pass through, which should be drunk with the liquid. Flavor with salt.

9.—*Beef Essence*.—(This method is highly recommended.) One ounce of finely chopped fresh beef, free

from fat; pour over it eight ounces of soft water, add five or six drops of dilute hydrochloric acid, and fifty or sixty grains of common salt, stir well, and leave for three hours in a cool place. Strain the fluid through a hair sieve, pressing the meat slightly; adding gradually toward the end of the straining, two ounces of water. The liquid is of a bright red color, tasting like soup. It should be served cold, in a small quantity at a time. If preferred warm it must not be put on the fire, but heated in a covered vessel placed in hot water.

10.—*Chicken Broth*.—Singe and clean a small chicken. One-half of the chicken may be used for broth, and the other half for broiling or a fricassee. Disjoint, and cut the meat into small pieces. Break or crush the bones. Dip the feet into boiling water and scald until the skin and nails will peel off (as the feet contain gelatin). Cover the meat, feet and bones with cold water; heat very slowly, and simmer till the meat is tender. A few minutes, before removing from the fire add salt and pepper to taste, also one-half of a teaspoonful of sugar. Strain and when cool remove the fat. When needed, heat the necessary quantity, and if desired very clear add the shell and white of one egg. Let this boil slowly three or four minutes. Skim and strain through a fine cloth. A little lemon juice may be added to vary the flavor. This may be poured into small cups and kept in a cool place; or if the patient can take it some of the breast meat may be cut into small pieces and moulded with it. If the broth is served hot, it should not be cleared with egg.

11.—*Mutton Broth*.—Chop one pound of lean, juicy mutton very fine; pour over it one pint of cold water. Let it stand until the water is very red, then heat it slowly.

Allow it to simmer ten minutes. Strain, season, and if liked thick, two tablespoonfuls of soft boiled rice may be added; or it may be thickened with a little cornstarch wet with cold water and stirred into the hot broth. Serve very hot. If there is not enough time to cool the broth and re-heat, the fat may be removed by using a piece of tissue, coarse brown or blotting paper, which, by passing over the surface, will remove any fat which cannot be taken off with a spoon.

12.—*Oatmeal Gruel*.—To one quart of boiling water add one-quarter of a cup of oatmeal, one-quarter of a teaspoonful of salt. Boil one hour, strain and serve with or without milk. Another method is to cover the oatmeal with cold water. Stir well; let it settle, then pour off the mealy water in a saucepan. Then boil the water.

13.—*Egg Soup*.—Put one ounce of sago with one-half pint of milk into a double-boiler, and cook twenty minutes. Strain through a sieve and add one-half pint of beef extract (or Bouillon). When hot take it from the fire and stir gradually into it the yolks (well beaten) of two eggs. Season to taste, and serve. Chicken or mutton broth may be used.

14.—*Albumen and Milk*.—Put the white of one egg into one-half pint of milk. Pour into a pint fruit jar, screw on the top tightly and shake well for one minute, when it should be light and smooth. Serve at once. A pinch of salt may be added if desired.

15.—*Egg-Nog*.—Beat one egg until very light, add two teaspoonfuls of sugar and beat again; add two-thirds of a cup of cold milk, mix well, and if ordered, two teaspoonfuls of brandy may be added. A pinch of salt added to the yolk of the egg makes it more palatable.

16.—*Orange Soup*.—Soak the juice of an orange, one-third of the grated rind, and one teaspoonful of lemon juice for one-half hour. Strain, and make the liquid up to a cupful with water. Bring to boiling point and add two level teaspoonfuls of arrowroot, moistened with a very little cold water, stirring constantly until it thickens. When it reaches the boiling point, add one tablespoonful of sugar, turn into a bowl and stand away to cool. Serve very cold. (Any tart fruit juice may be used for this soup.)

17.—*Arrowroot Gruel*.—Dissolve two level teaspoonfuls of arrowroot in a little cold water, add one cup of boiling water, cook for a few seconds; take from the fire, add a tablespoonful of sugar, one tablespoonful of lemon juice. (One egg may be beaten, white and yolk separately, until very light, mix them carefully and pour over the egg slowly one pint of hot arrowroot gruel, made as above; stir until well mixed.)

18.—*Rice Water or Jelly*.—Pick over and wash carefully two tablespoonfuls of rice, and cook in water until the rice is dissolved. Add salt and sugar to taste. If intended to jelly, add lemon juice and strain into a mould. Serve cold with cream and sugar. If to be used as a drink, add enough hot water to make a thin liquid, and boil longer. A little stick cinnamon may be added a few minutes before straining. Serve hot or cold.

19.—*Stewed Figs*.—Take some choice figs, wash, then cover them with cold water. Soak over night. In the morning bring them to boiling point, and keep them over the fire, just simmering for twenty minutes, or until the figs are plump and soft. Lift them out carefully, and boil

down the liquor until it forms a syrup. Pour this over the figs and serve cold. whipped or plain cream may be served with them.

20.—*Jellied Chicken*.—Take a young, tender chicken. Prepare and disjoint it as a fricassee. Put a bay-leaf, a stock of celery about four inches long, and two whole peppercorns in the bottom of a bowl. Then put in the chicken. Stand the bowl in a pot of boiling water, being careful that the steam shall not drip, or the water boil over into the chicken. Cover the pot closely and keep the water boiling until the meat is tender enough to allow the bones to slip out. Remove the skin and bones and put the remainder of the chicken into a pint bowl or mould. Season the remaining liquor with salt, and strain over the meat. Stand in a cool place to harden. (Do not add water to the chicken when cooking.)

CHAPTER XV.

The House and its Care.

It is not always possible to choose a dwelling-place or its furnishings as one would wish; circumstances must always control such matters, but there are certain precautions to be observed in every home. There should be a good supply of pure fresh air and water, plenty of sunlight and good drainage. The furnishing should be in keeping with the place and mode of living to be practised. The aim of the homemaker should be to keep the house clean, to have "a place for everything and everything in its place," to provide suitable, properly-cooked food, and to arrange the affairs of the household so as to avoid confusion of duties, and to surround those under her care with influences which will tend to make the home a place of rest and contentment. These conditions are not dependent upon wealth, but are possible in the most simple home. The true homemaker will not sacrifice the welfare and comfort of the family to outward display. The housekeeper should understand the amount of income at her disposal and regulate her expenses accordingly.

There are certain essentials to be observed in the management of a home, no matter upon what scale it is established. Chief among these is a systematic arrangement of duties so as to secure the greatest amount of comfort with the least expenditure of time, labor and money.

Various Rooms and their Uses.

The average house consists of a sitting-room, dining-room, kitchen, pantry, bedrooms, bathroom (except in the country where, if possible, a room should be set apart for this purpose), closets and cellar. Each of these rooms has its special use and requires special care.

THE SITTING-ROOM.

In a well-ordered household the sitting-room should be the social centre of family life. It should be one of the largest and brightest rooms in the house, and furnished with a view to comfort rather than appearance only. There is no place in a well-ordered home for the stiff "parlor" loaded with bric-a-brac, with blinds drawn to keep out the sunlight, and the furniture chosen for ornament rather than use. The sitting-room should be the family room in the truest sense, the room which will invite rest and pleasant social intercourse after the work of the day has been accomplished, and which will remain a pleasant memory of home while life lasts. If possible this room should have a hardwood floor. The cracks in an ordinary pine floor may be filled with putty or other filling and the whole painted any desired color (oak is the most satisfactory), with a rug in the centre. The rug need not be an expensive one; any kind of carpet may be made into a rug and tacked into place. There should be a comfortable couch with plenty of pillows in this room, a useful table, a bookcase and some comfortable chairs. A few plants, pictures, piano, etc., may be added as the means will allow, but the essentials should come first.

THE DINING-ROOM.

There are only two articles absolutely necessary for this room, a table and some chairs. But few dining-rooms are limited to the bare necessities. The table should be of good width, and the chairs should be as comfortable as possible. A hardwood or stained floor is best for a dining-room. A rug may be used and the border of the room stained to match. Elaborate draperies, etc., are out of place in a dining-room. The furnishing of the table is one of the most important matters in connection with this room. Table china can now be purchased in artistic designs at prices within reach of all housekeepers. As a rule "the best is the cheapest" but with care the cheaper wares may last a long time. Simple patterns, in soft tints, or plain white will give greater satisfaction than the more glaring colors, of which one soon tires. Neat patterns in glassware may be purchased at little cost, and the little accessories which make a table attractive, such as a pretty flower vase, neat designs for holding pepper and salt, etc., are inexpensive. The cutlery may be of sterling silver, silverplate or steel, according to the means of the user, but no matter what the quality, it must be well cared for and placed on the table in spotless condition.

THE KITCHEN.

From the practical standpoint the kitchen is the most important room in the house, and as the greater portion of the housekeepers' time is spent there, it should be furnished so as to make the work as easy and attractive as possible. Great care should be taken in the selection of a range, as the first essential in kitchen furnishing. Care

should be taken in furnishing a kitchen to have the articles in most frequent use in convenient places, so as to save as many steps as possible. It is economy to buy good articles, for kitchen use. Graniteware is more easily cleaned, but is not so durable as iron, steel or copper. Special attention should be given to the ventilation of the kitchen, not only in the interest of the workers' health, but to prevent disagreeable odors penetrating into the other rooms.

As the laboratory of the home, its equipment and care should be as complete as possible. A carpeted combination of kitchen and sitting-room is not a wise arrangement. There should not be any draperies or furnishings in a kitchen which will absorb odors. The floor should be of hardwood, stained or covered with linoleum. The plumbing should be open. A range, table, cupboard, a couple of chairs (one low, comfortable chair), are the only necessary articles of furniture required in a kitchen.

Absolute cleanliness should be the watchword in every well-regulated kitchen.

BEDROOMS.

From the hygienic point of view there should be as few furnishings as possible in a bedroom. A stained floor, with rugs, or straw matting is more easily cleaned than a carpet. The furniture should be solid and with good finish, but with as little ornamentation as possible. The most important article of bedroom furniture is the mattress and springs. Better save in the cost of the other furniture and spend it on the article which is most

conducive to comfort. The bed should be placed so as to avoid a strong glare of light from the window. Washable curtains and simple decorations are the most suitable for bedrooms.

BATHROOM.

The chief furniture of an ordinary bathroom should be, in addition to the stationary necessities, a chair, medicine cabinet, towel rod or rack, and an abundant supply of towels. A hardwood floor or covering of linoleum is the most suitable for a bathroom.

Division of Work in the Home.

It is a difficult matter for those who have not had special training to divide the work of the household so as to get through the regular daily routine without confusion and unnecessary exertion. Every housekeeper should make out a plan of work, as well as of meals for the week, always allowing for special duties. Habits of order should be cultivated by every member of the household, as carelessness and unpunctuality increase the burden of the housekeeper, and make it difficult to follow any system of order.

The following order may serve as a basis upon which to arrange a division of work where the family is limited in number to not more than four.

Rise at least one hour before the serving of breakfast. First, make the kitchen fire and put range in order (see page 9). Rinse and fill the tea kettle (allow the water to run for some minutes before filling kettle). While waiting for the water to boil sweep off the front and back steps, porch, etc. When the water has boiled prepare the cereal; put the table dishes to heat; air and

dust the dining-room and set the table. Prepare and serve the breakfast.

After breakfast see that the various rooms are aired, take the clothes off the beds and spread over chairs so as to allow the air to reach every part. Turn the mattresses and leave the room to air at least an hour.

Now, return to the kitchen and wash the dishes, towels, etc. Put the dining-room and kitchen in order. If there is anything to prepare for dinner which requires long, slow cooking, it should be attended to before going on with the housework. Now, return to the bedrooms, make the beds, empty the slops, wash and wipe the toilet ware. Put the room in order, unless the day for special cleaning, when the movable furniture should be beaten, dusted and removed from the room, the small articles dusted and placed on the bed, where they should be closely covered with a dusting sheet. Sweep the room, then leave it until the other rooms have been put in order. Wash the basin, soapdish, and bathtub, fold the towels neatly on the roller or towel rack, dust the room, wipe off the floor, see that bottles, etc., are in the proper place. Now, dust the halls, sitting-room, and settle the room which has been turned out. Prepare dinner or luncheon.

NOTE.—While this may seem an interminable round of duties to be performed in one morning, it will be found quite possible by a systematic and energetic effort, to have at least one hour to rest before preparing dinner or luncheon.

If dinner is served in the middle of the day the evening meal should be as simple as possible. Any special dish required for supper should be prepared, if possible, while cooking the dinner. It is a mistake

to sacrifice the other interests of the home to the preparation of elaborate meals.

Cleaning a Room.

1. Beat and dust any upholstered furniture, cover closely with a dust sheet.

2. Dust and remove any ornaments and lighter articles of furniture.

3. If there are rugs, roll them up and put out of doors to be aired and beaten.

4. Sweep the floor. If carpeted, sprinkle over it before sweeping either damp tea-leaves or damp paper torn in bits. If a stained or painted floor wash with a clean, soft cloth, and when dry rub over with a cloth damped with kerosene.

5. While the dust is settling brush and shake the rugs.

6. Wipe the walls and ceilings, tops of doors and windows.

7. Wipe carefully the picture glass and dust the frames.

8. Wipe all dust from window-ledges, frames and blinds.

9. Dust the room and wash the windows.

10. Wipe the carpet with a cloth wrung out of *tepid* water in which has been added three or four table-spoonfuls of ammonia (this will brighten the color).

11. If rugs are used put in place, arrange the furniture, ornaments, etc.

Once a month should be often enough for a thorough cleaning of a room under ordinary conditions. A carpet sweeping and careful dusting should be sufficient daily care. One or more rooms should be thoroughly cleaned each week, and a day set apart for that purpose.

Care of the Cellar.

There is no part of the house in which cleanliness is of greater importance than in the cellar. Odors arising from decayed vegetables or other causes are not only disagreeable but are a menace to health. There should be enough windows in the cellar to secure plenty of light and air, and they should be opened every day. The floor should be thoroughly swept, and if made of cement should be washed occasionally. Every corner should be cleaned. The walls should be whitewashed once or twice a year. See that all the shelves, tables, etc., are washed at least two or three times during the year. A box or barrel of unslaked lime is an excellent thing to keep in a cellar, especially if it is at all damp.

Care of Sink.

A neglected sink may be a fruitful source of disease in addition to attracting water-bugs and other pests. *Never leave scraps in the sink after washing* the dishes, but wash carefully, using small scrubbing brush and sapolio. Clean brass faucets with flannel dipped in vinegar or lemon juice, rub thoroughly with rottenstone and oil, then polish with a dry cloth. Any preparation for cleaning brass may be used. If the faucets are greasy wash them with warm soap-suds before using anything else. Nickel faucets may be washed with hot

soap-suds, wiped dry and polished with a soft flannel or chamois.

The waste-pipe must be kept free from grease. After pouring down greasy water, immediately pour down boiling water so as to prevent the grease from sticking to the pipes. Two or three times a week pour down a strong solution of sal-soda—about a half cupful of soda to two quarts of hot water.

Garbage Pail.

Scrub and scald the garbage pail every day. If dried in the sunshine no other disinfectant is required.

Care of Refrigerator.

The refrigerator should be *thoroughly* cleaned once a week.

1. Remove all food and ice.
2. Take out ice-rack and wash with hot water and sal-soda, and rinse with clear hot water.
3. Wash out the ice-box in same way.
4. Wash the food-chambers with hot water without soap, using sal-soda if necessary.
5. Run a wire with a cloth tied on the end down the waste-pipe.
6. Pour boiling water, in which sal-soda has been dissolved, down the waste-pipe.
7. Clean all corners and grooves with a cloth and skewer.
8. Wipe the refrigerator dry, and leave the doors open for at least an hour.

The waste-pipe should empty into a pan or have a pipe connected with a well-trapped drain-pipe and finished with a funnel under the waste-pipe of the refrigerator. This is better than having the two pipes connect closely, as the refrigerator may be moved for cleaning purposes if necessary.

Do not keep food with a strong odor, such as fish or onions, in a refrigerator with butter, milk, etc.

Care of Towels.

One of the most important, yet most frequently neglected, details of kitchen work is the care of towels and dish-cloths. A dirty dish-cloth breeds disease, as it is a hotbed for bacteria, and, as it comes in contact with the dishes from which food is eaten, it will be readily seen how it may transfer disease germs to those who eat from them; the wiping only changes the evil from the dish-cloth to the towel. Always wash the dish-cloth, after using, with soapy hot water, then scald, rinse and hang out in the sun if possible.

Wash dish-towels once a day in warm, soapy water, scald, then rinse in cold water, and hang out to dry.

All cleaning cloths should be washed after use.

All dish-cloths and dish-towels should be hemmed, as the lint and threads are apt to obstruct the sink drain.

POINTS TO REMEMBER.

To clean silverware (never scour) dip a soft, moist cloth in fine whiting, and rub carefully over the article, let the whiting dry, then rub off with a dry cloth, and polish with a chamois skin. A soft brush (an old tooth-

brush will do) should be used to clean out all ornamental work. Egg-stained spoons should be rubbed with salt, then washed in water to which a little ammonia has been added.

To scour steel knives either bathbrick, wood-ashes or sand-soap may be used.

Have a special knifeboard, dip a cork in water, then into the scouring material, and rub both sides of the blade, then wash and dry. Scour steel forks in the same way.

Do not put knife handles in water, as it discolors and loosens the handles.

Do not wet the cogs of a Dover egg-beater.

Dry all tin and granite ware thoroughly.

Always use *clean* hot water for washing the tea and coffee pots, without soap. Pans in which fish or onions have been cooked should be washed and scalded, then filled with water in which put a teaspoon of sal-soda. Place them on the top of the stove for one half hour; this will remove all odor from the pans.

General Information.

To CLEAN WOOD.

After the woodwork has been dusted with a soft cloth wrung out of tepid water (do not use soap), go over it with a soft cloth moistened with sweet oil and turpentine (one part turpentine to two parts oil). Rub with the grain of the wood, then rub with a soft dry cloth. Tables, chairs, etc., may be treated in this manner. White stains may be removed by rubbing thoroughly with kerosene.

TO CLEAN BRASS.

A mixture of rottenstone, sweet oil and turpentine (one cupful rottenstone, pounded fine and sifted, half cupful turpentine, and enough oil to make a paste), is an excellent preparation for cleaning brass. Wash the brass in soap and water, wipe dry and polish with the paste. Do not use brass preparations on lacquered ware.

TO REMOVE PAINT.

Rub with a woollen cloth dipped in turpentine.

TO REMOVE STAINS ON BASIN AND BATHTUB.

Rub muriatic acid* on the stained parts and rinse with cold water. A little ammonia may be added to the rinsing water.

ACID STAINS.

When an acid is spilled, pour ammonia over the spot at once to restore the color.

ALKALI STAINS.

If alkali, such as ammonia, soda, etc., be spilled sponge the spot with vinegar or chloroform.

STAINS ON MARBLE.

A paste made of whiting or chloride of lime should be left on the stain for several hours, then washed and wiped dry.

TO KILL MOTHS.

Use naphtha freely on all stuffed furniture (it will not stain the most delicate fabric). Pour the fluid well over

* This acid is apt to injure the fittings ; therefore, kerosene is better if the stain is not very bad.

the article (a watering-can may be used for pouring the fluid over carpets, furniture, garments, etc.). Windows should be opened and the room left to air for several hours after naphtha has been used. There should be no light or fire in the room where naphtha is being used, or until the fumes have evaporated, as it is highly inflammable and must be used with great care. Bedbugs may be banished by a free use of naphtha. Remember that the article must have a bath of naphtha and not simply a few drops or a sponging.

TO DRIVE AWAY ANTS.

Put borax, green walnuts, or pennyroyal in the places infested. (The oil of pennyroyal may be used when it is impossible to get the fresh article.)

WATER-BUGS.

A free use of borax will rid the house of these pests.

TO CLEAN BRUSHES.

Put enough warm water into a bowl or basin to cover the bristles, but not the back of the brush. To each quart of water add three tablespoonfuls of ammonia. Let the brushes soak in this for about five minutes, then move gently through the water several times. Rinse in cold water and stand on the side to dry in an open window or in the sun.

Dish-washing.

As dish-washing is an important duty, and occupies much time, a few hints may make this inevitable task less objectionable to young housekeepers.

A. PREPARATION.

1. Put away the food.
2. Scrape the dishes.
3. Stack the dishes.
4. Arrange in order of washing.
5. Soak the following dishes in cold water :
 - (a) Milky dishes (heat hardens).
 - (b) Eggy.
 - (c) Starchy or doughy.
 - (d) Pots and pans (in warm water).

B. EQUIPMENT.

1. Dish-pan.
2. Rinsing pan.
3. Draining pan (shallow pan or tray).
4. Water.
5. Soap.
6. Dish-cloth.
7. Dish-towel.
8. Bathbrick and sapolio.

C. COLLECTION OF EQUIPMENT.

1. Get the pans.
2. Collect soap, towels, etc.
3. Put warm, soapy water in the dish-pan, as warm as can be borne by the hand.
4. Put scalding water in the rinsing pan.

D. ORDER OF WASHING.

1. Glass
2. Silver.
3. Fine china.
4. Heavy china and crockery.
5. Tins (graniteware, etc.).
6. Pots and pans.
7. Steel knives and forks—scour.
8. Dish-pan and dripping pan.
9. Wash towels in rinsing water.
 - (a) Soap and wash.
 - (b) Scald.
 - (c) Rinse, wring and hang out to dry.
10. Wash the table with towel-rinsing water.
 - (a) Wet all over.
 - (b) Rub soap cake on table.
 - (c) Scrub with the grain of the wood.
 - (d) Rinse.
 - (e) Wring out the cloth and dry table.
11. Clean up the sink.
 - (a) Clean the taps and wash back of the sink.
 - (b) Scrub drain-board.
 - (c) Soap the dish-cloth and wash the basin of the sink.
 - (d) Empty the pans, rinse, wipe and put away.
 - (e) Rinse and put sink cloth to dry.

Rules for the Worker.

1. Wear a suitable dress for kitchen work. It should be washable, and short enough to clear the floor.

2. Fasten the hair firmly so that no loose hairs will fall into the food.

3. Before handling food see that the hands are thoroughly washed. Clean the nails with a nail cleaner or wooden tooth-pick; any little piece of wood may be made to serve the purpose.

4. Wear no rings or bracelets when engaged in kitchen work.

5. Keep a damp towel in a convenient place, on which to wipe the hands. Never use the dish-towel, apron or handkerchief for wiping the hands.

6. Wear a dust cap when sweeping.

7. When tasting food, take up a little of the food on the mixing spoon, then put it on the teaspoon, from which it should be tasted.

8. Cultivate systematic order of work.

9. Before beginning to cook see that the fire is so arranged as to be ready when required.

10. Have all material at hand—flour sifted, measured, etc. Arrange spoons and other dishes, that will be needed, in the most convenient place.

11. In measuring use the cup or spoon for measuring dry materials first, then the liquids, thereby using only one spoon or cup for measuring purposes.

12. Use an earthen bowl and wooden spoon for all cake and batter mixtures.

13. Cover and replace baking powder tin, sugar, flour and spice boxes as soon as the required quantity has been taken from them. By doing this the kitchen is not disordered, and time is saved.

14. Put dishes to soak as soon as emptied, and wash while watching the oven.

15. Plan work so as to save steps, time and fuel.

CHAPTER XVI.

Laundry Work.

As the first essential of laundry work is a plentiful supply of water, a word concerning that necessary article may not be out of place. Pure water is a chemical compound of hydrogen and oxygen. It has great absorbent and solvent powers, therefore pure water is seldom found. The first fall of any shower is mixed with the impurities of the air; among these may be acids, ammonia and carbon in the form of soot and creosote. It is these impurities which cause the stain left when rain water stands on the window-sill or other finished wood. Rain water absorbs more or less carbon dioxide from various sources, and soaking into the soil often comes in contact with lime, magnesia and other compound. Water saturated with carbon dioxide will dissolve these substances, forming carbonates or other salts which are soluble; such water is known as "hard."

Water for domestic uses is called either "hard" or "soft," according to the amount of salts which it may contain. When soap is added to hard water, the new compound formed by the union of the lime with the fatty acid of the soap is insoluble, and is deposited upon the surface of any article with which it comes in contact. It is much better to soften hard water by the addition of alkalies, ammonia or sal-soda before using for laundry purposes than to depend entirely upon soap for cleansing.

Another important material used in the laundry is soap. In purchasing soap, it is well to choose the make of some

well-known firm, who have a reputation to lose if their products are not good; and for anything stronger than soap, it is better to buy sal-soda and use it knowingly than to trust to the various packages so extensively advertised. Washing soda should always be dissolved in a separate vessel, and added to the water to be used. Ammonia may be used, but its too frequent use will yellow bleached fabrics. Borax is an effectual cleanser, disinfectant and bleacher. It is more expensive than ammonia or soda but is the safest alkali to use. Turpentine is valuable in removing grease; one tablespoonful to a quart of water will serve for washing silks and other delicate materials. It should never be used in hot water.

Removing Stains.—All spots and stains should

FRUIT.

be taken out before the clothes are put into the general wash to be treated with soap. Fruit stains are the most frequent and the most indelible, when neglected. The composition of fruit juice is readily dissolved by boiling water. Stretch the stained part over an earthen dish and pour boiling water upon the stain until it disappears. If fruit stains are allowed to remain they will require an acid, or in some cases a bleaching liquid like chloride of lime to remove them.

WINE.

Wine stains should be immediately covered with a thick layer of salt. Boiling milk may be used for taking out wine or fruit

MEDICINE.

stains. Medicine stains usually yield to alcohol. Iodine dissolves in ether or chloroform.

COFFEE,
TEA AND
COCOA.

Coffee, tea and cocoa stain badly; the latter, if neglected, will resist to the destruction of the fabric. These all contain tannin, besides various

coloring matters, and are "fixed" by soap and water. Clear boiling water will often remove fresh coffee and tea stains, although it is safer to sprinkle the stains with borax and soak in cold water first. An alkaline solution of great use and convenience is Javelle water. It will remove stains and is a general bleacher. It is composed of one pound of sal-soda with one-quarter of a pound of chloride of lime in two quarts of boiling water. When the substances have dissolved as much as they will, and become cool and settled, pour off the clear liquid and bottle it for use. Be careful not to allow any of the solid portions to pass into the bottle. Use the dregs for scouring unpainted woodwork, or to cleanse waste pipes. When a spot is found on a white tablecloth place under it an inverted plate. Apply Javelle water with a soft tooth brush (the use of the brush protects the skin and the nails). Rub gently till the stain disappears, then rinse in clear water and finally in ammonia. Blood stains require clear cold or tepid water; BLOOD. hot water and soap render the red coloring matter less soluble. When the stain is nearly gone soap and hot water may be used. Stains from meat juice should be treated in the same way. When blood is mixed with mucous, as in the case of handkerchiefs, it is well to soak the stains for some hours in a solution of salt and cold water—two tablespoonfuls to a quart. Grass stains dissolve in alcohol. If applied GRASS. immediately, ammonia and water will sometimes wash them out.

The following methods have proved successful, and may be tried where colors are likely to be affected by alcohol. Molasses, or a paste of soap and baking soda may be spread over the stain and left for some hours, or the stain may be kept moist in the sunshine until the green color has changed to brown, when it will wash out in pure water. Mildew requires different treatment from any previously considered. Strong soap suds, a layer of soft soap and pulverized chalk, or one of chalk and salt, are all effective, if in addition the moistened cloth be subjected to strong sunlight, which kills the plant and bleaches the fibre. Javelle water may be tried in cases of advanced growth, but success is not always assured. Some of the animal and vegetable oils may be taken out by soap and cold water, or dissolved in naphtha, chloroform, ether, etc. Some of the vegetable oils are soluble in hot alcohol (care being taken that the temperature be not raised to the point of igniting). Vaseline stains should be soaked in kerosene before water and soap touch them.

MILDEW.

OILS.

INK.

Ink spots on white goods are the same in character as on colored fabrics. Where the ink is an iron compound, the stain may be treated with oxalic, muriatic or hot tartaric acid, applied in the same manner as for iron rust stains. No definite rule can be given, for some inks are affected by strong alkalis; others by acids, while some will dissolve in clear water. Red iron rust spots must be treated with acid. Fill an earthen

IRON
RUST.

dish two-thirds full of hot water and stretch the stained cloth over this. Have two other dishes with clear water in one and ammonia water in the other. The steam from the hot water will furnish the heat and moisture favorable for chemical action. Drop a little muriatic acid on the stain; let it remain a moment, then lower the cloth into the clear water. Repeat until the stain disappears. Rinse carefully in the clear water and finally immerse in the ammonia water, that any excess of acid may be neutralized and the fabric protected. Salt and lemon juice are often sufficient for a slight stain.

Many spots appear upon white goods, which resemble those made by iron rust, or the fabrics themselves acquire a yellowish tinge. This is the result of the use of blueing and soap, where the clothes have been imperfectly rinsed. Therefore, if all dirt is removed, and the clothes thoroughly rinsed from all soap or alkalies used in removing the dirt, and exposed for a long time to air and sunshine, the use of blueing is unnecessary. In cities, where conveniences for drying and bleaching in the sunshine are few, a thorough bleaching two or three times a year is a necessity; but in the country it is wiser to abolish all use of blueing and let the sun, in its action with moisture and the oxygen of the air, keep the clothes white and pure. Freezing aids in bleaching, for it retains the moisture upon which the sun can act so much longer. When clean grass, dew and sunshine are not available, use a bleaching powder. Directions for the use of the powder usually accompany the can in which it is bought. Care must be taken to completely rinse out the acid

present in the powder. Grease is more quickly acted upon by hot water than by cold, but other organic matter is fixed by the hot water. An effective method is to soak thoroughly the most soiled portion of the clothes, fold these together towards the centre, roll the whole tightly and soak in cold water. The water should just cover the articles. In this way the soap is kept where it is most needed, and not washed away before it has done its work. When the clothes are unrolled, the dirt may be washed out with less rubbing. Too long soaking, when a strong soap is used, will weaken the fabric.

Whether to boil clothes or not, depends largely upon the purity of the materials used and the care exercised. Many feel that the additional disinfection which boiling insures, is an element of cleanness not to be disregarded, while others insist that boiling yellows the clothes. This yellowness may be caused by impure material in the soap, the deposit of iron from the water or the boiler; the imperfect washing of the clothes, that is, the organic matter is not thoroughly removed. The safer process is to put the clothes into cold water, with little or no soap, let the temperature rise gradually to boiling point and remain there for a few minutes. Soap is more readily dissolved by hot than by cold water, hence the boiling should precede the rinsing. One tablespoonful of borax to every gallon of water added to each boilerful, serves as a bleacher and disinfectant. Scalding or pouring boiling water over the clothes is not so effectual for their disinfection as boiling, because the temperature is so quickly lowered.

The main points in laundry cleansing seem to be: (1) The removal of all stains; (2) Soft water and a good

quality of soap; (3) The use of alkalies in solution only; (4) Not too hot nor too much water, while the soap is acting on the dirt; (5) Thorough rinsing, that all alkali may be removed; (6) Long exposure to sunlight, the best bleacher and disinfectant.

WASHING OF WOOLLENS.

All wool goods require the greatest care in washing. The different waters used should be of the same temperature, and never too hot to be borne comfortably by the hands. Soap should always be used in the form of a solution. No soap should be rubbed on the fabric, and only a good white soap, free from resin, or a soft potash soap is allowable. Make each water slightly soapy, and leave a very little in the fabric at the last rinsing, in order to furnish a dressing as nearly like the original as possible. Ammonia or borax is sometimes used in preference to soap. For pure white flannel borax is the most satisfactory, on account of its bleaching quality. Only enough of any alkali should be used to make the water very soft.

Wool fibres collect much dust, and should therefore be thoroughly brushed or shaken before the fabric is put into the water. Woollen fabrics should be cleansed by squeezing, and not by rubbing. Wool should not be wrung by hand. Either run the fabric smoothly through a wringer or squeeze the water out, so that the fibres may not become twisted. Woollen articles may be dried more quickly by rolling the article tightly in a thick, dry towel or sheet, and squeezing the whole till all moisture is absorbed. Shake the article thoroughly before placing

to dry. Woollen goods should not be allowed to freeze, for the teeth become knotted and hard.

COLORED COTTONS.

Colored cottons should have their colors fixed before washing. Salt will set most colors, but the process must be repeated at each washing. Alum sets the colors permanently, and at the same time renders the fabric less combustible, if used in strong solution after the final rinsing. Dish-cloths and dish-towels must be kept clean as a matter of health, as well as a necessity for clean, bright tableware. The greasy dish-cloth furnishes a most favorable field for the growth of germs. It must be washed with soap and hot water and dried thoroughly each time. All such cloths should form part of the weekly wash and receive all the disinfection possible, with soap, hot water and long drying in the sunshine and open air. Beware of disease-breeding, greasy, damp, dish-cloth hung in a warm, dark place. Oven towels, soiled with soot, etc., may be soaked over night in just enough kerosene to cover, then washed in cold water and soap.

PREPARATION FOR WORK.

All clothes, whether washed at home or sent to a public laundry, should be plainly marked.

Sort the clothes for the wash, putting each class in a pile by itself. Look over each article and remove any stains before putting it into the water. If the white clothes are very dirty they should be soaked in cold water, to which a little dissolved soda or borax may be added, for some hours.

Wring the clothes, rubbing the very soiled spots, out of the cold water and wash in the following order :

1. Fine things, such as muslins, lace, collars and cuffs.
2. Table linen.
3. Bed and body linen, including handkerchiefs, or wash handkerchiefs by themselves.
4. Prints and colored cottons.
5. Flannels (using fresh water). In winter flannels should be washed first if dried out of doors.
6. Coarse things, such as kitchen towels, dusters, etc.

Laundry tubs should be carefully washed and dried. Wooden tubs, if kept in a dry place, should be turned upside down, and have the bottoms covered with a little water. The rubber rollers of the wringer may be kept clean and white by rubbing them with a clean cloth and a few drops of kerosene (coal oil).

CHAPTER XVII.

Emergencies.

As frequent accidents occur during the performance of household duties, a few suggestions as to how slight injuries should be treated may prove useful to the young housekeeper.

Cuts.—A cut should be washed with cold water, covered with a small pad of cotton, bound up, and left alone. Should matter form, the bandage must be taken off, the wound bathed with carbolized water, 1-80, and a little carbolized vaseline spread on a bit of linen and laid over it. The washing and dressing should be repeated two or three times a day if there is much discharge.

Bruises.—A flannel wrung out of very hot water, and laid on a bruise, relieves the soreness.

For bruises on the face, apply ice. Brown paper wet in vinegar is an old-fashioned remedy. If the skin is broken, treat as a wound, with carbolized water and carbolized vaseline.

Sprains.—Both hot and cold treatment is recommended. Immerse the joint in water as hot as can be borne. Keep up the temperature by gradually adding more hot water. Let it soak for an hour or more. Then wrap in warm flannel, and surround with hot water bags or bottles.

Stings.—Bathe the part in ammonia, or baking soda and water; wet a cloth in the same, and bind over it.

Burns.—The best household remedies for burns are baking soda and carbolized vaseline. For slight burns mix the soda to a paste with water, and spread thickly over the part; cover with linen or old cotton. This may be kept wet by squeezing water over it. If shreds of clothing adhere to a burn, they should be soaked with oil, and not pulled off until softened. If the skin is gone, spread carbolized vaseline on linen, and bind on the part until the doctor arrives.

In burns caused by acids, water should not be applied to the parts. Cover with dry baking soda.

If caused by an alkali, such as lye, ammonia, or quicklime, use an acid, as vinegar or lemon juice diluted.

Poisoning.—For poison ivy, saturate a cloth in a solution of baking soda, ammonia and water, and lay over the part.

When poison has been swallowed, the first thing to do is to get it out of the stomach. Secondly, to prevent what remains from doing more mischief. Give an emetic at once. One tablespoonful of salt in a glass of tepid water; one teaspoonful of mustard, or one teaspoonful of powdered alum in a glass of tepid water. A teaspoonful of wine of ipecac, followed by warm water. Repeat any of these three or four times if necessary. The quantities given are for children; larger doses may be given to adults. It is well to give a dose of castor oil after the danger is over, to carry off any remnants of the poison that may have lodged in the intestines.

After a poison has burned the mouth and throat, plenty of milk may be given, also flour, arrowroot or cornstarch gruel.

For drowning and other serious accidents, see Public School Physiology.

VENTILATION AND SANITATION.

As pure air is one of the essentials of good health, it follows that one of the chief duties of a housekeeper is to see that the family supply of this necessary element is properly regulated. Very few housekeepers realize the importance of ventilation in promoting the general health and comfort of the family. The scope of this book prevents anything further than a few suggestions or a brief outline of the principles underlying these important questions. A few general rules are given: (1) See that surface water is carried away from all sides by either natural or artificial drains, and that the cellar is perfectly dry. Have enough windows in the cellar to secure plenty of light and air, and see that they are opened every day. (2) Have the cellar thoroughly cleaned and whitewashed with lime at least once a year, twice if possible, in the spring and fall. (3) Keep the coal in a dry place. (4) Do not allow decomposed vegetables, or old bottles, which may cause unpleasant odors, to accumulate in the cellar. Unless there is a special cellar for vegetables, where they may be kept at a proper temperature and carefully looked after, it is much better for the housekeeper to purchase in small quantities. Remember the ventilation of the cellar is of the greatest importance, and should never be neglected.

One of the most noted authorities in America, on the question of ventilation, says: "The three important objects are, (1) to provide an abundance of pure air in every part of the house; (2) To avoid drafts, either hot

or cold; (3) To provide means of escape for foul air and odors." As before stated, much of the vigor, comfort and happiness of the family depends upon attention to these matters. Next to the cellar, we will take the living and sleeping rooms, which should be thoroughly aired every day, not simply by opening the window a few inches at the bottom, or—as in some double or outside windows—by a little opening a few inches wide, but by causing a circulation of air in the room, and providing an outlet for foul air near the ceiling, which may be done by lowering the window from the top. An outlet for foul air is quite as important as an inlet for fresh air.

If there is a skylight at the top of the house, it should be kept open a few inches all the time as an outlet for impure air; an attic window will serve the same purpose. Have doors and windows so arranged that a draft may be made possible when needed to change the air of a room quickly, or in airing bedclothes; two windows being of course more desirable. After dressing in the morning open the window of the sleeping room, top and bottom; turn back the clothes over one or two chairs; place pillows and mattress where they will have a current of fresh air; also open the closet door. Do not allow water to remain in a bedroom more than twenty-four hours.

When a sleeping room has been used for a sewing or sitting room during the day, it should be thoroughly aired before bedtime. Open the bathroom window frequently, top and bottom, for a few minutes, so as to allow the air to escape out of doors instead of into other parts of the house. A nursery, sitting room or school room, which has been occupied by a number of people, should have the windows open, top and bottom, while the

occupants are at meals or elsewhere. A room which has been occupied as a family sitting room during the evening should be aired by the last member of the family to retire, in order to prevent the impure air making its way through the house during the night.

Special attention should be given to kitchen ventilation. In order to prevent kitchen odors from penetrating through the other parts of the house, it is necessary to have an outlet for steam and impure air near the ceiling in the kitchen. If windows are placed so as to secure a draft, they may be opened at the top only, when they will serve the purpose admirably. There should be a ventilating flue in all kitchen chimneys. In building a house, see that register ventilators are placed in the kitchen on different walls, which may be closed in very cold weather.

CHAPTER XVIII.

Tables for Reference.

The composition of a man weighing 148 lbs. is given as follows :

Oxygen.....	92.1 pounds.
Hydrogen	14.6 “
Carbon	31.6 “
Nitrogen	4.6 “
Phosphorus.....	1.4 “
Calcium	2.8 “
Sulphur	0.24 “
Chlorine	0.12 “
Sodium.....	0.12 “
Iron	0.02 “
Potassium	0.34 “
Magnesium	0.04 “
Silica	? “
Fluorine	0.02 “
Total.....	148.00 pounds.

STANDARDS FOR DAILY DIET OF LABORING MAN AT MODERATE MUSCULAR WORK.

AUTHOR.	PROTEID.	FATS.	NUTRIENTS IN DAILY FOOD.	
			Carbo- hydrates.	Fuel Values.
	lb.	lb.	lb.	Calories.
Playfair, England26	.11	1.17	3.140
Moleschotte, Italy.....	.29	.09	1.21	3.160
Wolff, Germany,.....	.28	.08	1.19	3.030
Voit, Germany.....	.26	.12	1.10	3.055
Atwater, United States.	.28	17.33	88.1.21	3.500

(Atwater).

That cooking affects the digestibility of meat is evident from the figures given in the following table (Church):—

TIME OF DIGESTION.

	Hours.		Hours.
Beef, raw.....	2	Mutton, roasted....	3½
Beef, half boiled.....	2½	Veal, raw.....	2½
Beef, well boiled.....	2¾ to 3	Pork, raw.....	3
Beef, half roasted.....	2¾ to 3	Pork, roasted.....	5¼
Beef, well roasted.....	2½ to 4	Fowl, boiled.....	4
Mutton, raw.....	2	Turkey, boiled.....	2½
Mutton, boiled.....	3	Venison, broiled.....	1½

It may be well to emphasize here that animal food is more digestible when cooked between 160° and 180° F. than at a higher temperature.

TABLE OF COMPARATIVE DIGESTIBILITY.

Commencing with the most digestible and ending with the least digestible of meats and other animal foods. (Thompson.)

Oysters.	Tripe, brains, liver.
Soft cooked eggs.	Roast lamb.
Sweetbread.	Chops, mutton or lamb.
Whitefish, etc.	Corn beef.
Chicken, boiled or broiled.	Veal.
Lean roast beef or beefsteak.	Duck and other game.
Eggs, scrambled, omelette.	Salmon, mackerel, herring.
Mutton.	Roast goose.
Bacon.	Lobster and crabs.
Roast fowl, chicken, turkey, etc.	Pork.
	Fish, smoked, dried, pickled.

COMPOSITION OF SOME COMMON VEGETABLES.

	Water.	Nitro- genous Matter.	Fat.	Carbo- hydr'tes	Mineral Matter.	Cellu- lose.	Fuel Value.
Cabbage (raw) . . .	89.6	1.8	0.4	5.8	1.3	1.1	165 per ct.
Cauliflower.	90.7	2.2	0.4	4.7	0.8	1.3	175 "
Spinach	90.6	2.5	0.5	3.8	1.7	0.9	120 "
Asparagus.	91.7	2.2	0.2	2.9	0.9	2.1	110 "
Lettuce	94.1	1.4	0.4	2.6	1.9	0.5	105 "
Celery (raw)	93.4	1.4	0.1	3.3	0.9	0.9	85 "
Greens	82.9	3.8	0.9	8.9	3.5	..	275 "
Rhubarb	94.6	0.7	0.7	2.3	0.6	1.1	105 "
Tomatoes (raw). . .	91.9	1.3	0.2	5.0	0.7	1.1	105 "
Cucumber	95.9	0.8	0.1	2.1	0.4	0.5	70 "

COMPOSITION OF SOME ROOTS AND TUBERS.

	Water.	Nitro- genous Matter.	Carbo- hydr'tes	Fat.	Fibre.	Ash.	Extrac- tives.
Potatoes	76.7	1.2	19.1	0.1	0.6	0.9	1.4
Carrots	85.7	0.5	10.1	0.3	1.5	0.9	1.0
Turnips	90.3	0.9	5.0	0.15	1.8	0.8	1.1
Beetroots	83.9	0.5	11.0	0.1	3.0	0.9	1.0
Parsnips	80.1	1.4	14.1	1.0	2.1	1.3	
Onions	89.1	1.6	6.3	0.3	2.0	0.6	

COMPOSITION OF SOME PULSES OR LEGUMES.

	Water.	Proteid.	Carbo- hydr'tes	Fat.	Cellu- lose.	Mineral Matter.
Green peas	78.1	4.0	16.0	0.5	0.5	0.9
Dried "	13.0	21.0	55.4	1.8	6.0	2.6
Lentils	11.7	23.2	58.4	2.0	2.0	2.7
Beans (green.)	89.5	1.5	7.3	0.4	0.6	0.7
Beans (dried)	11.7	23.0	55.8	2.3	4.0	3.2
Butter beans (unpeeled)	10.5	20.6	62.6	2.0	...	4.3

(Hutchison).

COMPOSITION OF BREAD FROM WHEAT AND MAIZE.

	In Air-Dry Material.						In Dry Matter.				
	Water.	Ash.	Fat.	Fibre.	Protein.	Nitro- gen free ex- tract.	Ash.	Fat.	Fibre.	Proteid.	Nitro- gen free ex- tract.
	<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>
Bread from whole winter wheat.....	3.07	2.33	1.22	2.86	15.70	74.82	2.40	1.25	2.95	16.20	77.20
Bread from whole spring wheat.....	7.46	1.69	1.24	2.80	15.26	71.55	1.82	1.34	3.02	16.49	77.33
Bread from fine flour, winter wheat.....	10.39	.59	.32	.44	11.94	76.32	.66	.35	.49	13.33	85.17
Bread from fine flour, spring wheat.....	8.00	.43	.47	.39	14.41	76.30	.47	.51	.42	15.66	82.94
Corn bread from whole maize.....	3.40	1.88	4.14	2.53	12.88	75.17	1.95	4.29	2.62	13.33	77.81

PERCENTAGE OF STARCH IN VEGETABLE FOODS.

	Per Cent.		Per Cent.
Wheat bread	55.5	Potatoes	21.3
Wheat flour	75.6	Sweet Potatoes	21.1
Graham flour	71.8	Turnips	6.9
Rye flour	78.7	Carrots	10.1
Buckwheat flour	77.6	Cabbage	6.2
Beans	57.4	Melons	2.5
Oatmeal	68.1	Apples	14.3
Cornmeal	71.0	Pears	16.3
Rice	79.4	Bananas	23.3

OATMEAL.

People who eat much oatmeal should lead a vigorous out-door life. The following analysis of oatmeal is given (Letheby):—

Nitrogenous matter	12.6 per cent.
Carbo-hydrates, starch, etc.	63.8 “
Fatty matter	5.6 “
Mineral matter	3.0 “
Water	15.0 “
Total	100.0

COMPOSITION OF EDIBLE PORTION OF EGGS.

Water	73.7
Proteid	14.8
Fat	10.5
Ash	1.0

(Hutchison).

The albumen—or the “white”—of an egg is greatly altered by cooking. When heated beyond boiling point it becomes a very indigestible substance. Eggs cooked

at a temperature of about 170° F., leaving the whites soft, are easily digested. A raw egg is ordinarily digested in one and a half hours, while a baked egg requires from two to three hours. Eggs *baked* in puddings, or in any other manner, form one of the most insoluble varieties of albumen.

COMPOSITION OF MILK.

Water.....	87	to	88	per cent.
Proteids	2	"	3	" "
Sugar.....	4	"	5	" "
Fat.....	3½	"	4½	" "
Mineral Matter.			0.7	" "

(Hutchison).

COMPOSITION OF MEAT.

Water.....	75	to	77	per cent.
Muscle fibres.....	13	"	18	" "
Connective tissue.....	2	"	5	" "
Fat.....	½	"	3	" "
Ash.....	0.8	"	1.8	" "
Extractives.....	½			" "

(Konig).

TEA.

	GREEN TEA.	BLACK TEA.
Crude Proteid	37.43	38.90
Fibre	10.06	10.07
Ash (mineral matter)	4.92	4.93
Theine	3.20	3.30
Tannin	10.64	4.89
Total nitrogen	5.99	6.22

The quantity of salts or mineral matter contained in some important articles of vegetable and animal food is shown in this table (Church):

Mineral Matter in 1,000 lbs. of 14 Vegetable Products.

	Lbs.		Lbs.
Apples	4	Bread	12
Rice	5	Watercress	13
Wheaten flour	7	Maize	20
Turnips	8	Oatmeal	21
Potatoes	10	Peas	30
Barley.....	11	Cocoa nibs.....	36
Cabbage	12	Wheaten bran.....	60

Mineral Matter in 1,000 lbs. of 8 Animal Products.

	Lbs.		Lbs.
Fat Pork	5	Flesh of common fowl	16
Cow's milk.....	7	Bacon	44
Eggs (without shells)	13	Gloucester cheese.....	49
Lean of mutton	17	Salted herrings.....	158

“In most seeds and fruits there is much phosphate in the mineral matter, and in most green vegetables much potash. One important kind of mineral matter alone is deficient in vegetable food, and that is common salt.”

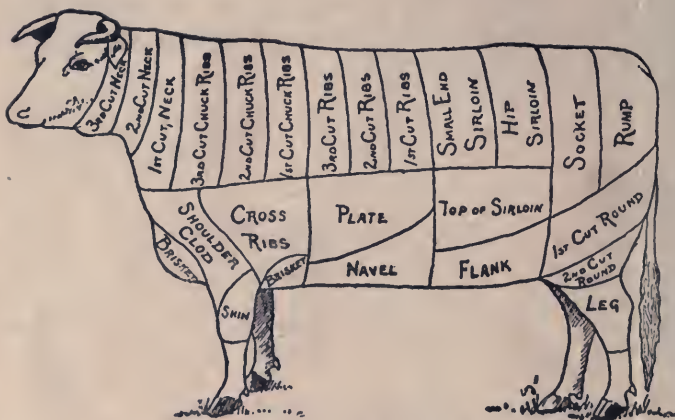


FIG. 1.—Diagram of cuts of beef.

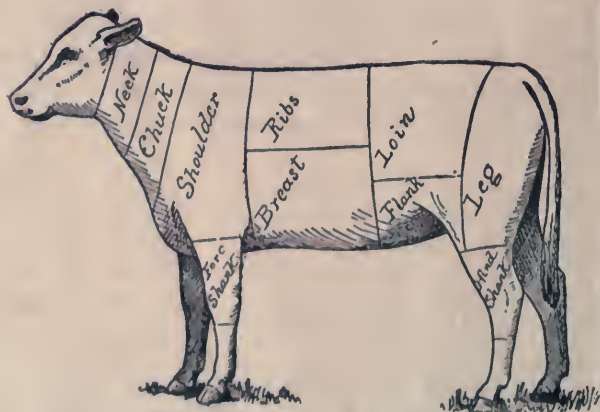


FIG. 2.—Diagram of cuts of veal.

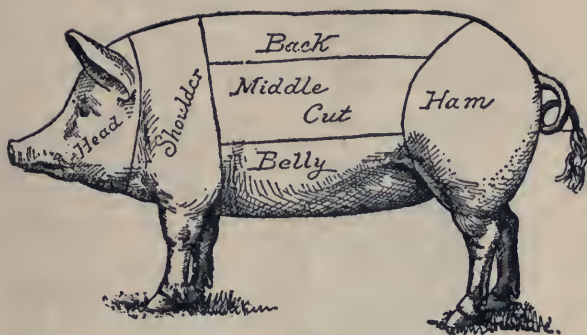


FIG. 3.—Diagram of cuts of pork.

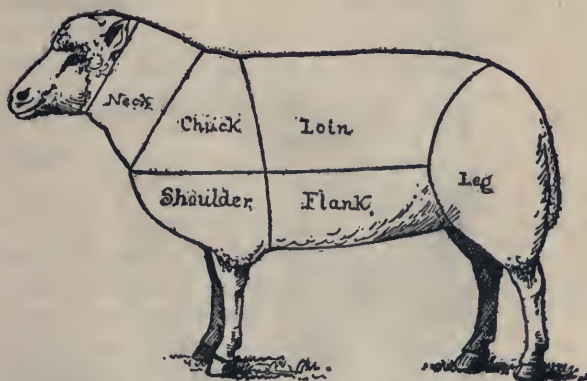
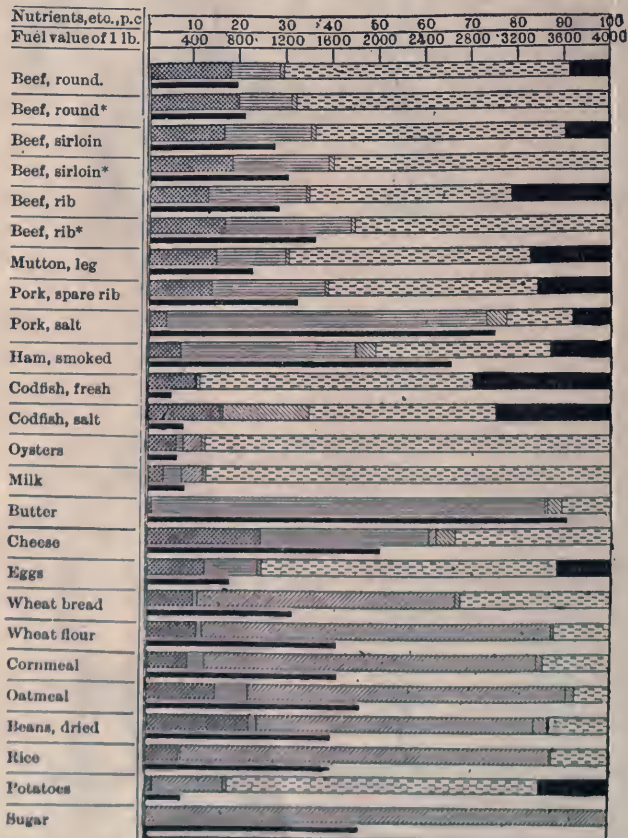
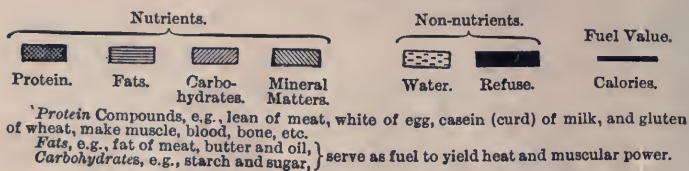


FIG. 4.—Diagram of cuts of mutton.





COMPOSITION OF FOOD MATERIALS—(Atwater).

Nutritive Ingredients, Refuse, and Fuel Value.

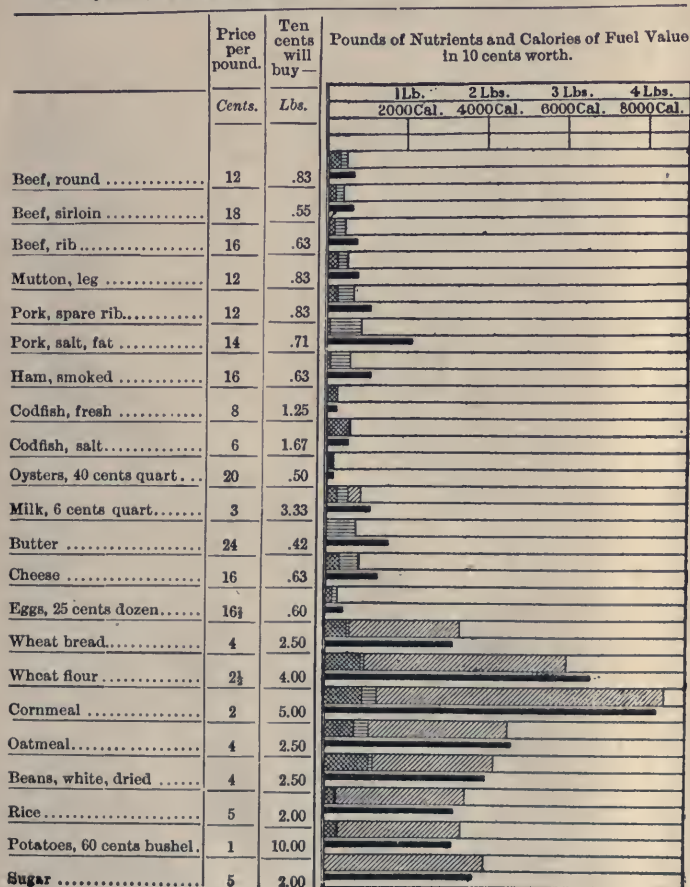


* Without bone.

PECUNIARY ECONOMY OF FOOD—(Atwater). *Amounts of actually Nutritive Ingredients obtained in different Food Materials for 10 cents.*

Protein. Fats. Carbohydrates. Fuel Value.
   

Protein compounds, e.g., lean of meat, white of egg, casein (curd) of milk, and gluten of wheat, make muscle, blood, bone, etc.
Fats, e.g., fat of meat, butter and oil, } serve as fuel to yield heat and muscular power.
Carbohydrates, e.g., starch and sugar, }



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