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THE HOME AND ITS MANAGEMENT

A HANDBOOK IN HOMEMAKING WITH
THREE HUNDRED INEXPENSIVE
COOKING RECEIPTS

BY

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Homemaking," "Housekeeping Notes"



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TO MY
MOTHER

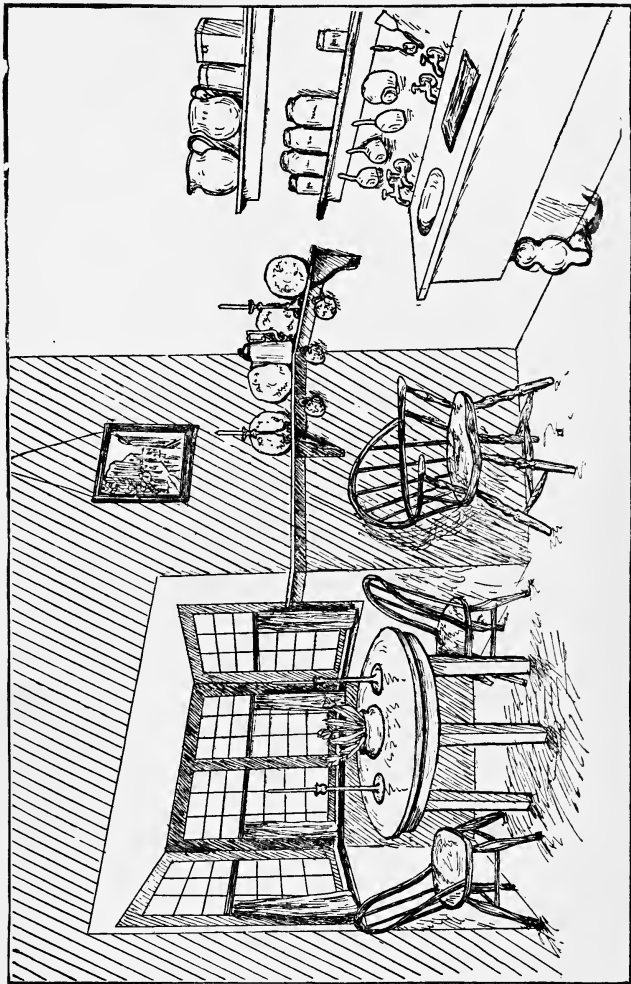
TO
WILLIAM WEBSTER ELLSWORTH

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THE HOME AND ITS
MANAGEMENT



KITCHEN AND DINING-ROOM COMBINED.

THE HOME AND ITS MANAGEMENT

CHAPTER I

THE HOUSE ITSELF

Every woman or girl who studies homemaking does it because she knows that some day, from the bricks or stone or wood that go to make a house, she must create a *home*. The house may shelter the family, but *home* is what makes life easier and better for each member of it; *home* should give health to the tired body and nerves and refresh the mind. The home must have a certain sense of harmony that will bring a feeling of pleasure to all who come into its circle. It must have order, just as truly as school education must be orderly. Each home must have what we call individuality; that is, it must not be just like every other home, but express the people who live in it. The law recognizes the difference between the mere structure or building and the idea of a home where human beings grow and develop. There are "Building Codes." These have to do with construction only. Then there is a "Housing Code" in nearly every city which regulates the sanitary condition of houses.

Health in the Home.

There is a close relation between the homes of a nation and the health of a nation, and an intimate relation

between the homes of a people and the character of a people. In London, before the Great War, it was shown that children fourteen years of age, brought up in overcrowded homes that were without sunlight, were on an average five inches shorter and thirteen pounds lighter than were children brought up where there was space and plenty of sunlight.

Woman's Place in the Household Partnership.

The house has become largely the woman's affair, and it is reasonable to feel that she must be taught how to select it and how to manage it, just as any scientific worker is taught his profession. The home is really the most important factor in the nation's life. Home work is the most important business there is. And the woman who manages it must feel this, and she must go about it as a man goes about his business. She is usually the partner of a man who works somewhere and earns money for the support of the family. She spends his money in carrying on her home business, and it is not fair to her partner that she should not know how to do it to the best advantage. Two men would not remain in partnership very long if the one who furnished the capital saw his partner wasting it: buying badly and not trying to learn how to do his share well.

What the Home Has Grown Out Of.

The right kind of a home is adapted to the climate, place, and kind of life in which it is to serve its part. Primitive people make their homes of reeds, of grasses or of leaves thatched on poles. A step higher in civilization is a wooden house, and even the early natives of Alaska and of New Zealand used wood. In lands where there are deserts and very few trees, wood is scarce, and

tents are used for temporary homes, and permanent ones are made out of clay and stone. The early Egyptians and the Aztecs of Mexico used stone. Such log houses, or cabins, as were built by the first white settlers in America, were simple and really beautiful because of their simplicity. The man cut down the trees in the forest, made them into logs, and built the house which his wife made into a home for the family.

Selecting a Home.

When you try to find a house to live in, deal directly with the landlord if you can instead of with an agent. It is better that the tenant should be personally known to the landlord, for then the landlord is more apt to be interested in the tenant. Nothing quite takes the place of a personal interview. If you must deal with an agent, at least know who the owner of the house is. You may need to consult him.

When you are choosing a house, remember that you are going to live *inside* of it and not outside. Consider the arrangement of rooms and your future comfort, rather than a pleasing exterior which, after all, is seen chiefly by your neighbors.

Honesty in Furnishing.

Avoid sham, for it is always vulgar. People of good taste do not like cheap pretenses. Don't take a house full of factory-made, useless ornamentation. Because of the perfection of modern machinery, shams are easily made. Wood can be made to look like stone; pine wood can be stained to look like mahogany; but it is better that your house and everything in it should look just what it is. Honesty and simplicity in a house indicate the character of the owner or tenant just as much as

honesty in a person. Avoid that which is not genuine in your house and in its furnishings.

Here are the questions we should ask ourselves as we go out to select a home:

1. Is the street quiet and do the neighbors seem to be agreeable?

2. Is there a good view?

3. Is the house near the place of business of the wage-earners, or is it convenient to a trolley or other means by which the place of business can be reached?

4. Is it near a good school? (And this matter should be thoroughly looked into if there are young children in the family.)

5. Is there a grocer and butcher near?

6. Can fuel easily be delivered?

7. If in the country, how about the drainage and the water supply? Gas and electricity also should be considered.

8. If you are buying the property, is it likely to advance in value or to depreciate?

9. Does it get the morning sun in the back or the front windows? (It should.)

10. Are the windows large so that a great deal of light and air can enter the house?

11. Are there windows opposite each other so as to have a through draft? Never forget that draft is what you need. Fresh air diminishes the chance of "catching cold." Colds are usually caused by the saliva of one with a cold sprayed into the air by talking, coughing, and sneezing. Heated, shut-in air makes the lining of the nose susceptible to germs. Look for a house with drafts in it; then if you feel them don't think the air has come into your house to give you a cold or stiff neck. You don't

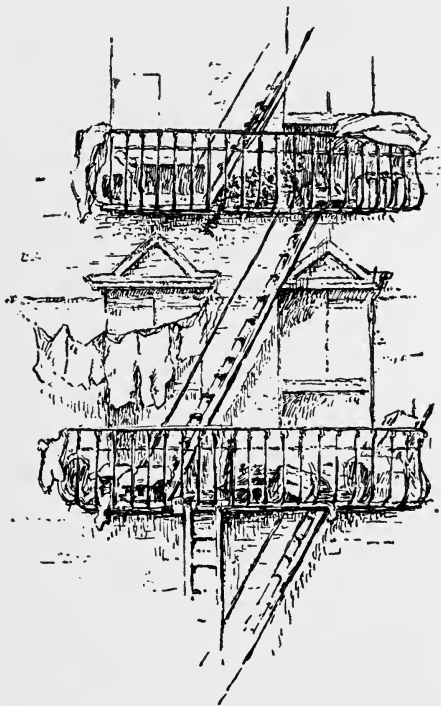
want a house where you must go out to get fresh air. Let the fresh air come to you.

12. Are the taxes reasonable?

13. How about the rate for gas, water, or electric light?

Outside Conditions.

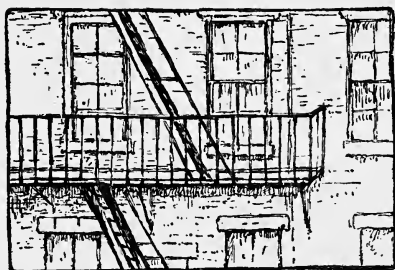
In selecting an apartment take especial notice of the outside conditions about the house:



This is an unsafe fire-escape.

Are the fire-escapes in good condition?

Are they easy to reach from the apartments?



Clean
and
safe
fire-escape.

Is the yard and area-way clean?

Are the ash and garbage cans covered? A woman usually can tell the standards of the owner of the house by these conditions. If the outside is dirty the inside is almost sure to be badly kept.

Inside Conditions.

Notice especially the halls. Is the woodwork in good condition?

Is the plaster in repair? Are the halls clean?

In the apartment itself: Is the plumbing in good repair? See laws pg. 71.

Is there hot water at all times? Is there sun (preferably morning) in at least one room?

Are there airshaft rooms? (Avoid these.)

Are there enough windows and a through draft in most of the rooms?

Is the kitchen large or small? A small kitchen saves steps and allows more space in other rooms where it is needed, while a large kitchen can be used to dine in as well as to work in. See page 2.

Built-in Fittings.

Whether you rent a single house or an apartment, built-in fittings lessen the cost of furnishing. Only be

particular that lines are good, the work honest and simple, and no sham.

General Suggestions.

One room often serves two purposes. A kitchen is used sometimes for a dining-room; a sitting-room for a bedroom. In a small apartment it may not be possible to put aside a separate room for a sitting or living-room only. The dining-room with the big table to sit about would be the natural one to select. This is much better than turning the living-room into a bedroom at night. Bedrooms must have fresh, unused air in them when night comes.

Excepting in the case of bedrooms, one large room is better than two small ones.

Don't take a house where one room leads from another with no independent entrance. Such a room is almost useless.

Locks.

It is not necessary to have locks on all the doors. For example, the kitchen, living-room, library, and dining-room are almost never locked. A good catch on the door is needed; but as locks get out of order when not used, you will find the lock useless if only occasionally you want to turn it.

Have as many fireplaces in your house as possible; these give warmth, cheer, and ventilation.

See that the house is dry, especially the cellar; disease germs live and breed in damp places, and die in a dry atmosphere.

If others have lived in the house before you, talk with the former tenant. If it is a new house, talk with some one who has rented from the same landlord.

A house that has been lived in is more apt to be **dry** than a new house.

A cold dry cellar closet can be used for preserving food.

Servants' Rooms.

If there are servants' rooms, take time to look at them carefully. It is very common to give the dark, badly ventilated part of the house to the servants. They must have air enough, a chance to bathe, and rooms that give health and pleasure. A home means not only the relation of one member of the family to another, but the relation of servant to family. The servant cannot have dignity and self-respect if the mistress does not care where she sleeps or in what kind of a room she rests after her housework.

Heating.

There are many ways of heating a house.

1st. *Open fires.* These only heat the air near the fireplace, and as the hot air is drawn up the chimney the heat does not get into the far corners of the room.

2nd. *Coal, wood, and gas stoves.* A stove heats one room, but there is no means of carrying the heated air into other rooms.

3rd. *Hot-water heating.* This is expensive, but for a large house it is the best. By this method a furnace heats large coils of pipes filled with water. Over these pipes the outdoor, fresh air passes, and after it is heated by the hot water pipes, it rises through registers into the rooms above.

4th. *Hot-air heating.* Here the heated air from the furnace passes directly up through flues into the rooms. This air has lost much of its freshness and vitality.

5th. *Steam heating.* This is by means of steam radi-

ators in the rooms. The radiator pipes are filled with hot steam, and then the radiator heats the surrounding air of the room just as the air about a stove is heated. In a steam-heated room always have the window open to let in fresh air; don't keep reheating the same old devitalized air.

Lighting.

Be careful before taking a house or apartment to notice where the lights are placed.

Is there a light near the kitchen sink? Is there one near the stove? (A window should not be directly opposite the stove as in that case the cook stands in her own light.) Is there one near the stairs? In the cellar near the furnace? Near the cellar closet? Are there low lights for reading? Will it be necessary to depend upon lamps? Is there a light near the wall space where the bureau will be placed?

These seem small points in the selection of a home, but they will mean comfort or discomfort later on.

Notice whether the doors have large openings, as a small door gives neither good air through the house nor a sense of space. A glass over the front door will give light in the vestibule at night.

HOUSING LAWS IN CITIES

If girls are to look upon housekeeping as an important business, they should know the laws relating to housing conditions. Each girl should know whether the state or the city in which she lives has adopted good housing laws or not. And she should know whether the observance of these laws are under the care of the building department of her city, or the tenement house department, or the health department. Then she will know where to obtain

redress for unhealthy or dangerous conditions in her home. Of course, she cannot keep any laws unless she knows them. For state and city ordinances relating to housing conditions write to Board of Health.

Country Houses.

A wise farmer or breeder of animals often takes more thought where he places his cows and his horses than where he puts his family. This is partly because he considers it his business to look after the farm, while it is the woman's business to look after the house. But the law seldom looks after country houses. Living conditions in the country or small town are often so very bad that the farmer finds himself powerless to change them, even though he has the desire. There is often no water; the houses are hard to heat; the windows are smaller than a city Board of Health would permit; the walls are thin; the roofs leak.

One reason so many people stay in the city is that homes in the country often are not comfortable. Also country people live far apart and cannot easily get together and demand better housing conditions as the people in cities have done.

If you are considering living in the country, choose ground that is well drained, with warm soil and choose a house that is dry, with large windows and, if possible, running water.

A piazza is a great comfort as an addition to a country house, for in summer it adds to the pleasure of outdoor life, and in winter, if it is enclosed with glass, it will keep the house much warmer.

Test the roof in a rain storm. Test the fireplaces. Look at the gutters and leaders.

It is not only her own home that a woman should have

in her mind as she studies homemaking, but she should realize that she is helping to lift up the taste and increase the comfort and the health of the entire community.

Each person can do a little; even a sign painted does something. It is said that when a shop sign or poster is well done it helps to educate the people. If a man whitewashes a back court, he has brought in light and cleanliness, and he may be encouraging some one to do a larger piece of work.

CHAPTER II

KITCHEN

Furnishing.

Kitchen work is hard at best. The kitchen, therefore, must be a cheerful room, orderly and well furnished. It will lighten the labor of cooking if you get charm and even gaiety into your kitchen.

A small kitchen means fewer steps for the cook, and this should be considered.

The ventilation should be perfect. This necessitates windows on two sides of the room so as to get a draft through.

Have as little wood in the fittings and utensils as possible, because wood absorbs odors and grease.

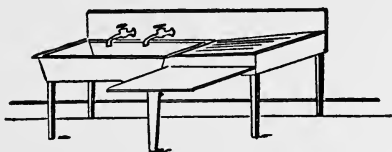
Have no dark closet for pots and pans. It is easy to forget to keep a place clean when you cannot see the dirt, and a close, shut-up closet is not as good for cooking utensils as it is to have them hanging out in the kitchen where they will get air. In many kitchens copper and brass utensils hang from iron hooks at the side or in the center of the room, and these add much to the beauty of the surroundings.

The floor should be of plain wood, or covered with oilcloth. A kitchen must have a floor which can be easily scrubbed.

There is no question as to what should be done with the walls of the kitchen: they must be painted and so made washable even if the other rooms are papered.

There should be no shade in the kitchen window, as the window must be open top and bottom at all times, and the shade gets torn as well as greasy. If protection is needed, have muslin half-curtains, or have whole curtains hanging on rings so that they may easily be taken down and washed. These curtains may be made of linen, of gay creton, or of some washable material that will be thick enough to be a protection when the gas is lighted.

Be careful to have light near the kitchen sink, and light near the stove. Food has to be watched while it is cooking, and dishes cannot be thoroughly cleaned in the dark.



If there is not a large drainage board for dishes, have a drop-shelf built beside the sink. This can be let down when not in use, thus saving space.

Hang brooms under a shelf or in a closet built for the purpose. Do not put brooms and brushes in a closet with other things.

Have all the pipes connected with the plumbing in plain sight. Hidden pipes are against the law and against all ideas of sanitation.

The ornamentation of a kitchen lies in the care and the arrangement of the useful implements. There never should be one useless article, not even a picture on the wall.

Copper and brass utensils, a shiny black stove, a spotlessly white table, the symmetry with which pots and pans, dishes and jars are arranged, and perfect cleanliness will give beauty to any kitchen.

An atmosphere of perfect order is one of the hardest things to accomplish in a room where much work is done, but it is necessary to have this order in the kitchen if one would have comfort and a sense of harmony in the home.

In buying kitchen utensils it pays to buy good iron, aluminum, brass, and copper articles, because these last for a long time. It does not pay to buy expensive tinware, as it is at best shortlived. It is often economy, for example, to buy tin utensils in a 10-cent store so that they often can be replenished.

Equipment of the Kitchen.

Each article in the kitchen must have a place of its own so that it can be found in the dark if necessary.

A little thought as to where to put things in the first place, a nail here and there, and a determination always to put each article back in its own place, will make housekeeping less tiresome and the kitchen so comfortable and orderly that, if size permits, it will be a pleasant room to eat in as well as to cook in.

Kitchen Work.

Many are apt to think of the work of the kitchen as consisting of cooking only, but as a girl studies the business of housekeeping she will realize how much knowledge other than cooking is necessary if a good housekeeper would run her kitchen as a good business man runs his shop.

Coal Stove.

The first thought in connection with a home after the shelter itself, is how to heat the house and cook the food.

Therefore, the stove is what we think of first after the house has been secured.

To understand one's own stove will save money, for a great deal of coal or gas can be wasted simply by not knowing how to manage the stove. One can waste both time and patience "fussing" over the fire. Much good food material is spoiled by not knowing how to regulate the heat in the oven.

Every housekeeper responsible for the home work, whether she does it herself or directs others to do it, should understand her fire—making it, feeding it, and cleaning the stove.

This work can be very dull or can be really interesting. If a woman thinks of homemaking as a profession, and is determined to play her part in the family partnership with the greatest efficiency, she will look upon the kitchen stove as her most valuable tool.

In many homes gas or electricity are used for cooking instead of coal, but in all country houses and many city houses the coal stove is still the only means of cooking and often the only means of heating. Even if a girl at the present time has gas or electricity in her home she should know about a coal stove as she is almost sure to need the knowledge some day.

When purchasing a coal stove, be sure it has a hot water boiler if hot water is not furnished in the house. A good stove pays in the saving of fuel.

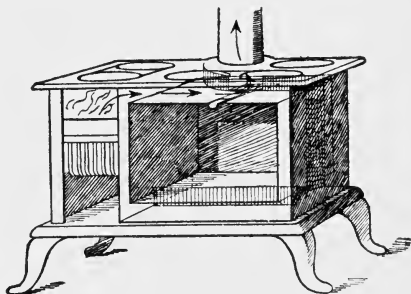
To Clean Gas Stoves.

Dissolve soda in boiling water and wash the stove thoroughly. Why? Because the grease from food is bound to soil the stove, and soda removes grease. Soak all separate parts of the stove in hot soda-water.

Coal Stove.

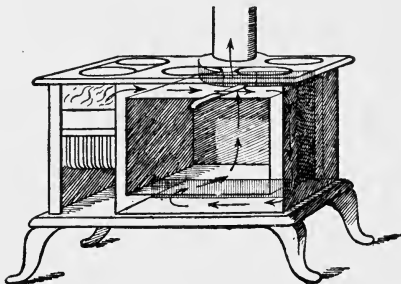
Before examining the stove, if it has been used, clean it thoroughly, remove the ashes over the oven box, under the oven and at the sides.

In this picture the draft is open.



Then examine the picture in the book and notice the direction that the hot air takes.

Be sure that no clinkers or ashes interrupt the circula-



In this picture the draft is closed.

tion of this air. To understand a stove thoroughly it is necessary to take it apart as far as possible.

Each furnace, range, or stove is somewhat different, yet the principle of all is the same. Each has a damper, draft, and check, each must have an escape for coal gas and smoke, and each should have water near by to prevent the air from becoming too dry.

In a kitchen stove this water is often placed on top of the stove in a bowl. This bowl must be washed and re-filled each morning. In a furnace the water is in a pan attached to the furnace.

Damper.

The damper is a flat plate which, when shut, closes a door between the stove and the chimney; when the damper is open much of the heat goes up the chimney; when it is closed the heat waves go around and over the oven. The damper is never entirely closed as the coal gas must have an escape through the chimney.

Drafts.

The drafts are doors or openings that come below the fire box. When they are open a strong current of air passes up through the fire box making the fire burn better. When the draft is closed the fire burns more slowly, because the air is shut out.

Check.

The check is a slide or small door above the fire-box. When open, cold air comes in on top of the fire; this so retards the fire, that is makes it burn more slowly.

In starting the fire, open the damper and draft, and close the check so that there will be a draft passing through the fire-box. When the fire is well started, close the damper and so save the heat which otherwise would continue to go up the chimney.

To make the oven hot close the damper, open the draft and see that the check is closed tight.

For a slow fire close the draft and damper, and open the check.

Near the Stove.

The things needed in connection with the stove must hang near it. You should never have to look about for anything required to manage a stove or range.

Connected with the stove or near it, one must have a matchbox, matches, a box for kindling, a place for newspapers, an ash-can, a coal-scuttle and a shovel, a stove lifter, a shaker, a poker, and a rake for cleaning out soot from all air spaces under and over the oven, a blacking dauber and brush, stove blacking, a whiskbroom,—and an old glove to protect the hand. One small shelf over the stove can hold all of these things, if some hang on hooks underneath.

An oven-cloth should be near at hand with which to lift hot dishes and so avoid any danger of the housekeeper using her apron or a dish-towel for this purpose.

Making the Fire.

First take out the ashes, seeing that clinkers and fine ashes are removed from every part of the stove.

Clean the space over the oven every day and that which is under the oven at least once a week.

Ashes prevent the free circulation of air and absorb the heat. Save unburnt coal.

Lay a fire lightly, first paper, then wood, then a little coal. Remember that a packed fire will not burn, because the air cannot get through it.

Before lighting the fire the dust should be brushed from every part of the stove and the stove blackened.

When lighting a fire have all drafts open, damper open, and check closed. Put very little, if any coal on at first and add more coal after the wood begins to burn.

When the coal begins to burn with a steady blue flame, close the damper.

In class work, the pupils, *not* the teacher, should do all this.

Blackening the Stove.

Before blackening the stove, rub it off with a damp newspaper. A range should be blackened every morning before the fire is lighted.

Never blacken over dust.

Clean the stove with newspaper if anything spills on it.

If a stove is not thoroughly polished after blackening, the bottom of the saucepans will become dirty.

It is necessary occasionally to scrub the stove with soda-water which will remove all old blacking.

During the day rake but do not shake the fire.

Never have the coal reach the lids of the stove, as this cracks them.

Never allow the stove to get red hot; it warps the lids.

To cool a too hot fire open the check or lift the lids.

While the fire is starting, it is a good time for the girls to learn something about the history of stoves, coal, wood, and matches.

Never forget that the amount of interest one gets out of a subject is in exact proportion to the amount of study and good spirit one puts into that subject.

In this book there are a few facts about coal, wood, and matches, but each girl will enjoy her stove more if she finds out something for herself in relation to these commodities.

Coal.

The first coal was taken from the ground in America in 1750, in Richmond, Virginia. At the time of the American Revolution coal was first used as fuel.

There are, in general, two kinds of coal: Anthracite, or hard coal; bituminous, or soft coal.

The principal deposits of anthracite coal in this country are found in Pennsylvania.

There are several kinds of anthracite coal:

White Ash, \$7.00 a ton in 1916 in New York City

Pink Ash, 7.25 a ton in 1916 in New York City

Red Ash 7.75 a ton in 1916 in New York City

These are the prices when bought by the ton. It always saves money to buy coal in large quantities and by weight.

Bituminous, or soft, coal cost in 1916 about \$14.00 a ton. It burns more quickly than hard coal and makes a great deal of smoke and soot in the burning. For this reason, in most cities, factories are forbidden to use soft coal. The engines on many railroads use soft, or bituminous coal — but nowadays less and less of it, because of the smoke and the fact that soft coal sends forth sparks which, as the train rushes through the country, is apt to set the woods on fire.

Brickets.

Brickets are bricks made of coal-dust. They give a very hot fire but burn very quickly.

Charcoal.

Charcoal is wood which has gone through a certain process of combustion. It is not cheap; it gives a very hot fire but burns out quickly. It is used by plumbers, tinsmiths, and other artizans. It is seldom used for cooking purposes, as this would be expensive on account of the rapidity with which it is consumed.

Wood.

It is much cheaper to buy kindling-wood by the bag or load than in bundles. It is necessary to use only very lit-

the kindling to start a fire if it is laid correctly, that is, lightly on the paper — and the paper loose. (Never stuff a whole newspaper in at the bottom of the fire-box.) Also, remember that a clean stove is a saving of wood as well as coal; for only in a clean stove can the hot air circulate easily.

Matches.

Before matches were manufactured, flint and steel were struck together and the sparks fell among tinder or on paper and set it afire. Many attempts were made to use chemicals for the production of a fire, but it was not until 1827 that a druggist in England made a really practical match. He sold matches at the high price of 84 matches for 25 cents. In 1833, a man called Preschel, of Vienna, opened the first factory for making phosphorous matches.

DISH WASHING, KITCHEN CLEANING AND WASHING KITCHEN UTENSILS

Dish Washing.

The piling, scraping, and rinsing of dishes is quite as important as the washing. Dishes that stand a long time before scraping require more effort to wash.

It is well in every practice kitchen to have the directions for dish-washing typewritten and tacked on the wall.

1. Scrape dishes.
2. Pile dishes.
3. Wash dishes.
4. Rinse dishes.
5. Wipe dishes.
6. Put away in neat piles.

Scraping.

Scrape all pieces of food from the dishes onto one plate and when every dish is scraped, empty this plate into the garbage pail, which first may be lined with newspapers. This paper must not be thrown into the can with the garbage when the house garbage is emptied into the street cans.

Piling Dishes.

Pile the dishes in order of size: cups together, saucers together, plates together. Put knives, forks, and spoons together, handles all one way. Never set one glass in another.

Soaking Dishes.

Soak all cooking dishes, and put on one side those which were used in the preparation of food, to be washed with the table dishes after the meal.

Soak with cold water all milk dishes, all dishes that have had dough in them, and all egg and cereal dishes. Soak with hot water all dishes that have had sugar in them, and all the greasy dishes. A little soda added to the water in which the greasy dishes are soaked will make the later washing easier.

To Wash Dishes.

Use two dish pans, or a stationary sink and one pan, or better still a double dish-washing sink, with very hot water; a draining tray, or stationary draining board; dish cloth, not mop; and enough dish towels so that you can take a fresh dry towel as often as the one you are using gets too wet. If you have to heat water, refill the kettle at once after taking water from it, but it is easier to have a large boiler for this purpose.

Make the hot dish-water soapy with a soap shaker; never leave soap in the water (washing-soda instead of soap is used by the Jewish people). Have rinsing water very hot with no soap or soda. If rinsing water is boiling hot, place dishes in a wire rack and allow them to dry by their own heat; a dish towel is then unnecessary. Be sure dishes are dry before putting them away. As soon as you can afford it buy a dish washing machine. The saving in labor more than balances the purchase price.

When rinsing water is not boiling hot, take the dishes from the rinsing pan and drain them on the rack or tray, placing the dishes upside down; thus some water runs off and dish towels do not as quickly get wet.

Order of Washing Dishes.

Wash the cleanest first: glasses, silver, teacups, saucers, rest of china, granite and tinware, pots and pans. The kitchen knives and forks should always be scrubbed at the time they are washed with Sapolio or with bath brick or ashes. A cork is better for cleaning knives than a cloth. Do not put handles of knives in the water as it loosens them by melting the glue.

To Clean Milk Bottle.

First soak the bottle in cold water; second, wash with other glassware in hot soapy water; third, rinse with hot water.

Pots, Pans, and Kettles.

Clean seams of pans with a match stick or wooden skewer.

To clean a pan or kettle in which something has been burnt, fill with water, add a handful of soda, and boil. Repeat this process, if not successful at first.

Dry tinware near the stove.

Dry woodenware in the sun (never near the stove).

After the dishes are washed and wiped, scrub the sink or pans, dry them, and always hang up the dish pans after using.

Wipe off the top of the table where the dish pans have stood, scrub the draining board or wash the draining trays, and then wash out the dish towels.

Washing Dish Towels.

Dish towels must be washed every time they are used. If grease is allowed to dry on the towels, it is hard to get them clean. Wash dish towels while they are still wet. Remember if they are not thoroughly washed every time they are used, and boiled once a week, they are not free from grease, and the towels will have an odor of grease as well as the dishes which are wiped with them.

Use clean pan and plenty of hot water, a small rubbing board, and soap. Wash one towel at a time, rinse each piece in a separate basin, shake out, stretch on rack with edges even; do it well and no ironing is required.

Scrubbing Kitchen Table.

The kitchen table can be a beautiful piece of furniture, but it needs daily care, and always the right care.

Scrub the kitchen table every day. Use basin of hot water, two cloths, small scrubbing brush and Dutch Cleanser or Sapolio (never use soap, as it makes the table yellow).

Wash one half of the table at a time to leave place for the cleaning materials.

1. Wipe table with cloth wrung out in hot water.
2. Shake Dutch Cleanser on the wet half and scrub with the brush. Scrub always with the grain of the

wood, as scrubbing around or across the grain does not take the dirt out and leaves streaks.

3. Wipe off the cleaning material with a wet cloth.

4. Wipe with a dry cloth.

Do second half in the same way, placing the cleaning materials on the half of table that has been washed.

After table is washed, put away Dutch Cleanser, empty, rinse, and dry the pan, rinse out brush, put the brush away with bristles down, wash out the cloths, wipe up the floor under the table if any water has been spilled, hang up the pan, and put all cleaning cloths on towel rack to dry, stretching them out smooth.

All bare wood, that is, unpainted, unvarnished, and unstained wood, is cleaned exactly like the kitchen table.

Putting away work after cleaning is as much a part of good housekeeping as the cleaning itself.

Kitchen Sink.

Near the sink there always should be kept a sink brush, a sink shovel, a soap dish, washing soda, a soap shaker, a strainer, wood ashes, and a knife-brick or Sapolio for cleaning knives.

To Clean Sink.

First brush all the bits of food and dirt from the sink with the sink brush and shovel, and put these scraps into the garbage-pail. Place over the sink strainer a small rubber mat or a cup, to prevent the soda from running down too quickly. Next put a handful of soda in the sink and pour on it boiling hot water, scrubbing the inside of the sink with the sink brush while the soda dissolves. Remove mat or cup, allowing boiling water and soda to run down the pipe. Then let clear hot water run

down the pipe until you are sure all grease and soda are rinsed away. Soda left in pipe will eat into pipe, and while soda and grease together are cleansing when hot, if allowed to cool they make a hard soap that clogs the pipes.

Tinware.

On tin pots and pans one will often find rust. Rust comes from dampness. If a tin pan is found rusty in the cracks we can be sure it was not thoroughly dried near the stove, or that the closet where it hung was damp.

Bon Ami or whiting are good for brightening tinware. But when tin-covers of saucepans are dulled by the steam it is not possible to make them as bright as new.

Ironware.

Kerosene and ashes will remove rust from ironware. Take an old cloth (that can be thrown away afterwards) and rub the iron utensil with the ashes and kerosene. Then wash with strong, hot soda-water, and rinse in clear hot water. Dry on the stove.

If iron is very rusty, cover it with some sort of grease (mutton fat or tallow are good), sprinkle with lime, and let it stand over night. Wash next morning in hot soda-water and dry thoroughly. A very rusty sink may be cleaned in this way, but be very careful of the hands as lime hurts the skin.

Woodenware.

Wood holds odors unless great care is taken. Wood often needs soda and boiling water to cleanse it and sun and air to dry it. The stove heat is bad for wooden utensils. Any one furnishing her own house should buy as few wooden utensils as possible.

Agateware.

Agate- and enamel-ware are very good, but they crack and break if not washed and dried properly, or if the material is cheap. A half dried agate kettle put on a stove to dry is apt to crack. If an agate lined pot or kettle is allowed to boil dry, the lining will crack and break off. Careful soaking so that there will be no need to scrape these utensils helps greatly to preserve them. Never use a knife; use paper to wipe out the worst dirt. Wipe off any utensil blackened by the stove with a piece of paper before washing it.

Aluminum.

This is the best material for kitchen utensils and although quite expensive at first, in the end it pays. To clean aluminum ware buy for ten cents one package "OO Steel Wool and Ivory soap." Take piece of wool the size of an egg and using this as a dishcloth wash soiled aluminum utensils with hot water and Ivory soap.

Cleaning the Bread-Box.

Each week the bread-box should be emptied, and all crumbs removed; then wash it with hot water and soda; thoroughly rinse it with clean hot water, and dry and air it (in the sun if possible).

Window Shelf.

The window shelf is an ice-box in winter.

In winter we can save money by using this outdoor shelf instead of an ice-box. The cold outdoor air is free, while ice is expensive. This window shelf must not be placed at the fire-escape window.

The law about putting food on fire-escapes does not vary in different states or cities. Everywhere it says:

“No person shall at any time place any incumbrance of any kind before or upon any fire escape.”

It is an offense punishable with a fine if persons break this law. It is only the amount of the fine that differs in the various cities.

In making this window shelf, be sure that it has a slanting roof to allow rain and snow to run off; that it has holes bored in the back to admit cold air, and at least a half inch opening between the shelf itself and the upright back, to allow the dust to be swept out and also to prevent the possibility of food lodging in cracks.

An enamel-cloth curtain will hide the contents.

To preserve ice, wrap in woolen cloth and then in newspaper.

If ice is buried in the ground it will last for days.

Cleaning Window-Shelf.

Take everything from the shelf. Put them one side out of the way. Brush and wipe off the top of the box. Wipe out the inside with a damp cloth, using a pointed stick or skewer to dig out any scraps of food that may have gotten into the cracks. The least particle of food allowed to spoil in the window-box gives a bad odor to the fresh food. Now, scrub with hot water and soda. Do not wash the enamel curtain with soda-water, as the soda makes the enamel cloth crack. Soap and water are the best for enamel cloth.

The window-box must be perfectly dry before you return the contents. Water soaked wood gives a bad odor to food.

Ice-Box.

The ice-box should be always in the coolest part of the kitchen. The drain-pipe of the ice-box, even when the

ice-box is built into the house, has no direct connection with other household plumbing; sewer gas might be admitted to the ice-box if it had.

A pan for water is found under the ice-box. This must be emptied when necessary, and cleaned twice a week, at the same time and in the same way the ice-box is cleaned.

Cleaning Ice-Box.

In cleaning the ice-box remove all food and ice, and wash the inside of the box with hot suds; rinse with hot soda-water and again with clear hot water. Take special care, in scrubbing off racks and shelves that no particles of food are left in the grooves. Use a skewer to dig out the corners. Draw an old cloth through the drain-pipe, or have a small brush for the purpose, for grease is apt to lodge in this pipe. Dry the ice-box and air it for at least half an hour.

Wash the pan under the ice-box in hot soda-water.

Cleaning the Kitchen Thoroughly, Including Closets.

In giving the kitchen a thorough cleaning (which must be done at least once a month) always clean out the closets first. The reason for this is easy to see. You do not want the dirt from the closet to be swept into a clean kitchen.

Any closet that holds food should be cleaned once a week.

Cleaning Closets.

Take everything from one shelf at a time, dusting each article and placing it on the table, which has first been covered with a paper. Do not mix articles from the different shelves; it makes confusion later.

To clean closets, if the shelves are unpainted, use the same utensils as were necessary for cleansing the kitchen table; a basin of hot water, two cotton cloths, small scrubbing brush, and Dutch Cleanser or Sapolio. Before scrubbing the shelves wipe doors, walls and top of closet with a damp cloth.

Dust off shelves with damp cloth.

Scatter on the Dutch Cleanser and scrub with brush and hot water (with the grain of the wood).

Wipe off the Cleanser with clean cloth, and then thoroughly dry.

Mold and a bad odor are the result of returning things to a closet and shutting it up before it is thoroughly dry.

Should the closet smell musty, wash it with hot soda-water after scrubbing the shelves, or add a little ammonia to the cleaning water.

If ants or cockroaches are found in the closets: first, clean shelves thoroughly; then boil a half pound of sulphur and four ounces of potash in water in an earthenware vessel until dissolved. Cool, dilute, if necessary; put into cracks and holes. Be very careful not to have this liquid touch any of the food.

While the closet is drying it is a good time to wash out empty jars in hot soda-water; also, to wash and air the bread-box.

Glass jars are the best receptacles in which to keep dry groceries; because one can see the contents without opening the top and looking in; also, one can see when any article needs replenishing. The jars are tight; no insects, air or dust can get in, and any one can tell when they need washing. They can be marked with the name of the article. Use ready mixed black oil paint for this and a very small brush, and print the name

on the jar. After it is dry, cover the name with a thin coating of white liquid shellac.

The closet for pots and pans; closet for dish-towels, cleaning cloths and aprons; drawers for knives, forks, etc., all are cleaned in the same way as the food closet. Where the work in the home is very heavy it is often better to clean one or two closets every week rather than all the closets on the same day.

Every shelf and closet must be kept clean. How often they are washed must be decided by each housekeeper.

Always arrange in perfect order all articles that have been taken from the closet. A closet may be perfectly clean and yet not orderly or attractive.

We have now learned exactly how to clean all kitchen closets. The main body of the kitchen is cleaned every day, but has a thorough cleaning (by that is meant removing all furniture from the room, cleaning walls, closets, etc.) at least once a month.

Never forget that your kitchen is the most important room in the house when considered from the point of view of health. Our life depends so largely upon the food we eat, and the cleanly way in which the food is prepared that no effort is wasted which is spent in good kitchen work.

To Clean Kitchen After Closets Are Cleaned.

First dust and take from the room everything that can be moved; do the stove cleaning next as this is the dirtiest work; then sweep the floor, after which cover a broom with a cloth and wipe down the walls. Next wash the painted walls and all woodwork with a woolen cloth. The unpainted and unvarnished shelves should then be scrubbed as we learned to scrub the bare wood of the kitchen table

To Clean Painted Woodwork.

Dust the woodwork with a cloth. Wash with warm water and white soap. Soda or Sapolio should never be used as they take off the paint. Use a small brush to take the dust from the grooves, and two cloths, one for washing and one for drying. Many add a few drops of Sulpho-Naphthol or other disinfectant to the cleaning water, but soap is a disinfectant in itself.

While the shelves and woodwork are drying, wash the windows.

To Wash Windows.

Use a pan of hot water, a duster, two cleaning cloths and a dish of Bon Ami. Place them on a newspaper near the window. Bon Ami is but one of many cleansers that can be used for washing windows.

First Method. Dust the window and woodwork and then apply a thick coating of Bon Ami to the glass. Let it dry, and rub off with a dry cloth. With a wet dusting cloth wipe off the woodwork around the window-panes. Newspaper or tissue paper is very good for polishing windows.

Second Method. To clean windows, add a few drops of kerosene and ammonia to a pan of hot water. Use a duster, two cleaning cloths and a newspaper. Dust the windows, wash, dry and polish.

Besides this general cleaning, windows should be dusted every day with a dry duster.

A little alcohol added to the water in the winter prevents its freezing.

The last cleaning in this thorough cleaning work is the floor.

Scrubbing the Floor.

For cleaning an unpainted floor have a pail of hot water, a floor-brush, floor-cloth and soap. Scouring powder may be used or soda. The condition of the floor must decide which cleaning agent to use. Grease can be taken from the floor with soda, lime and hot water.

Decks of ships are scrubbed with Fuller's Earth, soft soap and silver sand — equal amounts of each. Boil with water in an old saucepan. Keep in a jar and when you use it take a small quantity, dilute with water and use instead of soap.

Even if the floor has been swept it should be wiped, section by section, before scrubbing. Scrub a small space at a time and wipe off with a wet cloth; scrub with soap following the grain of the wood; or you can scrub with Fuller's Earth preparation; rinse and dry with a cloth wrung out in the scrubbing pail. Change the scrubbing water very often.

Return furniture to the kitchen when the floor is dry.

A good housekeeper will scrub her kitchen two or three times a week, after the day's work is done.

A kitchen should be left at night in perfect order so that you will find it so when you begin work in the morning.

Scouring Material.

Coarse scouring soap for iron and steel ware.

Fine scouring soap for windows, enamel, nickel and tin.

Scouring powders for unfinished wood and tinware.

Kerosene, plain or with sifted ashes, for cleaning zinc, removing rust, cleaning bath-tubs when stained, knives, iron sinks, etc. As a vermin preventive, kerosene is also excellent.

Brass polish, liquid or paste, for all brass and copper.

Silver polish, whiting or prepared polish, for nickel and silver.

Vermin destroyers made of carbolic-acid preparations.
Corrosive sublimate preparation, for bedbugs.

Disinfectants, without oils, for mattresses, general dusting, especially in cracks and dark places.

Sulphur preparations for destroying and preventing roaches and ants.

Alcohol, to prevent water from freezing.

Ammonia is good after cleaning bath-tub with kerosene. Soak handkerchiefs in ammonia water. Ammonia water brightens rugs.

Chloride of lime for sink pipes and water-closets.

Sal. soda for cleaning where grease has collected; also for dish washing in Jewish homes because soap is not Kosher.

Brown soap for laundry and hard cleaning. Brown soap is strong because of the resin in it.

White soap for white paint and fine laundering.

CHAPTER III

DINING-ROOM

Furnishing.

The furnishing of a dining-room should be very simple, if the room is used only as a place in which to eat, all of the furnishings should suggest this object.

Often a dining-room is used as a living-room as well. Then more than ever it must not be cluttered with unnecessary furnishings, for the occupations of the family will need all the room possible.

The table does not necessarily have to be in the center of the room, but can be in an alcove at one side, thus giving more sense of space. See page 2.

The chairs need not be all alike. In a small house or apartment six or eight chairs exactly the same might make a joint dining-room and living-room appear like the room of an institution.

China.

Shelves for china are better than a cheap sideboard. The shelves can be stained with alcohol stain and waxed until they have a high polish. Any kind of a sideboard is too large for a small apartment room, and yet people who cannot afford it feel the necessity of purchasing a sideboard, and so buy a highly polished cheap piece of furniture, which gives a crowded look to the room.

To hang china cups under a shelf is one way of deco-

rating a dining-room. Also plates placed in a plate rack on the wall may add to the color scheme of the room. Be very careful that the color of your wall blends with the color of the china.

If china is kept in a china-closet hang the cups under the shelf and so save space.

Radiator Box.

A box on top of the radiator with a shelf inside is very handy and need not be an ugly object in the room. This box is useful in keeping the dishes hot during a meal or heating plates before a meal.

Tea-Table.

Somewhere in the dining-room have a large tea tray or tea wagon. Every equipment for afternoon tea should be so convenient that tea can be served at a moment's notice. This custom has grown to be an expression of hospitality, and unless this act of serving tea can be performed without apparent effort it is no compliment to a guest.

Window Seat.

A window seat in the dining-room, made of pine, stained and waxed, is often a great convenience. Under this seat have one or more shelves; have a door enclosing it like a closet; hang this door by hinges from the top or the bottom. In this closet you can keep the table linen if there is no other closet provided and the seat itself will take the place of at least one chair and so give more space.

Do not have couches with cushions or stuffed chairs in this room. The room in which we eat must be sanitary, and furniture that collects dust is never really free from the possibility of germs.

Care of Dining-Room.

Before setting the table for breakfast always air the dining-room. Even if the weather is very cold, open the window wide for a few minutes and change the air of the room. If the weather permits keep the windows open while the breakfast is being cooked.

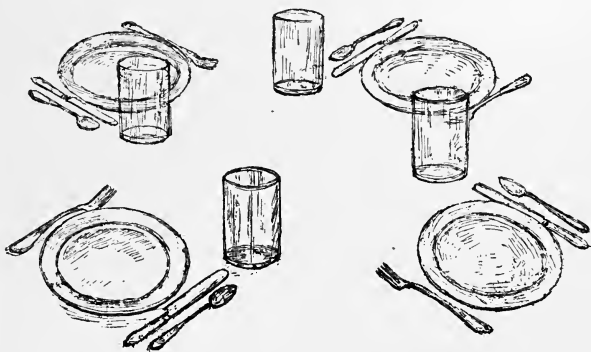
Dust the dining-room before setting the table; dust the table with a clean, damp cloth.

You now have a room free from dust and filled with fresh air; in such a room food can stand uncovered on the table without danger of contamination.

Setting a Table.

In preference to tablecloths use plain, but well-laundered, doilies with a bare table; these are easily washed and ironed, and a spot on one does not mean that all must be washed.

The first thing to set on the table is a centerpiece. On this you will have flowers, if possible, or fruit of some kind. Next place as many doilies as there are to be persons at the table; set these at even distances apart and about one half inch from the edge of the table.



Knives and spoons are placed at the right, the sharp edge of the knife toward the plate.

Forks and napkins at the left. Be careful that all knives, forks and spoons are at least one inch from the edge of the table.

Glasses at the top of the knives, three quarters full of water, and filled at the last moment. Salt and pepper on the table at every meal.

Place the chairs at the table the last thing.

This is the general plan of table setting. The arrangement thus far is the same for all meals. The addition of the proper articles for eating the different foods varies with the different meals.

Any one who can set a table properly has done a good piece of work. It means training the eye to see with exactness, so that the least unevenness in the placing of any object will be noticed immediately, as well as the training of the memory to remember everything that should be on the table.

The order of the dining-room, apart from the table, must be carefully noticed. Every door and drawer should be tightly closed. If the meal is breakfast and the morning paper is delivered it should be placed neatly on a chair. No clothing about, or articles not pertaining to eating.

Breakfast Table.

A good breakfast for a family where there are children is fruit, coffee for the father and mother, milk or cocoa for the children, cereal with milk and sugar, toast and butter for all. If you use this as a practice breakfast, and take it for granted that there is no servant to wait, you must have everything needed on the table, excepting the hot food (coffee, hot milk, cereal, toast).

In addition to the general plan there will be needed on this breakfast table: fruit plates, butter plates and butter knives, extra glasses for milk, coffee cups, two spoons at each plate, bread, butter, sugar, pitcher of milk, pitcher of water. When the fruit plates are taken off, a plate with a cereal dish on it should be placed before each person.

Dinner Table.

In preparing the table for dinner follow the general table-setting plan. Place as many forks, knives and spoons by the side of each plate as will be required during the meal. Place on the table (if the meal is to be served by the family) all food, except hot dishes. On a near-by side table have any extra plates or prepared cold dishes that will be needed after the first course. Have space on this side table for hot dishes. A shelf under the serving table on which to place soiled or emptied dishes, and castors to enable you to move the serving table from place to place, will be found a great convenience.

Before considering the dinner table as finished, go over in your mind each article of food to be served and see if everything needed for that food is on the dinner table or the serving table; take notice whether the arrangement of the table is attractive, and whether you have left space on the serving table to be filled later by the hot dishes.

If one member of the family rises and serves the others, she should pass all dishes (from which one helps oneself) on the left hand side, holding the dish low for the convenience of the person served; hold a napkin in the hand under the dish. Go on the right side if you are placing a plate on the table or taking a used plate from

the table. In the absence of a servant pass as many dishes as possible without rising.

If the serving table is on castors, or if there is a removable tray the size of the serving table, all hot dishes, for each course, can be brought in at one time; thus steps are saved and the social side of the meal is less disturbed.

Luncheon and Supper Table.

The table at these meals differs little from a breakfast table. After the general table-setting plan, add such articles as will be needed during the meal. Just before serving dessert at any meal, remove all used dishes from the table and all articles that will not be needed for the dessert; brush the crumbs from the table with a clean napkin on to a plate. See that all glasses are refilled, and then bring in the dessert plates and the dessert.

Servants.

Many people have a paid employee or servant to do much or all of the housework. Some have one and some many of such employees. That does not mean that the work connected with homes are tasks for which any woman is too fine and so hires a person to do the work for her. It means (or should mean) that in many homes there are too many things for one woman to do, especially in homes where children are to be cared for. If the mother has money enough she hires some one to come in and do a part of the housework in order that she may be free to do more thoroughly such duties as she feels are her especial responsibility. It does not mean that one woman pays another woman to do her work so that she may be idle.

A well-run office or factory or store carries on its

business in the same way. One man cannot keep the books, run the errands, sell the goods, and attend the telephone; so the manager divides up the work between himself and those whom he hires to help him. A man does not look down upon these associates in business; he knows that they are exactly as good as he is and their work, like his, a necessary part of the whole business.

A man who stands at the head of a business and directs others is perfectly fitted for his work only if he knows by practical experience every branch of the business. For this reason men who aim to be directors start at the bottom and work up. A homemaker must, in the same way, have had her experience in every branch of housekeeping before she can consider herself an efficient person to direct servants.

A servant is less protected by law than any other business woman. Thirty-nine states have laws limiting the working hours of women in factories and stores. In only nineteen are women workers in hotels and restaurants included; in only five are public institution servants protected; and in no State are the servants in our homes protected by law. They are obliged to work as many hours as the head of the house directs, or give up the place.

There is a great work for every woman and every girl to do in uplifting the profession of the house workers or servants. In the first place, have as exact a rule about the hours of work and the hours of freedom from work, as is the case with factory or office labor. This regulation of time will at once put the profession on a business basis. Do not ask any woman to perform for you any labor that hurts her dignity or any act that each individual should do for herself. Never address a servant with anger or as if she belonged to you. Show all

employees the same courtesy you expect from them. Remember that you make them just as angry as they make you; you probably seem unreasonable and at times stupid. A competent servant has her own way of doing things. She will do better work as you give her more freedom in her tasks. Never forget that one woman gets tired as surely as another, and one woman wants happiness as surely as another, and all people get lonely at times. If you take a human being into your home as a servant, only eight hours of her time should belong to you. Beyond this her time is her own to use as she desires.

Expert Table Work.

An expert in any kind of work will be careful of details. In table work the skilled laborer will be:

Always clean and neatly dressed; being particular about finger nails and hair.

Will step lightly and quickly.

Will close a door without noise.

Will never rattle dishes or make any sound with the silver.

Will never let her dress touch the dishes on the table.

Will be pleasant about her work. A skilled laborer is not cross as he works.

Dining-Room Rules.

1. The dining-room must be in perfect order before any meal is served.
2. Have hot dishes for hot food, cold dishes for cold food.
3. Glasses should not be filled until just before a meal is served.

4. Butter must not be placed on the table until the meal is ready.
5. Bread must be freshly cut.
6. Everything placed before a person is placed at the right.

All dishes from which a person serves himself are passed at the left.

7. Everything relating to one course must be removed before serving another.
8. A meal is not ready for the family until everything is in readiness in the dining-room and the kitchen is in order; all pots and pans soaking, and a space cleared for the soiled dishes as they are removed from the dining-room after using.
9. In clearing the table food must be removed first, then soiled china, glass and silver. Brush off the crumbs from the table and wipe the table with cloth slightly damp.

Put away very carefully the doilies that are not soiled.

If there is any stain on a doiley take it out at once (see stains page 99).

Put doilies that require laundering in the clothes-basket.

Silver.

The cleaning of silver is a part of dining-room work.

To Clean Silver.

Collect newspaper, old tray, silver polish, saucer, alcohol or water, duster and two pieces of old cloth.

Method.

Dust the silver.

Mix some silver polish and alcohol in a saucer. Rub this on each piece of silver and lay each aside on a piece of newspaper to dry. When thoroughly dry, polish off with another cloth. A soft brush is necessary to remove the polish from grooves or designs.

Wash the silver in hot water before returning it to the drawer.

Table Etiquette.

The attitude of one member of a family at a meal can make or spoil that meal for the entire family.

Each member of the family should cultivate a habit of appreciation; that is, don't be fault finding but take the food that is on the table and eat it with apparent pleasure. There are girls and boys who always come to the table in a faultfinding mood, they seem to take pleasure in saying that they "hate" this or that dish, forgetting that some one has worked hard to prepare it. A bad temper or an unhappy mood while eating is not good for the stomach and often produces indigestion. Talking pleasantly and eating slowly while at meals aids digestion.

When a meal is ready, go at once to the table. If late, the food gets cold and you have spoiled the pleasure of the cook, as well as annoyed the family, and ruined the taste of your own meal. A meal is a family gathering. No one must think of herself alone, but of what will give the entire group the most pleasure. We should not be over-anxious as to what is on our plate. Let us keep our eyes open. Notice when some one wants his plate replenished or his water glass refilled, or is in need of butter, salt, pepper, etc. A little girl should never allow her mother to wait on her; she is the one to

rise when necessary and wait on those older than herself.

“See to it that a certain ceremony, a certain importance, be attached to the partaking of food.”

BOOKER T. WASHINGTON.

CHAPTER IV

LIVING-ROOM

An English architect describes the living-room as "a room with space enough to carry on the business of life freely and with pleasure, and with furniture made for use." Another describes the living-room as a room that grows until it expresses the individual tastes of each member of the family.

"I give a loving glance as I go
To three brass pots on a shelf in a row
To my Grandfather's grandfather's loving cup
And a bandy-leg chair I once picked up
And I can't for the life of me make you see
Why just these things are a part of me."

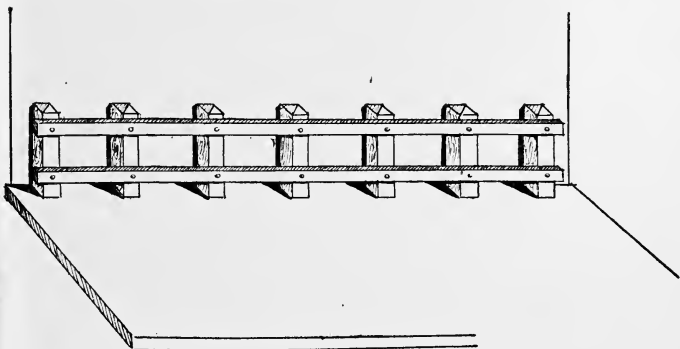
This does not sound like the old-fashioned back and front parlor used only on state occasions, with the shades drawn to save the carpet from fading. Because such a parlor was not a room to live in, it has ceased to be needed in the homes of to-day.

The right kind of a living-room will suggest to you at once what occupations the family are engaged in. Do they read good books? If so, the book shelves and the library table will tell you so. There will be lights low enough to read by, and these will be placed near the comfortable chairs. Is the family musical? You will be able to tell this not only by a piano or other musical instrument, but by the sheets of music which you will find in the music rack. They will be the compositions of real

musicians and jolly refined tunes, not the cheap, vulgar songs of the day. Are there stay-at-home, domestic members in the family? If so, the work basket will have a place in the living-room, and there will be a good light on the table to sew by.

Desk.

In this living-room there must be a desk for writing. If you want an inexpensive desk buy a kitchen table for about \$2.40, with a drawer and with square, not turned, legs. Make an alcohol stain the color you require. Stain the entire table and after it is thoroughly dry, rub off any powder that may be left on the surface of the desk with a soft cloth, and then wax every part with a good floor wax or common beeswax.



Rack for Writing Desk

For the back of the desk make a rack like the picture to hold bills, papers, etc. (Any carpenter can make this rack, or a smart boy can make it).

Have a glass or brass tray to hold pens and pencils, a glass inkwell and a large blotter. Glass fittings for the desk save time as they need only to be washed, and not

polished. The blotter should be of a color that blends with the room, and there always should be small blotters near at hand so as to keep the large blotter fresh and clean.

Library Table.

There should be a large table in the living-room, but it is well to remember that this table is for use. Have one made of good wood, oiled or waxed rather than polished, because a polished table soon becomes marred. A table cloth on this table catches the dust and makes extra labor for the housekeeper. Therefore, an uncovered table is to be preferred; or a table covered with chintz which has over it a glass surface. The chintz adds color to the room and the glass is easily washed.

Tea Table.

Afternoon tea is often served in the living-room, and as it is inconvenient to clear away the books, work basket, etc. from the large table, a small folding table should be on hand to be brought out at tea time. The tea tray, with every furnishing for tea on it, will be prepared in the kitchen and brought into the living-room and placed on this small table.

Fireplace.

If there is but one fireplace in the house have it in the living-room, then build your room around it; that is, think of the open fire as the center and have chairs, couch, and table all placed in relation to it.

Pictures.

If you have just a few good pictures hang these in the living-room, as the room suggests more leisure to look at pictures than any other room in the house.

Care of Living Room.

The daily and weekly cleaning of this room does not differ from the sweeping and dusting of dining-room or bedroom.

Books.

Books are hard to keep clean if not kept behind glass doors. In dusting books never use duster dampened with water. If leather bindings of books are wiped with a cloth slightly dampened with castor oil once a year they will be much longer preserved.

Desk.

Every day dust the desk. Throw away blotters when used up. Refill inkwell when necessary. Be careful of letters and papers belonging to other people. Never read one word of the papers and letters on other people's desks. Leave all papers in neat piles.

Lamps.

In a living-room or library that has no electric lights, a kerosene lamp is almost a necessity for reading. Some homes, especially in the country, are absolutely dependent upon kerosene and candles. Therefore it is well for every girl to know about the care of lamps whether she uses them at the present time or not.

Daily Cleaning of Lamps.

Two lamp cloths, hot water, and a duster are needed.

First dust the chimney, shade, and body of the lamp. Wash the chimney as you would any other glassware. If sooty clean with paper before washing. Next, turn the wick high enough to show all the charred part. Wipe this off with tissue paper until wick is perfectly even.

It is well to light it in order to test the evenness. Fill lamp, and then with lamp cloth wipe off any oil that may be on the outside. Dry with second cloth.

A bright light comes from clean burners. When lighting the lamp turn the wick down, allowing the chimney to become heated slowly. Put new chimneys in cold water and allow the water slowly to come to a boil. This will prevent a new chimney from cracking with the heat when the lamp is first lighted.

In putting the lamp out, blow across the chimney — never into it — as this might send the flame down into the kerosene.

If it is necessary to move a lighted lamp, first turn the wick low. The flaring up of the flame smokes the chimney.

Thorough Cleaning of Lamps.

This need not be done oftener than two or three times a year if lamps have daily care.

For this cleaning take a tray, a newspaper, a duster, two cloths, a dish towel, scissors, soft paper, kerosene, and a pan of hot soda water.

Cover the tray with newspaper. Place the lamp on the tray and take it apart. First wash the chimney and shade in hot water and dry with a towel; polish, using soft paper if there is no chamois.

Boil every part of the burner in the hot soda-water. Fill the reservoir with kerosene within an inch of the top. Trim, but never wash, the wicks. Put new ones in if the old wicks smell stale with oil. Put all parts of the burner and lamp together; wipe every part clean, seeing that all is tight, that the wick is even, and the chimney is clear.

Put the cloths to soak. Later wash and boil them.

Keep an old pan exclusively for cleaning lamps, for the odor of the kerosene is lasting and would ruin pans for other use.

Remember that special care must be taken when kerosene is used. A drop on the kitchen table or the hands may spoil a whole dinner.

CHAPTER V

BEDROOMS

The living-room, dining-room, and kitchen in your house belong to all, but each bedroom is the expression of only one or two people. These rooms, therefore, should be as individual as the members of the family, each room expressing a personality.

Furnishing the Bedrooms.

Do not have plumbing of any kind in the rooms that are used for sleeping. Confine the plumbing to the bathrooms, pantry, kitchen, and laundry; thus the piping is concentrated and it is easier to keep it in order. There is also less danger of sewer gas in the house. The possibility of sewer gas in a sleeping room is too great a danger, and for this reason washstands with running water are no longer placed in bedrooms.

No Ornaments.

A bedroom needs no ornaments except a few good pictures, and the usual bedroom necessities which should be beautiful as well as useful.

No Fancy Beds.

Queens used to hold receptions in bed. For this reason lavishly decorated beds came into existence, but now beds are used only to sleep in at night and but three things should be considered: Is the bed comfortable, can every part of it be washed and are the lines good?

Do not place your bed in the corner of the room where there is no circulation of air. Corner air is apt to be stale.

Another Don't.

You will not sleep any better by surrounding your bed with a handsome set of furniture. Buy what you need in the way of a bureau, table, chairs, but buy each piece separately and because it fits the room and your special taste.

If an adjoining large and small room are used jointly for a bedroom and a dressing room, it is sometimes better to use the small room to sleep in and the large one as a dressing and living-room. The bedroom can then be kept as cold as a sleeping porch, and the larger warm room used to dress in.

Beds.

Have iron or brass beds. Wooden beds are hard to keep clean and attract insects. The day of the double bed is past, because single beds are more easily made and kept clean, and it is healthier and more comfortable for each person to have a bed of his own.

Trundle Bed.

A trundle bed is a bed which can be pushed under another bed in the daytime. This is a great convenience in crowded quarters. If you wish to have a trundle bed, attach four short legs to a bed spring, and it is made. Or take a regular couch bed and have the legs shortened.

Mattresses.

Hair or felt mattresses are the best, but are the most expensive. Cotton and hair mattresses are less expensive

and very comfortable. Excelsior mattresses are hard, but cheap, and when covered by a cotton pad are not uncomfortable. Feather mattresses are unsanitary, they over-heat the body, and the body cannot lie in a flat, healthy position.

Screen.

A screen is necessary in the bedroom for privacy, if more than one person occupies the room. This may be made of a clothes-horse hung with burlap or cretonne or any wash material. Paint the screen white or any color that blends with the room. Use brass tacks in the top of the screen as knobs; on these hang the curtain by brass rings sewed to it. This curtain is easy to take off and clean and is better than a gathered curtain tacked fast.

Bureaus.

See that all bureaus have drawers that open and shut easily; that the handles are wooden or heavy brass, not light, cheap brass handles; that there is a mirror over the bureau; and that the lines of the bureau are simple and the finish dull. A high polish is used only on very cheap or very expensive furniture. It is poor taste to imitate the latter. The high polish can be removed from a cheap bureau and the bureau waxed. If light handles are changed for plain, heavy brass ones, the whole bureau will have a more pleasing appearance.

Closets.

If closets are not built in the house, a place must be made in which to hang clothes.

Have a shelf in each bedroom. On this shelf tack a curtain. A clothes-tree in the room for wrapper, night gown, or any article just taken off, will keep one from

throwing clothes on chairs. A window-seat with a closet underneath is a convenience in a bedroom for boots and shoes.

Child's Room.

Do not furnish the children's room with any old pieces of furniture or ugly rugs, taking it for granted that a child is too young to care. The children's room should be a means of education, development, and pleasure to the child. There is an educational advantage in the coloring of the room if this coloring is beautiful and the colors well combined; in the lines of the furniture, if they are simple; and in the pictures on the wall if they are worth looking at and are the kind of pictures that a child can understand. These pictures should be hung low so that the child can see them easily. The shelf for books should be low enough for the child to reach the books. This should be true, also, of the shelf or box for toys.

Have nothing in the room that is very valuable, because a child is not capable of knowing the value of things, or of being responsible for things that he can handle. We all know this, and yet we scold a young child if he breaks what we prize.

If the child's bedroom is to give pleasure to the child, the pictures, wall paper, curtains, bed covering — all must be of the kind that will interest a child. If the room is to be to the child his very own, he must be allowed to "muss it up" at times, because that is his nature and his baby way of expressing his energy. He can be taught to put away his own toys after he has finished playing with them.

Nursery pictures can be pasted on the wall and washed over with white liquid shellac; then they may be washed with the walls, if the walls are painted.

Guest Bedroom.

A guest room must suggest welcome. It must not only be comfortable but must show that the homemaker has given her own thought to it and not left it entirely to servants.

In every guest room have a basket or box of sewing materials, hairpins, pins, paper, envelopes, good pens and ink, such books as the different guests would be likely to want to read, and drinking water. At night a few crackers in the room are often appreciated. While a member of the family will always feel free to ask for any of these things, a guest usually would rather go without than trouble the hostess. A few fresh flowers in the bedroom are not a necessity, but they will be a proof to a guest that she is welcome to the home.

Do not have articles about the guest room that are distinctly personal to the family, such as family portraits on the bureau, the closet half filled with clothes, the desk cluttered with family letters. This will make a guest conscious that you have turned someone out in order to make room for her.

Hospitality is more often a characteristic of simple people who have not much money than of rich people who live in an elaborate way. Hospitality quite often decreases rather than increases as people become what we call civilized, although civilization means to grow more refined and more enlightened. In Tahiti, in the Society Islands in the Pacific Ocean, the natives greet a stranger by saying "Iorana," which means "Come in and have something to eat." In Mexico, long ago, a stranger who was journeying through the land could stop at any house and get a room for the night and food. On the table in these guest rooms it was the custom to have a pile of silver known as "guest money." From this the stranger

took what he needed to continue his journey to the next stopping place.

Formality is not politeness, but it often happens as a people grow rich and get the gloss of social ways, that they mistake forms for real courtesies. As long as people live simply there is time and desire to entertain guests. It is when our lives get crowded and confused that we find it hard to be interrupted by our friends.

Bedroom Work.

Airing the Bed. Every morning the moment you are out of bed take all the bedding off, throw it over chairs, raise the mattress in the middle so that the air can reach it on all sides, open the windows top and bottom, and allow all bedding to air for at least half an hour. In the average home where the housework is done by the homemaker the bed airs while the breakfast is being prepared and eaten.

Daily Work.

This is the work that someone in every household has to do every day. Not only does the bed have to be aired and made, but the bedroom has to be put in order and left free from dust and made attractive.

Just as surely as every morning you wash your body, face, and hands, comb and arrange your hair and your dress, so do you make your bedroom fresh, clean, and attractive.

These daily household tasks are often dull and monotonous, but if we do them well they become an art and a means to an end. That end is an orderly habit of mind with which to gain greater control over the larger happenings of life.

A mind grows orderly in sympathetic surroundings.

A bedroom, in a way, represents the girl or woman who occupies it and cares for it. If it has an atmosphere of order and simplicity and repose, it is beautiful and tells of a personality that dominates worldly things and is not confused by them. If the room smells of sweet, outdoor air, we know it is the habit of the occupant to push the hot air out by letting in fresh air. If there are no unnecessary things about, we know at once that the girl who sleeps in the room has good taste, which comes largely through education. Every one has seen a bedroom so full of charm that she longs to know the person who is responsible for it.

Before making the bed, the room must be "picked up"; that is, each article out of place must be put back into its own place. Soiled clothing must be put into the soiled clothes basket or barrel; coats, dresses, or hats not in use hung up; books put back in the bookcase.

Bedroom Closets.

Never hang up in the closet any article of clothing which has been worn without first shaking and airing it. At night, when the window is open, or in the morning when the room and bed are aired, always open the door of the closet and let the cold outdoor air blow through the clothes.*

Every one has noticed the close odor that sometimes comes out when the door of a bedroom closet is opened. This odor is unnecessary if the dust is brushed out of our outer garments each day, the clothes shaken and aired before hanging in the closet, and the closet and clothes aired at night.

Bedmaking.

The following is the usual way to make a bed, but

exact methods vary with different teachers and different housekeepers.

It is well for children to learn these tasks exactly, by one rule. Only after much education should one try individual methods.

First. Turn the mattress from end to end. Be sure the mattress is the other side up from what it was the night before and the other end around. Thus the mattress wears longer and does not become worn down in one place.

Second. Place a pad or square of cotton flannel over the mattress, before putting on the lower sheet. This is to protect the mattress and make the bed more comfortable.

Third. Put lower sheet right side up, broad hem at the top, tuck in first at top, then at bottom, stretching very tight before tucking in the sides. Make square corners.

Fourth. Have second sheet wrong side up, broad hem at the top. At first, tuck in only at bottom. Be sure that both sheets have middle crease exactly in the middle of the bed.

Fifth. Put the blanket on the bed at least a quarter of a yard below the top of second sheet, and turn top sheet over blanket to keep blanket clean. Now tuck in the sides, top sheet and blanket together. Both sheets and blankets should be tucked in with square corners, and pulled so tight that there is no crease anywhere.

Sixth. The spread is put on over the blanket, also with square corners, but the sides of the spread should not be tucked in but allowed to hang, in order to hide the sides of the bed.

Seventh. The way a pillow is put on a bed can entirely spoil the looks of the bed, but if the pillow is very clean

and very smooth and lies very square on the bed it will add to its beauty.

Eighth. When a comforter is used it is better to roll the comforter and put it at the foot of the bed than to make up the bed with the comforter under the spread, because the bed must be kept square like a box, and this is not possible when made up with a puff.

Cleaning the Bed.

In a crowded city, especially in old houses and in apartment houses, no house can be sure of always being kept free from bedbugs. They are one of the evils of congestion. They appear under conditions of dirt and neglect, but they are easily transferred from dirty homes to clean homes. Thus watchfulness and care are necessary even on the part of a perfect housekeeper.

If bedbugs get into a bed, first clean the mattress with a carbolic acid solution and put the mattress aside. Wash the bed with strong soap and hot water and dry thoroughly, and then wash with a solution of carbolic acid or a bedbug preparation which can be bought at any drug store. Repeat this every day until all traces of bugs are gone.

Bedbugs hide chiefly in cracks, in the castors of beds, and in the tufting of the mattress. They always stay in dark places. If they continue after the bed is clean, they are usually to be found behind the base board or wall paper.

Preventive Work.

If a housekeeper, even in a tenement house, is on the watch she will never let this evil get the better of her. As a preventive against bedbugs, clean well once a month. Take all clothes from the bed and shake hard in the air,

throwing them loosely over a chair near the window.

Wipe the mattress first with a cloth wrung out in water and Sulpho-Naphthol, being especially careful to wipe in the tufted places. After making sure that the mattress is clean from all dust, put near a window to air. Now wipe the iron part of the bed and the springs of the bed, first with soap and water, then with clear kerosene. Be sure that the springs are perfectly dry before making up the bed.

If one moves into a dirty apartment in which bedbugs are in the woodwork or wall paper, have all wall paper taken off and the walls scrubbed with hot water, Gold Dust or strong soap and Sulpho-Naphthol. Pour a carbolic acid solution behind the baseboards and wash the closets with Sulpho-Naphthol, Gold Dust, and hot water.

If, after this thorough scouring, the entire place is painted, no further trouble should occur. A more thorough cure is to close tight all doors and windows, paste paper over cracks that let in air, then burn candles of sulphur or corrosive sublimate in this empty air-tight room for twenty-four hours. This should be done before the painting if there is any doubt of cleanliness.

Sweeping.

After the bed is made each morning sweep the floor. In sweeping use different sides and corners of the broom, so that the broom will wear evenly. Hold the broom near the floor and sweep with short strokes so that the dust will not fly about.

Before sweeping any room see that no uncovered food is in the room, or anything that dust would injure. Sweep out the corners of the room first (a small brush for this is best). Sweep toward the center of the room.

Use a dust pan and brush to gather up the dirt that you have swept into the middle of the room.

If you have a coal stove it is better to burn this dust at once as it may contain disease germs. If you have a gas stove put the dust in a paper and send it out with the ashes.

Brush out the large broom, after using, with the small brush. Wipe the dust pan with a cloth. Wipe off the small brush with the same cloth. Shake out the cloth and put it at one side to be washed.

Dusting.

In dusting use cheesecloth dusters because cheesecloth is soft and takes up the dust. Never use a feather duster, as it only scatters the dust. With a dry duster wipe off the windows, mirrors, brass, china, and books. Then shake the dust from the cloth and after dampening it wipe all articles not marred by dampness, dusting at the same time the shelf or table on which they stand.

Woodwork should be wiped off with a damp cloth; this includes chairs, tables, desks, and any wood that is painted, varnished, or stained but not polished. For highly polished wood use an oily woolen cloth, as a cloth damp with water leaves streaks. Boiled linseed oil, with or without beeswax mixed with it, is used for polishing.

Weekly Bedroom Cleaning.

As in the kitchen, so in all rooms, the closets must be cleaned first if they are to be cleaned on the same day as the room. Once a month is often enough to give bedroom closets a thorough cleaning.

Thorough Cleaning of Closets.

When you clean a closet thoroughly, take all clothes from the closet, giving each garment an extra shake as it

is taken out. Air these clothes in the open air, if possible, while the closet is being cleaned.

Brush all loose dust and dirt from the walls and floor of the closet, wipe the walls with a damp cloth and scrub the floor, being careful to wipe out all cracks and crevices. Dry and then shut the door tight before beginning the cleaning of the room.

Besides each day dusting and doing the regular morning work in a bedroom, it is necessary once a week to give the room a thorough cleaning.

Dust all movable things, including small pictures, and put them in another room. Take curtains down if possible; if not, pin them up away from the floor. Cover with old sheets kept for the purpose any stuffed piece of furniture too heavy to move from the room. Take out any rugs that may be on the floor, and then sweep the floor with windows open.

Brush the walls with a covered broom, then sweep again with a damp cloth on the broom.

While the dust is settling, wash the windows. Wash the mirrors at the same time as the windows, also wash the glass of all pictures which have not been removed from the room. (For washing windows, see page 34.)

Next clean the woodwork, washing the painted woodwork if it is really dirty, and wiping it with clean damp cloth if not.

To Wash Painted Woodwork.

First. Wipe with damp cloth.

Second. Wash with white soap or whiting and warm water.

Third. Wipe off soap with clear cool water.

If there is a stained or waxed floor, oil or wax it the

last thing before moving the small pieces of furniture back into the room.

Do not forget to dust the gas fixtures. Never try to clean them with polish. Rubbing the gas fixture hard will loosen it.

If curtains have been taken down, shake them well, out of doors if possible, before rehunging them.

To Clean Brass.

All brass and nickel should be cleaned before returning it to the room. (Some housekeepers have a regular day for polishing all the brass, silver, and nickel in the house, not a general cleaning day.)

Dampness tarnishes brass and nickel.

If copper is too tarnished to clean with brass polish, first boil in soda and water. It will then polish easily.

For cleaning brass it is necessary to use some substance to remove the dirt, tarnish, and corrosion, and also a dry polish to give a higher luster. First, collect the necessary implements:

A newspaper to protect the table.

An old tray upon which to set the article to be cleaned.

Wet polish, or brass paste.

Dry powder (whiting or silver powder is good).

A cheesecloth for dusting.

Three pieces of cloth (that you can throw away).

A polish cloth (tissue paper, or newspaper, may be substituted for this cloth).

Never use good cloths of any kind for hard cleaning. It wears them full of holes.

Dust the brass, apply wet polish with an old piece of cloth, rubbing very hard. This cloth becomes very dirty and should be thrown away.

Use a piece of match-stick under cloth to remove dirt from cracks and grooves.

Wipe off the wet polish, which loosens the dirt and rub with a second piece of cloth. With a third, apply the dry white polish. Rub hard with polishing-cloth.

Brass will keep bright twice as long if treated with a final dry white polish.

To keep brass from tarnishing when not in use, wrap in tissue paper.

To Clean Nickel.

Wipe off nickel. Mix silver polish with a little water or alcohol. Rub this on each piece of nickel. When dry, wipe off powder and polish with a clean, dry cloth.

After the bedroom has been cleaned, see that it looks orderly. A room may be clean and yet not attractive. The shades must be even, the chairs straight, plants watered, and all dead leaves taken off.

CHAPTER VI

PLUMBING

Odors.

Odors are danger signals. A bad odor means "Look out; there is trouble somewhere."

If you smell gas, look at once for the leak. Fumes of gas cause death. Do not look for the leak with a light.

If you smell that dry, disagreeable odor which is associated with the burning of agate or tinware, you should rush to fill the kettle or saucepan. The water is boiled away; the smell is the warning which comes often too late to save the kettle.

Every one has noticed a stale smell when entering a bedroom where the windows have been closed all night. This is a warning that the oxygen in the air has been exhausted and only poisoned air is left. Had one window been open at the top and bottom, no odor would have been in the room. Oxygen, or fresh air, has no odor.

At times the offensive breath of a friend has been noticeable. There are days when one is conscious that one's own breath is not sweet. This is nature's danger signal. The breath is virtually without odor in health. It is often the neglect of the ordinary habits of a person's life that produces an unhealthy condition of which the bad breath is but the sign. Eating candy between meals, or eating too fast while at meals, or forgetting to drink water, creates indigestion. A coated tongue, a bad taste

in the mouth; these can be hidden from others. But nature uses still another method: she attacks our pride in her effort to make us obey her laws. The breath that comes from a disordered stomach no one can hide from others.

Or, possibly the trouble is that the waste matter from the system has not been carried off. One's obligation to reach school, store, or office at a certain hour is put ahead of every other duty. But nature rebels when her rules are broken. The waste matter of the body is poison to the system and the system must be cleansed of that waste every morning. The habit of neglecting this duty causes constipation. Constipation is first a clogged system, then a poisoned system.

A decaying tooth throws out an odor that means disease. Brushing the teeth night and morning, and a visit to the dentist, surely as often as once a year, will often prevent decay; and without decay there can be no odor from the teeth.

The close odor that is sometimes called the human odor is very noticeable in crowded places like trolley cars or a great city's subway in the rush hours. And it is at times associated with an individual. This odor is like a loud voice crying, "The body has not been bathed recently." "The clothes have not been changed often enough," or "The clothes and the closet in which the clothes have hung have not been aired." If human beings lived out of doors instead of in houses the air would cleanse the body from much of the impurity. Without this outdoor life, daily thought must be given to bathing the body and airing the clothes.

It would be interesting, while on this subject, for pupils to think of other odors that are signs of trouble and to give the remedy for each. There is almost always a

remedy. In the case of the smell of smoke, immediate action and a cool head are what is needed. Sewer gas often has no odor, and so a test of plumbing is made with a liquid that has a strong smell like peppermint. This peppermint is put down the pipes, and if there is a leak the peppermint escapes and sends its odor up into the house, we know the sewer gas is escaping too. Under these circumstances, call in a plumber at once.

The plumbing in our homes is connected with the sewerage system of the city, just as the disposition of all the individual left-over food and rubbish in each home is a part of the work of the great municipal department that cares for the street and city waste.

Municipal Housekeeping.

We have city or municipal housekeeping as well as personal housekeeping. Just as the work in a large hotel is divided into departments, the cooks being responsible for the kitchen work, the chambermaids for the bedmaking and the cleanliness of the rooms, so the work of a city is divided into departments, and each individual in each home is protected by the laws of these various departments.

The police department is responsible for the order of the city. It is its duty to see that no man is disorderly on the street or in any way interferes with the rights of any other man. The street cleaning department is held responsible for the cleanliness of the streets. The work of the health department is to look after the physical condition of the city so that the people will not get sick; and should a case of contagious sickness occur, to prevent its spread. And so we might talk of the department of bridges, public charities, department of correction, city courts, department of docks and ferries, fire department,

bureau of highways, park department, department of sewers and water supply. These are all branches of the city's housekeeping, and the people of each city are taxed to pay the expenses of these departments. You would find it an interesting study to learn for what each of these departments is responsible. It is our money that pays for these city employees, and it is our business to see that these servants do their work well.

The city departments that have to do with the plumbing in our homes are the health department and the tenement house or building department. In some cities all of this responsibility is thrown on the health department.

PLUMBING

Plumbing is anything connected with piping—such as sinks, wash-tubs, bath-tubs and water-closets.

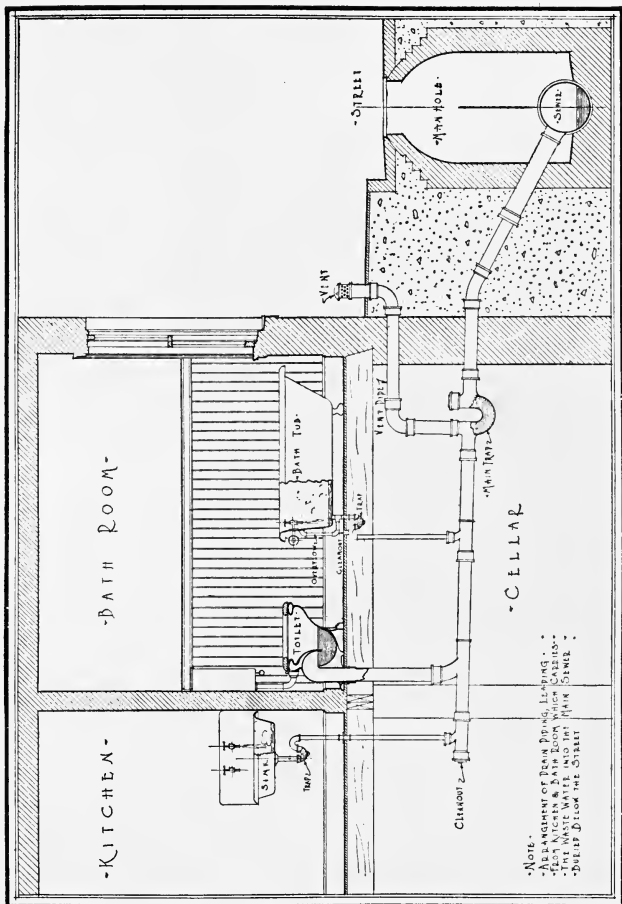
Laws in regard to the construction of the plumbing are sometimes state laws, and sometimes city ordinances; but each city's health department must see that the piping of its houses is kept in good condition so as not to endanger the health of any citizen.

It is the duty of every citizen not only to know the laws but to have a clear idea as to where the tenant's responsibility lies and what is the responsibility of the owner of the house, so that he can go about the righting of wrongs intelligently.

Some of the best plumbing laws.

“There shall be a separate water-closet in a separate compartment located within each apartment, suite, or group of rooms.”

“There shall be a sink or wash-bowl with running water in each apartment, suite, or group of rooms.”



“ In every tenement house all plumbing pipes shall be exposed.” That is, there can be no woodwork or even a curtain to hide the pipes. Each woman must be able to clean around her pipes and a leak can be noticed and mended at once.

“The floor, or other surface, beneath and around the water-closet and sinks shall be maintained in good order and repair, and if of wood shall be kept well painted with light-colored paint.” Many of these laws were made after houses were built, but owners of old houses must take away the old woodwork around the pipes and paint the floor a light color on which dirt can be seen easily.

These laws are useless unless known and coöperated in by the owner of the house and by every tenant. A complete knowledge of household plumbing is a necessary part of homemaking education. Every house-keeper should understand the piping in her house, how the water and waste liquid matter are carried from the house to the sewer. She should see to it that the light of day shines on every part of the piping.

A trap, or water-seal, is a U-shaped bend in a pipe. It must always have in it sufficient clean water to extend an inch or more above the bend. This water is called the seal, and its use is to keep the sewer gas from coming into the room. All water-closets, sinks, and tubs have these water-seals.

Buy a bent glass tube at any drug-store. Pour into this glass tube dirty water and then pour in clean water, and you will see how the clean water forces the unclean water down and forms the clean seal which keeps the odors from coming up.

The stationary equipment connected with the plumbing in most homes is the water-closet, bathtub, wash-tubs and kitchen sinks, and some times stationary wash-stands in bedrooms. We speak of the ice-box in connection with plumbing, for, although the pipe in connection with the ice-box is not always built into the house, it is a pipe which must be cleaned in the same way as all other pipes, and it is a danger to health if not kept absolutely clean.

Kitchen Sink.

First consider the kitchen sink and how to keep it clean, and how the pipe under it can be kept free from grease. This sink has the U-shaped pipe underneath, and, as has been learned from the reading of the plumbing laws, there is no woodwork inclosing this pipe. In a dark, damp place vermin collects, while in a light, dry place, where there is open plumbing, there is not this danger. The kitchen sink and the inside of the pipe connecting the sink with the sewer are kept free from the accumulations of grease by the use of soda. Dishwater is apt to be greasy, even if one is particular in the scraping of dishes. Liquid grease chills as it reaches the pipes and clings to the inside of the pipes; other substances stick to these greasy sides; and if nothing is done to cut away the grease, these substances rot and send odors into the house. The next thing is that the pipe becomes clogged and the water will not pass through. To correct this is not the plumber's or the landlord's business, but it is the duty of the little housekeeper, or the grown-up housekeeper, who washes the dishes.

To Clear Pipes of Grease.

A strong hot solution of washing soda will dissolve grease if there is no other foreign matter. The kitchen sink should be washed out with this hot solution of soda once a day (as we learned in the kitchen work, page 27).

Further Pipe Cleaning.

If the water still fails to flow freely, the trouble probably is that a match, leaves, pieces of food, or like waste, has reached the bend or water-seal and cannot pass through. Put a bucket underneath the bend. Unscrew the nut with a wrench, which every housekeeper should

have. The water collected in the bend will at once rush out bringing with it grease, tea leaves, coffee grounds, etc. This may cleanse the pipe; if not, while nut is off, pour through the pipe a strong solution of soda and boiling water. A steel wire closely coiled (called a ferret) can be bought and used. Push this through the pipe if still not clear.

Water-Closet.

Water-closets should be well-lighted and well-ventilated and should have floors that wash. Every girl studying this chapter should know by heart the laws of her state relating to water-closets.

Every one using a toilet should feel responsible for the condition of that toilet. Each time the water-closet is used it must be thoroughly flushed, at least three or four gallons of water should go down the pipe. The water-closet may be cleaned thoroughly every morning, but in one hour it can become an unattractive, unhealthy place if each person using it is not careful to flush it well, leaving the seat dry and clean, the toilet-paper neat, and no newspaper about. The closet in every house, in every public hall, or in every public school, is the responsibility of every one who uses it.

To Clean Water-Closet.

For cleaning water-closet (which should be done at least once a week) you will need a long-handled brush, which is used only for the toilet; a cleaning cloth marked "T," so that no one in the house will be tempted to use it for any other purpose; hot, soapy water, and a kettleful of boiling hot soda solution.

First lift the open, as well as the closed cover; then with the hot soapsuds and the long-handled brush wash

every part of the bowl and all the hidden cracks and crevices. Flush thoroughly so that at least two or three gallons of water may flow into the pipes. Now, pour into the bowl the soda-solution, allowing it to run down the pipes as slowly as possible. Flush again thoroughly, and with the cloth wipe every part of the woodwork connected with the seat. Be especially careful to leave dry the hidden crevices, for it is in these damp hidden places the roaches collect, and from these places, if left damp, disagreeable odors come.

This thorough cleaning of the toilet should be repeated at least once a week, besides the daily cleaning with the long-handled brush.

Wash-Tubs.

Wash-tubs are to be used only for washing clothes not for storing soiled clothes. It is very hard to keep wash-tubs absolutely free from dampness; and allowing clothes to stay in a damp, air-tight place will surely cause them to become moldy. There is nothing dirtier, more unhealthy, or more untidy than using wash-tubs as store places.

To Clean Wash-Tubs.

After using the tubs to wash clothes in, wash them thoroughly with soap and water, then wipe them out with a clean cloth. Be very careful to dry every part about the hinges of the cover of the tubs and all cracks and crevices. It is in these cracks that dampness collects and that cockroaches breed. After the tubs have been washed and dried thoroughly, do not use them again until you are ready to wash more clothes.

Bath-tubs.

In England there is what is called the "Order of the Bath." Back in the fourteenth century, when a king wanted to honor a nobleman he treated him to a bath as symbolic of regeneration; a bath was rare in those days, as private baths were found only in palaces. After this honor, the Order of the Bath was conferred upon the nobleman. In these days there are few houses that have not one bathroom, and some houses have as many bathrooms as there are bedrooms.

Furnishing. Have as little wood about your bathroom as possible. Remember that wood absorbs odors. If you can choose, have the tub some distance away from the wall. It is easier to clean behind it. Have as much white as possible in the bathroom; it suggests cleanliness. If the room is papered, shellac the paper about the washstand where water is apt to spatter.

Have a nickel basket for soiled towels; a wet towel put into the clothes basket will itself become mildewed, and will mildew the other clothes. If a half curtain (muslin) at the window is necessary for protection, have two pair of such curtains so that when one is being washed a clean pair can be put up at once.

The furnishing of a bathroom must be most carefully considered because of its connection with health. It must have floor and walls that can be scrubbed.

The plumbing must be open, so that cleaning under the sink, bath-tub and toilet will be possible.

There should be as few things in a bathroom as possible. A shelf or a closet for medicines, towel rack, a shelf for extra clean towels, hooks for tooth brushes, a toilet-paper rack or nail (always supplied with toilet-paper), a few white hooks on the door or wall on which to

hang a wrapper or night-gown while bathing. Glass shelves and glass rollers are the best because easily washed.

Bath-Tubs.

Scrub out the bath-tub with soap and water every morning (not with sand soaps as these will scratch the tub). Insist upon it that each member of the family after bathing shall wipe out the bath-tub, and in addition the tub must be thoroughly scrubbed by the housekeeper as a part of the morning work.

A tin tub can be brightened with Bon Ami powder. The stains on a porcelain or tin tub can be removed with turpentine, or kerosene. These stains come from soap, hard water, and the oil from our bodies.

Bath tubs should be cleaned with kerosene at least once a week, and after that thoroughly scrubbed with soap and hot soda water.

Nickel Faucets.

If the nickel fittings in the sink and bath-tub are rubbed every day with a soft dry cloth they will not need to be cleaned with whitening oftener than once a week. Clean nickel like silver, page 45.

CHAPTER VII

USEFUL FACTS FOR THE HOMEMAKER

Furnishing.

Let the colors of the different rooms blend. Sharp contrasts are neither pleasing nor artistic. Plan all rooms at the same time, having a general scheme of color, as one room is often seen from another.

Get unusual rather than ordinary and commonplace furnishings. This always shows thought.

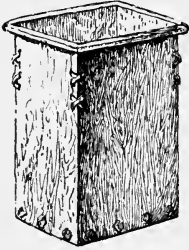
Furnishing cannot be done in a day, it should be a slow process. Often you cannot tell what to buy to complete a room until you have lived in the room for a time.

Remember that the people in the house are judged more or less by the house. If the furniture is tawdry, the ornaments sham, the pictures cheap and with showy frames, every one is sure to think that there is something a little vulgar in the minds of the people living in that house. Refinement is expressed by simplicity.

Pictures.

No pictures at all are better than poor ones. There are people who hang a picture because they happen to have it, irrespective of whether or not it gives pleasure. Such indifference cheapens a room. A picture is like a book; often you like it at first, but time proves that it does n't continue to please. If so take it down, you want your room to express your taste.

Scrap Baskets.



Scrap baskets can contribute a certain beauty to the room in line and color. This does not mean they must be expensive. Often market baskets are charming in line. Don't decorate a scrap basket with bows. If there is a carpenter in the family he can make a scrap basket out of wood. A bottom and four sides, with eight holes bored in each and the sides then held together by pieces of leather fastened through the holes, will make a basket.

Ornaments.

There are few ornaments so beautiful that they add to a room without the additional virtue of being useful as well. A vase has its place, it holds flowers; candlesticks are necessary for the candles; photograph frames only are good if they hold photographs you care for—the frame is to show the photograph, the photograph is not an excuse to show off the frame.

Pieces of copper and brass need not be useful to deserve a place in the house. They add to a room by the very beauty of their color. This is true of anything where the color and line is beautiful. But be sure it has this value.

Shelves.

Have all the shelves you can use. They save closet-room, table space, and floor space. They make it much easier to be orderly, and they really add (if put up with thought) to the lines of a room. Any one of the family with a knack for carpentry work can make and put up shelves.

Kitchen Shelves.

In the kitchen have a shelf under which you can hang brooms, brushes, dust pan, etc., and on this shelf put jugs, jars, small brushes, or any kitchen utensils. Also, have a shelf for pots and pans; one for stove materials near the stove; and one near the sink for soap, soda, etc.

Have shelves in the living-room for books; in the dining-room for china; in the bedroom for clothes, if there is no closet. No one can be orderly unless there is enough hanging-room and shelf-room for everything.

Floors.

What to do with the floors in a house is always a question. Carpets cannot be kept sanitary unless they are cleaned with a vacuum cleaner, and few have this luxury. This is true of rugs when they are too large to be taken into the yard and cleaned. A few rugs, small enough to shake easily, are all right and practical. Many rugs are a nuisance. A painted floor is not durable unless you varnish over the paint. This varnish can be renewed from time to time and the paint kept from wearing off in spots. Shellac on floors is serviceable only when covered with wax, for shellac turns white if washed or even wiped with a damp floor cloth. The most satisfactory floor is a stained floor waxed with some good floor wax. Linoleum can be preserved by a coating of varnish.

To Stain Floor.

Only natural wood, without paint or varnish, can be stained. The wood should be well cleaned and thoroughly dried before staining. Soda and hot water is often sufficient for this cleaning, but if the floor has been painted remove the paint with lye and hot water, or varnish re-

mover; do not let the lye touch clothing or hands. For staining floors, any one of many floor stains may be used. Ask for an oil stain *without varnish*, selecting the desired color. One quart is enough to stain one good-sized room. Put stain on with large brush. Dry for twenty-four hours; wipe the surface off with dry cloth, then wax with common floor wax. If such a floor is waxed once a month, it should last a year without restaining. Once a year scrub off all wax and stain again.

To make oil stain yourself use $\frac{1}{3}$ oil to $\frac{2}{3}$ turpentine, a little drier and dry stain of the desired color.

Walls.

There are laws regarding walls and wall paper. Many cities have this law.

“No wall paper shall be placed upon a wall unless all wall paper shall be first removed and said wall thoroughly cleaned.”

Any tenant has a right to insist upon this law being kept before a room is repapered.

As papered walls cannot be washed, in apartment houses or in crowded quarters they are always a source of danger. If there are germs of any kind resulting from disease or dirt, they find a resting place on wall paper, and paper cannot be sterilized because it cannot be washed. If vermin of any kind get into a house, behind the wall paper is the most natural place for them to hide, as dampness and darkness are what attract them.

Paint is a safeguard against vermin. Soap is a disinfectant. Painted walls can be washed and, therefore, absolutely sterilized. A plain coloring is a better background for furnishing (especially for pictures) than a figured paper.

Kalsomine or Cold Water Paint comes in beautiful

colors, and it is so easily put on that any one can kalsomine a wall. This kalsomine cannot be washed, but it makes an inexpensive wall covering and can be put on fresh once a year if necessary. Kalsomine is much cheaper than paint but less durable.

To Paper Walls.

Make a thick paste of two pounds of fine flour and cold water stirred together. Add to this about one-fourth pound of glue. Add enough boiling water to make the paste the consistency of cream. Cool. Wet the wall rather than the paper with this paste. Use large flat brush in putting on paper. Keep some wall paper on hand, in case paper on wall needs patching.

No rule regarding the color of walls can be laid down. It is all a matter of taste and education. Different nations have different ideas. The Italians love bright colors. The Japanese and Chinese have brought to us wonderful combinations. The walls of a room should be thought of as the framework to what the room contains. Nothing destroys the effect of a room so much as a staring wall paper. The tint of the ceiling must be one that shades into the wall paper, not one that contrasts with it.

Window Shades.

Shades are seldom beautiful in themselves. They are simply a protection against persons looking in and as a means of darkening the rooms. Shades are apt to become discolored and torn if the window is opened from the top. Therefore, there is some advantage in having inside shutters or curtains instead of shades.

If curtains are used as protection, they should be made of a material that does not fade; for example, net, pongee, linen, blue denim. Hang these curtains next to the win-

dow on white celluloid rings so that they can be moved back and forth easily on a brass rod. The white rings wash with the curtains, while brass rings tarnish with dampness. Brass clasps to hold back the curtains when the window is open will keep them from blowing out of the window or into a gas-light.



Inside curtains hung for decoration and not protection should be very thin, so that the light can come through; short, so that the dust from the floor cannot reach them; and made of washable material.

Chairs.

Have chairs where you naturally want to sit down, by the window, in front of the fire, by the table where the lamp stands. Don't place a chair just because you think it looks well in a certain spot.

Staining Furniture.

The furniture (when bought in the white) can be stained with alcohol stain and waxed with floor wax. If the furniture is varnished and one wishes to stain it, remove the varnish with "varnish-remover," then wash the wood clean with benzine. After it is dry, stain with alcohol stain, dry, and wax.

Alcohol stain is made by mixing dry Aniline stain with alcohol. The proportion of each should be regulated according to the shade desired — if the color is too dark, add more alcohol; if too light, add more stain. Only the Aniline stains dissolve in the alcohol.

Oiling and Waxing Furniture.

In old times cabinet makers used no varnish or shellac.

They covered the wood with boiled linseed oil and beeswax and rubbed it with a soft cloth until the wood was sufficiently polished.

Two Receipts for Furniture Polish.

(1) Equal parts beeswax, turpentine, and linseed oil.

(2) $\frac{1}{2}$ pint turpentine,

$\frac{1}{2}$ pint vinegar,

$\frac{1}{2}$ pint linseed oil.

Locks.

When locks get out of order it is usually from lack of use. Any one can repair a stiff lock. Take lock off with screw driver, keep screws in relation to right holes. Soak lock and lock plate in kerosene oil, and oil all parts with oil dropper. If, after taking the lock off, you find the spring broken, take it to a locksmith. (It will cost only half as much as bringing the locksmith to your house.) When the lock is oiled and mended, put it back yourself, using screw driver and same screws.

Loose Door Handles.

This is due, usually, to the screw holes becoming large and the screws not holding. Get screws a size larger, and the trouble usually will be remedied.

Never have cheap brass in locks or catches. If you cannot afford good brass, have iron or a cheaper material. *Avoid imitation.*

Receptacle for Soiled Clothes.

A white clothes box made of white *papier maché* is sanitary, easily washed, and fits in the corner.

A clothes bag is awkward hanging on the wall, and is ugly when filled with soiled clothes.

A clothes basket is hard to wash, and the odor of the clothes gets into the straw.

A good receptacle for soiled clothes is a pickle barrel, price fifty cents. Holes should be bored in the sides to admit air, and a barrel top may be purchased at any hardware store. This kept in an unused corner, serves also as a seat, and is less bulky than a straw basket.

To Take Paint from Glass.

Use soda and boiling water. If the paint has been long on the glass use varnish remover.

Gas Meter.

Ask the gas man once to tell you how to read the gas meter, and you will be able to keep account of this house expense.

Rattling Windows.

If the windows rattle, tighten the window fastening by taking off the plate with a screw driver. Replace it a little further back so that the windows are held closer together.

Mica Shades.

Don't buy new mica shades when yours look dull. Soak the old ones for five minutes in vinegar and water.

Matting.

To clean matting, wipe over with cloth wrung out in salt and water; then wipe dry.

Enamel Paint.

If enamel paint is too highly polished, rub it with a light pumice stone and oil.

How and When to Save Money.

The first thing is to realize the value of education in the matter of buying those things which every one must

purchase to live. Women are the great purchasers of household supplies, and they do not play the game of living intelligently if they do not learn how to buy.

The second thing is, education is not learning something by heart or taking as truth what some one else tells you. Education trains us to *think*. If we learn to think for ourselves we will be able to estimate the relative importance of things. On certain things one can save money, on others it is wiser to spend money.

Take advantage of every labor-saving device you can afford. Many get so in the habit of doing household work one way, that if a new device is at first confusing they will not accept it.

Don't save money (unless economy demands it) on a mattress. You get just what you pay for. A hair mattress will last twice as long as a cotton mattress.

Don't save money on a moving man if you have good furniture. A cheap man may do more damage to one piece of furniture than what you have saved.

You don't save money by buying coal or groceries in small quantities. In the end you pay nearly twice as much.

You don't save money by buying cheap furniture, varnished to look expensive. Furniture should last two or three generations. It will pay in the end to have it made of good wood.

You save nothing by buying on the instalment plan. This is only a loan from the company which you pay little by little, adding the interest on the loan to the payment. Save all the money needed first, and then buy your furniture with confidence. You will get full value for your money in this way.

If linen is laundered at home (not in a steam laundry) it pays to get good linen. It does not pay to get more

than you need. If bed linen and towels are laundered at a laundry, buy them cheap, as they will not last anyway. *Save money* where frequent renewals are inevitable, as with *china* and *glass*. Expensive pieces break as quickly as cheaper ones; they are no cleaner, they make the food no better. Neither expensive ones nor cheap ones suffer from wear and tear. It is breakage that destroys the usefulness of china and glass.

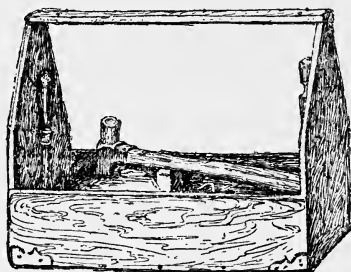
Save money on curtains. These are destroyed by sun, dampness and air, and expensive material is as easily affected by these things as cheaper material.

Save money on tin kitchen ware. It rusts soon with the best of care.

Don't save money on brass or copper utensils: they last forever if of good material.

Tools.

You cannot keep your house in order without tools. Have not only utensils to cook with, brooms, brushes and cloths to clean with, but tools to repair what is out of order. Have a basket made of wood containing hammer, screw driver, awl, wrench, nails, tacks, wire, large scissors and any other tools that your particular need requires. This basket can be taken from one place to another and the tools will not get mislaid.



CHAPTER VIII

LAUNDRY WORK

Laundry Equipment.

Before doing the first stroke of work a good workman is sure that he has at hand all the necessary tools and material for the performance of his particular task. This is true of every piece of work, if you would keep your mind and work orderly.

In this task, be sure that you have time enough; hurried work is usually poor work.

Second, see that the place you have to work in is the best at your command. A light, airy basement is the ideal laundry; but the majority of women must use the kitchen. If the kitchen is also the laundry, great care must be taken that the soiled clothes (many of them underclothes) are not about at the time the food is cooking. On wash-day very simple food should be served and as much of this as possible cooked the day before. This is the cleanest, easiest, and most orderly way.

As the stove will be needed for the clothes-boiler and irons, there will be but little space for pots and pans.

Stove.

In some homes, where space and money are plentiful, there are laundry stoves separate from cooking stoves. Such stoves are never blackened, because the irons must be kept absolutely clean; they are rubbed clean with a dry brush.

In the majority of homes the cooking-stove is used for irons. Therefore, be very careful that on ironing-days, especially, the stove is rubbed as free from blacking as is possible.

Tubs.

Porcelain or soapstone tubs are the best; wooden tubs absorb odors.

The most desirable stationary tubs are set away from the wall, but these are seldom found in apartments. When the tubs are built against the wall it means more care for the housewife, to keep dry every crack and edge and hidden crevice.

If galvanized tubs are used, be careful that they do not rust. Dry well and occasionally oil.

In the country, portable wooden tubs are used; if these are allowed to become too dry, between washings, they will fall apart. When in use such tubs are placed on a bench, which should be about thirty-six inches high. The advantage of portable tubs in the country is, that they make it possible to wash out of doors, and fresh air and sunlight sweeten the clothes.

Stoves and tubs are what are called stationary equipment and are usually put in by the landlord; but every woman or girl is responsible for their condition when wash-day comes. It is only a bad housekeeper who uses her tubs as a storing place between washings. Damp tubs breed cockroaches.

Movable Equipment.

If the laundress is the right kind of laundress, she will see that all equipment necessary for washing and ironing is on hand and in good repair before wash-day comes.

In a small kitchen many things that we have for every-day use may be utilized in our laundry work, thus avoiding unnecessary things about, and also saving expense.

Rubbing-Board.

There are three kinds:

Glass. Which is most easily cared for, and wears longest.

Zinc covered boards.

Wooden boards. Which are the least desirable.

Wringer. This is not a necessity, but helps to make easier the wringing of clothes. It is more economical to buy a wringer of good quality, even if more expensive. A good wringer requires very careful treatment. To keep the rubber-rollers clean, it is very necessary after each washing, to unroll them and wipe them dry. A very good housekeeper will have a slip bag to keep her rollers in.

Boiler. An oblong boiler is more practical than a round one; it holds more clothes and fits better on the stove.

A copper boiler will outlast all others, but it is expensive.

A tin boiler, with copper bottom, is a very practical boiler to buy.

An all-tin boiler is cheap but it does not last.

Any boiler must be carefully dried after each washing.

HAVE ON HAND ON LAUNDRY DAY

Clothes-Stick. An old broom-handle is as good a stick as any other to take clothes from the boiler.

Pail. To carry water.

Dipper. The house dipper will answer.

Agate pan. This is for starching; the dish-pan will answer.

Saucepan. To make the starch in.

Tea-kettle. Be sure it is absolutely clean.

Three brushes. One for scrubbing the wood-work of board, tubs, etc.

One for removing very soiled spots from clothes.

One when it is necessary to use cleaning fluids.

Wooden spoon. For starch.

Strainer. For starch.

Clothes-basket.

Clothes-horse or towel-rack.

Clothes-line and clothes-pins.

Get a good clothes-line, it lasts longer; a poor line is not safe. Take the clothes-line down every time it is used. Wipe with damp cloth before using. Metal lines rust easily.

Clothes-bag for pins. Have this of pretty cretonne, and make it an attractive addition to the kitchen.

Duster for clothes-line. Any clean duster will answer.

A cloth for wiping tubs, boiler, etc.

Small piece of perfectly clean cloth, always at hand to rub off any spots.

Equipment for Ironing.

Ironing-table or board. It should be covered with flannel or a coarse blanket, and cotton cloth pinned tightly over this. A drawer in an ironing-table is a great convenience.

Irons. There are many kinds of irons: gas and electric, which are expensive.

Nickel-plated. These do not rust.

Iron ones are the most common and many a laundress will use no other kind. These must be of different sizes. They must be kept smooth. When not in use keep in a dry, clean place. Wash, and heat irons before using

Iron-holders. Do not use any old rag for an iron-holder, but take time to make three or four holders of bright, pretty material.

Iron-stand. A tin cover may be used for this.

Wax. This is needed to prevent irons from sticking.

Sandpaper. For smoothing irons.

Heavy paper and cloth. This to test the heat of the irons; never try them on the ironing board.

Materials Used in Laundry Work.

Soap. Use a soap containing little resin.

Ammonia. Mild.

Borax. For removing stains and softening water.

Sal-soda. For cleaning the tubs and pipes.

Salt. Used for smoothing **irons**; also for stains.

White vinegar. Sets color.

Alcohol. For stains.

Bluing. Not liquid. Bluing, in liquid form, is usually a compound of ferro-ferric oxide; that is, an iron compound, and injurious to clothes in combination with an alkali. Soap is an alkali; therefore, clothes not well rinsed, after bluing, will often show rust-marks.

Starch. It will pay to get the best.

There are many liquids for removing stains, such as Javelle water, ether, etc., but any girl who is not a trained laundress cannot be trusted with these things; when not used properly they spoil the clothes.

Many clever women have found substitutes for various articles of laundry equipment that may for some reason be missing, even in the home of a good house-keeper. It will be interesting for any one studying this book to take note of any substitution that has taken place in her home.

Body Clothes.

Clothes which are worn absorb waste matter thrown off from the body in the form of perspiration, and in bits of dead skin which are being constantly rubbed off. The food that we eat repairs this waste. Our underclothing, because of this waste matter, becomes damp, sticky, and oily. Unclean clothes increase the heat of the body in summer and make it colder in winter. A bath every day, winter and summer, followed by clean clothes at least twice a week in winter and oftener in summer, will do much to prevent discomfort and illness. In the case of small children clean clothes will often stop their fretting, which indicates irritation.

As every girl knows, dust must be removed, if for no other reason, because dirt indicates the possible presence of disease germs.

Sorting the Clothes.

Sorting is the separation of clothes, before washing, into the divisions in which they are to be washed.

Table linen,	Towels,
Bed linen,	Flannels,
Underclothes,	Stockings,
Handkerchiefs,	Print or colored dresses.

Before beginning the actual washing, it will make the labor much more interesting to know something of the materials that are to be washed. The care of the stove is more interesting work after studying about coal and wood. Care of household garbage is interesting when we know about the municipal problems in the disposition of the city waste. This rule holds good in laundering.

The materials ordinarily laundered are linen, cotton, silk and wool.

Linen.

Linen is not so good for many things as cotton; it wrinkles easily and is much more expensive. For the table however it is the best material to use; its smooth, brilliant texture adds to the beauty of the table; it looks fresh and clean and when properly laundered lasts well.

Linen is woven from flax. Flax is a plant which grows from two to three feet high, bears small leaves and blue flowers. When the seeds of flax begin to ripen the plant is pulled up by the roots. Then follows a process called "rippling" by which the seeds are taken from the plant. The stalk is then steeped in water to produce fermentation. Then comes "scutching," by which the fibre is freed from its woolly core; then a process called "heckling" by which the fiber is combed out, straightened, and the longer threads separated from the woolly mass. "Spinning" is twisting the fiber into thread. "Weaving" is the art of producing the linen cloth from a combination of these threads.

Making linen of flax is but one of the uses of the flax plant. The seed is very nutritive; linseed oil, which is made from the seed, is a great industry. Flax used to be raised on individual farms, and the women of the family took the flax after the heckling and with their own hands did the spinning, weaving, bleaching, and finishing.

The cultivation of cotton did much to lessen the necessity for linen, and the introduction of machinery did away with flax-growing and weaving as an individual farm industry; even dragging up the flax by the roots is all done now by machinery. Hand-linen looms are not used to-day, and many families were ruined when the machinery for making linen was introduced, as their hand-looms were their only wealth.

In the process of making linen, "finishing" is the last

step. It is in this finishing that the linen manufacturers are able to deceive the public. This finishing or sizing is the gloss on the linen; it is often simply starch ironed in, and polished hard. The starch will wash out with the first laundering. When you buy linen the way to test good from bad is to rub a piece of it between the fingers; if it is thickened with starch instead of being really heavy linen, the starch will come off on your fingers; also after you have rubbed a little of the starch out the linen will have a thin look, while good linen will stand rubbing and keep its firm appearance.

Cotton Cloth.

Underclothes often are made of cotton cloth, so also is what we call "bed-linen." This expression comes from the old times when sheets and pillow-cases always were made of linen. Linen is too expensive now to be used generally for sheets.

Cotton is now our chief vegetable fiber. At least six billion pounds a year are produced, and the United States raises the larger part of this.

Cotton is the white downy covering of the cotton-plant, and the value of the cotton depends upon the evenness and strength of the fiber. In cheap cotton the fiber is about an inch long; in good material the fiber is two inches long. Long fiber cotton is used for fine cotton laces, fine lawn, and muslin goods, while the short fiber cotton is made into inexpensive cloth. One reason why cotton is cheap is that there is only five per cent loss in preparing it for use.

There is not time in a book like this to make a study of the manufacture of cotton, but every woman and girl should know good cotton cloth from a poor quality. It is true in cotton, as in linen, that the finish or sizing is de-

ceptive. This, too, can be put on with starch which, when washed out, leave the cloth loosely woven and flimsy. Rub the cloth, and feel it with your fingers and you will soon be able to judge the quality.

Do not blame the woman behind the counter if you find that you have bought a nightgown, for example, that looks cheap after a few washings. The saleswoman does not make the goods, and does not set the price; very likely she herself has no knowledge of cottons. She is paid to make you buy the nightgown.

It is well to remember a few good rules about ready-made cotton underclothes. If an article is cheaper than the market price there is usually some reason for it; if it is being sold at a marked-down sale it is worth while to examine it very carefully. After you have rubbed it in your fingers if it feels thin and loosely woven do not buy it, no matter how tempting the bargain. If any one gets good cloth and good work she has to pay for them.

Colored Cotton Cloth.

Gingham is made of yarn which is dyed before it is woven into cloth. Cretonne, chintz, and calico are made into cloth and then stamped.

Outing cloth, which is an imitation of wool, is soft and light and made of cotton. It does not shrink like wool, the best grades do not fade, but it has not the warmth of wool.

Flannels.

Flannel, which is all wool, is made from the soft, hairy covering of sheep and goats. The wool of the llama of South Africa also is used in making stuffs for women's wear. Sheep-raising was a business long before agriculture was known; in fact so long ago that no one knows

when man first realized that the wool of sheep was valuable. As soon as wool began to be used for cloth the sheep-raiser saw the need of improving the fleece. This was done by careful breeding, careful feeding, and by protecting the wool-bearing animals in bad weather; in other words, the more domestic a sheep is, the softer and finer the wool. Much of the wool used in this country comes from Australia, South America, and South Africa.

The wools used for blankets and carpets come from a lower quality of sheep, where the hair is harder and coarser.

Cashmere wool is the most costly of all wools, and comes from the cashmere goat in the Himalaya Mountains.

In old times, wool manufacture was a home industry, just as linen was. The beautiful hand-spinning and weaving done then has not been excelled to this day. The first wool machine in this country was in Pittsfield, Massachusetts, in 1790.

Manufacture of Woolens and Worsteds.

First, the sheep is washed, and then sheared; the wool is then beaten to get rid of dust and other impurities, then washed again. This second washing, after the wool is taken from the sheep, is not only needed to remove dirt but a fatty secretion, called "yolk." Wool is washed in a soapy solution, often with soda added; and is passed from one tub to another until it comes from the last tub comparatively clean; it is then dried, bleached, or dyed. Even after all this, the wool has a matted appearance, and contains some dust and sand. The process of removing this is called "willowing," and is done by a machine that gently tears the matted locks apart, and frees the wool of all impurities.

“Mixing” comes next, and is a process whereby wools of different quality are mixed together. If other material, such as silk or cotton, is to be blended with the wool, it is done at this time.

Oiling. The wool, after its many washings, is hard and wiry, and in order to restore its natural softness it is slightly oiled while it is being mixed. Up to this point worsteds and woolens go through the same process; after this the work is different: worsted thread is combed and the thread twisted until it becomes hard; woolen yarn, from which woolen goods are made, is simply carded and loosely spun.

Carding. This process produces a thread whose fibers lie loosely, projecting from the main thread in little ends which form the nap of the cloth.

Spinning is the art of drawing and twisting this fiber so that it is formed into continuous threads, ready for weaving or knitting.

Weaving. This is the art of making thread into cloth.

Stains on Clothes.

As a good laundress sorts her clothes she will look for stains. Any garment or article having a stain on it should be laid aside, for if put into hot soapy water it will set the stain and make it difficult to remove.

Blood Stains. Wash in cold water, then rub with naphtha soap, and soak in warm water. If the stain remains apply a paste of raw starch.

Chocolate or Tea. Sprinkle with borax and soak in cold water; then, when washed in the hot soapy water the stain will come out.

Coffee, Fruit. Lay the stained part over a bowl and pour boiling water on it; have the water come from a height so as to give it force.

Glue. Vinegar rubbed on with a cloth will remove glue.

Grass Stains. Warm water and naphtha soap should take out grass stain. If on white goods ammonia may be added.

Grease. Wash in gasoline and then warm water and soap.

Ink. Let the stained part stand in milk, and when the milk is discolored change it to fresh milk. Wash next in cold water, and lastly wash in warm water with a little ammonia, if the goods are white.

Ink on Carpet. 1st. Take up all possible ink with a spoon. 2nd. Lay on carpet blotting paper; press well into carpet. Take fresh piece and repeat. 3rd. Wash stain with warm water and ammonia. Use milk if you have no ammonia.

Kerosene. Use Fuller's earth made into a paste, and let this remain on the stain for twenty-four hours.

Machine Oil. Wash first with soap and cold water, and then rub with turpentine if the stain is not removed.

Mildew. Usually it is our own fault if the clothes are mildewed; they have been neglected and left damp in a close place. If they should become mildewed, squeeze lemon juice on the stain, and lay it in the sunlight. If this does not remove the stain, make a paste of soap, starch, lemon and salt, and let this paste stand on the spot for twenty-four hours.

Milk. If on a colored dress, wash with cold water.

Paint. Use benzine or turpentine.

Perspiration. Soap-suds and sunshine.

Scorch. Rub the scorched article with lemon and put in the sun.

Stove Polish. Naphtha soap and cold water.

Wagon Grease. Rub with lard and then wash with warm water and soap.

Wax. Place brown paper over grease spot and press paper with warm iron.

Wine. Put a layer of salt on the stain; then pour boiling water over the spot, as in fruit stains.

The next step after sorting clothes and looking for stains is to:

Soak Clothes. This is done to loosen the dirt so that the garment will require less rubbing when washed. Add a little soap to the water in which clothes are soaked. Stockings and colored clothes are not soaked.

Clothes are soaked usually over night.

In the morning wring out the clothes. Wash the tubs and fill nearly full of hot water. Fill the boiler half full of cold water and add enough dissolved soap to make a light suds. Put a coarse, clean cloth in bottom of the boiler, to prevent clothes scorching. You are now ready to wash, not to talk about it, but to do the actual work.

In clothes, as in dishes, the cleanest are washed first.

Table and Bed Linen.

Put these in one tub of hot water; use soap freely. As each piece is washed wring it with the hands and drop it in the next tub of water. When all of this first lot are in the second tub, wash them again with soap, as before; as each piece is washed and wrung from this tub, drop it in the boiler of cold water. When the boiler is full start the fire, if it is a gas or electric stove; put the boiler over the hot fire, if it is a coal stove. Press the clothes down with a wooden stick, which is also needed to turn the clothes and take them from the boiler.

While the first tubful of clothes is scalding in the boiler,

rub out the second tubful of underclothes, which are the next cleanest, in the same manner.

When the second lot is ready for the boiler, the first should have finished boiling and be ready to take out. Put these in a tub of clear water. Wash the third lot, which will be the more soiled clothes and towels, while the second lot is in the boiler. Take the second lot from the boiling water and put them in the tub with first clothes, and then put third washing in the boiler. It is now time to rinse the first and second clothes. First, wash out and thoroughly clean the tubs that have been used in washing, as they are to be used for the rinsing. Fill both tubs with clear hot water; rinse and wring from one tub into the other, then wring out into bluing water. The last boiler of clothes should be rinsed in the same way and blued. As the clothes are wrung out from the bluing water separate those that require starching.

Bluing Water.

Use clean cold water, and have the bluing ball tied in a cloth, to prevent specks coming onto the clothes. Never allow the clothes to stand in this water, as they will become streaked, and never, for the same reason, allow them to rest on the bottom of the tub.

Hanging.

Be sure the lines are clean and tight. Every time they are used they must be wiped with a clean, damp cloth. See that the clothes-pins are clean and not broken. Hang clothes of a kind together, and hang white clothes in the sunlight, if possible. All articles should be hung on the wrong side. Hang the sheets out first, as they take the longest time to dry. In hanging fine pieces, and the underclothes, be careful that the clothes-pins do not tear the garments.

Starched Clothes.

Bed linen, towels, table linen and handkerchiefs should never be starched. People differ about underclothes. Many care for no starch, while others wish a little, realizing that garments iron more easily when starched, and keep clean longer.

To Make Thick Starch.

Half cup of starch,
Half cup of cold water,
One quart of boiling water.
One quarter teaspoonful of lard or wax,
One teaspoonful of borax.

Mix the starch with cold water, and make smooth; slowly add wax, borax, and boiling water. Allow the starch to cook about fifteen minutes, and then strain. Use the starch hot. Borax gives stiffness, gloss, and whiteness to clothes; wax keeps irons from sticking.

Thin starch.

This is made in the same way, except that three quarts of hot water, instead of one quart, are added. Wring clothes out in hot starch while they are still wet. Hang them out of the wind to dry; wind blows the starch from the clothes.

Raw starch.

Two tablespoonfuls of starch,
One half teaspoonful of borax,
Two cups of cold water.

Dissolve the borax in a little hot water; mix starch with cold water and add this to the borax. This is used for starching shirts and collars and cuffs.

When cold water is used, the articles to be starched must be thoroughly dry before starching. As each article

is starched, squeeze it and roll it in a towel for an hour before ironing.

Woolens and Flannels.

As these require great care to prevent them from shrinking, it is well to do them on a day separate from the regular wash day. All woolen material should be washed in lukewarm water, and rinsed in water of the same temperature. In the first water use a soap solution; never rub soap on the garment. If woolen garments are not thoroughly rinsed, so that no soap remains, they will not be soft. When washing, do not rub flannels more than is necessary, as rubbing hardens and thickens them. Use borax and ammonia if the water is hard. Dry flannels in the sun or in the air; never near a hot stove. Squeeze dry, and shake well, before hanging. Hang wrong side out. Never let flannels freeze because it shrinks them. White clothes are not injured by freezing. It is well to bring flannels indoors before they are perfectly dry; roll them in clean cloths and iron as soon as possible.

Blue flannel will keep its color better if a tablespoonful of vinegar is added to the rinsing water.

White flannels are blued, as are other white clothes, but great care must be taken to have the water of the same temperature as the washing water.

Good Things to Remember About Flannels.

First. Don't allow them to get very soiled before washing, as rubbing hard injures them.

Second. Wash in lukewarm water, one piece at a time.

Third. Do not soak flannels, as it hardens them; do not boil, as it shrinks them; wash quickly.

Fourth. Rinsing and bluing waters should be of the same temperature as the washing water.

Fifth. Shake flannels before washing and shake them after washing, before hanging.

Blankets.

Select a clear, windy day in which to wash blankets. Fill two tubs with lukewarm water; pour a soap solution into one tub and a weak soda solution into the other.

Dissolve three tablespoonfuls of borax in a quart of water and divide this between the two tubs.

Shake the blankets; then put one pair into the first tub, sop it up and down until the dirt is out of it; squeeze the water out and put it in the next tub; sop up and down as before. Now rinse the blankets very thoroughly in waters of the same temperature as the washing water. Run the blankets through a wringer, if you have one. Shake hard before hanging up to dry. Hang, by firmly pinning in many places, so that no great strain may come on any one part of the blanket.

If there are any soiled spots remaining on the blanket spread it on a board and rub with a brush; rubbing with the hands twists the fiber. Have fresh water for each pair of blankets. Be sure that the blankets are perfectly dry before they are taken from the line; brush with a soft brush after drying or beat with a clean furniture beater. Fold and place between sheets with a heavy weight on the top; this is better than ironing.

Colored Clothes.

To set the color in clothes before washing, rinse the colored garments in one gallon of water to which has been added, either, one tablespoonful of salt or one quarter cup

of vinegar. Colored clothes should never be soaked. Do not use much soap in washing; do not have the water hot, only warm; do not use strong, yellow soap or washing-powder or ammonia; do not rub any soap on the garment but wash in suds. Colored clothes must not be boiled or blued. Dry quickly and dry in the shade.

If a girl will remember all of the "don'ts" connected with the washing of colored clothes, she may be trusted to wash them.

To Wash Silks.

Make warm, soapy water of Ivory soap. Rub article to be washed as little as possible; squeeze the dirt out so as not to hurt the weave. Do not use ammonia on white silk; it makes it yellow. One teaspoonful of borax dissolved in a pint of boiling water softens the water. This is sufficient for two tubs of water and should be added to the soapy water. Rinse in two waters; wring as gently as possible, and hang out to dry. When half dry, take in, roll tightly in clean cloth, towel or sheet; let it stand thus for an hour and then press.

Ribbons are washed by spreading them on a clean board, scrubbing them with a soft brush, rinsing well and pressing the same as silk. Do not use too hot an iron on silk; it makes it stiff.

Stockings.

Great care should be given to the washing of stockings. Clean, fresh stockings mean warmer feet in winter and cooler feet in summer. Stockings rinsed out but not washed are not "clean" stockings.

Stockings should be first washed on the right side and then turned and washed on the wrong side. Never rinse stockings in water that has been used for other clothes, as

it contains lint. It is well to rinse new stockings in salt water to set the color.

Silk stockings are washed like other silk goods.

Woolen stockings are washed the same as flannels.

Cleaning of Tubs.

This is the last task connected with washing, and is most important. First, the tubs should be scrubbed to remove the grease and scum. Lint from the clothes is very bad for the pipes; therefore, they should be flushed with soda water after every washing. If the water runs slowly down the pipes, even after using soda, pour down potash and boiling water.

Dry the tubs, and the woodwork all about them. Do not use tubs for anything between washings.

IRONING

It is not possible to learn ironing with a few trials; for knowledge of this art comes only with practice. Ironing is like cooking; all that any book can do is to start a girl in the right way. As was taught in the very beginning of the laundry lessons, do not begin to iron until everything for the work is at hand. Go over once more the necessary things.

Ironing table or board,	Cloth and paper for testing
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Iron stand,	irons,
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Flat-irons,	Wax,
-------------	------

Iron holders,	Sandpaper,
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Bowl and cloth for dampening dry spots.

First, be sure the work of covering the ironing-board is understood. Every girl should be able to cover an ironing-board so that it will be smooth and tight.

To obtain good results, clothes must be well dampened. Spread each article out on a clean cloth and sprinkle one

piece at a time. This is done with the hand or a clean whisk-broom that is used for nothing else. Then roll the clothes, turning in the edges as you roll.

Plain articles, such as towels, napkins, handkerchiefs, may be rolled together. After sprinkling and rolling, it is a good thing to let them stand several hours before ironing. Starched clothes need to be damper than those that are not starched, except those with cold water starch.

There are always some clothes that do not require ironing, such as knitted underwear, woolens and stockings. It is only necessary to smooth these out well and fold carefully; they are fresher if not ironed.

Be very sure that the irons are clean before heating. Place the articles needed for the ironing on the ironing-board, at the right. Iron the coarser things first, as the irons become smoother the longer they are used.

First towels, then napkins, table doilies, sheets and pillow-cases, and handkerchiefs.

Be careful that the hems are properly ironed and the edges even — edge to edge. If there is embroidery on the articles iron this first and on the wrong side.

Fold hems of sheets together and fold wrong side out. Iron table-linen on the right side. Iron all pieces until dry, that is, until all steam stops rising.

Underclothes.

If there is embroidery, iron this first. Then the sleeves, the yoke, and lastly the body of the garment. Iron over as large a space at one time as possible, and do the work rapidly, or the garment will dry.

Skirts.

The ruffle is ironed first, then the band, and lastly the body of the skirt.

Any garment with folds and seams should hang for a while before being folded; it is difficult to get the seams perfectly dry with the iron. Starched clothes require a very hot iron.

Remember the appearance of table linen and handkerchiefs depends upon the way they are folded. Fold all napkins alike so they will look the same on the table.

Iron an embroidered article on a Turkish towel; this will make the embroidery stand out.

Never allow irons, when not in use, to stand on the stove; they lose their temper, and are not able to hold the heat.

CHAPTER IX

MARKETING

How to Learn Marketing.

The only way to learn how to cook is by cooking, day after day, making mistakes, producing unexpectedly good results, blundering along, working, working, working, until finally you instinctively know the taste of the pudding before you begin to combine the ingredients. You know instantly what flavoring is lacking in the stew the moment you taste it. You can make an entire meal from the left-overs in the ice-box by adding here and combining there; and never will you waste so much as one egg shell. Only then are you a first-class cook. Marketing is mastered in the same way. Not one visit to the market with a teacher can teach you how to buy. All that teachers and books can do is to give you the rules to work by. Taste, education, income, digestibility, time, all go toward making a difference in diets.

Don't begin to market after you get to the store. The ice-box, the window shelf that holds the left-over food, the bread box; these are the first places to visit. Any one can go to the market and buy steak, vegetables, salad and a dessert. It takes an artist of the kitchen to see in the liquid part of the left-over mutton stew the foundation of a clam chowder; or see the possibility of good meat balls in the strained-off pieces of meat, the few pieces of stale bread in the bread-box and one onion. To a woman with a creative mind the cold cereal of yesterday is not something for the garbage pail, but thicken-

ing for soup. All children do not like cereals plain. A wise housekeeper is glad of the chance to give such a child this nourishing food in combination with other foods. In the ice-box the good housekeeper may find the water that yesterday's corned beef was cooked in, or the vegetable water from yesterday's beets. At once she thinks of pea soup, using the corned beef water instead of pork; or with vegetables, adding the beet water to soup stock. A few pieces of stale cake are in the cake box; that means that with one egg, a little milk, sugar and chocolate you have the pudding for dinner.

Now when you start for the butcher's and the grocer's you buy only what will supplement and make into new combinations the food at home.

What are some of the foundation principles that every housewife should carry with her to the market and what are some of the faults she should overcome?

Waste is one of America's greatest faults.

You want the meat of an egg to-day rather than the egg shell, but it is wasteful not to foresee that to-morrow morning you will want the shell to clear the coffee. In the same foolish way, women buy meat, and stand and look on while the butcher (having made those women first pay for the entire weight) trims off the fat, and cuts out the bone, and throws this valuable food in a box under the counter to be sold again; and yet these women know that the bone is good for soup and the fat for frying. Why do they do it? Indifference and laziness. What the butcher cuts off is yours, ask him for it.

Another rule to carry to market is: don't buy in small quantities. Space is valuable, and storage place is sadly lacking in most homes, but many buy five cents' worth of this, ten cents' worth of that, because no thought has been given to using what space there is.

Glass jars take up very little room; they cost only from five to twenty-five cents each, and they last forever. Put a shelf in the kitchen; and on it a row of one and two quart jars, each holding a dry grocery; and you have added to the beauty of your kitchen, you have saved money by making it possible to buy in quantity, and you have saved the labor of running out over every day for the flour, sugar, coffee and staple articles that should always be in the house.

Don't try to buy cheaper than the market price. If butter is selling for forty-one cents a pound, and you can buy it for thirty cents, there is something the matter with the butter. When you think you buy forty-five cent eggs for twenty-five cents, you don't; you buy only twenty-five cent eggs. The salesman deceives you by making you believe you are saving money, instead of telling you that you are paying a good price for poor eggs.

In some shops sugar, flour, rice, etc., are all done up in pound packages; "to save time," you are told. Have the dry groceries you buy weighed out before you. It takes a little more of your time, but you get the full weight for your money. When you buy by the package, you pay for paper and the labor of packing. One half pound of loose soda crackers has thirty-five crackers, and costs five cents. One package of soda crackers has twenty-four crackers and costs five cents. You sacrifice eleven crackers for the paper package.

Meat.

To buy meat to the best advantage a girl must know the different cuts; which ones are tough and which are tender; where the juicy parts lie; what the proportion of meat is to bone in each cut and why the quality and

price of the meat is different in one part from another. This knowledge may be gained by a careful study of meat charts: by asking questions of those who know, and more than all else by going to market and learning by experience.

To acquire a perfect knowledge of the charts given in this chapter is a good way to begin the study of meats.

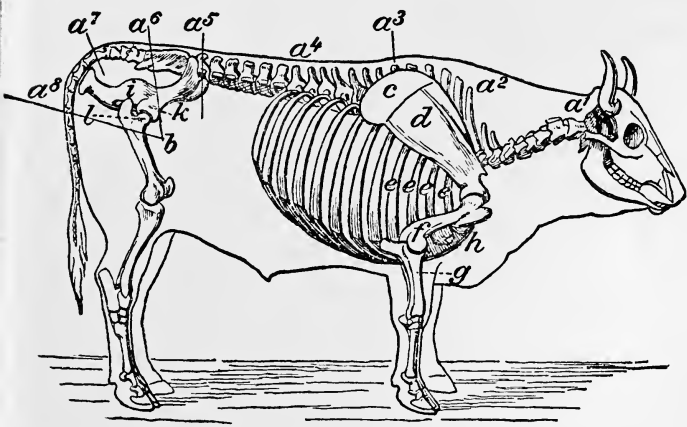


Fig. 3. Location of the Bones in the Various Cuts of Beef

*a*1 to *a*2, neck; *a*2 to *a*3, six chuck ribs; *a*3 to *a*4, seven prime ribs; *a*4 to *a*5, loin or porterhouse; *a*5 to *a*6, thick or hip sirloin; *a*6 to *a*8, rump piece; *a*7, where rump is divided into top and tail end; *c*, *d*, shoulder-blade; *e*, *e*, *e*, *e*, cross-rib-piece; *f*, *g*, bones in shoulder of beef; *h*, sternum; *i*, head of thigh-bone; *k*, socket; *l*, ball.

Take, first, Fig. 3. This is the skeleton of beef. The vertebræ run from head to tail. Study the bones in the spine with the help of the text underneath, so that when you see those bones in the butcher shop you will know at once from which part of the animal each cut comes. As the beef hangs in the market it is split in two down the back bone. Remember this when you try to locate the bones as seen in the picture. See Fig. 4.

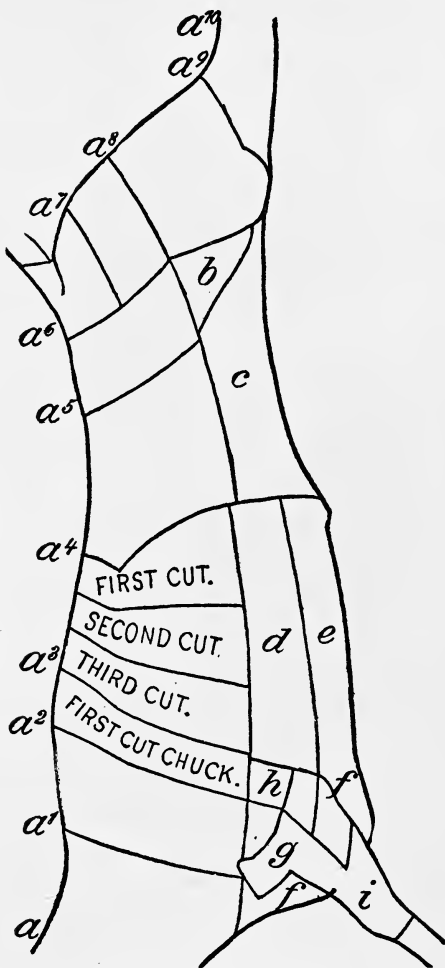


Fig. 4. Side of Beef — New York Method of Cutting

a, neck; *a*₂ to *a*₃, six chuck ribs; *a*₃ to *a*₄, seven prime ribs; *a*₄ to *a*₅, porterhouse roasts or steaks; *a*₅ to *a*₆, thick or hip sirloin; *a*₆ to *a*₇, tail end of rump; *a*₇ to *a*₈, top of rump; *a*₈ to *a*₉, round; *a*₁₀, leg. *b*, top of sirloin; *c*, flank; *d*, plate piece; *e*, navel; *f*, *f*, brisket; *g*, shoulder; *h*, cross-rib; *i*, shin.

A careful study of the text under these two cuts will give you a clear knowledge of where the porterhouse steak, the rib roasts, the chuck, the round steaks, etc., come from. No matter, at first, about the cost; learn only the location of the various cuts; be familiar with the names, and learn what cuts have little and what have much bone.

Now pass on to Fig. 5 and again study the different cuts; this time with thought as to price and the quality of the meat.

This book quotes prices of meats in normal times.

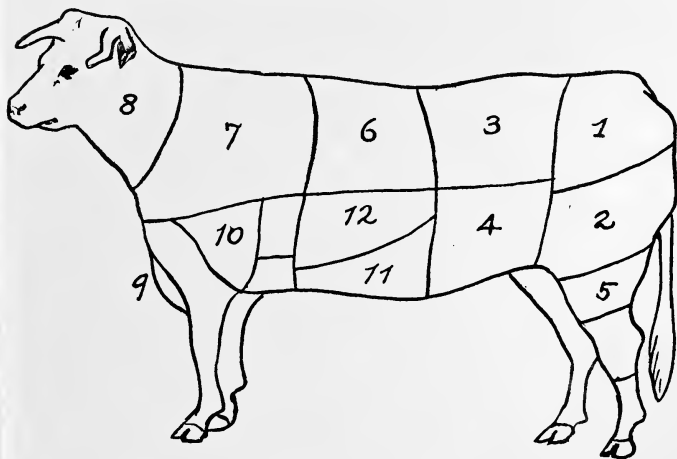


Fig. 5. Diagram of Beef

1, rump or short steak; 2, round; 3, loin; 4, flank; 5, leg; 6, ribs; 7, chuck; 8, neck; 9, brisket; 10, shoulder; 11, navel; 12, plate.

The cuts of beef can be divided into three qualities; first, those from the middle of the back, called ribs. There are seven of these ribs, as you can see by counting in Fig. 3. They are marked 6 in Fig. 5. Porterhouse, sirloin and Delmonico steaks are cut just back of these ribs. These are the most expensive cuts; in New York

City the meat costs from twenty-four to thirty cents a pound. These roasts and steaks are also the tenderest part, because they are the least muscular, that is the least exercised. There is, as you will see in Fig. 3, a great deal of bone that you pay for when you buy these expensive cuts. As the butcher cuts the meat from nearer the head and nearer the tail he charges less. Cuts from these parts of the beef are the second quality. Rump and round, marked 1 and 2 on Fig. 5, are the back cuts, and the chuck (marked 7) is the part near the head. In both of these extremities the meat is more muscular. Watch a cow moving its head back and forth, or notice the constant motion of its hind legs, and you will see at once how much more the muscles are used here than in the back. Although this makes the meat less tender and therefore cheaper, we find in these second quality cuts less bone and fat than in the rib; and the meat has more flavor, and is juicier. The tenderness is gained by longer cooking. The chuck and round make excellent rolled steaks and pot roasts. The round is used because of its juicy quality for making beef broth, beef tea, scraped beef and stew. These second quality cuts, in New York, are from eighteen to twenty-four cents a pound.

The third quality is the toughest meat; that on the legs, that part below the neck called the brisket (marked 9 on Fig. 5) and the meat on the belly, called the navel and plate (11 and 12 on the chart). From the neck we get good stew meat, beef for broiling and mince meat. The brisket, navel and flank are often put into brine and sold as corned beef. The heavy part under the ribs is sold too for stew meat and pot roasts. The price of this meat is from sixteen to eighteen cents a pound. It is from the legs or shin as it is called, that much of the good soup meat comes; the bone adding to the flavor be-

cause of the marrow inside and the gelatin from the tissue. This shin or soup meat costs sixteen cents for the meat, not counting bone which is thrown in.

Every part of the animal is utilized. The bone which is not used in our kitchens is ground into manure or turned into numerous articles; the skin is made into leather, the ears and hoofs into glue; the hair is mixed with mortar; and the horns are cut and molded into spoons and other useful articles.

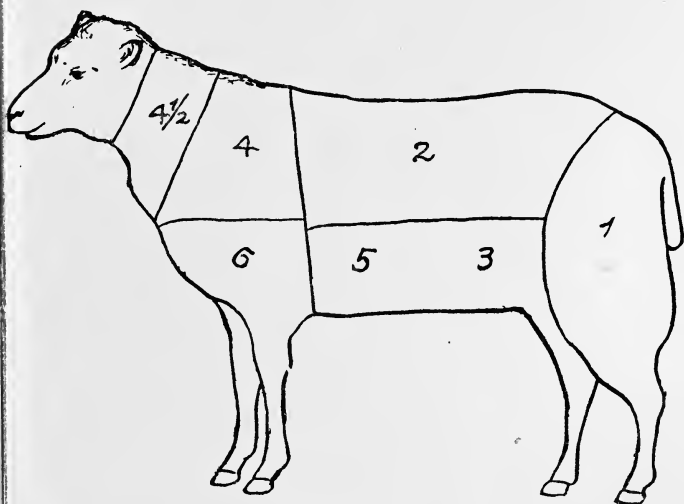


Fig. 6. Lamb

1, leg; 2, ribs and loin; 3, flank; 4, chuck; 4 1/2, neck; 5, breast; 6, shoulder.

Mutton or Lamb.

This meat is called lamb if the animal is less than a year old, after the year it is called mutton. The first eight ribs on a lamb are what we call mutton chops, next to these rib chops and nearer the tail are the loin chops. (These rib and loin parts are marked 2 in Fig. 6.) The

loin mutton chops are what in beef we call steaks; they are better to buy than the ribs because there is more

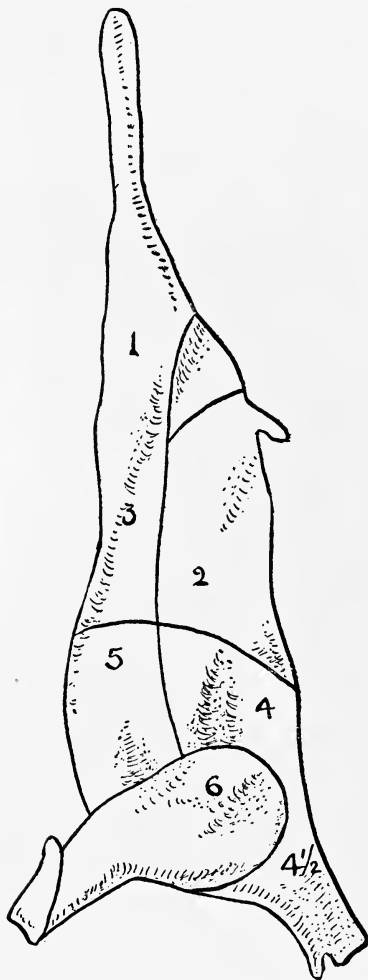


Fig. 7. Mutton

1, leg; 2, ribs and loin; 3, flank; 4, chuck; 4½, neck; 5, breast; 6, shoulder.

meat in comparison with the bone. When the thin bones of the rib chops are trimmed they are called French chops.

The leg is the most economical cut of mutton because there is so little waste. The shoulder makes a good, cheap roast for a large family. Roasts, stew and pot pie meat are cut from the shoulder, the chuck and the flank.

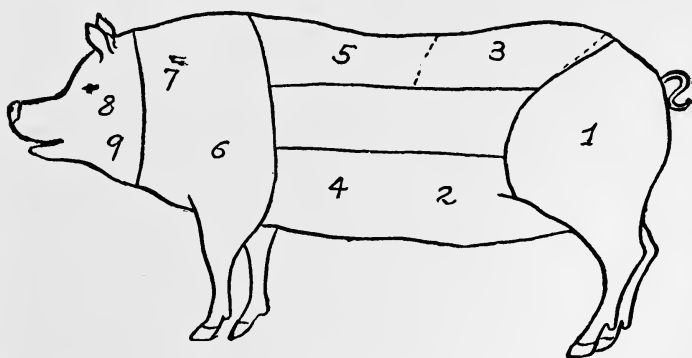


Fig. 8. Pork

1, ham; 2, flank; 3, loin; 4, brisket; 5, ribs; 6, shoulder; 7, neck; 8, head; 9, head.

Pork.

Pork is the flesh of the hog. Pork is more apt to be diseased than any other meat and the ways to know healthy pork from unhealthy should be known to every housewife. Pork should be cooked a long time and it is a good rule not to buy pork in hot weather.

The quality of the meat depends upon many things; age of the animal, kind of food eaten by the hog, the way the meat is prepared for market and the length of time it has hung after being killed and dressed. The dirty food which many pigs eat is the chief reason for the bad meat which we must avoid in buying pork.

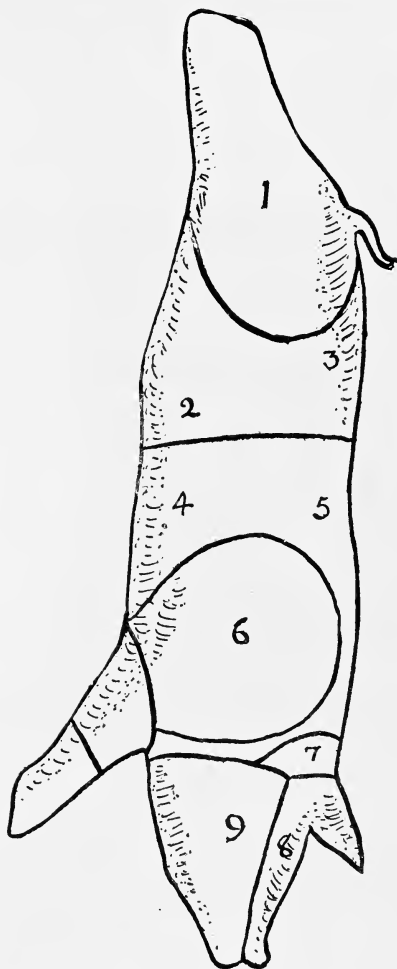


Fig. 9. Pork

1, ham; 2, flank; 3, loin; 4, brisket; 5, ribs; 6, shoulder; 7, neck; 8, head; 9, head.

A large part of the hog is too fat to eat fresh, and that part has to be salted down and sold as salt pork.

As in the case of beef and mutton the ribs and loin are the best cuts. These are marked 3 and 5 in the Figs. 8 and 9. When ready for the table we know these cuts as pork chops and roast pork.

The shoulder, marked 6 on the charts, is often used fresh for roasting and boiling.

Ham comes from the leg; and bacon is pork which has been salted and smoked as well. The brisket, in the belly of the hog, is the meat used most often for this salting process.

Salt pork is made from the flank, the head, the brisket. Any of the fat part of the hog can be salted down and sold as salt pork.

Sausages are made from pork; sometimes in combination with beef or veal. It is very easy to put any left-over scraps into sausages; the only way one can be sure that one is getting good meat is to have confidence in the sausage maker.

How to Know Good Meat from Bad.

Only by experience can the odor of bad meat be detected. No teacher can convey by words the difference between a fresh and stale odor.

Good beef is firm, fine-grained, bright red in color, moist, juicy. The fat is light straw color, the suet white, firm, dry and crumbly.

Bad beef is coarse meat, flabby, dark in color. The fat is dark yellow. The suet oily and fibrous.

Diseased pork has a dull appearance, with yellowish lumps through the fat and lean.

Fresh pork has fat which is firm, clear, and white, and the lean meat is pink.

The price of the different cuts is learned from daily experience, trying different markets until you feel a confi-

dence in your butcher. *Never* go to any market that is not clean. Leave any butcher that allows customer or employee to spit on the floor.

When porterhouse steak sells for twenty-eight cents a pound, round steak should sell for about twenty cents, and the chuck steak in the cuts just back of the neck for sixteen cents. In buying the chuck ribs for ten cents you buy more than one-half bone. In the round, one-twelfth is waste, and in the expensive porterhouse cuts one-eighth. Of course, every girl knows that bone and fat are not really waste, but they are worth only seven cents a pound not twenty-five cents. It is well, therefore, to know just the proportion of twenty-five cent meat and of seven cent bone and fat that you are paying full price for. Never forget that when you buy expensive meat you get less nourishment for your money than in other food. Such foods as eggs, milk, peas, beans, fish, cheese, give you the nourishment at less cost. Remember that a cheap cut of meat cooked slowly has more flavor than an expensive cut cooked quickly.

The best way to reduce the meat bill is to cut down the amount of meat. It is never necessary to have meat oftener than once a day. Other foods can be substituted. Meat also may be used in combination with vegetables and dough as in meat and vegetable pie; or in combination with cereal, as in baked rice and meat; thus the flavor of the meat is extended through a larger amount of food than merely the meat itself.

Another way to get a better value for our meat money is to buy intelligently, getting cuts that have flavor and little waste and not to pay so much for the tenderness of the meat.

Depend on long cooking, and as has been said, use every scrap of fat and bone that is paid for. Meat is one of

the most expensive items in the family food bill. It will pay to give much study as to how to reduce this steady drain on the income and still satisfy the family taste and give the necessary nourishment.

Fish.

When you think of buying fish, Friday, very likely, comes to your mind, but you can buy better fish and cheaper fish on other days than Friday, when the demand is less. Learn to appreciate the value of fish. It does not contain all the nutritive value of meat, but it is a good substitute. Buy fish from a fish dealer you can trust. If he cuts off the head, fins, etc., make him give them to you if you have paid for their weight. These fish trimmings are good for chowder.

Left-over fish can be made into a dozen good dishes, so it is more economical to buy a good-sized whole fish, and to make it last for two days, rather than to buy a small fish that is just enough; there will be more meat to the amount of waste in the larger fish. If the fish is cleaned at the fish dealer's, watch to see that it is cleaned thoroughly. Above all, learn to tell fresh fish from stale. In a fresh fish the eyes are bright, the gills red, the flesh firm and without odor, the fins firm and erect.

In a stale fish the flesh is not firm, it has an odor, and after being cooked is watery rather than creamy, and is of a bluish appearance rather than white. To test a fish, put it in water; like an egg, it will sink if it is fresh, and float if it is not.

It is very dangerous to eat fish that is not perfectly fresh. Buy fish in their different seasons, if you would have them fresh. Fish out of season is kept in cold storage.

Fish Seasons.

January to June	Shad
September to March	Oysters
June to September	Smelts
May to September	Mackerel
May to October	Bluefish
All the year	Cod, Haddock and Halibut

A reliable fish dealer will tell you what fish is fresh and in season. Ask before buying. Don't buy frozen salmon and pay a high price, when you can buy fresh cod for less than half the price. Haddock is a good, cheap fish for frying; it is firmer than cod. In buying a fish for boiling have the fish as firm as possible.

Buying Vegetables and Fruit.

Vegetables, like fish, should be bought when in season, for what we want is freshness. You can read book after book on the subject of vegetables, and the writers will tell you to "cook the vegetables the day they are picked." In our large cities it is hard always to buy these newly picked vegetables; but try for freshness.

Potatoes, onions, cabbage, beets, carrots, spinach, turnips, we have all the year. Corn — June to November; cucumbers, peas, squash, string beans through the summer months; asparagus, March to June.

As you go to the vegetable market day after day, you will become as familiar with the different vegetable seasons as a country girl is with the times of the year in which the daisies, the violets and the wild roses come.

Another thing that is an important part of buying vegetables is to learn how much to buy. For example, peas in the pod, squash that boils down seemingly to nothing, are deceiving. The following list will be a guide, but experience is the best teacher:

Asparagus, 1 bunch will serve four people.

Cabbage, a good, solid one, will serve eight people.

Cauliflower will serve six people.

Carrots, 1 small bunch will serve four people.

Onions, 1 qt. will serve four to six people.

Peas, 1 qt. will serve four people.

String beans, 1 qt. will serve four people.

Tomatoes, 1 qt., 5 to qt., will serve six people.

Greens and salads should be crisp, and should have no appearance of decay or of being bruised or wilted.

Cabbage and cauliflower should look solid and have no discoloration. Don't buy very large or very small vegetables; there is much waste in the small ones, and the large ones have lost some of their best taste.

A good pumpkin and a good winter squash will be dark in color, also heavy and hard.

These are only a few hints; the rest every girl must learn by marketing, not hurriedly or in a spirit of indifference, but going to market just as she goes to school, to learn something.

A business man would not think of buying goods until by feeling, looking and testing these goods in every way, he knew the value of what he was buying; and yet a woman will go to market and take anything the butcher or the grocer gives her.

Above all, go to market yourself. Do not order by telephone.

CHAPTER X

DIVISION OF INCOME

Division of Income.

What is income?

The dictionary says "income is the money which comes in to a person as payment for labor or services, or as gain from business, land, or investment."

Leisure and a sense of freedom in the home are dependent on income, plus the intelligence of the housekeeper. The income of an ordinary family is what is paid the father each week for his labor, or what he makes from his store or office; and added to this, is such money as the mother or children may earn by their individual labor.

Sometimes money is invested, that is stocks or bonds or mortgages are bought, and from these interest comes in once or twice, or sometimes four, times a year; this interest is income.

At times an income may be increased by renting rooms in the home to outside persons. All this money added together makes up the family income.

Why is it necessary to divide one's income before spending it? Why must one plan how to spend it beforehand? Because certain expenditures are more necessary than others. We divide the income so that we do not rob the absolutely necessary output and use the money for luxuries. What we call luxuries are things we can live and be happy without.

Statistical experts have taken hundreds of family incomes and have calculated what part or what percentage of these incomes should be spent for food, what percentage for rent, what amount for clothes, etc. Restaurants, stores and hotels are run in this way. Experience has shown that the man or woman in charge of a restaurant will probably not succeed if he spends more than 43 per cent. of his income for food; 28 per cent. for cooks and waitresses, or what is called labor; and 11½ per cent. for rent and all other necessary expenses. The percentage must stay the same whether the restaurant makes little or much money; that is, let us say that a man decides that he will pay out for expenses 82½ per cent. of what comes in and no more and have a profit of 17½ per cent. If he takes in \$100 a week, \$82.50 will go to buy food, pay the cook and the other necessary charges. If he has a larger restaurant and takes in \$1000 a week, he can have better food, more people to work for him but the percentage is still the same; he still should pay out about five-sixths of what he takes in.

Now, we should run our homes in much the same way; a good housekeeper is an executive officer, an accountant. She knows sanitation and hygiene; is a household physician and a nurse, she should have a social sense so as to make her family and guests feel at ease and happy.

As a family's income increases, the percentage for food, rent, fuel, the actual necessities of life, becomes smaller. That is, if a man gets \$20 a week, he spends (or should spend) about \$13.50 for food, rent and heat. If he gets \$25 a week, he spends about the same for these necessities, but has more money for clothes, education, recreation and health. The division of an income differs in different places. Rents in large cities are twice as high as in small towns. Fuel in the country is less than in the

city. Carfare is an important item of expense to a man in the suburbs. The division of income discussed in this chapter is that of the average city family living in an apartment or small house.

There are wealthy people who do not bother to divide their income before spending it; but even rich people should make this division. Some of them put into their budget (that is, their calculations) a certain percentage which is to be given away. Many families fail to live well, not because they have not enough money coming in, but because they do not calculate before spending it how this income can be divided to the best advantage.

It is usually the woman, the housewife, the mother in the home, who manages the expenditures; and the girls who study this book are the housewives of the future. An orderly mind in this matter of money and how to spend it, is what is lacking in nearly all homes. To have this clear sense of order in household management, several things are necessary:

First. A woman must feel within herself the ability to do every kind of housework perfectly with her own hands. This gives a consciousness of power and does away with the feeling of confusion that often comes from facing tasks of which one is not the master. This power should belong to the woman with servants, as well as to one who does her own housework. A servant is an employee of the housekeeper, who is the employer. The agreement between them is a business contract. The servant sells so many hours of her time for work. These hours should be as definitely understood as the working day of any clerk or laborer.

Second. Be a good buyer. Forty-three per cent. of the average small income goes out for food. Do not add to expense by demanding unnecessary deliveries.

Third. Know food values, so that you will not spend 25 per cent. for water and waste, and only 18 per cent. for nourishment. Make your money buy just as much as possible of the food that makes bone and tissue and good red blood.

Fourth. She must make the most of the food purchased, bringing out all the flavor and assuring its digestibility. She will never waste any left-over food.

Fifth. She must be an expert at sewing and mending and making over clothes. A woman living on a small income who cannot sew, will never clothe her family well on the allowed one-tenth of her income. She must darn the stockings when the holes are small. Sew on a button when it first comes off; buttons cost very little and take little time to sew on. She must be able to make children's garments.

Sixth. A simply furnished, orderly house is the expression of a good housekeeper. When you visit a house where there is a place for everything and everything is in its place, you know at once that the housewife has a good business mind.

There is one article of furniture that is almost a necessity if accounts are to be kept; that is, a desk or table for writing, and a drawer in which to keep papers. A kitchen table with a drawer, and with square legs, makes a good desk. Make an alcohol stain by mixing wood alcohol with Aniline stain until you have the desired color. If Aniline stain is too expensive take $\frac{2}{3}$ turpentine, $\frac{1}{3}$ linseed oil and a little drier; to this add the required color in any dry stain. Stain the entire table with this. After it is thoroughly dry, rub with a soft cloth and wax with any floor wax or common beeswax. Make a rack for the back of the desk to hold bills, papers, etc., as seen in the picture on page 49. Have a tray to hold

pens and pencils, a glass inkwell that can be washed and a large blotter. This desk, completely equipped, will make it easier to keep the family accounts; no one is likely to keep household accounts well if the materials to work with are not on hand. Remember, no work is accomplished without thought and labor. On the desk have a small card catalogue with all receipts; not for cooking only but for the different methods of improving housework.

From now on we will imagine five people when we speak of a family: father, mother, and three children. Each family has its own standard of living. For instance, a family paying \$15 a month for rent has different food, different clothes, lives in a different way from the family spending \$100 a month for rent. Not until the income is more than \$2000 a year does the style of living change much; then the standard of living is different in every department. In the household of small income, women work and the object is to buy the necessities of life; in the one of large income, it is possible to buy sufficient food to nourish thoroughly every member of the family; to provide a shelter that gives each person enough room to sleep and eat and live comfortably, to buy clothes enough to keep the body warm; to secure an education for the children beyond the compulsory age of fourteen; and to have enough money over for recreation. For an income to be adequate there must be some money for recreation (perfect health is seldom possible without this contrast from work) and a little money to put away against possible sickness. If there is not this possibility of saving, the wage-earners worry, and worry is like poison; it saps one's strength.

What is the lowest living wage for a family of five? What is the least on which a family can be healthy and

keep out of debt? Different writers give different figures; \$1040 a year, or \$20 a week, is the lowest living income affording any comfort. So, in learning how to divide the money that a family spends, we will take this sum.

In studying division of income select either pads or envelopes as your method. If the pad method is selected, use sheets like the sample given below. Have extra sheets to allow for mistakes. Mistakes will be made at first, and a girl will have to go over the work again and again.

Weekly Expense Account.

For the week ending.....

Day of the Month	20 per cent Rent	43 per cent Food	5 per cent Fuel and Light	10 per cent Clothing	4 per cent Insurance	2 per cent Recreation	16 per cent Sundries	100 per cent Total	Savings forward \$.....
Mon.	\$	\$	\$	\$	\$	\$	\$	\$	Deficit forward \$.....
Tues.									
Wed.									
Thurs.									
Fri.									
Sat.									
Sun.									
Total Receipts \$.....									
Expenses \$.....									.43
Savings \$.....									20
									8.60

To reckon percentage multiply the total sum to expend by the per cent, thus, 43% (per cent) of \$20. a week, is .43 times \$20. = \$8.60

With an income of not more than \$1100 a year, 43 per cent., or nearly one-half, should be spent for food; only

20 per cent. for rent (so if the income is \$20 a week the rent of the apartment should not be more than \$17.33 a month). Only 5 per cent. of the income should be spent for coal and gas, 10 per cent. for clothes, and so on. If you use the pad system — work out for yourself how the income should be divided. There should be fifty-two sheets in each pad, one for every week in the year. Each sheet is divided into columns giving the percentage of the income allowed for each household expense, and each column is divided into spaces for the days of the week. In the lower right-hand corner is shown how to reckon percentage. At the head of each column is a dollar mark. Reckon for yourself how much, with a certain income, should be spent for each item, and then see how nearly you have approached this at the end of the week.

Besides the pad an account book should be always at hand. No matter where you go, take your account book with you (a penny blank book will do), and make an entry in it every time you spend money for carfare, marketing, clothes, rent, etc. Put down the amount you spend and what you spend it for. At the end of each day enter the total of each expenditure on your pad. For example here is an account for a day — say Monday:

Bread	\$.05
Potatoes and fruit .....	.20
Gas (quarter meter) .....	.25
Shoes mended .....	.50
New pail .....	.25
Carrots .....	.05
Soup meat .....	.10
Sugar .....	.05
Milk .....	.07

Moving pictures	\$.15
Carfare .....	.10
Coal .....	.20
Month's rent	17.33

That evening write in the rent column of your pad after Monday \$4.00; for although you pay by the month, a monthly rent of \$17.33 comes to \$4.00 a week. Your food, on Monday, added together comes to \$.52; gas and fuel \$.45; clothing (that would include the mending of shoes) \$.50. Recreation (that takes in carfare and recreation) is \$.25. The new pair for \$.25 will go in the sundries column.

After the entries have been made for the whole week, add all the expenditures together and see how far the amount expended exceeds what you allowed yourself. If it comes to more than it should, put the amount under deficit, and try to cut down expenses until the amount has been made up.

Every girl who has the care of the house expenditures should realize the need of some system.

If the envelope method of keeping accounts is selected, get stout manila envelopes for the purpose. There should be seven envelopes. At the top of one write "Rent," on another, "Food," then "Light and Fuel," "Clothing," "Insurance," "Recreation," "Extras." If other divisions are more convenient, they can be used; these are merely suggestions. In each envelope put the amount of the week's wages that can be spent for that especial account, calculating on the same percentage basis that was used with the pads. When any member of the family takes money out of one of the envelopes, he or she must put in its place a slip of paper on which is written the amount taken out, the name of the person drawing it, and the item

for which it is spent. At the end of the week there should be in each envelope either the money or the slip accounting for the money. On the outside of the envelope, the expenses for each day may be entered to be added together at the end of the week. If the money in the envelope marked "Clothes" is insufficient, you may have to borrow from the envelope marked "Food," but in that case enter the loan on a slip and pay back the "Food" envelope next week.

When a woman knows how much money she can spend she will not spend more, if her house is run like a business.

CHAPTER XI

FOODS AND THEIR VALUES

Sensible Diet.¹

“ Why do we need advice in regard to what we eat? Why should we not eat what we want when we want it, so long as we feel well? The answer is that we are not sure that because we feel well to-day we shall continue to be well ten years hence when the result of our diet has had its effect on our heart, brain, liver or kidneys.

“ We know that the average person is not as strong and well as he ought to be, so that we have the right to consider whether there is not possible some improvement in our food, as there is certainly possible an improvement in many of our other daily habits. Wise men have been for some years testing the results of food, and they have found out how an improvement in health is possible.

“ There are two ways of treating this subject :

“ First. To prepare a daily list of foods, and to ask you to have faith enough to believe that they are what you ought to eat.

“ Second. To outline a few important principles in regard to food, and then to let you make up your own bill of fare.

“ In this chapter we shall try to make some of the principles clear.

“ The practical questions that confront the housewife

¹ A part of this chapter is rewritten from a paper by Eugene Lyman Fisk, M.D., and read by him at a meeting of the Medical Society of the County of New York.

are: What is the cheapest, best-tasting, most digestible food that will keep a family in the highest state of health? What are the most important food requirements? What are the least important?

“The most important foods for the human body are energy foods. These energy foods are called carbonaceous foods. Just as coal, the simplest form of carbon, is fuel for a steam engine, so are the carbonaceous foods fuel for the human engine. Carbonaceous, or energy-giving foods are sugar, starches, and fats. The sugar and starches are called carbohydrates; the fats are called hydrocarbons; but the single term carbonaceous covers all. It is well for us to get familiar with these terms. For the average human body about six-tenths of the heat or fuel needed should come from the carbohydrates, namely, sugar, potatoes, bread, cereals, and vegetables. Three-tenths should come from hydrocarbons, namely, fats, butter, oils, milk or cream, and the fat of meat, the latter the least desirable. A person who exercises a good deal, or works very hard, needs more fuel food than one who does very little with his body.

“The least important foods are those which we take for the purpose of building up or repairing the body. These are the nitrogenous, or protein foods. We have seen that from energy-giving foods we should get six-tenths plus three-tenths of our needs. This leaves one-tenth, and that one-tenth should come from what are called proteins. Examples of these are the lean of meat, fish, all flesh foods, white of eggs, and cheese. Certain vegetables are also rich in protein, especially peas, beans, and lentils. There is protein also in nuts, cereals and bread. These latter foods contain both elements, heat and energy.

“Now, after a skyscraper has been built, we do not keep piling brick and mortar and steel girders into it. A

certain amount of wear occurs, and a limited amount of repair material is needed right along. So it is with the human body. The body having been built, these protein materials are needed in limited quantities for maintenance; not more than 5 per cent. is needed for growth. These proteins can also be used for energy, but they are an expensive source of energy; just as oak or mahogany wood is an expensive fuel to burn in the furnace. If the body takes in too much protein fuel, the intestines become poisoned. Careful experiments by many wise men in this country and in Europe have shown that we can have sound health and strength on about half the quantity of protein or meat foods that are generally eaten. Increased muscular work does not call for more meat, but for more energy food. 'More work—more meat' is not true. It is true that a man doing hard outdoor exercise can burn up greater quantities of meat or protein food than a man working quietly in the house, but he may still poison his body, and the meat food is an expensive fuel from a financial as well as a health standpoint. The homemaker, for these reasons, should keep herself and her family from too much of this class of foods. There is less risk of injury from peas, beans, lentils, eggs, cheese, and nuts than from meat. Such foods are likewise cheaper, so a goodly portion of the protein should be got from food other than meat. Meat makes an acid gas in the intestines, and does not stimulate them, and they are apt to become sluggish and not throw off the poison or waste. Meat, fish, or eggs once a day will keep one's body fairly safe. Many people keep in good health without any meat, but until we know more about it, it is well to keep meat in our dietary so long as it is used in small quantities.

“Other important elements in our foods are the fruit

and vegetable acids and alkaline salts, and other inorganic material such as phosphorus and iron. These elements are not exactly foods, as they do not supply energy and are little needed for repairs, although they enter into the bone, teeth, and other tissues, and are needed for growth and to maintain a certain chemical balance in the blood and elsewhere. Lack of these elements, especially lime, may cause serious disease. For this reason, we must eat in abundance fruit and green vegetables. These keep the kidneys active and the blood healthy.

“As to arranging a dietary with the above to guide us, it is necessary to have at least a rough idea of the energy requirements of the body. This is measured in what are called calories. Calory means a definite, easily understandable unit of measure. Just as a scuttle of coal will produce a certain amount of steam pressure, so will a definite quantity of food produce a certain amount of heat or energy when burned in the body,—in other words, when digested and absorbed. The body is losing heat constantly, and this heat must be replaced or the body will grow cold and the internal activities will stop.

“A woman weighing 155 pounds requires 2900 calories a day. The number of available calories in the various foods have been determined by scientific experiments.

“Nuts are high in protein and calorific value and can be substituted for meat and other protein foods, but they should not be added to a meal already rich in protein, such as an ordinary Christmas or Thanksgiving dinner. Peanuts, or peanut butter, and apples, form a well-balanced ration that would supply the body's needs at small expense. Macaroni and cheese also forms a well-balanced ration of protein, carbohydrate, and fat. Needless

to say, foods must be made digestible by cooking, or their calorific value is lost.

“It is not so hard to think in calories as one might imagine. Take a dinner and analyze it,—Roast beef, 100 calories, Bread 150, Butter 150, Rice Croquettes 128, Baked Potatoes 100, Bread Pudding 128, Sugar (two lumps) in coffee 100. Total 956, about one-third of the day's requirements in calories. This meal has too much protein, but the balance would be restored by lack of protein and more green vegetables and fruit at the other meals. An ordinary portion of these hearty foods averages about 100 calories.

“When one is working hard, the portions of bread, potatoes, butter, and rice can be increased and will easily raise the meal to the energy requirement, without the addition of a protein ration. If a man has worked hard and is hungry, help him to more potatoes and vegetables, or simple pudding, but do not increase the meat portions. Corn bread and syrup will carry him far on a cold day, and if he works hard he will burn it up completely; there will be no ashes, as in the case of meat or other protein.

“The beacon lights I would hang up are as follows:

“To keep you warm and give you energy for work, eat energy or fuel foods, potatoes, bread, cereals, corn bread, syrup, and other sugars.

“To keep your muscles and organs in repair eat a limited and fixed amount of repair foods, meats, eggs, cheese, nuts, flesh foods, peas, beans and lentils.

“Do not increase the repair foods with increase in work or exposure to cold; increase the fuel foods for further energy.

“Eat fruit every day. Canned fruits are good. Cooked fruit is often better than fresh fruit.

“Eat green vegetables whenever you can get them. Thoroughly wash all raw foods.

“Have plenty of bulky vegetables of low food value, like carrots, parsnips, spinach, turnip, squash and cabbage to stimulate the bowels and give flavor to the diet and prevent over-nourishment.

“Eat slowly and taste your food well, and it will slide down at the proper time.

“Do not let any one bring a grouch or a cross feeling to the dinner table; it will upset all the food values.”

The Day's Food for a man doing fairly hard muscular work:

1 $\frac{1}{4}$ pounds of bread or 1 pound of oatmeal, corn meal, rice, etc.

$\frac{1}{4}$ cup of butter, oil, meat drippings.

$\frac{1}{4}$ cup of sugar, or $\frac{1}{3}$ cup of honey or syrup.

1 $\frac{1}{4}$ pounds of fresh fruits and green vegetables.

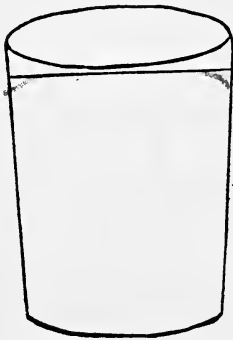
12 ounces of meat or meat substitutes; that is, poultry, fish, eggs, cheese, dried peas, beans, lentils and nuts.—Department of Agriculture.

Protein.

Protein is that in food that repairs the waste. Just as our clothes wear out, and our houses and our furniture show wear, so our bodies slowly wear away and need new material to renew their loss. Protein food is needed in the case of children for growth.

Carbohydrates.

This means, the starch and the sugars in food. The value of these carbohydrate foods is to give heat and energy to our body. If we kept our body in repair by eating protein foods and gave it no carbohydrates or energy foods we would be as useless as a good stove with



Carbo-
hydrates
100.0

Granulated Sugar.

no fire in it. Four-fifths of our food should be energy food, just as we spend little time and money repairing the stove but much time in putting in coal.

Fats.

These give body fuel or heat, and heat that can be stored away. So in cold countries or in cold weather, the body wants more fats than when the weather is warm.

Water.

One-half of the weight of what we eat is water. Water is as necessary for the inside of our bodies as bathing is for the outside. Water helps us digest our food; it helps carry off the waste matter or that part of the food that our bodies cannot use. Besides the water that is a part of food, every one should drink at least six glasses of water a day.

Minerals.

The minerals in food purify the blood, and the body, especially bones and teeth, need these minerals.

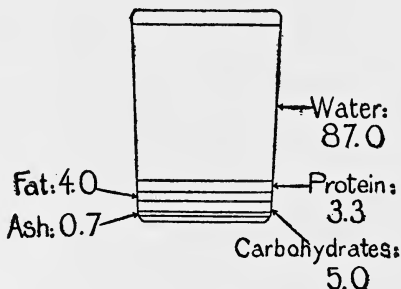
Ash.

This is the part of food that is left to pass off after the body has taken the repair property, the energy and heat,

the minerals, and all that the body needs from the food. This ash must not remain in the body to clog the circulation as clinkers and ashes clog the stove.

A *calory* is a unit of heat energy. You don't eat

WHOLE MILK



calories any more than you eat a pound. One eats food that supplies heat or calories to the body.

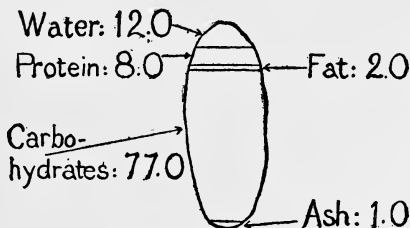
The housekeeper must study the various foods and see how much protein, how much carbohydrates, how much water are in the foods that she has on her table or sees in the market every day. What should she buy and cook for a meal to get about $\frac{4}{5}$ energy food and $\frac{1}{5}$ repair food?

Milk.

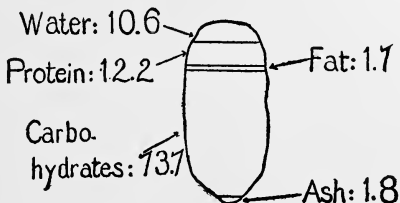
The reason small children can live on milk and little else is because in milk we find every kind of food: protein, starch, fat, sugar, and water. Milk is called a complete food because it contains, more than any other food in the world, everything the baby needs.

Cereals.

Cereals are the fruit or seeds of grasses. In all grasses there is laid up in the seed a storehouse of nourishment

RICE

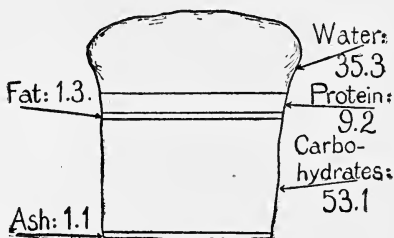
for the young plant while it is growing. It is this nourishing seed we eat when we eat oatmeal or other cereals. There is in cereals about 10 per cent. or 12 per cent. of protein, and the rest is starch, fat and water. When milk and sugar are eaten with cereal, any girl can see that she gets a great deal of food-value for the money

WHEAT

paid. About four cups of cereal will feed six persons for one meal and the cost is about twenty cents, including the milk and sugar eaten with it.

Bread.

Bread is made from flour. Flour can be made of wheat, rye, oats, or barley, but wheat is one of the most nutritious of the grains, and wheat flour is the most popular in this country from which to make bread. Bread is called the "staff of life" because it contains all the food elements the body needs, except almost no fat. Bread contains

WHITE BREAD

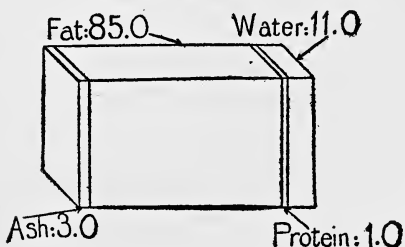
wheat, milk, water, and sugar; also yeast, which makes it light and digestible. For a given sum one can obtain more food-value from bread than from any other food; for it is $\frac{3}{4}$ solid nourishment and only $\frac{1}{4}$ water. There are no animal foods and few cooked vegetable foods of which this can be said. But no one would want to live on bread alone, as a child lives on milk; one would have to eat four pounds of bread or five ordinary five-cent loaves to acquire enough energy to get through the day.

Butter.

Butter is eighty-five per cent. pure fat. . We eat fats to give heat and energy to the body.

Butter is an expensive fat. Oil and lard and crisco give us the heat at a smaller price.

BUTTER



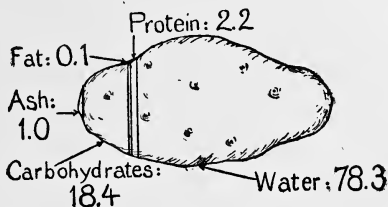
Eggs.

Eggs contain a great deal of protein and fat; one egg yields as much energy as half a glass of milk. But eggs are not a food you can serve all alone, any more than you serve meat with nothing else. Eight eggs are equal to one pound of meat, but you would n't feel like working or playing even if you ate one pound of meat or eight eggs; it would be too much protein for the system to take care of. If you serve eggs on toast you will get the needed carbohydrates.

Potatoes.

A potato is a root that grows under the ground. On

POTATO



its surface are what we call "eyes." If a potato is buried these eyes send out shoots. Now, an ordinary root does not have these eyes, or buds, so the potato is really a

thick underground stem. If you leave the potato in a dark, warm place, it will send out shoots exactly as it does underground. A potato is not good to eat after it has begun to sprout, because much of the nourishment has gone from the potato to feed the sprouts.

It is now about three hundred years since the potato was introduced into this country. It came into Europe in about 1580 — that is, more than three hundred and thirty years ago; but the people in Europe thought for a great many years that the potato was poisonous, and it was not until a time when the crops were so bad that the people were almost starving and were obliged to eat the potato, that they realized their mistake. Since that time it has become, more and more, a popular article of food.

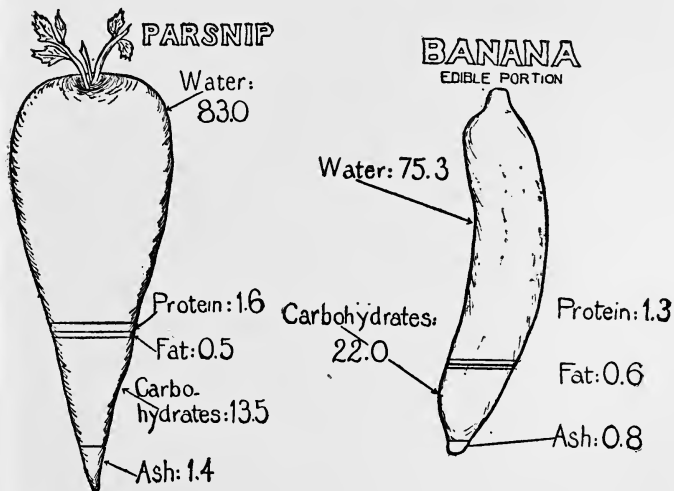
If you cut a potato across with a sharp knife, and look at the cut surface, you will find three distinct layers :

First. A thin, outer skin. This outer skin contains a poisonous substance called solanine, but the poison in the skin is destroyed by cooking. It is because of this poison in the skin of the potato that the water in which it is boiled must not be used for anything else but must be thrown away. This is not true of the water that other vegetables are cooked in, for vegetable water as a rule is very useful as a foundation for soups. You will find that a good housekeeper always keeps vegetable water for soup-stock.

Second. Next to the skin is a broad layer which discolors when it is exposed to the light. If we allow this discoloration to take place it gives the potato a very unpleasant taste. If you peel a potato and cannot at once boil it, see that it is kept in cold water until you are ready to put it into boiling water; but do not let a potato soak in cold water unless it is absolutely necessary, be-

cause while it is soaking it will be losing some of the good mineral salts which are in the middle layer and which are a part of the food value which we wish to get out of the potato. These minerals help to build up the tissues of the body. It has been found that we would die within a month if we did not get from our food these necessary minerals.

Third. The flesh of the potato is the inner part.



While the middle layer between the skin and the flesh gives us the mineral matter that we need, the center gives the starch which is the chief food-value in the potato. Starch is what we found so abundant in cereals, but in cereals we also found a great deal of protein; in the potato we get the heat and energy from the starch, but very little of the protein tissue-building material. Therefore, potato alone is not a good diet. We must eat with the potato meat or eggs, or we must cook potatoes with a milk

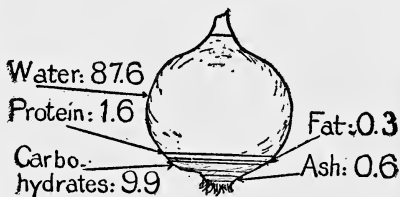
sauce. Then we get the needed protein from the meat, eggs, or milk and the starch from the potato.

More than 76 per cent. of every potato is water. This water we have found is very necessary to our bodies, but it is not what we call food. You can, therefore, see that only 24 per cent. of a potato is really food, and all the rest is water.

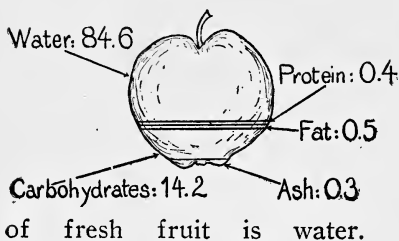
Fresh Vegetables.

Most vegetables contain only a small amount of nutritive value. The exceptions are peas, beans, and lentils. But although you may not get energy out of the other vegetables, you get what the body needs in minerals. As you see in the cuts there is a great deal of water in vegetables; also there are mineral salts and vegetable acids. Our intestines need a certain amount of bulk in order that the proper action shall take place. Vegetables do much to give this required bulk.

ONION



APPLE EDIBLE PORTION



Fruit.

There is not much nourishment in fruit. We eat it more for the sake of the blood and because we like the sweetness. From 75 to 90 per cent.

Foods and Their Values.

GROUP 1.—*Foods depended on for mineral matters, vegetable acids, and body-regulating substances.*

Fruits :

Apples, pears, etc.
Bananas.
Berries.
Melons.
Oranges, lemons, etc.
Etc.

Vegetables :

Salads — lettuce, celery, etc.
Potherbs or “greens.”
Potatoes and root vegetables.
Green peas, beans, etc.
Tomatoes, squash, etc.
Etc.

GROUP 2.—*Foods depended on for protein.*

Milk, skim milk, cheese, etc.
Eggs.
Meat.
Poultry.

Fish.
Dried peas, beans, cowpeas, etc.
Nuts.

GROUP 3.—*Foods depended on for starch.*

Cereal grains, meals, flours, etc.
Cereal breakfast foods.
Bread.
Crackers.
Macaroni and other pastes.

Cakes, cookies, starchy puddings, etc.
Potatoes and other starchy vegetables.

GROUP 4.—*Foods depended on for sugar.*

Sugar.
Molasses.
Sirups.
Honey.

Candies.
Fruits preserved in sugar, jellies, and dried fruits.
Sweet cakes and desserts.

GROUP 5.—*Foods depended on for fat.*

Butter and cream.
Lard, suet, and other cooking fats.

Salt pork and bacon.
Table and salad oils.

CHAPTER XII

COOKING

There are certain rules in connection with food and cooking that must be known by heart before one is ready to begin to do the actual work of cooking.

Good Things to Remember.

Personal appearance and cleanliness. Be clean in body and in dress.

Wear a dress of wash material.

Always wear an apron.

Cover the hair with a cap, or if not see that no hairs or curls are loose and untidy.

Have a towel pinned at the belt to wipe your hands on.

Never "run out and buy" just before a meal. This is an expensive way and it is a sign of disorderly house-keeping.

Market only once a day for the three meals. Do this marketing in the morning.

Never leave food uncovered when not in use. Keep milk in a tightly covered bottle; the bacteria in the air sours milk.

To keep milk overnight without ice, scald it, then cool and cover tightly.

Cover butter when not in use, as butter absorbs odors. If you put a melon in the ice-box with uncovered butter the butter will taste of the melon.

Cooked food, especially meat and fish, will keep better than fresh food.

Bread and cake do not need to be kept in a cold place, but they must be kept in air-tight tins or earthen jars.

Olive oil is injured by freezing; do not keep it in the ice-box excepting in very hot weather.

Never put hot food in the ice-box.

Do not waste the space of an ice-box or window-box by using it for food that does not need the cold to keep it fresh. Keep the ice-box for milk, eggs, butter, vegetables, fruit, meat and leftover, cooked food.

In cooking a meal, everything must be hot and ready to serve at the same time.

Never begin to cook until the cooking table has on it all you need to work with.

Rules for a Cooking Table.

Pull table away from the wall.

Cover with white paper or enamel cloth.

Place on the table all pots and pans, knives, forks, spoons, and working dishes that will be required.

Get out all needed cooking materials.

See that the kettle on the stove is filled with fresh water for boiling.

See that the fire is raked down, ashes out, coals hot, and the damper and check closed and draft open.

Have cooking receipts in plain sight.

Now you are ready to combine materials and to apply heat.

Useful Weights and Measures.

32 tbs. in a pound of butter

2 cups in a pound of butter

5-cent loaf of bread cuts into 18 pieces

- 4 cups of flour to 1 pound
- 2 cups of sugar to 1 pound
- $2\frac{1}{3}$ cups dry beans to 1 pound
- $2\frac{2}{3}$ cups brown sugar to 1 pound
- $2\frac{1}{3}$ cups oatmeal to 1 pound
- $2\frac{2}{3}$ cups corn meal to 1 pound
- $1\frac{7}{8}$ cups rice to 1 pound
- $4\frac{1}{3}$ cups coffee to 1 pound
- 2 cups chopped meat to 1 pound
- 3 tsp. in 1 tbsp.
- 16 tbsp. in 1 cup
- 2 cups farina in one package
- 2 cups farina in one pound
- 1 pint of rice in 1 pound

Table of Proportions.

- 1 cup liquid to 3 cups flour for bread
- 1 cup liquid to 2 cups flour for muffins
- 1 cup liquid to 1 cup flour for batters
- 2 tsp. soda to 1 pint sour milk
- 1 tsp. soda to 1 cup molasses
- $\frac{1}{4}$ tsp. salt to 4 cups custard
- 2 tsp. salt to 4 cups water
- $\frac{1}{4}$ tsp. salt to 1 cup white sauce
- $\frac{1}{8}$ tsp. pepper to 1 cup white sauce
- $\frac{1}{2}$ pint or 1 cup is 8 ounces of milk
- 32 ounces in 1 qt. of milk
- 2 tbs. in one ounce.

Cooking in General.

There are four reasons for cooking food:

1. To bring out new flavors.
2. To please our taste.
3. To make food more digestible.

4. To destroy harmful microbes.

Cooking consists in applying heat to raw food. There are many methods of cooking; the most common ways are:

Boiling. Cooking food in boiling water, the food being covered by the water.

Stewing. Simmering or slowly boiling.

Broiling. Cooking food directly over a fire or in front of a fire.

Roasting. Cooking meats, or fish, in an oven, allowing the juices to be drawn out into the roasting pan, and then basting, or moistening, the roast with these juices.

Frying. Cooking food in hot fat.

Baking. Cooking in an oven by heated air.

Frying is a very common method of cooking, because it is the easiest and the quickest. It is the least healthful method. In frying, the food absorbs the hot fat, and hot fat is very irritating to the stomach, unless it has been subjected to long and slow cooking, as in the case of baked cakes, cookies, muffins, etc. Even with these it is better, before eating, to allow the fat in them to cool. A muffin is more digestible cold than fresh from the oven. The reason for this is that fat which has been heated and then cooled is more granular, the water having been driven off in steam; then the fat becomes brittle and is more easily broken up in the stomach.

Baking is a healthful way of cooking food. In baking, the heat of the oven expands the air or gas in the food, the water in it turns to steam; while a part of this water evaporates a part remains in the food. It is the steam in the food and the expansion of the gases that work the physical changes in the raw materials that have been mixed together.

Sample Menus.

FOR A COOKING CLASS.

All receipts for dishes suggested in the following menus are in the back of this book. These receipts take it for granted that when the terms teaspoon and tablespoon, or "tsp." and "tbsp." are used, *level* teaspoon and *level* tablespoon shall be understood.

No. 1.

Breakfast of *Cocoa, Cereal, Bread and Butter.*

Why are these valuable foods?

Cocoa is simple to make, easy to digest, tastes good and is nourishing. It takes the place of tea or coffee. Tea and coffee are stimulants, never good for boys or girls. They affect the nerves. Only a very stupid girl, who does not value health, will take into her system food that injures her body.

In a cup of cocoa we get:

Milk, Cocoa, Sugar.

Milk. You would have to eat two eggs, or half a pound of potatoes, or nearly a quarter of a pound of round steak, to get as much strength as you will get from a cup of milk.

Sugar. Helps the taste, but it also gives the body heat and energy.

Cocoa. Gives the flavor and contains a very little protein.

Receipt for Cocoa is on page 287.

Cereals.

Cereals, or grains, are simply the seeds of certain grasses that are used for food. Cereals contain woody fiber, and so must be cooked a long time. They also contain much starch and some protein.

To know how to cook cereals is very important, because there are few foods where we find as much real nourishment for the money.

TIME-TABLE FOR COOKING CEREALS

Cereal	Amt. Cups	Water Cups	Salt tsp.	Time min.
Rolled Oats	1	2½	1	40
Pettijohn's	1	2	1	40
Cream of Wheat	1	4	1½	40
Wheatena	1	4	1½	30
Rice	1	6	2	30
H. O.	1	2	1	30
Hominy (fine) . .	1	4	2	} 1 hour
Cornmeal	1	4	2	
Oatmeal (coarse)	1	3½	1½	3 hours

Things to Remember About Cooking Cereals.

1. Cereals should not be eaten unless they are thoroughly cooked.

2. Have the cereal stiff enough to be chewed. If too soft it is swallowed without being chewed and is, therefore, not easily digested. Infant cereal food is strained.

3. It is a good rule to cook cereals twice as long as directed on the package.

Suggestions for Serving Cereals.

1. Berries, apple sauce, sliced peaches, or sliced bananas can be served in the same saucer as the cereal, and this makes a very appetizing dish.

2. Figs or dates, cut in small pieces, may be stirred into cooked farina or mush before serving. If eaten with cream and sugar, this dish contains enough nourishment for an entire meal.

Cereals can be divided into three classes:

Raw cereals, such as old-fashioned oatmeal, cornmeal, etc. (These need long cooking.)

Partially cooked, such as Cream of Wheat, H. O., Quaker Oats, etc. (These need less cooking.)

Prepared cereals, such as Shredded Wheat, Force, etc. (These require no cooking.)

The only difference in the cooking of cereals is the amount of time required in the boiling and the amount of water used. The water should be boiling and salted when the cereal is added. Cook for five minutes directly over the fire, and stir lightly with a fork until all is thoroughly mixed. Then cook in a double boiler or in a small saucepan placed over a larger saucepan, the larger one containing boiling water (this to prevent the cereal from burning). While cooking, stir occasionally from the bottom with a fork.

As the water underneath boils away, more should be added; also, if the cereal absorbs the water too rapidly, add more water.

Bread and Butter.

Bread. Three-fifths of a loaf of bread is solid nourishment. Bread contains a large amount of carbohydrates, a small amount of protein, but very little fat. When we eat butter (which is about 85 per cent. pure fat) with bread, any girl can see what a well-balanced, nourishing food bread and butter is.

How to go to Work.

To prepare a breakfast of cocoa, H. O., and bread and butter.

Have receipts either clearly in your mind or in plain sight.

Put fresh cold water in kettle to boil.

Wipe off kitchen table and cover with white paper or enamel cloth.

Put the following on the kitchen table: cocoa, sugar, milk, H. O., salt, bread, utensil plate, measuring cup, knife, teaspoon, tablespoon, saucepan, double boiler, bread knife, egg-beater. Place cereal dish on back of stove to get warm. Fill cocoa jug with hot water.

As soon as water is boiling, start cereal.

While cereal is cooking, make cocoa.

When both are ready to serve, place on stove where they can simmer but not boil.

Cut bread in even, thin slices and put on bread plate.

Take butter from ice-box the last moment, cut in even squares (unless it has been made into butter balls), and serve on one plate.

Now pour hot water from cocoa jug and fill with hot cocoa.

Fill cereal dish with hot cereal.

All is now ready to serve — cocoa, cereal, bread, butter.

Sample Meal.

No. 2.

Cream Toast, with or without *Cheese*. *Baked Apple*.

Receipt for Milk Toast on page 340.

Receipt for Baked Apple on page 358.

Toast. Ordinary white bread is improved in flavor and is more digestible when it is toasted. Second-day bread, that is, bread a little stale, is better for toasting.

Milk has all the necessary ingredients required by the body. It is not however a perfect food for a grown person. A man or woman cannot live on milk alone, as a baby does. We would have to drink eight glasses of

milk to get enough nourishment, and that would be too bulky for the stomach to take care of.

Common flour is wheat reduced to a powder by grinding. Only by cooking is it valuable as a food. Flour has in it what is called gluten. Gluten is a protein, and it is the gluten in flour that makes it possible to make bread. When this gluten mixes with water and gas, it blows up the mass we call bread like a sponge.

So in milk toast we get bread toasted (thus made more digestible); milk, with its high nutritive value; flour with its fuel value; lastly butter, which gives fats to the body. Fats give more than twice as much heat as carbohydrates. When you add cheese, as in receipt on page 340, you greatly increase the nourishment in your meal, for cheese has all the concentrated food value of milk. There is as much nutritive value in one pound of cheese as in three pounds of beef.

Baked Apples. These do not contain much nourishment excepting the energy from the sugar. Cooked fruit loses in food value but gains in digestibility. For baking select smooth, sound apples. Wash them and follow receipt on page 358.

Be sure, when you cook fruit, to preserve all the juice; you will lose the best part of the fruit if you allow this to be lost.

How to Go to Work.

Collect and put the following articles on the kitchen table: bread, milk, butter, cheese, pepper, salt, apples, sugar, cinnamon, sauce-pan, measuring cup, utensil plate, teaspoon, tablespoon, knife, grater, pan for apples.

See that fire is in good condition with oven hot.

Place dish for toast on back of stove to heat.

Follow receipt for baking apples.

While these are baking, make cream sauce for toast and let it simmer on back of stove while you make the toast.

When apples are baked put on serving dish.

Butter the toast, put in hot dish and pour over it the sauce. The last moment add cheese and serve at once.

Sample Meal.

No. 3.

Fish Chowder, page 295 — *Crackers*
Dried Apricots or Fresh Berries, page 360.

These receipts will show you that on the kitchen table you must have fish, potatoes, onions, milk, salt pork, salt, pepper; also apricots, sugar for cooking fruit, and necessary cooking utensils.

Fish chowder is a very hearty dish. One and a half pounds of codfish is equal in nutritive value to one pound of lean beef. The milk, as you know, has high nutritive value. The potatoes will contribute starch and bulk, and the mineral in the potato will help digestion and purify the blood. The onion is used as seasoning on account of the strong oil quality. It adds almost no nourishment to the chowder. The salt pork is made from the fat part of the pig. Turn to page 120 and you will see how the fat from the back and belly of the pig is salted down. The fat adds to the taste of the chowder and gives heat to the body. After eating a hearty chowder you will want something fresh and light. Fresh berries would be the most agreeable, or as a good substitute apricots cooked according to the receipt on page 360 and served cold.

How to Go to Work.

First put apricots (which have soaked over night) on to boil.

Place soup dish on back of stove to heat.

Now make chowder according to receipt.

As soon as apricots are soft, place one side to cool.

After chowder is cooked and eaten, apricots will be cool.

Sample Meal.

No. 4.

Cornmeal served as Polenta, with *Lettuce* and *Celery Salad*.

Cornmeal is Indian corn ground fine, and has every advantage as a food. It is cheap, because it is quick and easy to raise; it has great nutritive value, only 10.8 per cent. is water while over 89 per cent. gives energy and fat and repair matter to the body. Cornmeal may be served in many ways: as a mush, as polenta (which is an Italian dish), as a pudding or boiled and fried.

It is well to serve such vegetables as lettuce and celery with the cornmeal in order to get the water and the mineral matter that is lacking in the heavier dish. We crave a light, cool dish like a salad after as hearty a dish as cornmeal. The oil in the salad dressing gives additional heat value and the cheese served with the cornmeal gives all the nutritive value of milk with no loss in water.

Receipt for polenta on page 366.

Receipt for salads on page 328.

How to Go to Work.

Place on the kitchen table all material and all utensils necessary for cooking corn meal.

Fill kettle with fresh water.

As soon as the water boils start corn meal cooking according to receipt.

While corn meal is boiling, take from the ice-box the lettuce and celery. Wash and put back in cool place.

Make French salad dressing, and leave this also in the ice-box or cold window box.

Do not put greens and salad dressing together until the last moment after polenta, or corn meal dish, is ready to serve.

Sample Meal.

No. 5.

Pea Soup *Crackers*

Lettuce and Tomatoes with Mayonnaise dressing.

Receipt for pea soup on page 296.

Receipt for Mayonnaise dressing on page 328.

A pound of dried peas from which pea soup is made costs eight cents, and there is as much protein in a pound of peas as in one pound of the edible part of most meats. Dried peas give the body a large amount of repair material, or protein. The salt pork contributes the needed fat, and the crackers eaten with the soup will supply the starch food. In the salad the lettuce gives minerals while the tomato adds an acid flavor that is pleasing to the taste. In the salad dressing one gets the nutritive value of the egg and the heat value of the oil.

How to Go to Work.

Think far enough ahead to soak the peas over night in cold water.

The first thing in the morning drain and cook peas as directed in receipt.

When soup is nearly ready, place on the kitchen table oil, vinegar, pepper, mustard, salt, lettuce, tomato, bowl and spoon for making salad. Then make dressing according to the receipt.

Wash lettuce. Wash, peel and slice tomatoes. Arrange in salad dish, with lettuce leaves around the edge

and tomatoes in the center.

Put soup dish on back of stove to get warm.

When soup is finished strain it into hot dish, and eat with crackers.

After soup is eaten put dressing on tomatoes and lettuce and serve on salad plates, or small tea plates.

CHAPTER XIII

COOKING — CONTINUED

BAKING

A Suggestion for Plan of Class Work.

Taking it for granted that a class is to have a course of twenty lessons. In every other lesson have some baking. Divide this work between:

Baked Meats.

Baked Puddings.

Baked Cheese and Vegetable dishes.

Muffins, Corn Bread and Baking Powder Biscuit.

Cookies and Cake.

If possible, more lessons should be given on this subject.

In baking, there are physical changes which come from a blending of all the materials. No substance is lost, but some of the substances are changed. For example, in a cake, the sugar is still sugar, the starch is still starch, and the fat is still all there; but the materials have been blended together, and as a result of this blending new flavors develop. A proportion of the starch and sugar in the crust will change to what is called caramel. (In the back of this book is a receipt for caramel sauce, and any girl can see for herself how the flavor of the sugar is changed by cooking.) (Receipt on page 351.)

In the back of this book are receipts for baking cake, muffins, corn bread and biscuits, for preparing baked meats, baked puddings and baked vegetable and cheese dishes.

The first thing to be sure of in baking is that you per-

fectly understand your oven, and that it is in the best condition for baking. A freshly made fire is apt to give a hotter oven than one that has been burning for many hours; but since a fresh fire is by no means always possible, have your fire as free from clinkers and ashes as you can, and have the coals red.

For a hot oven, close the damper, open the draft, and be sure that the check is closed tight.

There are two ways to test an oven:

1. Place a piece of clean white paper in the oven and time with the clock. If the paper burns in five minutes, the oven is a "hot oven." If the paper takes eight minutes to brown, the oven is a "moderate oven."

2. An easier test is to hold the hand in the oven and count. Your hand will feel very hot in six counts in a "hot oven." You can count eight before it will feel very hot in a "moderate oven."

Keep the inside of the oven clean; do not think that because no one sees it you can neglect this necessary cleaning.

Doughs or batters, containing a large proportion of eggs, should be cooked in a moderate oven to prevent toughening. Any girl can see why this is so if she will boil an egg rapidly and then boil one slowly by putting it in cold water that slowly comes to a boil; the first egg will be tough and the last creamy and tender.

In baking doughs, the larger the mass, the lower must be the temperature of the oven. This is so that the heat may have time to penetrate to the middle of the dough, and expand the gas and harden the albumen and gluten before the crust forms around it. If one is baking a cake, for instance, and the crust forms before expansion has taken place, the cake will be heavy.

An oven which has in it food giving off much moisture,

or water vapor — corn cake, for example — requires great heat. If, at one time, there are several dishes in the oven all throwing off steam, the oven should be hotter than if those dishes were cooked separately.

No brown crust is formed in baking until the water from the surface has nearly all evaporated.

Remember that every time you open the oven door to look at what is baking, you allow cold air to enter the oven. On the other hand, don't think for one moment that when the dough is in the oven you can forget it. It is your responsibility every minute until it is thoroughly cooked.

If the cake is put on the lower shelf of the oven, the greater heat will reach it from the bottom, and the cake will cook slowly (giving the gases time to expand). This is better than if the cake were first put on the top shelf, where it would heat too quickly making a hard crust before the dough is heated through.

All of these points in regard to the oven have to be known before the mixing and the baking begins. After the mixture is put together, as little time as possible should pass before it is in the oven and the door is shut. There is no time to study the oven after the batter is mixed.

Getting Ready for Baking.

Cover the kitchen table with paper.

Collect all the utensils and materials that will be used.

Before any baking is begun be sure that teaspoon, tablespoon, measuring cup, utensil plate, materials to be mixed, bowls for mixing, flour sifter, baking pans, even paper for buttering pans, are on the table. Every good cook will use forethought in getting ready so that after she has once begun to combine the food materials she will

not have to leave the table until the batter is ready for the oven.

There are good cooks and bad cooks, and a poor cook often works as many hours as a good one. The thing that makes a good cook is a thorough interest in cooking. Cookery is an art; and to succeed in it, you must, while working, give it your whole attention, your common sense, your muscle, and your taste. When a girl is a trained cook, she can use her own initiative.

Doughs.

Doughs are made light and porous in the following way:

1. When baking-powder unites with moisture, the gas in the baking-powder is set free. To test this, put dry baking-powder in a spoon, drop a little water on it, and at once you will see bubbles of gas. It is this gas in dough that makes it light.

2. Gas is produced by yeast. Yeasts are very minute plants. These tiny plants, when they come in contact with sugar, so break it up as to produce from it carbonic acid gas and alcohol. This process is called fermentation. The use of yeast is simply to manufacture the gas from the sugar that is in the dough.

3. Doughs are also made light by beaten eggs. The whites of eggs, especially, can be expanded by beating air into them. Then, when the egg is added to the dough, the air is also added. Batter without eggs can be beaten so hard that air is beaten into the batter. When eggs are used as leavening agents, the whites are beaten separately, as they will expand much more when they are separate from the yolks. The whites are folded into the mixture last of all, and a good cook will be careful to break as few air cells as possible.

4. Soda in combination with an acid such as sour milk or molasses liberates a gas that makes the dough light.

5. The expansion of water into steam, as the heat enters the dough in the oven, also lightens the dough.

All material used for leavening must be kept cold, as cold air expands more on being heated than warm air.

General Rules for Mixing Dough and Batter.

Two cups of flour require about four teaspoons of baking powder. But batter and muffin mixtures require more baking powder to the amount of flour than soft dough.

When eggs are added, one teaspoon of baking powder can be omitted for each egg.

Fats are added to a dough or batter mixture to make it brittle. This is called shortening, and greatly enriches the dough. Fat should be cold when added to pastry, but melted when mixed with batter.

Food that is served cold needs more sweetening than food that is to be eaten hot; warm food always tastes sweeter than cold.

To Test any Batter.

A cake or corn bread or any soft batter is ready to be taken from the oven when a clean toothpick (do not use a straw from the dirty broom) can be inserted and no batter sticks to the toothpick.

Time-Table for Baking or Roasting Meats.

Beef — 15 minutes to the pound

Lamb — 20 minutes to the pound.

Pork — one-half hour to the pound.

Veal — one-half hour to the pound.

Chicken — 20 minutes to the pound.

Turkey — 20 minutes to the pound.

Time-Table for Baking.

Fish — 15 minutes to the pound.

Bread — 45 to 60 minutes.

Cookies — about 10 minutes.

Thin Cake — 15 to 30 minutes.

Loaf Cake — 40 to 60 minutes.

Indian Pudding — 3 hours or more.

Bread Pudding — 45 minutes.

Pies — 30 to 45 minutes.

Scalloped Dishes — 20 to 30 minutes.

Baked Beans — 5 to 7 hours.

Some Reasons Why Baking Is Not a Success.

Carelessness in watching the fire. Coal is put on at the wrong time.

Failure to test the oven.

Slowness in putting the batter in the oven at once after mixing.

Failure to have the leavening agents cold.

Failure to move the cake from the bottom to the top shelf at just the right time.

Failure to test batter with a toothpick before it is overdone.

Greasing baking pan with butter instead of crisco or drippings.

Sample Lesson in Baking Meat.

FIRST BAKING LESSON

Roast Mutton with Mint Sauce, Brown Potatoes

Mutton is the same as lamb, only it is cut from a sheep one year or more old. Mutton is a good food for many reasons. Sheep are especially free from disease, and the meat is seldom unfit for food. Mutton has a smaller percentage of water than lamb, more fat and protein. There-

fore, there is more tissue-forming substance and energy value in mutton than in lamb. Mutton is a digestible food, and practically all of the nutritive part is taken up and assimilated by the body.

Mutton is cheaper than beef, pound for pound, and there is less waste, because a sheep can be cut so that all parts are used.

When mutton comes from the market it should be wiped thoroughly with a damp cloth, and all parts that have the least unpleasant odor cut off. As to cuts of mutton, see Chapter on Marketing, page 110.

Beside baking there are different ways of cooking mutton.

Soups and Broths. In making mutton broth we want to get as much of the flavor and nutritive material of the meat into the water as possible. To do this, cut the meat in small pieces so that a great deal of the surface of the meat comes in contact with the water. Don't let the water at any time boil hard. If the meat is fresh, do not remove the scum that rises to the top, for there is nourishment in that scum.

There is not much nourishment in mutton broth, for it is in the meat that is taken out that the nourishment lies, only gelatin and mineral matter are left in the water. No one can grow or gain enough energy to work on with mutton broth as the only food during a day.

Then there is *Mutton Juice*. This is juice from the mutton pressed out, or squeezed out with a lemon squeezer, without using any water as in boiling.

Mutton Stews, page 312.

Minced Mutton, page 311.

Boiled Mutton — this is the same process as in soup, only the mutton is boiled whole and not cut up.

Boiled Mutton with Vegetables.

Boiled Mutton with Caper Sauce.

Many more ways to cook mutton can be found by sending for "Mutton Bulletin" No. 526, Department of Agriculture, Washington.

Roast Mutton. When the word roasting was first used it meant cooking before an open fire. Now it means the same as baking.

For this baking the oven should be very hot at first so as to keep the juices from escaping. Then reduce the heat after the meat is covered with a crust. As the fat drips from the mutton into the dish, take a spoon and pour it over the meat every fifteen minutes or so.

Roasted Leg of Mutton with potatoes makes a good dinner dish.

SECOND BAKING LESSON

Corned Beef Hash
Baked Rice Pudding

In cooking a meal of Corned Beef Hash and Baked Rice Pudding, the pudding must be mixed and put into the oven first. (Receipt on page 348.) While this is baking, chop and cook the hash. Place platter for hash on back of stove to get warm before beginning to cook.

In making Corned Beef Hash use one cup corned beef to two cups potatoes.

Do not put the beef through a grinder but chop it by hand. Only in this way can all the gristle be gotten out. To make a good hash, a cook must take time: "fuss over it," taste it, season it carefully. It takes more skill to make a good hash than to roast beef. Follow receipt on page 312. This meal lacks mineral matter, so add fresh vegetables.

Sample Meal.

THIRD BAKING LESSON

Baked Macaroni and Cheese — Spinach

Macaroni is made of flour and water, molded or formed into tubes. After the molding it is dried or slightly baked.

Macaroni is more than 75 per cent starch.

Macaroni is always combined with cheese, milk, tomato or some other food before it is eaten.

Cheese is more than 33 per cent. fat and more than 25 per cent. protein.

Butter is about 85 per cent. fat.

Milk, as you have found, has high nutritive value, so if you follow the receipt on page 324 you will see that Baked Macaroni is a dish that in nutritive value can take the place of meat for dinner. With this hearty dish you will crave a green vegetable composed largely of water.

Spinach has little food value, but it is refreshing and it is very healthy. Invalids and little children can eat spinach. Spinach is seldom perfectly cooked. It needs two things to make it good — labor and butter. It takes time, water and patience to wash it clean. In the place of butter drippings from beef or chicken may be used. For children, spinach when young and fresh is often cooked without water so as to keep all of the salts. Cooked in this way, it is also more of a laxative. Page 325.

While the macaroni is baking and the spinach boiling, it would be well to study vegetables as a whole, and the time needed to cook the different vegetables.

Cooking Vegetables.

In choosing vegetables in summer, be very careful to

select fresh ones. Summer vegetables should be cooked as soon after gathering as possible. Vegetables purchased from push-carts must be carefully examined to see if they are fresh, and very carefully washed before cooking. If the peas or beans you buy seem old, it is better to make them into soup than to serve them as vegetables. The subject of vegetables is a big subject, for there are dried and canned vegetables to consider as well as fresh ones.

Every girl should learn to can vegetables so as to use them in winter when fresh vegetables are dear. Certain vegetables are especially good for sick people and certain ones are beneficial for children.

Vegetables give the body minerals and water and necessary bulk; peas, beans and lentils give a great deal of nourishment.

All vegetables should be cooked in boiling salted water. Some of the common summer vegetables are:

	Time for Cooking
Lima Beans	1 to 1 $\frac{1}{4}$ hours
String Beans	1 to 3 hours
Beets, young	45 minutes
Beets, old	3 to 4 hours
Cabbage	35 to 60 minutes
Cauliflower	20 to 25 minutes
Celery	Used raw
Corn	20 minutes
Lettuce	Used raw
Onions	45 to 60 minutes
Spinach	25 to 30 minutes
Tomatoes	Cooked or raw
Peas	20 to 60 minutes

A small scrubbing brush, which may be bought for five cents, with the word "vegetable" marked on the back,

and a small pointed vegetable knife are a necessary part of preparing and cooking vegetables.

Sample Meal.

FOURTH BAKING LESSON

Omelet and Corn Bread

In preparing the cooking table for making omelet and corn bread, place on the table Indian meal, flour, milk, eggs, butter, sugar, baking powder, pepper and salt; a mixing bowl, measuring cup, spoons, knife, utensil plate, drippings or crisco to grease pan for corn bread.

Have a good fire in the stove. Place on the back of the stove to heat, a platter for omelet and plates.

First make the corn bread after receipt on page 335.

While this is baking, get eggs beaten, seasoned and ready for omelet. Do not put the egg into the frying pan until corn bread is finished, cut and ready to eat. Then make and serve eggs according to receipt on page 304.

Sample Meal.

FIFTH BAKING LESSON

Cake — Plain, and with Frosting

Before beginning to cook, read over carefully what is said about doughs, batters and baking on page 164.

There are many cake receipts, but in nearly every cake certain things are to be done.

Dry ingredients, that is, all dry material like flour, sugar, salt, baking powder, are mixed together and sifted before uniting them with the wet material.

Cake should be beaten hard to get the air in.

After mixing and beating, the cake should be put at once into the oven before it has a chance to fall.

Whether the cake turns out well or not is largely dependent on whether the oven is good or not.

Feather cake, on page 354, is a simple cake to make for a first cake lesson.

Cake may be left plain or with frosting.

Uncooked Frosting.

White of 1 egg.

Confectioner's sugar.

2 tbsp. thin cream.

4 tbsp. cocoa or 1 square chocolate.

Beat egg and to this add cream and enough sugar to make a thick frosting. Melt chocolate and add to white mixture while still hot.

Make up five other sample meals which include baking dishes.

CHAPTER XIV

PRESERVING FRUITS

Different Ways of Preserving Fruits.

Fruits are best when served ripe and in season, but the fruit season is a short one and when winter comes some fruits are difficult to get and are too expensive for the majority of people to buy. We do well to store fruits for winter during the summer when they are cheap.

There are different ways of preserving fruits in season so that they may be used out of season. They may be dried in ovens or in the sun, so that all water is evaporated. Dried fruits, such as apples, peaches, apricots, dates, raisins, when boxed and sealed, keep an indefinite length of time. They can be purchased by the pound at any grocery store. Other ways of keeping fruits are to preserve them in a heavy sugar solution: to reduce them to jelly, and still another way is canning.

Food Value of Fruit.

Most fruits have but little nutritive value, the average amount of water being 85 per cent., but our systems need this water. We need also the mineral properties of fruit, and the odor and flavor act as a stimulant to the appetite and as an aid to digestion.

There are a few fruits that have a high nutritive value, and these are dried fruits: dates, figs, prunes and raisins. Raisins have the highest per cent of nourishment, and prunes the next highest.

The dried date is a staple article of diet in Egypt.

Half a pound of dates and a half a pint of milk is food enough for a meal for a man.

Half a pound of dried figs is more nourishing than half a pound of bread. A pint of milk and six ounces of figs are a hearty meal.

Prunes are dried plums; they not only have a high value as food, but have a laxative quality for which reason they are given to children as a means of regulating the bowels.

Fruits are dried in great sheet-iron stoves, which look like tall towers. These stoves have a number of wire-netting shelves, one on top of the other. The fresh-cut fruit is laid on these shelves. A fire is built at the bottom of the stove, and the fruit is bathed in steam vapor until all moisture has passed out of it in the form of steam, leaving the fruit dry. In this dried condition it is packed into boxes and sealed.

The receipts for cooking dried fruits are on page 359.

Cooked fruit is more digestive than raw fruit. It takes the stomach more than three hours to digest two raw apples, while a cooked apple will digest very quickly. The acid in raw fruit, if at all unripe, causes irritation to the intestines. Diarrhea and colic are often the result of eating unripe fruit.

Canning.

In canned fruits the flavor of the fruit is preserved better than in any other way, since less sugar is used in canning than in preserving. Therefore, this means of preservation gives us the best substitute for fresh fruit. Canning fruit is simply putting sterilized fruit into sterilized jars, and making the jars air-tight and water-tight. Sugar may or may not be used. When we use the word sterilize, we mean the killing of all bacterial life by means

of heat. To sterilize our jars we simply boil them until all possible bacterial life has disappeared.

Buying in quantity is the cheapest way to buy fruits. Much better value can be obtained for your money by buying by the crate or the basket rather than by the pound. Do not buy from stands or from carts, as it is very necessary to have fresh fruit for all canning and preserving. Fruits for canning should be firm, fresh, and ripe, but never overripe, as overripe fruit ferments, even though it has been boiled and put up in air-tight jars.

After buying the fruit, the sugar, and as many one-quart jars as will hold the fruit, the next thing to do is to prepare the table, as we would in any cooking-lesson. Surely every girl who reads this chapter in the homemaking course has learned the lesson, never begin to cook until everything she needs is ready on the kitchen table.

Draw the table into the middle of the kitchen, away from the wall; for the preservation of the wall and for the greater convenience of the cooks. Cover the table with a white paper or enamel cloth. Collect all materials, fruit, sugar, jars, and cooking utensils. These utensils are: pan, in which to sterilize the jars; kettle for cooking the fruit (this should be of agate or enamel, never of tin); wooden or silver spoon for filling the jars and for stirring the fruit; a working plate; a cloth for standing jars on and wiping them; silver knife; funnel for filling jars with small fruit (the larger fruit is dropped into the jars with the spoon); scales; measuring-cup; brush for cleaning the fruit; paring-knife; quart jars, and covers; rubber rings; colander for washing berries and draining the water from the fruit. An excess of water will make the fruit tasteless.

Go carefully over the receipt and notice for yourself

what utensils and what materials will be needed in this canning lesson. Not until these are on the kitchen table, every girl ready in a large apron, perfectly clean hands, and the kitchen fire burning at its best, is it time to begin work.

In canning we use glass jars with tight-fitting covers and rubber rings. The jars and covers may be used for years, but the rings should never be used more than once, as the rubber becomes porous, and will let in the air if used a second time.

To Test Jars.

Wash the jar, the cover, and the rubber ring in soapy water, and rinse. Fill the jar with clear water, put on cover and rubber ring, and turn it upside down, allowing it to stand in this position for some little time. If the water comes from under the cover, the jar is not water-tight, and it is useless to sterilize it, as the best sterilization cannot make it fit to use. Remember it is by keeping all air out of the fruit from the time it is canned until the time it is used, that prevents fermentation.

After testing the jar in this way and finding it is not tight, it can sometimes be made air-tight by putting on a different rubber ring or a different cover, but never use a jar until it will stand this water test. After you have proved your jars air-tight, sterilize them.

To Sterilize Jars.

Wash the jars, and fill with cold water. Set them in a pan of cold water, the water covering the jar. Put this pan with jars on the fire and let the water slowly come to the boiling point. Boil for at least five minutes. While the jars are being sterilized, prepare the fruit for

them, for they should be filled with the fruit while still hot.

The covers should stand in the boiling water at least five minutes, but the rubber rings should be dipped in and taken out at once. Never allow the rubber to boil in the hot water, as water softens it.

General Rules for Canning Fruit.

All fruit should be washed in cold water, never in hot or warm water. If berries are being canned, hull them after washing. Cherries may or may not be stoned. Pears are cut in half, pared, and the core taken out. Peaches are pared, and the stones taken out. Apples are pared, cut in quarters, and the core taken out. Plums are skinned by scalding them in boiling water. The stone of the plum need not be taken out for canning. Grapes are skinned for jelly and marmalade, but are not skinned for canning. Rhubarb is peeled before canning.

While thus preparing the fruit, the syrup can be cooking on the stove. As has been said, sugar does not necessarily have to be used, but it helps to keep the fruit from fermenting. For all fruits, such as plums, cherries, and berries, make a syrup of one cup of sugar and three cups of water. This amount of syrup is sufficient for each jar of fruit. For sweeter fruits, such as peaches and pears, use three-fourths of a cup of sugar and three cups of water for each jar. While the syrup is boiling, put the prepared fruit into the syrup carefully, so as not to break it. Cook until the fruit is tender. To know if the fruit is tender, try it with a fork. Be sure that the fruit is well heated through, or it will spoil after being put into the jars.

Now that the jars and fruit are sterilized by boiling, the time has come to fill the jars with the fruit.

To Fill the Jars.

Remove sterilized jars from the water and place on a plate covered with a hot, wet cloth, so as to avoid all danger of the jar breaking.

Fill the jar with the boiling fruit until it overflows. If it is large fruit, it should be put in with a spoon; if small fruit, put it in through a funnel. Run the blade of a silver knife around the outside of the fruit after it is in the jar; dip the rubber in the boiling water for a moment, and put in place around the top of the jar; now take the cover from the boiling water and screw on tightly.

Turn the whole thing upside down and let it stand on its head to cool. Be sure that the cover is on so tight that no juice leaks from the can. Wipe off your jar with a damp cloth, and put it in a cool place until you are ready to use the fruit.

If fruit ferments it will be for one of three reasons: the jar and the fruit were not perfectly sterilized; the jar was not air-tight; or the fruit was overripe.

Marmalade.

The dictionary says that marmalade "is a pulpy consistence made from various fruits." Marmalade is the pulp and the juice of fruit with sugar, while jelly is the juice and sugar without the pulp.

Preserves, marmalades, and jams are virtually the same, being the preservation of fruit in a strong sugar solution; but marmalade is usually made from the more acid and bitter fruits. Marmalade is less apt to spoil than canned fruits, because of the quantity of sugar used.

It is economy to put up marmalade when fruits are in season, for the expense at that time is comparatively

slight. Later this preserve can be used on bread in place of butter; in sandwiches, and if served with meat adds much to a dinner.

Receipts for marmalade are on page 362.

Jellies.

Jellies are made of cooked fruit-juice and sugar, there being an equal proportion of juice to the sugar.

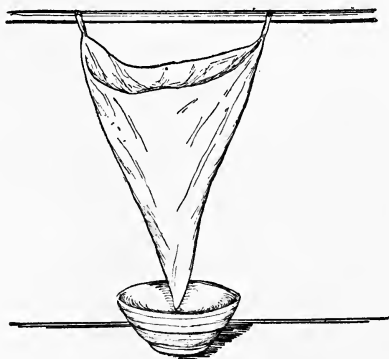
Not all fruits can be made into jelly. There is a certain quality in fruit called pectose, and only when this is present will the fruit jellify. In overripe fruit this quality is lost. If the fruit and juice cook too long the power to make the juice firm is gone. Consequently, if you fail to obtain a firm jelly, it can be explained by one of these reasons: the fruit was too ripe or it was cooked too long. Sometimes, when fruits are picked directly after a rain, the juice will not harden into jelly. The best fruits for jelly are grapes, quinces, crab-apples, and currants.

Jelly-glasses.

These should be prepared in the same way that jars are prepared for canning: sterilized by placing in cold water and allowing this water to come to a boil; and boiling at least five minutes. After the jelly is poured into the glass, cover with paraffin. Paraffin may be bought by the cake, melted, and poured over the jelly. If the glass has not a tin cover, a piece of paper, cut round, and placed over the top, and pasted down over the edge of the glass, with mucilage, will do as well.

Jelly-bag.

A jelly-bag is necessary to strain the juice of the fruit from the pulp. To make this bag, take cheese-cloth, fold



Jelly-bag

double, then fold two opposite corners together; round the pointed end, and sew, making it the shape of a cornucopia. Bind the top with tape, and sew on two or three loops of tape by which to hang it.

Jelly receipts on page 363.

CHAPTER XV

CARE OF CHILDREN

Clothes for the Young Baby.

A baby does not need a great many expensive, useless things, but only enough clothes to keep it warm, fresh and dainty.

The clothes should be made by hand rather than purchased ready-made, for clothes made by hand give better value for the money expended, and will last longer. Inexpensive material may be used, but, of course, goods of better quality wear longer, if they can be afforded. A baby's clothes should be extremely simple, never over-trimmed, and ready when the infant is born.

Necessities for a Baby.

From two to four dozen diapers of bird's-eye diapering,

Four flannel bands,

Three wool shirts,

Two flannel skirts,

Two white skirts (these are not necessary at first),

Three to five dresses,

Three night-slips,

One cap and coat,

Two flannel or knitted blankets,

Three pairs long white stockings, for winter.

Soft lawn or nainsook is the best fabric for slips and skirts. The cloth should be washed before being made

up to protect the tender skin of the baby from chemicals that may have been used in bleaching the material.



Wrapper

It will be necessary to buy paper patterns; the cost of patterns is only ten cents each.

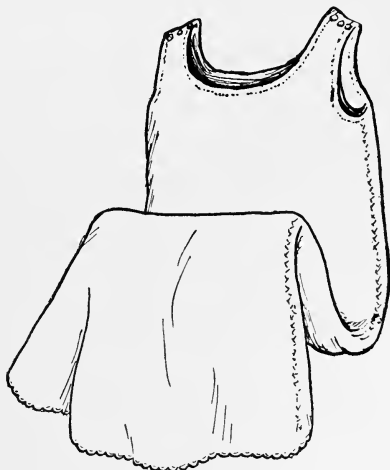
Diaper. Eighteen inches wide, one yard makes one diaper; twenty inches wide, ten yards make nine diapers; twenty-four inches wide, four yards make three diapers. Never use rubber diapers.

Band. Three-quarters of a yard of flannel for four bands. A small baby wears a flannel or knitted band as a safeguard against rupture, or as a support to its little body, and for warmth. Bands should be made of fine, white flannel.

Bands should be cut, and the goods left with raw edges, so that the bands will stretch, or they may be torn straight across the goods. Make them six inches wide and eight-

een inches long. These should be worn only two months.

Shirts. The baby should have at least three all-wool or silk-and-wool shirts.

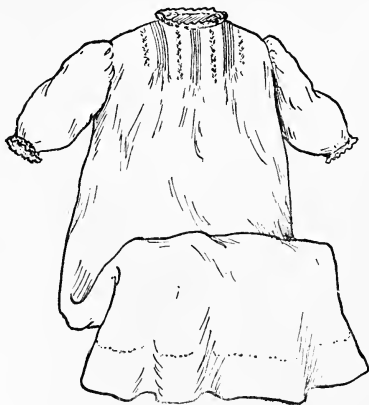


Flannel Skirt

Merino shirts are the best. Do not get the first size, as the baby outgrows them too soon. The second size will fit for a long time.

Flannel skirts. These should be made to hang from the shoulders, and not with a band to pin around the abdomen. A white skirt is not necessary for a young baby. The flannel skirt should be twenty-seven inches long; if a white skirt is used make it of cambric or nainsook.

Dress. Twenty-seven inches wide goods take two and five-eighths yards; thirty-six inches wide goods take two yards. Dress when finished should be twenty-seven inches long. Neck should be fastened with tape, not buttoned.



Dress

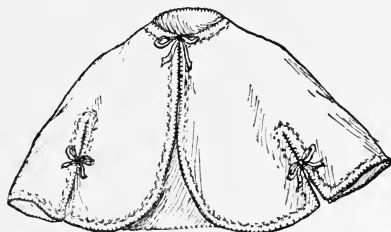
Nightgown or night-slip. Twenty-seven inch wide material, two and one-eighths yards. Open in front.

A pinning-blanket is not necessary or advisable; it prevents the baby from using its feet freely.



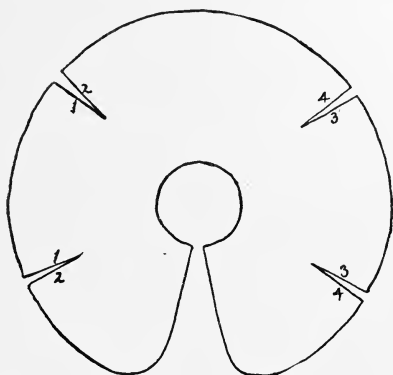
Nightgown

It is necessary, in winter especially, to protect a baby from draft; a wrapper such as shown on page 184, made of Scotch flannel or outing flannel, is a useful garment for this purpose. A paper pattern can be bought for ten cents. Tie the wrapper at the neck with ribbon to match the flannel.



Flannel Sacque

The flannel sacque is worn for the same reason as the wrapper, to protect the baby from draft. The sacque is so simple that no pattern is necessary. Cut the flannel



in a circle making a hole in the middle for the neck and an opening in the front and at the sides as in the picture. Bind it all around with binding ribbon or work a blanket

stitch around the entire edge. Tie together 1 and 1, 2 and 2, 3 and 3, 4 and 4.

Topics to be Discussed While Sewing.

Lessons on the care of a baby are difficult lessons for grown-up people and still more difficult for girls to learn, for there are many facts that must be learned by heart. It is easy to have near us in the kitchen the many receipts for cooking, and if our memory fails, the cook-book is always at hand; but it is not possible to carry about directions on how to give a tiny, irresponsible child its best chance for health and happiness. The rules that lead to this every good mother knows by heart: the right thing to do at the right time. The care of little children is a more serious occupation than any other. An infant is absolutely helpless, and responsibility for its very life falls on the girl or the mother who has the baby in charge. While a group of girls are sewing clothes for a make-believe baby, a great many important facts about real babies may be learned.

If the baby in your house is sick, the first thing for the girl or the mother to do is to see a doctor or a nurse and find out what the trouble is. Do not take the advice of neighbors; they mean well, but the advice is often ignorant.

Before proceeding farther on this subject of children, a tribute should be paid to the big sisters who give much care to the tiny members of the family. This responsibility means constant sacrifice of playtime, and it means endless patience on the part of these older sisters. But this position of "minding the baby" is taken almost always with a spirit of love and unselfishness — a spirit that is one of the most beautiful things in the crowded parts of our city life.

It needs more than love and an unselfish spirit to care for a baby. Every girl must have knowledge, and she must learn to control herself and to control the infant in her charge. It is not enough to know that the baby should not eat candy or suck a nipple; one should see that he does n't. Every girl who takes the responsibility of a little brother or sister must see that rules are obeyed. Let every girl and woman from this day on make this firm resolution: "As I know the laws of life, I will do all in my power to keep them and to enforce them." This strengthening of the will and this power of control are more important than any other education in the world.

Let every one who studies this book drop forever the idea that the important subjects of life are known after once being studied. The remark is constantly made by school-girls, "I studied that," or "I did that last term; I don't see why I need to go over it again." Those who are studying this lesson for the first time, at fifty will be still studying the subject, "How to take care of the baby."

CLOTHING

Diapers.

Diapers should be washed every time they are soiled, and dried, if possible, in the sun and open air. Never dry a diaper and use it again without washing. Keep diapers in covered pails until washed; and really soiled diapers should be washed out at once.

Very few clothes are needed by the baby in hot weather; a diaper and a gauze shirt are often enough. More harm is done by putting too many clothes on a baby than by not putting on enough. It is because babies are loved so much and seem so frail to grown-up people and to big sisters that the fear of their taking cold is exaggerated; and so the baby is wrapped up until its body is

too warm, and the child finds it hard to use its limbs comfortably. The body of a tiny child is warmer than the body of older people, and it feels the heat more. The skin wants to breathe, and the air wants a chance to enter the pores of the skin. It is the fresh air that gives life, and yet some babies are wrapped up as if fresh air were a poison and must be kept away from the little lungs.

Perfect circulation is necessary if a baby is to have rich blood; good air must enter the lungs; and the clothing be kept loose. Fresh air cannot enter the lungs of any child that has a shawl wrapped around its head or has so many tight clothes on its body that its lungs cannot expand.

The only way a baby exercises is by screaming, kicking, and squirming. Tight clothes prevent this.

The baby's clothes should be thin, light, and soft, and always laundered without starch. They should hang from the shoulders.

For a baby to sleep well, its clothes should be loose. Remember, if an infant is too warm, its sleep will be restless.

A child suffers from wet clothes, but cannot tell of its discomfort. It is for the one in charge of the baby to use such thoughtfulness and kindness that the clothes will be changed as soon as they become wet or soiled.

Before the Birth of the Baby.

The care of a baby should be started before it is born, and there are many things that even schoolgirls can do to help their mothers. Of all the babies who die under one year of age, thirty-five per cent. or over one-third, die before they are a month old. Many of these babies die because at birth they are weak and sickly, and this is due

largely to the fact that the mother uses up too much strength during the months before the baby is born. Every girl must see that one way to help save the life of her baby brother or sister is to help the mother as much as possible before the baby is born.

In the first place, more respect should be shown to all women at this time. Very often a woman is irritable when she is carrying her child. This is because she is uncomfortable, and her whole nature feels the discomforts and hardships of life more than at other times. It is little enough for the family to do to show great patience toward the mother at this time. Another way a girl can help is to spare her mother all the steps and all the housework possible, never allowing her to carry or lift any heavy weight, taking from her as much of the cooking, bed-making, cleaning, and care of the house as is practicable.

In many cases the schoolgirls of a family hear more about such institutions as settlements, milk stations, and hospitals than does the mother. It is, therefore, the daughter who should see that her mother has the address of a good trained nurse or a good hospital or the best doctor. This will relieve the mind of the woman, and will be of great benefit to the tiny baby.

Other causes which weaken the mother before the birth of the child are improper food, irregular meals, and lack of rest and sleep. This reduces her strength, and she has not the proper strength to give the baby who is depending upon her.

Every child has a right to be born healthy. Life is a hard battle, even if we have all the strength that is our due, but it is unfair, if it can be avoided, to start a baby with a weak body. If every schoolgirl realizes the necessity that a woman who is bearing a child should be in the

best physical, mental, and spiritual condition possible, it will do a great deal to make better men and women in the coming generation. Heredity is what a baby gets from its father and its mother, and environment is the condition under which the child lives and grows to be a man or a woman. A great deal has been said about heredity, that a baby could not help being this or that because it inherited the tendency from its father or mother; but now we know that conditions over which we have control — have much to do with the life of a child.

The Nursery.

The nursery is the room in which the baby sleeps. This room should be free from all unnecessary articles that collect dust and interfere with the circulation of the air. It is the mother of the house who, in most cases, decides where the children, including the baby, shall sleep, it is she who furnishes the rooms; consequently, schoolgirls have little power to carry out individual ideas except by suggestion. Every girl has a right to her own ideas and taste, and the chance will come when she can furnish a nursery her way, but in the meantime she can help, and often advise her mother.

The baby's room should be the room that the sun shines in, if there is such a room in the house. Grown people spend much time at the shop, the factory, the school, or in the street. The baby spends at least three-fourths of every day at home, and it needs the sun to help it grow — surely as much as a flower does. A crib for the baby should have only such trimming as can be easily taken off and washed. Even though schoolgirls cannot regulate many things about their parents' house, they often can detect close air in a room when the mother does not notice it. This is because the mother does not get the

contrast her girls get, who constantly run in and out from the open air. When the air in the baby's room seems impure, open the window wide for a few moments, taking the baby into another room while you thus change the air of the nursery.

Do not dry the diapers in the room where the baby is sleeping; don't cook food there; and it is better not to have the gas burning at night in the nursery.

The baby does not want too much heat in the room any more than it wants an over amount of clothes. Thermometers do not cost much; get one, and keep it in the nursery. Never let the thermometer go above seventy degrees. If it rises above that, open the window a little from the top and bottom, and let the overheated air out and the fresh air in.

Have the room the baby lives in a bright, pretty room, but not fussy. The baby and its equipment need all the space possible. Nothing is more beautiful than a nursery which in every detail shows that it belongs to a little child. The bed in this nursery should be a crib or a single bed. A baby should sleep alone, never with a grown person.

Nursing a Baby.

Girls may say that this is their mother's business, but for three reasons it is everybody's business to learn about this subject. First, because it makes every one anxious to help a nursing mother so that she can better perform this great obligation to her child. It makes every one respect her and show this respect in every possible way. And, third, this subject is so important that girls should begin to realize it when they are young and when there is time and opportunity to study about these things.

These are a few of the reasons given by the Board of Health in New York City on the subject "Why a Mother should nurse her Baby."

1. One death out of every five which occur at all ages is that of a baby under one year of age, and the greatest number of these deaths is among bottle-fed babies.

2. In the city of New York during 1912, 3392 babies under one year of age died from bowel trouble, and *nine* out of every *ten* of these babies were bottle-fed.

3. Mother's milk is the only safe food for a baby during the first six months of its life.

4. Cow's milk or prepared food can never equal breast milk as the proper food for the baby.

5. Breast fed babies rarely have bowel trouble. Bottle-fed babies rarely escape it, particularly during warm weather.

6. Babies fed on breast milk show the best development; the teeth will appear at the proper time; the muscles and bones will be stronger, and walking will not be delayed.

7. A breast-fed baby is not so likely to have bronchitis or croup, and if attacked by any disease, has a much better chance of living than a bottle-fed baby.

8. Pneumonia in babies is fatal more often in bottle-fed babies than in breast-fed babies.

There is a great deal that mothers should know about nursing their babies that schoolgirls must learn later, but one fact every girl must know by heart and teach to as many women as she can. A baby must be nursed only at regular intervals and at the same time each day. A doctor, a nurse, or a milk station attendant will tell a mother how far apart these intervals should be, and then, no matter how hard the baby cries, no food should be

given between times. Remember, when little girls or women give children what they cry for because they cry it is not kindness but selfishness, and is cruel to the child.

Children's Diseases.

A little knowledge as to the signs of illness is necessary for girls so that they can act in time to prevent serious sickness. If you have not sufficient knowledge to know when the baby is sick, you will not know when to send for the doctor.

The common diseases of children are the following:

Colic. This can be known usually by the sign of pain, hard crying, and drawing up of the feet.

If this happens, get the feet warm, and put a hot flannel on the stomach and rub the stomach gently. No young girl should give medicine. If the pain continues, call at once on some one with experience.

Convulsions. You can recognize a convulsion by a choking sound, spasmodical breathing, stiffness of the body. The eyes are staring, the hands clenched, and the mouth firmly shut.

Send for the nearest doctor and while you are waiting for him, put the baby in a hot bath, and, if this does not relieve him, soak the feet in mustard water.

Constipation. This is the responsibility of the older members of the family toward the little children. Small children cannot realize the importance of having their bowels move every day and at the same time each day. It is one of the duties of big people to train little children to form this habit of regularity. Begin this training when the baby is only two months old. Let no girl ever lose sight of the fact that constipation is a fearful danger; the

system becomes clogged and finally poisoned, often for no larger reason than that children forget, or are in too much of a hurry, to care for and respect their bodies.

Diarrhea. Too frequent movements of the bowels, occasioned usually from indigestion. The baby is sick when it vomits or has diarrhea; it is seriously ill when it has several loose, green passages a day. Stop all food, give cool boiled water, and take the baby to a doctor. Older children often have diarrhea from buying and eating what the little stomach cannot digest. Giving a penny to a child to keep it quiet is a cruel act to the child; there is no kindness in it. If the child in your care has diarrhea, there are two things to do: stop all food and keep him quiet. If he is not better in five or six hours, ask a doctor's advice.

Earache. If the baby screams as if with pain, puts his hand to his head, and cries when he is touched, the trouble is often earache. No girl knows enough to treat the ear. Do not even drop oil or hot water in the ear. Put a hot water-bag or a warmed piece of flannel against the ear; but if this does not stop the cries, carry the baby to a doctor or to the nearest nurse. Nurses do not treat diseases, but they can advise as to the very best place to go and how to get there.

Croup. This usually comes to a child at night when it is difficult to get the doctor or nurse at once. Croup begins with a dry, hard cough, and the baby shows difficulty in breathing. While the father, or some one, is getting dressed to go for the doctor, the big sister can do the following things: start the tea-kettle boiling and let it boil in the room with the baby, for steam helps it to breathe. Also, hot cloths put on the throat may relieve the child. The room should be kept warm. This is all a girl can do except to keep her head and help the family

to keep calm, and get the advice of a doctor or nurse, *not* a neighbor's advice.

Measles begin with sneezing, watery eyes and nose, a cough, and an eruption appearing on the face and neck. Under these conditions keep the baby warm, out of all drafts, and away from all other children, if there is any eruption, until you have seen a doctor; as so many diseases are contagious.

Whooping-cough. This also is very contagious. It begins like an ordinary cold, growing more severe as time goes on, until the child begins to "whoop." It is not a dangerous disease, except with tiny babies, but it means suffering and terrible discomfort. Children are apt to vomit when they cough, and this requires much labor and much patience on the part of big sisters.

Mumps. A swelling beneath the ear and a sore throat indicate mumps. Take the child to a doctor if you fear mumps. It sometimes proves very serious, always painful.

If a child shows symptoms of serious illness, put him to bed at once. Keep all other children out of the room until the doctor comes. And do not wait until to-morrow to send for the nurse or doctor. *Send at once*.

Don't get irritated at a baby if he seems cross. He may be ill. Look for the following signs: a hot, dry skin means fever. Vomiting means the baby is trying to get rid of something that is not digesting. If he won't nurse or take his bottle, there surely is something wrong. If he has a cough, find out at once if it is serious.

A cross and fretful baby is usually a sick baby. A well baby sleeps most of the time and is happy when he is awake.

Many children's sicknesses and deaths can be prevented if grown people know what to do, and do it.

How to Bathe a Baby.

A baby can have a tub bath after it is ten days old. It should not be bathed for one hour after feeding, and if the room is cold in the morning, bathe the baby just before he is put to bed for the night.

Get everything ready for the bath before undressing the baby. See that the room is warm.

Place the baby on a pillow on a table or on the lap — first protecting the pillow with rubber or oilcloth. If the room is cold, have the table near the stove, or have the baby on a blanket over a hot-water bottle.

Have clean clothes on a chair near the stove.

Have plenty of hot water, Castile soap, soft towels, and a piece of cheese-cloth (not a sponge), several cotton swabs, and a glass of clean water to wash out the baby's mouth.

In taking off the clothes, unfasten them and pull them all down over the feet. In undressing a child have a separate place for wet diapers.

Cover the baby with a blanket, then lay a towel over the blanket.

Shake soap in water lightly and wash the face. Never use cold water; it frightens a baby.

Pay special attention to the corners of eyes and ears.

Wash the ears carefully, and in back of the ears. If dirt is found, apply white vaseline to back of ears with cotton swabs, then wash. Twist wash-cloth very finely, and wash inside of the ears.

Rinse the cloth and wash the face all over, then dry it.

Then wash the head, soaping well, and dry very carefully and quickly.

If there are crusts on the head, use vaseline to soften them.

Wash the mouth by wrapping absorbent cotton around the finger, dip the finger in a glass of clean water, clean under the tongue, the roof of the mouth, and around the teeth.

Then clean the nostrils with a twist of the wash-cloth.

Be sure the water is warm. It should feel warm to the elbow. As it cools quickly, have the water warmer than necessary for the bath when you first draw it.

Soap the body before putting the baby in the basin. Do this very gently to avoid frightening the child.

Wash it all over very carefully and thoroughly in the bath.

Take the baby in one hand and the towel in the other and put the baby back on the pillow.

Never lift the baby by its arms. Put one hand under the head and the other hand under the back.

The navel must be kept clean. If necessary, use vaseline.

Dry the baby by patting it with the towel; do not rub it. Give the child a bath every day, and more than one a day can be given in hot weather. This is to cool the body, more than for cleansing purposes.

Wash the baby, when soiled, every time you change its diapers. Use no soap, only warm water, and dry thoroughly to prevent chafing. Chafing comes always from moisture.

Dressing a Baby.

Keep in mind that no clothing must be tight, and that no common pins may be used. Put all clothes on over the feet, not over the head.

Have clothes warmed before putting on. Damp clothes might cost the baby its life.

First put on the shirt, then push it up out of the way, so that the band can be put on.

The belly-band is rolled before it is put on, and then unrolled as it is put around the body. Pin just at the side of the middle in front. Never use cheap safety-pins. Stitch the band on or use reliable pins. Be careful when pinning not to stick the baby. Put pins one inch apart. Have the band tight enough to support the abdomen and protect the navel, but not tight enough to cause ridges in the flesh.

Have a blanket always over the baby's legs while dressing it; pull skirt down over the band.

Then put on a diaper. Fold the diaper to fit the baby, always diagonally. For older babies, two diapers should be used, and put on in the same way.

Pin the shirt to the diaper, but do not have the diaper too tight; it must be comfortable.

Put the stockings on next and pin them to the diaper.

Sleeping.

At night all the baby needs is a diaper, belly-band, and nightgown, flannel in winter and nainsook in summer. In winter turn the nightgown up at the bottom, like an envelope, to protect the feet.

As we have learned, it is much better for a baby to sleep alone. Grown people have been known to roll on children during sleep and smother them; and if an infant sleeps with the mother, there is always the temptation to frequent nursing at night.

The child's bed should have a mattress, firm, but soft; a rubber sheet to protect the mattress; a very thin pillow, or none at all, and never a comforter, only blankets that can wash.

A tiny, healthy baby should sleep nine-tenths of the time. At six months old, two-thirds of the time.

Never rock a baby to sleep.

Never give it a "pacifier."

Never let a little child in your charge stay up after seven o'clock.

The room a child sleeps in should be darkened and quiet. In crowded homes quiet is hard to secure, but let every one try to secure a restful sleeping-place for the little members of the family.

When a baby cries at night, it is a signal for help. Get up and see that the bedding is smooth, his hands and feet warm, the diaper not soiled or wet, and the baby comfortable. Don't take him up, or he will expect it.

Not only do babies sleep at night, but they take one or two long naps in the daytime. Out of doors is the best place for these naps. But night or day, while a child sleeps, have the window open to admit fresh air.

To Lift a Baby.

Practise on a doll how to lift a baby in the right way. With the right hand grasp clothing below the feet. Slip the left hand beneath the infant's body and head. It is then raised on the left arm, and the entire spine is supported.

How to Give a Baby Air in Bad or Very Cold Weather.

Dress him as if he were going out, and then open the windows. Place the carriage or crib near the window, but not in a draft. So long as the baby is out of a draft and away from the dampness, it will do him good. A veil is not necessary if he is n't in a draft, and in the street keep the sun from his eyes rather than use a veil.

Washing a Baby's Clothes.

A baby's band, shirt, dress and stockings should be washed every day. No starch, bluing or soap powders should be used. Especially is this true in washing the diapers, as they might chafe and poison the skin of a small infant.

The flannels have to be washed with care to prevent shrinking. All flannels should be washed and rinsed in tepid water. (See Laundry Lesson.) The flannels should be stretched into shape before being left to dry, and not dried near the fire.

CHAPTER XVI

FOOD FOR INFANTS

It is seldom a lack of love, but often a lack of knowledge, on the part of the homemaker, that compels a child to face life handicapped because of a weak body. Mothers and big sisters must learn that love will not excuse them. "All breaches of the law of health are physical sins." We sin against an irresponsible child when we allow it to eat the wrong food or unclean food, or to eat any food at the wrong time.

This fact interests the world, for weak children grow into useless citizens; and the strength of a child and the value of a citizen depend largely upon the food that is given to the baby when he is too young to select for himself.

Milk.

Milk appears to be all liquid, but in the stomach it becomes partly solid. It has in it every kind of food that a baby requires. It is thirteen parts solid and eighty-seven parts water. The solid parts are protein, fat (or the cream), sugar (or the whey of the milk), and salts. The fat feeds the nerves, gives heat, and may be stored for future use; the sugar gives heat and energy; the proteids give growth to the blood cells and the muscles; the salts help the growth of the bones. An infant cannot digest its food without water, nor can it get rid of waste material. Milk, as we know, is the first food for animals, including human beings; and as it is the only food taken

for the first five or six months, the importance of its preparation can be readily seen. In France, it is against the law to give solid food to children under a year without a doctor's prescription.

Let every girl have the fact firmly fixed in her mind that during the first three months of a baby's life it needs perfect care, more so than at any future time. A wrong start may mean a long life of suffering, as young life is so delicate that the body is unable to resist hurtful things. Bad milk is the easiest way to start the baby wrong. Impure milk is poison to an infant. This danger is one of the reasons why mothers are urged to nurse their children, rather than give them cow's milk; for the mother's milk is fresh and pure, whereas, it is almost impossible to buy cow's milk that has not been kept at least twenty-four hours. A healthy mother's milk is free from the danger of bacteria, which means it is clean milk; impure milk is milk in which the bacteria are multiplying.

Flies in milk-shops are apt to do more harm than flies in other food-shops in the same neighborhood. The reason for this is because milk (especially in summer) is an excellent medium for bacteria.

Milk is more easily infected than many other foods, whether flies drink it or fall into it. The same flies that spoil the milk by infection may walk on meat and not poison it.

Knowing these facts, every girl will see that a mother will nurse her baby if it is possible for her to do so. There are handicapped babies who must eat from a bottle; we must help them.

It is often the work of the big sister in the family to prepare the baby's food; this chapter is not intended to teach *what* food should be given to the infant at a certain age, but *how* to prepare any food that is

given, so that it may be pure and clean when it reaches the baby's stomach.

There are many things that the girls in the family can learn about milk. One is to know bad, from good, milk. If you see any sediment or dirt in the bottom of a glass, or in the bottle of milk, do not use the milk; that sediment is dirt and has already begun to poison the milk. But unfortunately, a great deal of dirty milk looks clean. Bacteria are tiny living things that poison milk. These bacteria microbes are too small for any one to see without a microscope. There are thousands of them in one drop of bad milk, and they increase very rapidly, not only before you give the milk to the baby but after it is in the baby's stomach. All cow's milk contains germs, even when handled carefully; but they may be harmless germs, and if the milk is kept cold they will not increase. Many germs are harmless; some simply make the milk sour, while others produce typhoid fever, diarrhea, and tuberculosis. A single microbe, can in twenty-four hours increase to more than ten billion. Loose milk is the most likely to have poison bacteria in it. If any girl will stand for fifteen minutes at the door of a grocery, where loose milk is sold, she will see how often the lid of the can is lifted, how many chances the dusty air has to enter, and flies to light on the milk. A fly puts its feet for a few seconds into the milk and flies away, leaving one tiny spot behind, and that spot may increase into millions of microbes. Therefore buy only bottled milk which has been kept from contact with hands, insects, and other impurities. Bacteria multiply not only when milk is in a dusty place but when it is in a warm place.

Having bought the milk in the bottle, as free from germs as possible, take it at once to a clean, cold place until you are ready to use it. The delay in putting the

milk in a cold place is often the reason for sour milk. It is so easy for a girl, after she has purchased the milk, to let the bottle stand in the sun, near the stove or on the kitchen table, and then make the excuse, "I thought some one would put it in the ice-box." Every girl who purchases milk should feel responsible for it until it is in a clean, cold place and sealed against the air and insect life.

There are many ways of keeping milk sweet and clean, even if you have not an ice-box. For example, take an old pail with a cover, make a hole in the bottom, put a piece of ice in the pail and the milk bottle on the ice. Put the cover on the pail, and throw a clean blanket over the whole. Place this simple ice-box in a pan, so that when the ice drains through the hole in the pail the water will not go on to the floor. Do not forget that your pail and the blanket over it must be kept scrupulously clean.

There are many things that every girl may learn on this subject of milk, and a few terms with which every homemaker should make herself familiar.

"Modified Milk": To modify milk means to make the cow's milk as nearly like the mother's milk as possible. Mother's milk is very much weaker than cow's milk, or, as the latter is called, "whole milk." For example, there is three times as much protein in cow's milk as in mother's milk for a little baby four or five days old. You cannot give a tiny baby "whole milk" direct from the cow; it must be weakened so that there will be only one part milk and three parts water. As a baby gets stronger more milk and less water is used, until at last, when the child is nine to twelve months old, it can take the cow's milk without any water.

There are many different ways of preparing or modify-

ing milk: milk and water; barley water and milk; oatmeal, and other preparations that doctors may decide are the right food for different children at different ages. The proportions used in these preparations are called "formulas," and any mother or big sister, living in our cities, who wants to know how to feed a baby can find out at a milk station.

Take the infant there; it will be weighed, examined and its age asked. The doctor, at the station, will then give the nurse just the "formula" that the baby should have, and the nurse will show the mother how to prepare it. These formulas must be worked out only by a doctor or a trained nurse who has made this a study for years. Modifying milk by these formulas is a work that experts consider so necessary that many cities spend thousands of dollars a year in establishing milk stations and paying baby specialists. If there is no station in your city, take the baby to a nurse or consult a doctor. Don't *guess* at so important a question as the preparation of milk for the baby.

Taking it for granted, therefore, that no girl is going to work out any formula without the help of an experienced person, our lesson will be simply how to do the work after the doctor has given the formula.

Prepare the table as for cooking; cover it with clean, white paper, or a perfectly clean towel or cloth. All the basins, bowls, bottles, and any utensil used for the preparation of milk, should be used for no other purpose.

The articles (which should be on the table before beginning to work) are as follows:

Six feeding bottles. These should be round, not flat, so that they will clean easily, having no inside corners to collect the milk. Feeding bottles are marked with one ounce and half-ounce measurements, which enable any

one to use them in place of a measuring glass. They come in different sizes, but an eight-ounce bottle is a good size, for when the baby is small the bottle may be partly filled, and when older it may be used entirely full. Two of these bottles may be bought for five cents. Prepare every morning as many bottles as will be needed during the next twenty-four hours. Put only food enough in each bottle for one feeding.

Have also on the table rubber nipples, with a small hole at the end so that the milk will not rush too fast into the tiny stomach. These should be of black rubber which go over the neck of the bottle. A rubber feeding tube should never be used.

A pitcher is needed in which to mix the food. If possible, have this of glass, as germs do not collect on glass as readily as on other material.

A glass funnel, to be used in pouring the milk preparation into the bottles, must be at hand; also corks for the bottles. Absorbent cotton often is used, but corks can be boiled every day and are cheaper. A bottle brush, some bicarbonate of soda, or if that is not convenient, common salt; a fine wire strainer (some use gauze to strain the barley water, but a fine wire strainer is easy to wash and to keep clean), a saucepan, sugar, a teaspoon, barley (prepared barley is good, but many doctors use ordinary clean store barley), a glass, and a pint bottle of milk.

After each feeding, bottles and nipples must be rinsed in cold water, then the bottle left filled with cold water (a little bicarbonate of soda may be added), and the nipple placed in a glass of cold water with half a teaspoonful of salt added. Hot water will sour any milk that has stuck to the bottle or the nipple. Corks should stay in a glass of water when not in use.

Bottles, corks, and nipples should be thoroughly washed once a day with hot water, soap and soda. Use the brush for the inside of the bottle, and turn the nipple inside out, washing it thoroughly. When nipples are new, boil them for at least ten minutes.

The time has now come to prepare the baby's food. This should be done in the morning, early, and all food needed for the day should be prepared at one time. When the table is ready be sure that your hands and apron are clean, and that no soiled cloths are hanging over or near the table; remember how sensitive milk is to any microbe.

Take the bottles, corks and nipples (all of which have been made perfectly clean, but not sterilized) and put them in a clean pan of cold water; place them on the stove and allow them to stay there until the water has boiled twenty minutes. Washing bottles is not sufficient; something may stick to the bottle that only boiling will loosen.

The formula given here is a simple milk modification. We will use it only as an example:

Ten ounces milk,
Ten ounces barley water,
Half ounce sugar,

This will fill five 8-ounce bottles.

Take a saucepan, and with three cups of water use two teaspoonfuls barley flour. Put the water on to boil; mix the barley flour with a little cold water, to avoid lumps, and then add it to the saucepan of boiling water. Add a pinch of salt, and boil for twenty minutes.

To sterilize milk, it must be boiled, but this is not necessary if the milk is bottled and certified. Scalded milk only paralyzes any possible germs; it does not kill them.

When the bottles are boiled, pour off the water, but

leave the bottles in the saucepan and put the saucepan in a dish-pan of cold water until the bottles are cool.

Take the corks from the water with a spoon, never with the fingers. Take the nipples from the water in the same way.

Now allow the barley water, which has boiled twenty minutes, to cool while the bottles are cooling; it will cool more quickly if placed in a pan of cold water.

When the barley water, milk and bottles are cooled, pour ten ounces of milk into the glass pitcher. If there is no measuring cup at hand, measure by the extra feeding bottle, filling it full once and then measuring out two ounces more. Dissolve half an ounce, or four teaspoonfuls of sugar in the barley water. If you have lump sugar, not granulated, one lump of sugar is equal to a teaspoonful, so that four lumps will be four teaspoonfuls. Strain this barley water and sugar into the milk.

Now that the milk, barley water, sugar and the pinch of salt are mixed together in the glass pitcher, pour this mixture into the cooled, sterilized bottles. If five bottles are used, put four ounces of this milk and water mixture into each bottle. Cork at once and put on the ice.

Before giving the bottle to the baby place the bottle in a saucepan of hot water. Test the milk by putting a drop on your wrist; if it feels warm it is the right temperature. Never touch your lips to the bottle.

If lime water is required, buy it at a drug store. A large amount may be purchased for five cents, and will keep, in a cool place, for three or four weeks. Lime water is not used in place of water, but to make the milk more easily digested. It is also used for babies suffering with colic.

FOOD FOR CHILDREN BETWEEN ONE AND FIVE YEARS OF AGE

List of General Foods for Little Children.

Cereals.

Broths. Beef, mutton and chicken.

Soups. Milk and vegetable.

Eggs. Coddled, poached, scrambled, custard (never fried eggs).

Meats. Broiled, roasted.

Fish. Broiled, baked (never fried).

Vegetables. Celery, peas, asparagus, potatoes, rice, macaroni, cauliflower, carrots, beans, spinach.

Fruits.

Stewed fruits, apples, cherries, grapes, raspberries, strawberries, blackberries, dates, figs, prunes, pears, peaches.

Juice of oranges, pineapple.

Desserts: Junket, custards, plain-fruit jellies, fruit juice with gelatin, milk puddings, tapioca pudding.

Food for Children Under Five Years.

There is no subject more important to study than the care of little children, and food is the most important element in that care. The work in the home falls so heavily upon the mother, the cooking and serving the meals take so much of her time, that the responsibility for the younger children of the family is assumed at times by the older sisters. The very first thing that these older sisters must learn is that children must be saved from themselves; that what they want to eat and what they do not want is of no value; such decisions must be made by older minds than theirs. The excuse, "he

will not do it," or "he will not eat it," or "he wants this," or "he wants that" is a silly excuse for any one to give for allowing a child to have the wrong thing, or to eat food which injures the stomach. A child under eight years of age does not know what is good for him, and will almost invariably choose the wrong thing. If one is not strong enough to make her little charges eat nourishing food, if she has not the power to keep them from eating between meals, then she is not capable of looking after children.

The work you are to take up now is the preparation of food for children after the first year. As we have seen, children under a year live almost entirely on milk. They have no teeth and cannot chew food, and neither has the stomach the juices to digest food, other than milk. Before beginning the preparation of these foods for children, over a year old, let us take up a few of the rules of life that grown-up people must learn and must teach little children, in order that the child's body will be in a condition to turn the food into fuel. Just as in the stove lesson no coal was put into the stove until the stove was in perfect working order.

CARE OF A CHILD'S BODY

Sleep.

Sleep is an absolute necessity to life, and the amount of time a child spends in sleep, and the regularity with which it takes these rests, have a great deal to do with its health. Children under three years of age should sleep twelve hours every night, and besides this should take a nap in the daytime. Not only does the body need rest, but also the heart, the lungs, and the stomach. These organs all work at night, but they do not work

so hard as in the daytime. The eyes need rest, too, and all the nerves of the body need to be absolutely quiet for at least half of the twenty-four hours. Even if a child is able to live with little sleep, and even if he looks healthy as a baby, he will meet manhood with insufficient strength if he does not have his right amount of sleep. There is no use to feed a tired body; it is like piling coal into a worn-out stove.

Air.

A little child of two or three years has no idea how much air should be in the room when he goes to bed; this must be decided by a grown person. If you put a child to bed in an overheated, close room, he will wake up in the morning more exhausted than when he went to bed, and will lose all the feeling of refreshment which should come after a night's sleep. One sign of this will be that he will want no breakfast. The food that a child eats at night is not given a chance to digest if that child sleeps in a close room. The waste matter is not thrown off, the system is clogged and the child feels heavy, and has no appetite.

Exercise.

Playing and running about is the way that children exercise, and this exercise is absolutely necessary for digestion. But a big girl must remember when she is playing with a child that the exercise must not be violent. A walk across the room is a long journey for a baby, and a walk a block long is a long journey for a small child. It is sometimes difficult for a grown-up girl to realize how very delicate the muscles and nervous strength of a child are; if these are overstrained, if the play is too violent, it may weaken a child's heart for the heart will

pump hard and try to keep the body going when the natural strength is exhausted. Big girls must never pull little ones by the arm, to make them hurry. Remember that children cannot hurry, and it is cruel to try to make them walk fast.

Bathing.

One fact about children is that they never seem to want to be clean, especially little boys who object even to having their hands and faces washed, and balk at a bath unless it means a swim in the river. So this part of their daily life must be decided by some one who knows better than they.

We know that a skin which is not clean becomes inactive, and often diseased. It certainly would be cruel to let a child's skin get into an unhealthy condition before the age when he is responsible. The entire body of a child must be washed with warm water, at least once a day, to keep the skin active. Do not put food into a dirty body; the waste matter from the pores of the skin must be washed away.

Teeth.

Every one wishes to be as good-looking as possible, and there is nothing that makes a man or a woman uglier than bad teeth. It is extremely cruel not to care for the teeth of a little child, and to neglect them in childhood means expense later on, and very often at a time when money is most needed for other things. It also means indigestion and malnutrition, that is, the food cannot nourish the body unless the teeth are in condition to do their part. Brush a child's teeth every morning and every night; take it for granted that he will never want them brushed, that he will cry and do everything he can

to make you omit this morning and evening duty. Later on, he will thank you, if you are faithful. Good, firm teeth prepare the food by chewing and breaking it thoroughly apart. Remember this is the reason why we have teeth.

Habits.

A child comes into the world with no habits, either good or bad, and his life later on is decided by what habits are formed in childhood. A great responsibility in the care of a child is to make him form good, rather than bad, habits.

The habit of liking the right, rather than the wrong food is accomplished by never giving the child any wrong food. If you hear a child crying for tea and refusing milk, it is because his mother or some one has given him tea and created in him a taste for the stimulating, rather than the nourishing, drink. The habit of going to bed early is formed by regularity. If you let a child go to bed one night at seven o'clock and the next night at ten o'clock, and at another time allow him to sit up until the grown people go to bed, how can that child understand that he should go to sleep at a specific hour?

Food.

It is a very common error for grown-up people to think that children can eat "what is on the table." The child sees certain foods that are served three times a day, and naturally asks for them, often by loud cries. It is estimated that one-half of the cases of illness among children are the result of eating this grown-up food; good food for people who have their growth but wrong for a child.

In the first place, the child lacks the strong teeth to

masticate the food. The juices of the stomach in a child are very different from those in a grown-up person; the stomach and intestines are small and tender, as is the child itself. No one would expect a baby of three to carry up the coal. Why should one expect a tiny stomach to do hard work?

† A child not only should be prevented from eating the wrong food, but he must eat the right food. Big people must know how much waste and water there is in each food,—what foods build tissue, what kind furnish heat, which contain minerals to purify the blood. People in very cold countries eat foods that contribute heat. Old people eat foods that repair waste. To children we give much of the food that contains protein, for that makes muscle and tissue and provides the elements needed for the growing body. Never allow yourself to think again that all ages can be fed and treated alike. The growing boy eats twice as much food as his grandmother, for she eats only to provide heat and to repair the waste of the tissue, while he eats to increase the weight and height of his body. The old people feel cold when the children in the same atmosphere are too warm. That is because the circulation is slow in the former and quick and healthy in the child. Human life is a wonderful study. Make it such by knowing a great deal about it.

Dr. Rotch, a man who has made a study as to what children should eat, divides the child's life into four periods. THE FIRST PERIOD is the first year of the baby's existence, and in that time, as we have learned, he lives on milk. THE SECOND PERIOD is from one year to thirty months old, and in these months it is very necessary to have variety in the food, always remembering that the foods given must contribute to growth. The child is still a baby, and its chief diet is milk, but this may

be varied with fruit-juices, broth, gruel, white potato, and after eighteen months, an egg. Increase the quantity of the food only as fast as the stomach of the child can digest it. THE THIRD PERIOD begins when the child is two and a half years old, and then the child can begin to eat vegetables, such as fresh squash and peas. It may have more kinds of fruit, but always cooked fruit, not raw. It also must have more proteins; add this element by beginning to give the child a little bacon or scraped meat. Then, when the child is three years old it may have such meats as chicken, mutton chop, roast beef and beefsteak, but these should be cut into very small pieces, with a little salt added, but no pepper. When a child is three years old it is well to give meat one day and an egg the next. A child eats eggs before it eats meat; that is, a child can have eggs when it is a year and a half old, but it should not have meat until it is nearly three years old.

Dr. Thompson gives the following general rules:

“ 1. Allow time for meals.

“ 2. See that the food is thoroughly masticated.

“ 3. Do not allow nibbling between meals.

“ 4. Do not tempt the child with the sight of rich and indigestible foods.

“ 5. Do not force the child to eat against its will, but examine the mouth, which may be sore from coming teeth, and examine the food, which may not be properly cooked or flavored. If good food is refused from peevishness merely, remove it, and do not offer it again before the next meal-time.

“ 6. In acute illness, reduce and dilute the food at once.

“ 7. In very hot weather give about one-fourth or one-third less food, and offer more water.”

Preparation of Food.

. *Gruel.* The great point in making cereal gruel is to cook it thoroughly. Oatmeal, farina, barley, hominy, and rice are the best cereals to use. Receipt, page 290.

Until the child is four years of age milk forms the chief part of the diet, but after the first year it is used much in combination with other things.

Put milk in soups, in puddings, in gruel, and give a child dried bread and milk if he says he is hungry.

Never give a child really cold milk; warm the milk a little for an infant under two.

Never let any one, when overheated, drink cold milk. Milk is a food, not a drink.

Never give a child an egg until you have tested it. Fried eggs and omelets are not good for children. Soft-boiled eggs are the most digestible.

Fruits. After a child is a year old you must know how to prepare for it, orange juice, stewed prunes, and apples.

The utensils used in preparing food for a child should be scrupulously clean. If possible, keep separate for this cooking a saucepan, a double boiler and the few other needed utensils.

Two or three teaspoonsful of olive oil served with food each day is very healthful.

The following are suggestions for the diet for little children. (All of the receipts for these suggestions are in the back of this book.)

Division of Child Hygiene.*Diet for Child from Twelfth to Eighteenth Month*

FIRST MEAL, ON RISING

(1) Two to three tablespoons of juice of a sweet orange, or juice of six stewed prunes, or two tablespoons of pineapple juice.

(2) One cup milk with either zwieback, or dried out bread.

Note: Fruit must be given either half an hour before or half an hour after milk.

SECOND MEAL — DURING MORNING

Milk alone or with zwieback.

NOON MEAL

(1) Small cup of meat soup or broth.

(2) Dried bread may be added.

Note: Soup may be made of chicken, beef or mutton.

FOURTH MEAL — AFTERNOON

Milk with or without swieback.

EVENING MEAL

(1) One half cup thick gruel mixed with one half cup of milk, from top of bottle. Zwieback.

Total milk in twenty-four hours, one quart or thirty-two ounces.

Diet for Child from Eighteenth to Twenty-fourth Month

BREAKFAST

(1) Juice of one sweet orange, or strained pulp of six stewed prunes, or pulp of baked pear.

(2) A cereal, such as cream of wheat, oatmeal, farina or hominy with top milk. These must be cooked until like gruel.

FORENOON

A glass of milk with zwieback, or dried bread.

(This is better than crackers for a very little child.)

DINNER

(1) Broth or soup made of beef, mutton or chicken, and thickened with peas, farina, sago or rice, or occasionally,

Beef juice with dried bread, or clear vegetable soup with yolk of egg, or on another day,

Egg coddled, with bread, or the egg poached, with a glass of milk.

(2) Dessert: apple sauce, prune pulp, or junket.

Do not give milk at dinner with beef juice.

(A child can often digest junket when its stomach will not retain milk.)

SUPPER

Glass of warm milk, with zwieback and custard or stewed fruit.

Total milk in twenty-four hours, one quart.

Diet for Child from Two to Three Years

BREAKFAST

(1) Juice of one sweet orange, or pulp of six stewed prunes, or a little pineapple juice, or apple sauce.

(2) A cereal, such as oatmeal, farina, cream of wheat, hominy or steamed rice, slightly sweetened or salted, with the addition of top milk. Or,

A soft boiled or poached egg with dried bread or toast.

(3) A glass of milk.

Note: Milk and raw fruit-juice must not be given at the same time.

DINNER

(1) Broth or soup made of chicken, mutton, or beef, thickened with arrowroot, spaghetti, rice or with the addition of the yolk of egg or toast squares. Or,

(2) Scraped beef or white meat of chicken or boiled

fish, never fried (small amount), and mixed with mashed or baked potato. Fresh peas or spinach, or carrots may be given, but must first be pressed through a sieve.

(3) Dessert: apple sauce, baked apple, rice pudding, junket or custard.

SUPPER

(1) A cereal or egg (if egg has not been taken with breakfast), with stale bread or toast. Corn bread with milk or with cocoa or bread and custard.

Never give a child under three meat every day; alternate with eggs, alternate potato with macaroni, or rice.

(2) Stewed fruit.

Diet for Child from Three to Six Years

BREAKFAST

(1) Fruits: an orange, apple, pear or stewed prunes.

(2) Cereal: oatmeal, hominy, rice or wheat preparations, well cooked and salted, with thin cream and sugar, or

Egg: soft boiled, poached, or scrambled.

(3) Milk or cocoa.

DINNER

(1) Meat: chicken or beefsteak, or roast beef, or lamb chops, or fish.

(2) Vegetables: spinach or carrots or string beans, peas, cauliflower-tops, mashed or baked potatoes, beets or lettuce (without vinegar), macaroni, or spaghetti. Bread and butter (not fresh bread or rolls).

(3) Dessert: custard, rice, bread or tapioca pudding. Home-made ice cream (once a week), corn-starch pudding (chocolate or other flavor), stewed prunes or baked apple.

Never give a child bought ice cream, the milk from which it is made may not be fresh; the freezer may not have been clean; and no one can know exactly from what the flavoring is made.

SUPPER

(1) Milk toast or Graham crackers and milk. Or a thick soup, such as pea, or cream of celery, with bread and butter. Or a cereal and thin cream with bread and butter.

(2) Dessert: stewed fruit; custard or plain pudding; jam or jelly (homemade).

From United States Department of Agriculture
PAMPHLET ON "FOOD FOR YOUNG
CHILDREN"

"At the close of the day the mother might ask herself these questions.

"1. Did each child take a quart of milk in one form or another?

"2. Have I taken pains to see that the milk that comes to my house has been handled in a clean way?

"3. If I was obliged to serve skim milk for the sake of cleanliness or economy, did I supply a little extra fat in some other way?

"4. Were the fats which I gave the child of the wholesome kind found in milk, cream, butter, and salad oils; or the unwholesome kind found in doughnuts and other fried foods?

"5. Did I make use of all skim milk by using it in the preparation of cereal mushes, puddings, or otherwise?

"6. Were all cereal foods thoroughly cooked?

“ 7. Did I keep in mind that while cereals are good food in themselves, they do not take the place of meat, milk, eggs, fruit, and vegetables?

“ 8. Did I keep in mind that children who do not have plenty of fruit and vegetables lack the minerals and the vegetable acids needed for laxative effects?

“ 9. Did each child have an egg or an equivalent amount of meat, fish or poultry?

“ 10. Were vegetables and fruits on the child's bill of fare once during the day?

“ 11. Did either the fruit or the vegetable disagree with the child? If so, ought I to have cooked it more thoroughly, chopped it more finely, or have removed the skin and seeds?

“ 12. Was the child given sweets between meals, or any thing that tempted him to eat when he was not hungry?

“ 13. Was he allowed to eat sweets when he should have been eating cereals, meat, eggs, fruit or drinking milk?

“ 14. Were sweets given to the child at the end of the meal unmixed with fat and not highly flavored?

“ 15. Was the child made to eat slowly and chew his food properly?”

CHAPTER XVII

PART I. PREVENTION OF DISEASE AND PERSONAL HYGIENE

PART II. HOME CARE OF THE SICK

PART I

The knowledge of disease is not only needed in times of sickness, but every one should have certain general information in order to recognize illness; and to prevent its spread from one member of the family to another.

A homemaker ignorant of what causes disease and what will prevent it unconsciously can do a great deal of harm. Almost every detail of housekeeping has some connection with health. Think how much harm could be done if a homemaker did not know that to leave food exposed to dust and insects might easily cause infection; or if she did not know that in impure drinking water are typhoid germs, or if she did not clean the sinks, drains, dishes, cooking utensils, and dish towels very thoroughly, knowing the danger from possible germ life.

Every girl must know the danger to healthy people if they are allowed to sleep in the bedclothes that have been used by a sick member of the family: and that the clothes of a fever patient must be washed separately from the family wash.

When any member of the family is really sick, a doctor and a nurse must be called in at once, then the members of the family will be told exactly what to do.

In this chapter we are going to talk about hygiene, the science of health, and of those acts of health prevention

which every woman and girl can perform for herself. We will also find out how much home nursing and care of the sick a girl should know without pretending to be a trained nurse.

First, take up the subject of

Personal Hygiene.

Hygiene is the science of health. Sanitation means applying this science in the preservation of health, and personal hygiene has to do with those principles or rules that apply to the care of the body.

Sometimes, when we read or hear of the simple rules that are necessary for health, we want to say, "I always do that," or "I never do that"; but the most careful people in the world have to be reminded constantly of the everyday acts that affect health, and the girl is in danger who is too sure of her knowledge on this subject, or who depends upon newspapers or quack doctors to give her prescriptions for health. Nature will do her part in warding off disease and discomfort if we consistently follow her rules. This is not easy, for it means daily self-control, courage often to go contrary to our neighbors' ideas, and character strong enough conscientiously to perform dull duties every day.

In the first chapter is a description of the house and its conformity to all the rules of household hygiene or sanitation. We found that a house, to be sanitary, must have space, cleanliness, air and sunlight, and that every part of it must be in perfect repair and working order. In this chapter we are to consider how to keep in order the health of the people who live in these houses. A *house* consists of walls, ceilings, floors and the furnishings. A *home* means the house and the people who live in it.

The Skin.

Every girl wants a clear skin. This is a mark of beauty; the skin more than anything else is a sign of bodily health or disease. A smooth, clear skin means that the tiny blood vessels are in good condition; that the circulation is good; that the right nourishment is being supplied to the body and that the digestion is normal. A dull, sallow skin, or pimples on the face, indicate that the blood or circulation is out of order.

To keep the skin in perfect condition:

First, Food. Eat the right food at meals and eat it slowly.

Eat nothing between meals.

Study what is the right food and take pains to get it. Do not rely too much on advertisements. Remember that the writers of most advertisements are interested only in selling their goods. They do not care about you or your health.

Do not drink tea or coffee while you are getting your growth.

Second, Air. Fresh air contains oxygen. We must breathe a great deal of oxygen into our lungs to make the skin clear and cheeks red.

Impure air is filled with poisonous substances. It contains the refuse from the lungs; it is filled with dust and germs, and is lacking in oxygen.

It is bad to breathe impure air as it is to drink impure water. You would not think of bathing in the water another person had bathed in, but you forget that in a close room filled with people we breathe into our lungs the air which other people have exhaled.

Bad air, or not enough air, affects digestion and circulation, and shows in the skin. The signs are: the disappearance of bright coloring suggestive of health, pimples,

dullness of skin and a puffy look, especially around the eyes.

The rebuilding of the body is largely done at night during sleep, and oxygen is necessary for the process of rebuilding. For this reason the window must be open in a bedroom at night (winter as well as summer), and many times during the day the air in a room should be changed.

Third, Sun. In the first chapter you learned to have your house face south or west, so as to get the sunny exposures.

Disease germs live in dark places away from the sun. Sun is a disinfectant. A room with sun, therefore, is a more healthy room than one without. There have been cases of face eruptions traced to living in sunless rooms. If you cannot have sun in your room, you can have air, and then plan to be out in the sunlight as much as possible.

Fourth, Exercise. Exercise is absolutely necessary for a good circulation; and good circulation is necessary to carry off the waste matter of the body, otherwise this waste matter will clog and poison your systems. Nothing will ruin the skin more quickly than this kind of poison.

Choose walking, when possible, rather than riding in a subway or a hot trolley-car. Remember you are aiding circulation in the one case and retarding it in the other.

Fifth, The Morning Bath. The loose dirt which we accumulate from the outside is, perhaps, blacker, but it is not more dangerous than the dirt, consisting of the waste matter which is given off through the skin, and which can be partially absorbed again to poison the body. The body should be bathed every day.

Perspiration and oil are emitted through the pores of the body; if not washed or rubbed off, this hardens and

clogs the pores; it also gives off a disagreeable odor.

Do not wash only — rub the skin hard every day. This is good for the nerves of the skin. The exercise makes them sound, healthy and hardy.

The good or bad treatment of the skin has a decided effect on general health.

Remember :

We breathe through the skin as well as through the nose.

We feel through the skin.

The skin must be clean so that nothing will obstruct it in throwing obnoxious matter and in taking in oxygen.

Absence of a bathroom in the house is no reason for not bathing. A good way to take a bath without a bathroom is :

Two basins of water, one warm and one cold, a wash cloth for each, soap and a towel. Stand in a third basin or tin tub. With the warm water and soap wash every part of the body. With the cold water rinse the body. Dry and rub hard with a coarse towel. Rinse out all basins, wash out cloths and put in sun to dry. Never allow any one else to use your wash-cloths or towel.

Cosmetics.

It is natural that every girl should want to make her skin as lovely as possible, but it is by air, sun, good circulation and good digestion that this beauty will come; not by preparations and powders bought at the drug-store. These powders often contain lead, which makes ugly blackheads in the skin. Also, lead poisoning may enter the body through the pores and affect the muscles and the digestion. Even if there is no lead in face powders, they often contain ingredients which in time make eruptions on the skin.

Hands and Nails.

Hands must be washed just before cooking or before touching food. Also wash the hands after going to the toilet, after arranging the hair or putting on shoes and stockings. To avoid chapped hands, dry thoroughly after washing and at night rub with a pure cold cream.

It is not enough to manicure the nails once in a while. Keep the nails moderately short and always have an orange-stick conveniently near the wash-basin, so that the nails may be cleaned each time the hands are washed.

Hair.

A very careful cook will always wear a cap when she is in the kitchen. This is to prevent any possibility of loose hairs getting into the food. If no cap is worn a careful cook will be sure that her hair is neat and held securely in place. No one should ever comb her hair in the kitchen, or in the room where the family eats, nor should she wash her hair in the rooms where food is prepared or eaten. A careful housecleaner will cover her hair with a cap while sweeping or dusting.

It is well for a girl to remember that every time she goes out of doors without a hat, the air blowing through her hair gives it strength and beauty. Sun, air and a good brushing will keep the hair in such good condition that a wet shampoo will be necessary only once a month. The best shampoo for a healthy scalp is hot soapsuds made of pure unscented soap. Do not rub the soap directly on the head as this makes the hair sticky. Make soapsuds, wash the hair in these suds and then rinse in clear hot water. Soap again to make sure all grease is out and this time rinse thoroughly in three or four waters.

Once a week wash out the hair brush and comb in hot water with a little ammonia in the water. The ammonia

is needed to cut the grease which comes from the hair. Do not put the handle of the brush in the water.

Teeth.

There is not a girl studying this book who does not know that she should brush her teeth morning and night with her own tooth-brush, using tooth-powder when possible, and rinsing the mouth with fresh water after each brushing. One must not forget that much of the disease from which people suffer comes from unclean and decayed teeth. Bad teeth are breeding-places for bacteria and germs. These disease germs get mixed with the food and then get into the stomach and intestines, where they often cause disease. Bad teeth can poison the entire system; cause disease and even death. If every girl could only realize this, she would never go to school without brushing her teeth, and never go to bed leaving particles of food in her mouth to cause dangerous decay.

Feet.

A strong foot is a foot with the muscles in a healthy condition. The widest part of the foot is at the toes. Let any girl spread her foot out with the shoe off, and look at the foot and then at the shoe, and she will see that the shoe is usually not at all the shape of the foot. The foot, to a certain extent can be contracted but when it is crowded into a pointed shoe, the muscles are first hampered and finally rendered almost useless. The toes have no freedom of action and the muscles no exercise. The foot loses its spring, becomes weak, and "flat-foot" is often the result. The temptation to buy pointed shoes is apparently hard to resist; they are considered fashionable by some people, and the shoemakers cater to these people by making pointed shoes cheaper than good,

broad ones; but it is money well spent when a girl buys shoes with broad toes, even if she has to sacrifice something to get them.

If a girl changes her stockings at least every other day in winter, and every day in warm weather, she will find her feet keep warmer in winter and cooler in summer and grow less tired. It is very simple to wash out stockings. They do not need to be ironed, only well dried.

Bathe the feet in hot water when tired; a little cooking soda in the water is a good thing. Wash the feet in cold water every morning. This will keep the muscles hard and the feet strong.

When the feet are not in good condition, a tired feeling, irritability, nervousness and general depression is the result.

Eyes.

For reading, studying, sewing, or any work that requires keen eyesight, daylight is better than gas or electric light, but every one must read or work sometimes by artificial light. Whether you get your light from a window or from a gas-jet, the light should come from behind and above you. For writing, have it over your left shoulder if possible.

If a girl has to strain her eyes to see objects clearly, or has frequent headaches, or the eyes look red at the end of the day, she should go to an oculist at once. Glasses in time often save the eyes for a lifetime.

GERMS

Germs (another name for bacteria) are a tiny form of vegetable life. These germs are found everywhere — in dust, in air, on our skins, our hair, on the furniture, walls, floors, in water and in the earth. They are not

all disease germs. Many are perfectly harmless; in fact, some are necessary to our health.

These little germs must live on something; that is, they, like all life, must get food. Some get their food from dead matter and cannot live on live matter. These are the germs found on dead fish, meat, etc. This kind of bacteria you would find in your garbage pail, or on a dead horse that has fallen in the street. Then there are germs that get their food from living people. Most of the disease germs are in this class. How these disease germs cause sickness is too far-reaching a subject for us to take up in this book, but as certain germs enter and feed on the bodies of human beings, they multiply and create poisons that are called by different names. One we call measles, one typhoid fever, one we speak of as a cold in the head. There are more than twenty-five kinds of known poisons, and each has a different name; but it is the doctor's business and not ours to study and learn how to counteract them. Our business is to learn how to keep these disease germs out of our bodies.

It is through the mouth that most germs enter the body. There are other ways, through the nose, and the bacteria can enter through an open wound into the blood; but in a healthy person it is mostly through the mouth and nose that disease germs enter; unbroken skin is a protection against them.

How do disease germs get into the mouth? By being on the food, by being in the water and by being on any object put into the mouth. For example, if any one lets the baby suck dirty toys or a nipple from a milk bottle, that has not been boiled, the baby is sucking in germs. They may not be poisonous, but there is always the chance of the poisonous one getting in.

How do disease germs get on the food? When dishes

are not clean the dust from the dish gets on the food; when flies which have stood in infected matter rest their dirty feet on our food; and when our hands which have not been washed touch the food.

Danger from Water.

Water becomes impure by sewage or other impure matter flowing into a stream and poisoning the water. Human beings who drink that water may be poisoned.

The following rules every one must know and keep:

Before touching food hands must be thoroughly washed with soap and hot water.

Food must be covered so that no insect or dust can rest on it.

Sputum from the mouth must be regarded as poisonous. No one is ever allowed to spit in any public place, and all the sputum must be destroyed, like any other poison, after it leaves the mouth.

Waste matter from the bowels or kidneys may be poisonous, and must go into the sewers of the city and be destroyed like any other poison, and all water-closets or utensils that come in contact with this waste matter must be thoroughly washed with soap and water every day. The germs of many diseases live in this waste matter.

Infection.

This means the communicating of disease germs. That is, if a person is sick, the bacteria from that diseased person may be carried to a well person. It is for this reason that when there is sickness in a home or in the neighborhood every one must be very careful that everything which touches the sick person must be at once disinfected. The hands of the nurse, or the clothing from the sick, must be thoroughly washed; mosquitoes and

flies must be kept away; because hands, flies, etc., might rest on the sick person and then touch the food that later some well person puts into his mouth. It is very easy for a girl who is acting as nurse to lift a sick person in bed, and then without washing her hands to cut the bread for breakfast.

Disinfectants.

Disinfectants are something that destroy disease germs. There are three principal disinfectants.

1st. *The rays of the sun.* If a girl hangs the clothes in the sun, or airs the bread box with the sunlight shining on it, she will disinfect or kill any possible germs on the clothes or in the bread box. It is because the sun is a disinfectant that we are advised to have sunlight in our rooms and to live in the sun as much as possible.

2nd. *Heat.* This is another disinfectant. When food is cooked it is safer to eat than raw food, because the heat used in cooking has destroyed the germs that are found on all uncooked food (not all the germs are poisonous). When you boil and iron clothes you disinfect the clothes as well as clean them, for the heat of the water and the heat of the iron kills any germs that the air or the body have left on the clothes. In case of accident, if you have no perfectly clean cloth to tie up a wound, boil your handkerchief twenty minutes and then you can be sure there are no bacteria to get in the wound.

Chemicals, are the third disinfectant. There are many of these. Soap is the commonest one. Lime is another. Lime is what we throw down a water-closet if there is sickness in the house. Carbolic acid is another. This is the foundation of all the bedbug preparations. But the only chemical that it is necessary for children to remem-

ber is soap. Soap cleans away the dirt as nothing else does, and it kills the germs at the same time.

If every girl remembers that sun, heat and soap are, excepting in cases of serious illness, the necessary disinfectants, she will know the principal rule that makes for health.

If any girl wishes to be sure that she herself, and her room, are free from disease germs, she simply will have to scrub herself and scrub her room with soap and hot water, and then let in the sun.

PART II

Home Care of the Sick.

So far we have talked only of preventing disease, but sickness is sure to come in every home sooner or later.

What are the nursing duties that every one must be acquainted with in order to do her part in making a patient comfortable?

The Model Sick Room.

This should be a room with sun in it, away from the noise and smells of the kitchen. The family should take from the bureau or closet in the sick room any clothes they may need later because the patient must not be disturbed by members of the family going in and out. When any one is sick, the room one is sick in should belong entirely to that person.

The great thing in the care of the sick is to make the patient comfortable and clean and as happy as possible. A good nurse is willing to give any amount of trouble to accomplish this.

Have fresh air in the room and see that the room is attractive.

A few flowers add a great deal. If order and cleanliness are necessary to produce in a healthy man the energy and power to go forth to meet life, so much more is this harmony needed to recreate the loss of health and energy.

If the simple tasks are performed quietly and well it will often help to restore health.

Bathing a Sick Person in Bed and Changing the Sheets.

The bed for a sick person should be pulled away from the wall and not face the light.

Bed Bath.

First get everything that you will need for the bath and place all the utensils on a table or chair near the bed, because when one begins to give a bed bath she must not leave the patient to go for water or cloth or soap, as this is most distressing to the sick.

For the bath is needed a basin of warm water, soap, one or two bath towels, alcohol, and a wash cloth of gauze.

A bath should be given before the sheets are changed.

First take the spread from the bed, fold it neatly, and put it out of the way. Make your patient comfortable on the pillow before beginning the bath. Sick people are often irritable and easily annoyed. We should do all in our power to make this morning bath a pleasure and not something to be dreaded.

Have plenty of hot water near at hand. Have an extra pitcher of hot water and a jar in which to empty the water from the basin when it becomes too cold or needs replenishing.

Make the water a little soapy by shaking the soap in it;

do not rub the soap directly on the face or on the cloth.

Before beginning the bath, loosen the clothes at the foot of the bed.

First wash the face and ears, paying particular attention to the ears. The back of the ears and the creases often get very dirty,—this is true especially of little children.

Remember to be very gentle when you are playing the part of nurse. It is trying to any patient to have her ears washed. Do not expect the same patience in a sick person that you do in one that is well.

After washing the face and ears rinse out the cloth. Wipe the face off again and then dry face and ears carefully.

Next take off the nightgown, shake it out carefully and hang it over a chair. If the weather is cold place this chair near the stove.

Now lift one arm from under the bedclothes and lay it on a Turkish towel which you have placed over the bedclothes to protect them. Rub plenty of soap on the cloth, and rub the arm well, particularly under the arm. Rinse out the cloth, wipe the arm once more, and dry thoroughly. If the patient is not very sick, rub with a good brisk stroke. Before washing the hand it is well to trim the finger nails, if they need it. Put the patient's hand over the basin, wash it thoroughly with soap and water. Clean the finger nails with an orange stick when the hand is thoroughly dry. Now wash the other hand and arm in the same way.

It is very refreshing to any one who is obliged to stay in bed to have the arm and hand rubbed with alcohol after it is thoroughly clean. Never use wood alcohol, but 50 per cent. pure alcohol gives a cool refreshed feeling. No matter what part of the body you are washing, remember

you must always keep the patient covered, excepting the part which is being washed.

Now, throw back the clothes to the waist line. Wash the body to the waist with the soapy cloth, rinse and dry with the Turkish towel, as you did the arm, and if possible rub the body with alcohol. Next, turn the patient on her face and wash the back in the same way.

The turning of a very sick person is quite a difficult matter because often one is so sick that she cannot turn herself; but school girls studying this chapter must know they are too young to take care of a very sick person; so we can take it for granted that all these home-nurses have to do is to ask the patient who is not very sick and to whom she is giving the bath, to turn herself over.

Always place a Turkish towel under the body to protect the bed from dampness.

Next draw the bed clothes up around the throat of the patient so as to keep her warm during the bathing. Take out first one leg, place under it the Turkish towel and be sure that all the rest of the patient's body is well covered. Wash the leg well with soap and water, wipe it off with fresh water, dry the leg with a brisk stroke, and if possible rub with alcohol. Cover that leg, take out the other and wash and dry in the same manner.

Now you have bathed the face, the arms, the body and the legs of your patient, but you have not yet washed the feet. When one is sick in bed the feet get tired and hot and need careful bathing. For this, an old blanket, two towels and a basin are needed. From the foot of the bed where clothes have been loosened, slip the blanket under the legs and feet of your patient, put Turkish towel over the blanket.

Ask your patient to bend her knees so that the bottom of the feet are resting flat on the bed. Slip the basin

half full of warm water under the clothes, lift the feet and put them in the basin. Put a folded towel where the legs touch the basin so as to protect them from the edge. Now wash feet well with soap and water, dry thoroughly, and after drying take out the basin and towels, leave blanket for a little time, and if the feet are cold put a hot water bag in the bed.

Do not hurry when you wash the feet of a sick person. It is well to let them soak for a few minutes in the hot water.

It is understood that fresh hot water is always near by in a separate pitcher to add to and keep the basin water warm. Water with any chill in it will be unpleasant and possibly dangerous to the patient.

Now the bath is finished. The one who is giving the bath can at once collect the basin, the towels, the cloths and soap and take them away while the patient rests a little.

Combing the Hair.

The next task in order is to comb your patient's hair. Put a towel (fresh if necessary) under her head. Part the hair from front to back with the comb. Comb first one side then the other. Always begin at the end of the hair and work up, combing a small part of it at a time. If tangled, twist it around your finger to relieve the pull on the scalp. A good nurse will never pull her patient's hair; that might start a headache that would last all day.

After combing one side, braid the hair on that side; then braid the other in the same way. Have the braids go quite near the ears so that the back of the head may be left free and your patient may not be obliged to lie on a twist of her hair.

Wash your hands after combing the hair.

Teeth.

If not too sick, your patient will want to brush her own teeth. Nothing is more refreshing in illness. Any fever or any trouble with the stomach at once gives a bad taste in the mouth. Cleansing does much to relieve this. Put a towel in front of your patient, covering the bed clothes carefully. On this put a basin, hand the patient a glass of fresh water, her toothbrush and tooth-powder.

Now make a mouth wash with half a glass of fresh water or water and a little salt. After she has brushed her teeth and before taking the basin away let her rinse her mouth.

Changing the Sheets with the Patient in Bed.

First take out top sheet from under the blanket and place it one side to use later as a draw sheet. The blanket must cover the patient and protect her from all exposure.

Now take the pillow very gently from under the patient's head, move her to one side of the bed, roll the soiled under sheet and the draw sheet up next to the patient.

The clean sheet is then laid on to the uncovered half of the bed, the fold in the sheet coming midway in the bed. Tuck in this clean sheet on the free side and make it smooth as far as the patient; roll this clean sheet up tight against the patient beside the soiled one.

Now fold the top sheet which you took from the bed into a strip about one yard wide for a draw sheet and tuck it into the side with the clean sheet. Make this smooth also, and roll it up next to the patient.

Now turn the patient to the clean side of the bed over the rolls of sheets. Go to the far side of the bed, pull out and throw to one side the soiled sheet and soiled draw sheet that you rolled in the middle of the bed.

Pull the clean sheet tight and tuck it in with square corners; at the same time pull draw sheet as tight as possible and tuck in with the sheet.

Be very careful that there are no wrinkles in the sheet. The draw sheet is used with a sick person to protect the under sheet, and when the sickness is of any severity a rubber sheet is placed between the under sheet and the draw sheet.

The pillow, on which a clean pillow case has been put, is now placed under the patient's head. Lift her with one arm under the shoulders and slip the pillow in with the other hand. Pull the pillow down so that it will be a little way under each shoulder. Always ask your patient whether the pillow is comfortable.

All this time the patient has been covered with the blanket.

Next, place a clean top sheet over the blanket and pull the blanket from under, having your patient hold the sheet at the top. The blanket is then placed over the top sheet and the sheet and blanket tucked in at the bottom of the bed.

Put on the spread to protect the blanket and also to make the bed look attractive.

No one can do this work at first without the help of a teacher. This is not dull and monotonous work like much of the housework. A human being is dependent upon the care of a nurse for both refreshment and strength. This sense of responsibility to another will make any work interesting.

One thing every one should know is how to make people comfortable who have been in bed a long time. Often, as in the case of old people, they may not be sick enough to have a doctor, and yet they must spend much of their time in bed.

Always be patient with these people. They are apt to be nervous and unreasonable. They will be trying, but one who has youth and health should feel only pity and not irritation for those who are more or less helpless.

Bed Sores.

When a patient lies in bed for a long time, different parts of the body become sore from pressing on the bed, from moisture, from wrinkles in the bedclothes, from crumbs in the bed and from lack of cleanliness.

There are many ways to prevent these sores:

Keep the bed and the patient in a perfectly clean condition.

Watch for sore places. The first sign will be a red look and a feeling of soreness.

Wash these places carefully with half alcohol and half water, and then powder them with talcum powder to keep them free from moisture.

If they do not get better at once, send for the doctor and ask him what to do.

It is often a rest to a patient to keep the foot or the elbow from pressing on the bed. This can be done by making a round pad and resting the elbow or the heel in this.

To Make a Pad. Take absorbent cotton and make a round ring of this cotton. Wind this ring around and around with gauze from two to three inches wide. When it is thoroughly wound, pin the end of the gauze with a safety pin, but be very careful that the safety pin is in a place where the patient's flesh cannot touch it.

Medicine Closet.

Every family should have in the house either a box or a

medicine closet to hold articles to be used in case of illness or emergency.

This box should contain alcohol (never wood alcohol), for use in bathing a patient; vaseline, or oil, to use in case of burns; bicarbonate of soda (baking soda), also for use in case of burns; talcum powder to dry the moisture from the skin; white castile soap, for use in bathing a patient; absorbent cotton, which is used in nearly all illness; sterilized gauze bandage; scissors, which should be kept in this box and used only for illness; pins, ordinary and safety pins; cold cream for chapped hands.

No medicines need to be kept in this box, for if a patient is obliged to take medicine the doctor will prescribe it.

The Invalid's Tray.

Let us take as an illustration a little sister who is sick. She has been made comfortable for the day. She has a clean, cool body; the sheets on her bed are fresh; and the room has been aired and dusted with a damp duster so that no dust has been thrown into the air and thus on to the patient. Now the patient is ready for something to eat, and it is the duty of the home-nurse to get the breakfast.

This meal must be daintily served, the dishes made attractive, the linen spotless; and when hot food is used the dishes must be hot, when cold food is served the cup or dish must be cold.

The appetite has a great effect on digestion, and sick people are very apt to have poor appetites, and so it is the part of the nurse to do everything in her power to stimulate, and to arouse, the appetite. An attractive room, a flower on the breakfast tray, and a happy, quiet,

cheerful nurse wearing a very clean apron, all these do much toward making the patient willing to eat. If the tray-cloth is a little soiled, if the tea has slopped into the saucer, if the outside of the water glass is wet, if the nurse's finger-nails are dirty, the patient may lose her pleasure in the breakfast and refuse to eat.

There are six things to remember in preparing an invalid's tray :

1. Make it look attractive.
2. Have everything taste just right; Hot things very hot, cold things very cold, and each kind of food seasoned exactly right. A good cook must taste the food before she serves it.
3. Be sure all of the food on the tray is easily digested. (When one is working or playing she can eat more solid food than she can when lying still in bed.)
4. Be sure it is the kind of food that will give the patient strength. She wants to get well and strong as soon as possible, and every mouthful of food must help her toward health.
5. Let no time elapse between the cooking and serving. Food that stands after cooking is not appetizing.
6. Never ask your patient what she wants to eat, never talk about the food where she can hear you. Surprise her if possible. This surprise helps the appetite and adds interest to the dullness of a long sick-day.

The tray on which you serve the meal must be large enough to hold all the dishes without any appearance of crowding. If, for example, you are serving only milk and toast, use a small tray; but three or four dishes will require a large one.

Cover the tray with a tray-cloth. This does not need to be expensive, but it must be *spotlessly* white. If you have not a tray-cloth use a perfectly clean napkin.

Choose the best china you have; the silver and glassware must be the best and polished.

In setting the tray follow the same rules as you did in setting the table. Place the plate where it can be conveniently used; knife at the right, sharp edge toward the plate; the fork at the left of the plate. A bread and butter plate should be placed above the fork. The napkin must be placed at the left of the fork. Cup and saucer at the right — with the handle so that your patient can reach it easily. Water glass above the knife, not full enough to spill as you carry the tray. Be sure that there is salt and pepper on the tray, sugar if required, and a small pitcher of cream or milk, if needed. Now the tray is ready for the hot dishes of food as soon as they are cooked.

It depends upon how sick the patient is what she can eat. In this chapter you will find only a few suggestions. In the chapters on cooking you learnt about foods in general and how to prepare them.

Do not give a sick person anything fried. Fried food is not as healthy as boiled or steamed or baked food.

Some cooked fruit is more easily digested than raw fruit, for example, bake an apple or make it into apple sauce, and serve it with milk and sugar; but if you have an orange the juice is, when served cold, often more acceptable than hot fruit, especially in warm weather. The flavor of this fruit will help give your patient an appetite for the more nutritive part of her breakfast, and orange juice is easily digested. Fruits also aid digestion. They are largely composed of water, and contain but little nutritive value, the little they have being sugar. But the blood needs the minerals in fruits, and so it is well to serve fruit with the meal.

Eggs have a great deal of protein and repair the waste

of the body as does meat. There is so much food value in eggs that even if they are expensive try to buy one or two fresh ones for your patient's breakfast. Try to give the sick person the best, even if the healthy members of the family have to deny themselves. To determine whether an egg is fresh or not, put it in a cup of water; it will sink if fresh and rise to the top if not. The reasons why eggs are given to sick people are many:

1. They have a great deal of food value.
2. They taste good and are easy to eat.
3. They are easily digested when raw or cooked soft.
4. They are free from bacteria because the bacteria cannot get through the shell.

Toast is more easily digested than bread. To make toast for an invalid: Cut off the crust, toast the bread a rich brown, first on one side then on the other. Serve it hot and let the patient butter it at the last moment. Dry toast is easier to digest than buttered toast.

Milk alone, or in cocoa, is often prescribed for the sick. If babies can digest milk and gain from it all the strength needed, it is easy to see how it would be just the food a doctor would prescribe for a sick person.

Accidents.

What part should a girl play if she is at hand when an accident occurs? In other words, how much of what is called "First Aid to the Injured" is required of a school girl?

The first thing for every girl to learn is that she must keep her head in case of accidents.

There probably will be in the crowd some one who knows more than she does. Follow his advice, help him by doing exactly what he orders, and try to keep the

curious crowd as far away from the injured person as possible.

Do not let the one who is hurt see the injured part if you can avoid it. Often a man or woman who is hurt will suffer from shock ; that is, faint away or collapse if he is allowed to see the arm or leg or other part of the body that is injured.

The second thing for a girl to do is to help to get the doctor as soon as possible. Do not take the patient to the doctor, but bring the doctor to the patient, because moving one who is hurt may do a great deal of harm. Until the doctor comes have the patient lie perfectly quiet, flat on his back. Do not try to find out where he is hurt. Do not even try to get his clothes off, but keep him as quiet as possible, and cover him with a blanket or a coat, always keeping the crowd as far away as you can.

Burns. Burns are the most common form of accidents. Little sisters who are under the care of big sisters are more apt to get burned than to be hurt in any other way.

The first thing is to protect the burn from the air, and so to ease the pain.

Mix baking soda with water until it is a thick paste, and put this wet dressing all over the burned spot. If you have no baking soda, use starch or flour.

When the pain begins to grow less, cover the burned place with vaseline or olive oil or castor oil.

If it is a bad burn, that is, if it seems to be very deep or to cover a large space, get the doctor as soon as possible.

Sunburn is often a very bad burn, and can be relieved with baking soda or covered with oil like any other burn. Do not cover with a cloth or handkerchief that is not sterile.

Cuts are another common accident.

One important thing about treating cuts is to remember all the things that should not be done.

When the skin is broken, there is danger of germs getting into the blood. Never tie up a cut with a dirty handkerchief or rag. Never touch the cut with your hand, for there are germs on everybody's fingers. Never let the child whose finger is cut put the finger in his mouth, for the sputum may contain bacteria that will enter the blood.

Unless the bleeding is very bad, it does no harm to let a cut finger or cut foot bleed, because as long as the blood is going out no germs can get in.

The air, also, does not harm the cut, and unless you have a clean gauze bandage or a freshly boiled cloth to cover it, it is better to leave the cut open to the air.

Children are apt to fall down and scrape the skin from the knee or elbow and get the dirt of the street into this raw spot. To clean this out, soap and water are best, but if the soap hurts too much call a doctor, for a doctor always can do work of this kind more skilfully than an untrained person.

Use boiled water to wash a wound and remember soap is a disinfectant.

Sterilisation is another word you must learn. It means about the same as disinfectant. When gauze is sterilized it comes in contact with heat and all germs are destroyed. A handkerchief is sterilized when boiled twenty minutes.

If a girl is faced with a more serious accident than a slight cut or a small burn, she should not try to give aid herself but simply to keep the patient quiet, and get the doctor.

CHAPTER XVIII

A HOT WEATHER LESSON

Hot weather has to be faced every year, and the majority of people, on small incomes, are not prepared to meet it. Too little importance is attached in this country to climatic changes. In India, for example, where the thermometer is seldom below eighty degrees, clothing, food, hours for labor, are studied with a view to preserving health and comfort in spite of the heat. In most parts of the United States there are only a few weeks of really warm weather, but many endure this rather than plan to meet the condition with the forethought and intelligence that comes from education on the subject. Thus the person who really desires to make the summer free from discomfort often does not know how.

Air.

One of the great advantages of summer is that fresh air has opportunity to enter our homes, as it has not in cold weather. Doors and windows are wide open night and day, and there is little danger of breathing exhausted air. Every person should make the most of this. Sleep with every window in the house wide open; insist upon fresh air in the store or office or factory; spend all of the recreation-time possible in the open air. Rides in an open car or on top of a stage or on a ferry-boat; an hour with a book on a park bench instead of in the house; use of the roof for reading or working — are all perfectly possible open-air city pleasures. Summer is not

the only season in the year when one can live under open-air conditions; in winter it simply takes more courage and vitality. It is much better for a girl to spend her money in trolley fare or for the short railroad journey that will take her to the country than it is to spend that same amount of money for a feather for her hat.

Summer Furnishing.

There are three reasons why warm clothing, dust-collecting table-covers, curtains, ornaments, etc., should be packed away in hot weather.

First. They create a feeling of stuffiness and irritation. Every one is more sensitive to disorder, to the overcrowding of a room, and to dirt, in hot weather than in cold. Nerves are on edge, and the vitality that in cold weather can help one to laugh at the discomfort of disorder and crowded quarters is lacking in summer. Things press against us when we are suffering from the heat. Give the rooms in summer an atmosphere of space.

Second. Curtains, table-covers, etc., collect dust when the windows are open, and add to labor and to the danger of disease germs.

Third. A crowded room takes away from the free circulation of air, and in summer we must have all the draft possible.

Packing Away for Hot Weather.

If you have not a chest or packing trunk get a wooden box. Any grocery store will have one and will deliver it to your house for a few cents. A box the length of the window and thirty-seven inches high makes a good window-seat as well as packing box. Scrub this box thoroughly inside and out with soap and soda and hot water. When dry, paint the inside cracks with turpentine. Five

cents' worth of turpentine and a small brush will do the work. Stain the outside of the box, including the cover, with alcohol stain.

To make stain. Mix with alcohol enough dry Aniline stain to make the required color.

After the stain has thoroughly dried, rub off with a cloth the powdery remains of the stain which have not passed into the wood. Wax the box with melted beeswax or with any prepared floor wax. Hinges are never found on these grocery-store boxes, but good hinges can be purchased from any hardware store for ten cents.

When the box is cleaned, stained, and the cover hinged, line it with newspaper, having the paper overlap so that there are no open spaces. Shake, brush, and thoroughly air every article of clothing or other material that is to be packed. Then fold carefully, and place the separate articles in the box, with a newspaper between each. When the box is full, cover the whole with a newspaper, tucking it in so that no air or insects can reach the clothing. Fasten the cover on tight, and do not open until autumn.

This box can be used for wood in winter.

Mosquitoes.

Mosquitoes in tropical countries are the carriers of malaria and yellow fever. The Panama Canal, because of the prevalence of yellow fever in the Canal Zone, could never have been built had it not been for the discovery that these fever poisons are carried from one person to another by the bite of a mosquito. In 1880, the French started to build the canal, but were obliged to give it up because the prevalence of the fevers made labor impossible. It was through the acts of brave men, among them Dr. Carroll and Dr. Lazaer, that it was

proved that these tiny insects were so dangerous. These doctors allowed mosquitoes that had bitten yellow-fever patients to bite them, and in both cases the disease was contracted. Dr. Lazaer studied the mosquito as it lit on his hand and drank his blood. Three days later he came down with yellow fever, and died, but his death proved beyond doubt that the mosquito must be eliminated. Havana has been free from yellow fever since 1902 because of the splendid work of William C. Gorgas.

Mosquitoes breed in damp places and in stagnant water. When the United States was ready to build the canal and it was decided that either the mosquito must go or the canal remain unbuilt, the first thing that was done in Panama and Colon was to install a perfect system of sewers and to pave the streets. This did away with the filth and the mud that had been the breeding place of the mosquito. As mosquitoes breed in damp undergrowth, this also was cleared away, swamps were drained, and stagnant pools were oiled. It was not possible at once absolutely to exterminate the disease, but as soon as any one showed signs of yellow fever, he was put into a screened room, and an officer was put on duty day and night to see that the screen doors were always closed and that no mosquitoes in the room could possibly fly out. As soon as the yellow fever patient was well, the house was fumigated and all mosquitoes were killed.

This drainage and sanitary work cost the United States more than nine millions of dollars and the lives of many valuable men, but the discovery that the mosquito was a disease carrier was worth the lives of these scientists and doctors, and to clean up this one little spot in the world was worth all it cost. It is facts like these that make us respect the word "sanitation." The principal man at the head of all this cleaning-up work was Colonel Gorgas, and

what that man did in a big way each girl can do in a small way. He stands simply as one of the greatest house-cleaners that ever lived. He made perfectly clean and healthy the place that was given him to clean, and that is all that is expected of any one.

Flies.

Flies are another danger of the summer months. A fly eats and carries on its body the filth and bacteria from the substances on which it feeds. The house-fly is a disease-carrier not because it infects people by its bite, as the mosquito does, but because it eats and lives and lays its eggs in infected material. Dead animals and excreta are its principal food. But if the house and the near-by street have no filth or disease bacteria exposed for the fly to feed on, it is a harmless, though annoying, insect. If one does not like the thought that the fly now walking around the edge of the cream-jug was a short time ago eating and walking on a dead fish, feeding in the garbage-pail, or even in more disgusting filth, the only thing to do is to keep all such feeding-places covered.

The body of the fly is thickly covered with tiny hairs, its legs are like little brushes, and the dirt and germs stick to this hairy body. It is estimated that a fly can carry about infected bacteria on its legs and wings for at least eighteen hours. Not only do flies carry germs, but they also drop this dirty material from their body after they have eaten it. The fly always overeats, and it overeats decayed material, which it prefers to fresh food. This overeating causes a distention of the body, and in order to relieve this feeling, the fly drops the undigested food as it moves from object to object. The girls who study this book may have noticed that when a fly falls into the milk it will leave a trail as it crawls out. These

trails are the droppings from the intestines and the mouth. They have been studied and proved to be often infected. Every girl has also seen fly-spots where the fly has walked. These spots are the same things: little drops of dirt. Flies feed on sputum, and when this sputum has dried to such an extent that the fly cannot draw it into its mouth, it will inject fluid and moisten in this way the dried sputum, so that it can be sucked in.

The dirty habits of the fly are also conspicuous from the places in which it lays its eggs. Some flies prefer the wounds of animals, in which cases extensive sores are the result. Some will lay their eggs in the dirt of the street. A certain kind of fly will lay its eggs only in cheese, bacon, or some fatty material. As the common house fly does not pierce the skin, it cannot carry poison to the blood, but a fly will light on our skin again and again so that it may feed on the skin secretions. The danger from a fly lies, then, in the fact that they feed and breed in dirty, infected places, and then light on the food of human beings. You may never see the fly that poisons you or that makes your baby sick, for all that is necessary is that the hairy little body shall walk over filth and then infect the milk.

Intestinal diseases are those most often given by the fly to human beings. This is because of the matter that the fly eats. Diarrhea in summer is the most common of these diseases. A single fly can carry on its body 6,600,000 bacteria, and in one examination in England between the months of July and October, twenty per cent. of the flies were found to be infected with diarrhea germs.

A fly does not move much from street to street or from house to house. So if the house you live in and the street you live on are clean, you are comparatively safe.

What is the citizen's responsibility in this question?

Flies *will* walk in filth if there is any filth to walk in. That is a habit in flies we cannot control, but the milk and food in the house can be covered so that the dirty feet of the fly cannot touch what we eat. Garbage-cans, ash-cans, and all waste can be covered, and so made impossible for the fly to use as a feeding place. The windows can be screened. A screen can be bought for twenty-five cents, and the purchase of this may save a baby's life. A screen is also necessary to keep the mosquitoes away. In this country mosquitoes are not the deadly carriers of disease that they are in the tropics, but they do poison many people, they heat the blood, and they certainly do much to annoy and rob one of sleep. Do not shut the windows to keep insects out when a screen will do the same work. Just as uncovered garbage is a breeding-place for flies, so stagnant water, even a small quantity of water in a pail, will act as a breeding-place for mosquitoes.

Those who study this book may not go to Panama or give their lives to help science, but every one can take the rules that these great scientists have discovered, can learn them by heart, and can live by them day by day, and every girl can clean up her little corner or her one house, just as thoroughly as Colonel Gorgas did his larger house-cleaning.

Foods.

Food is to the body what coal is to the stove, and as no one builds a big fire in the stove on a warm summer day if it can be helped, so no one should overheat the body in hot weather. One-fourth to one-third less food is needed in hot weather than in cold, and not only is the quantity of the food different but the quality is also different. The foods that contain carbohydrate, fat and

protein, such as meat, oil, butter and sugar, create heat in the body. Proteins and carbohydrates are quick fuels. For example, if energy is wanted quickly one may obtain this by giving the body eggs or sugar.

To produce heat slowly in the body, and a heat that will last, as a hard coal fire outlasts a wood fire, eat oils, nuts and fat meats. It is for this reason that in cold countries, on all Polar expeditions, the men eat great quantities of fat, but little of this heat-giving food is necessary in warm weather.

Cooling foods are the foods that contain much water. There is a constant loss of moisture from the body in summer as there is loss of heat in winter. In hot weather, therefore, we must eat food that makes up for this water loss, just as in winter we must eat food that gives back the loss of heat. Water is as cooling to the inside of the body as the cold bath is to the outside. Eat uncooked vegetables such as celery and lettuce; such fruits as pears, peaches and oranges, these being largely composed of water; but when you eat this uncooked food be very careful that it is fresh and clean, for food decays very rapidly in hot weather. Never eat any fruit or vegetable or salad without washing it thoroughly.

Freshly cooked vegetables, such as peas and beans, contain much nourishment and in summer they are better to eat than meat. Do not give the stomach a great deal of work to do in hot weather. Eggs are more quickly digested than fat meats.

Eat foods in summer that require a short time to cook. It is often possible to cook in the morning the food necessary for the day, thus allowing the fire to go out and insuring a cool house to sleep in. Be thoughtful of the servant in hot weather; she suffers from the heat as truly as her employer. A supper of cold meat, crisp

cool salad, cold milk and bread and butter is surely more appetizing than a steaming hot dish on a summer night.

Buying in Summer.

One reason for the increase in disease in warm weather is bad food. Every one knows that to keep food from decaying in summer it must be put on the ice; in winter the cold weather takes the place of the ice-box.

In winter most people are obliged to eat canned vegetables, which never have the sweetness of the fresh vegetables. Do not open a can of peas in July because it is easier than shelling the fresh, and equally cheap, peas from the market. In buying vegetables, remember that they must be crisp. Lettuce that is not crisp is not fresh. If possible, buy fruit with the skins on. Never buy pineapple or watermelon by the slice, as the dust from the street has entered every piece.

Sweet, syrupy drinks do not take the place of water. The sugar in soft drinks is heating, and clear water is healthier and more cooling. Our bodies cry out for moisture because of the great loss of water through the pores of our skin.

Let each girl seriously take up the problem of hot weather living. The death-rate of children is much greater in summer than in winter. There is the danger from decaying food, because fermentation is quickened by the heat. The man who sells you fresh vegetables from a cart may be perfectly honest when he tells you they were fresh that morning. In summer a few hours are all that are needed to produce decay. Then, too, there is more dust in summer than in winter. Our windows are open, and the dust easily enters our homes. Also in summer, it requires more will-power to dust properly every morning and to get rid of all dust. Flies and

mosquitoes infect the food in summer, and the overheated bodies of little children furnish easy lodgment for disease.

The care of little children has been considered, but while we are on this subject let us go over a few absolutely necessary facts about helping the baby during the summer.

The baby should never be weaned in hot weather, but if it takes cow's milk, the milk must be kept in a cool place and covered.

Milk which has been heated by the sun or by hot air, or has been too near the stove, is bad milk.

A baby feels the heat more than grown-up people; in hot weather it should wear as little clothing as possible. A loose cotton shirt and a diaper are sufficient for a hot day.

In warm weather give the baby a cool sponge bath several times a day, and give it plenty of clean, cool boiled water to drink; never forget that it gets thirsty and is unable to ask for water.

If the baby vomits or has diarrhea, stop all feeding. Give it boiled water, and send for the doctor at once.

Picnics.

While many people think picnics are only childish things and not important enough for study, they are really worth studying for two reasons.

First. They are held out of doors; and to eat in the fresh air gives the body the best possible medicine.

Second. A great many people who, at home, are very particular about meals think anything will do for a picnic. On the contrary, cold food that is to take the place of a hot meal should be prepared with even more care if possible than the meal at home. It is usually eaten in a warm atmosphere after being carried some distance.

Every one can recall how many children come home from picnics (which should mean health, relaxation and amusement) sick at their stomachs. Why? Because they either eat the wrong food, or the right food prepared in the wrong way, and as soon as the stomach feels the motion of the ferry or the car it protests. For it is an insult to the stomach to fill it with unwholesome food.

What should be taken on a picnic? Sandwiches, fruit and something to drink. Sandwiches should be the main part of the lunch. In a sandwich we have the bread which is wanted at every meal and which contains the necessary starch; butter contributes the fat, and a proper filling completes the needed nourishment. In making sandwiches in summer very little butter should be used, for it is apt to get rancid, and fat is heating. The filling of the sandwiches must contain as much food value as possible, and whether it consists of meat or salad or cheese a sandwich is the easiest way to carry the main part of the meal.

Making Sandwiches.

Have your hands clean, for sandwiches must be handled in the making. Bread a day old is better than fresh bread. Have the filling very cold.

As sandwiches are usually eaten in hot weather and away from ice, they should be done up in oiled paper to keep out the air and heat. Germs are very active in warm weather. Sandwiches should not be of that material which easily decays. Meat is expensive, and quickly spoils in a warm place, so it is well, when possible, to select a substitute for meat.

A quarter of a pound of cheese contains the same nourishment as 1 qt. of milk or as much as $\frac{1}{2}$ lb. of meat.

Two eggs are equal to $\frac{1}{4}$ lb. of meat.

Nuts are only 5 per cent. water and the remaining 95 per cent. is nourishing.

Thirty walnuts (without shells) contain as much fat as $\frac{3}{4}$ lb. of meat.

There is much nutritive value in olive oil.

Sandwiches made with salad dressing and lettuce, chicory, cucumber and celery, do not give much nourishment apart from the oil and bread, but we do get refreshment, water and salts.

Vegetables, fish, cut fruit and meat make good sandwiches, but spoil quickly in a hot place.

Salad oil becomes rancid if kept in a warm place for any length of time.

All these facts should help decide what kind of sandwiches should be taken on a picnic.

As a rule, cold food is not so appetizing as hot food (this does not mean iced dishes), and hence great care should be taken to make every sandwich dainty, even though it seems fussy and unnecessary at the time. All should be the same shape and size, and the edges cut even with a sharp knife.

To Make a Sandwich.

Prepare the material that you are to put in the sandwich.

Have oiled or tissue paper ready (if the sandwich is to be taken away).

Cut the bread in slices one quarter of an inch thick. Butter with soft butter (mash if butter is hard). If very dainty sandwiches are desired, cut off the crust after sandwich is filled, but remember that the crust cut off is just so much food value wasted.

Spread filling on one slice of bread and place the other evenly on top. Wrap in the paper before bread dries.

Remember that knives and forks are not usually at hand when sandwiches are eaten. Anything of fibrous texture must be chopped fine, as eating with the fingers is unattractive if the food is not very dainty to handle.

Never use anything excepting oiled or tissue paper for wrapping the sandwich. *Never use newspaper.* There are people who are so careless and have so little thought for health that they will use a dirty, inky newspaper to wrap about a luncheon. Newspapers are made from dirty rags; the printer's ink used on the type is black, greasy oil (rub it off on your hands and see for yourself). After the newspaper is printed it is carried by boys who handle it with dirty hands.

CHAPTER XIX

CITY WASTE

GARBAGE, ASHES AND REFUSE

The reason why every one needs to know about the disposition of the city refuse is because the ignorance and thoughtlessness of citizens is keeping back this disease-prevention work. Look down any air-shaft, or look into the alleys back of the tenement houses, and see the absolute disregard of the law which reads: "No person shall place ashes, rubbish, garbage, refuse or other matter in the yards, open areas or alleys connected with or appurtenant to any tenement house, except in suitable receptacles provided for the same." Until these laws are known to every individual, and kept, the Street Cleaning Department and the Health Department combined cannot make a city healthy.

When any citizen throws rubbish from the window, or tosses papers on the street, he is breaking a law.

Why is it difficult to make individuals do their part in this daily, municipal house-cleaning? Because so many lack the necessary imagination to take an interest in things out of sight. As soon as garbage or refuse is out of *her* house many a woman ceases to feel any responsibility for the harm it may do. Only education can create this civic interest, and only a social spirit can make men and women regard the work of the municipality as a personal obligation.

It is the business of each housekeeper to see that all

household waste reaches the large street cans, and to see that none of it remains in the pipes or in the house receptacles. It is the landlord's responsibility to have large covered cans to receive this household waste. It is the city's responsibility to care for this waste after it is out on the street.

Here are three laws included in the sanitary code of many of the large cities.

"Every tenement house and every part thereof shall be kept clean and free from any accumulation of dirt, filth or garbage, or other matter in or on the same, or in the yards, courts, passages, areas or alleys connected with or belonging to the same.

"No person shall place or keep filth in any place in a tenement house other than that provided for the same.

"The owner of every tenement house shall provide for building proper receptacles for ashes, rubbish, garbage, refuse and other matter."

All this means that the law demands that every apartment house shall be kept clean, inside and out. According to definition, the poorest tenement house and the richest apartment house come under the same laws.

In every home there must be three receptacles for the material that is to be thrown away:

Can for Ashes — this to be emptied into the large street ash can.

Can for Garbage — this to be emptied into the large street garbage can.

Baskets for Waste Paper — these to be emptied into the city paper bag.

Useless rubbish such as old bottles, old mattresses, tin cans, etc., is called for by the Street Cleaning Department. When the department is informed that there is rubbish in a house, the street carts must call for it at once.

Never allow anything to go into the garbage pail but clean food-material, as dry as possible.

Care of House Garbage Can.

A garbage can should never be left open.

It must be emptied every day.

If newspaper always lines the can, scraps of meat or vegetables cannot get into the cracks. It will be very easy to wash it out with boiling soda-water, using a stick with a cloth on the end. Use the cloth for this purpose only. In emptying the garbage can, throw the garbage into the large outside garbage receptacle, but throw the paper that lined the can into the paper bag.

Cleaning the Garbage Can.

Be sure all food is scraped from the can. Put in a handful of soda, pour in boiling water and wash around with the cloth until all the soda is dissolved. Pour this dirty water down the toilet and rinse the can with clear hot water.

When dry, air and put in fresh newspaper.

It is not necessary to clean the ash can in this way. Ashes are clean as long as they are not blown about.

Tie together papers before sending them out to the street to be taken by the wagon.

What Becomes of the City Refuse.

We say, it is the business of the municipality to remove promptly all offensive and dangerous city refuse, but the burden is too heavy for any city department to carry alone; without the help of the individual it is impossible to do the work well. A great deal is said and written of those diseases that can be controlled in clean surroundings. No city department can do this preventive

work alone. The street cleaners are the doctors keeping down the death-rate, but until every person who desires health is willing to do his or her part, no number of municipal doctors can control disease.

“The individual needs fresh air, pure water, good food, safe shelter, a clean body and something beautiful to look at.”

When any person, desiring these healthy surroundings, becomes a part of a city, he must assume his share of obligation.

In New York City there were in 1915, 6,500 men employed in keeping clean 1,359 miles of streets. The great majority of citizens are so absolutely uninterested in this work that day after day they not only do nothing to *help* make the city beautiful and healthy, but they actually *hinder* these men in their work.

If the refuse of an average city for one year were put together, it would fill one large city block in a pile more than 1000 feet high; and if the sewage of New York was collected into one stream it would make a continuous flowing river as large as the Hudson in summer. Surely, with a problem as great as is the disposition of this huge amount of waste matter, every man, woman and child should be trained to do their part; there must be no possibility for the excuse, “I did not know the law,” or “I did not know it was my business.” Action is created through interest, and what we are interested in we take care of. Let every school child become interested in his city, and he will want to help keep it clean.

In studying the disposition of a city's refuse, it is necessary constantly to keep in mind the two sides of the question — the sanitary and the business side. That is, the work must be done well, but it must also be done as efficiently as possible.

All city waste should be taken care of by the city, rather than by individual persons or companies. The municipal method is more systematic, more sanitary, cheaper for the people, and easier for the street cleaners. No city where the municipality is not responsible for the disposition of its garbage and refuse is up to the highest civic standard.

City Refuse or Waste.

This is composed of :

Sewage, or night soil.

Street sweepings — that is, the soot and air dust; the rubbish falling from refuse-cans; manure; pavement dirt; leaves; droppings from carts; bits of material from building construction.

Garbage — Animal and vegetable matter, and, in many cities, dead animals.

Ashes — including unburnt coal.

Rubbish — Paper-boxes, rags, bedding, leather, rubber, metals, bottles and glass, paper-sweepings from houses, furniture, old clothes, old shoes, old carpets, etc.

Snow.

Waste is matter whose present usefulness is over. It must be so taken care of as to do no harm, and must be changed or reduced into by-products consistent with the health of the community. Health is so closely allied with the disposition of waste that this side of the subject is of the greatest importance to every one.

The expense to a city of keeping its streets clean is so great that the matter of the by-products becomes very important. They must help to pay the cost of cleaning.

A by-product is a secondary product. It is something produced in addition to the principal product. As, for example; food is the principal product in the use of ani-

mal or vegetable matter, but when the matter has served its use as food and becomes garbage, it may be turned into a secondary by-product, grease.

A short study of every kind of city waste will show the danger if this waste is not properly cared for, and the economical loss if it is not reduced to its greatest value or its most marketable by-products.

Liquid Waste or Sewage.

Sewage is waste water from houses, street refuse and area drainage.

There is an average of one hundred gallons of sewage per person to be disposed of every day. The responsibility of caring for this falls on the city, and there is no profit to be derived from this liquid waste.

Inland communities must bury the sewage; this is a costly and unsatisfactory method. In cities situated near water, the sewage is often carried into the rivers, ocean or lakes, and the great danger is the pollution of the water.

In the last few years much progress has been made in the purification of domestic sewage, which can now be so disinfected and filtered that all danger is removed. Engineers, sanitarians and chemists are constantly working on the subject of the safe disposal of sewage—but there is much municipal house-cleaning still to be done.

Street Sweepings.

Country-road dust is composed principally of ground-up rock, and is comparatively clean, because the country roads are but little used for travel. In cities, however, there is a natural fouling of the city streets which comes from the animal manure, wear from the pavements, soot, dust from the air, slobbering of animals. This dirt can-

not be avoided; it can only be scientifically taken care of. There is also the unnatural, unnecessary dirt: sputum from human beings, scattered garbage, house-sweepings, and droppings from carts. The danger comes when this mixture of natural and unnecessary filth is ground fine by the action of traffic. In this condition it is mud or slime in wet weather, and dust in dry weather. The slimy mud sticks to the feet and clothing of the people, and in this way is carried into homes and stores, where it mixes with the air, and this contaminated air finds a lodgment in the human lungs. This street dust settles on furniture, our fingers come in contact with this dust and later touch food; the dust also settles directly on uncovered food and the food becomes contaminated and carries disease to human beings.

Dust, in dry weather, requires neither clothing nor boots to carry it into our homes; it blows in through windows, doors and the smallest crack. Mud is less objectionable than dust, but mud in warm weather becomes a breeding-place for germs.

It should be remembered that it is not enough to remove layer-dirt from the streets; it is the mud and dust underneath that hold the disease germs.

There are three methods of cleaning.

Method I — Hand-sweeping.

Method II — Machine sweeping.

Method III — Flushing.

Sprinkling paved streets does not in any way clean them; it simply turns dust into mud, which soon dries and becomes dust again. It is believed by experts that if streets were properly cleaned, sprinkling would be unnecessary. In large cities streets are now flushed every day. Snow as well as dirt is removed in this way.

Disposition of Street Sweepings.

For the sake of the city's health, street sweepings, being dangerous, should be disposed of every day. They and night-soil are the only refuse which have no value, and are the most difficult of disposal. For example, it is not easy to burn street-dirt because the sweepings carry moisture and sand. This clogs furnaces and adds virtually nothing to the heat. The animal manure is too often mixed with other rubbish to be of much value as a fertilizer.

In some places the street sweepings are disposed of in dumps, or are used to fill in roads, but this creates offensive odors, and the disease-laden material is blown into the air in the form of dust. In some cities, for example, Columbus, Ohio, the sweepings are mixed with water and flushed down the sewers, and all danger is thus avoided. Here is, however, the danger of a noxious deposit being formed at the sewer outlet, which must be cared for.

The care of the sewers is every one's responsibility. We have no right to take the time of street-cleaners to work over a dammed-up sewer, clogged only because some one has thrown down sticks, stones or other solid material.

In 1911, the expense of cleaning the streets of New York City was more than six million dollars, apart from the expense of removing the snow, which was two and a half million. It is estimated that if people had not thrown litter on the streets or in the sewers, and had kept the laws regarding the care of garbage, the cost of cleaning the streets would have been reduced at least \$400,000. Other ways in which people can assist in keeping streets clean is to refrain from the filthy habit of spitting, and from shaking rugs and mats on the

sidewalk or from the windows. Both are unlawful.

A desire for cleanliness is contagious. If we make it our habit to be clean, others, almost unconsciously, will copy us. Each person should resolve that, "As an individual I will do nothing that will contribute to the disorder of the city streets, and wherever possible I will prevent others."

Is there anything that the city can do to make the careless man and woman keep the street-cleaning laws?

The city can compel officials, who have the power, to arrest and *fine* all persons who will not keep the laws. As it is at present, except in cases of epidemic when the citizens are thoroughly frightened, many laws are a mere farce.

The municipality, also, can make the keeping of the laws possible. For example, when the law says "no person shall throw papers on the street," receptacles in which to throw papers should be in convenient places.

Ashes. The ashes which are dumped in the city ash-cans contain much unburnt coal. The accumulated contents of these cans has a heating value of fifty per cent of new coal. The cost of obtaining this coal is collection and the labor of separating the coal from the ash. The cost of this combined labor is less than fifty per cent. of the value received. The fine ashes can be used to fill in low land, and ashes mixed with lime will make Portland cement. In certain combinations the ashes make a common brick material; in other combinations, they are used to make ornamental tiles, and an artificial stone for sidewalks. In some communities, cesspool material and ashes together are used for fertilizing.

Every city has its own method of disposing of the ashes.

From New York City the ashes are taken to Riker's

Island in the East River. This island originally had eighty-six acres. In 1914, because of all the ashes dumped there, it had grown to three hundred and twenty-five acres. The Street Cleaning Department can make land on this island until it is fifteen feet above high water mark. Then they must stop and go elsewhere; but as ashes are soft and constantly sink, land is slow in making. Land made in this way is not good enough to build on, but on account of the fertilizing value of the ashes, and the vegetable matter that gets mixed in with the ashes, such a dump can be used for planting certain rank-growing things.

Rubbish.

When we speak of rubbish, we mean bottles, paper, rags, mattresses, old furniture, old clothes, old carpets, tin cans, broken crockery, etc., which have lost their original usefulness.

Rubbish should be collected by the city, and the city, not the householder, be held responsible for its disposition. In Cleveland, Ohio, the rubbish is collected by workhouse prisoners; in Buffalo, the city contracts for the collection of ashes, rubbish and garbage; in New York, it is collected by the Street Cleaning Department and sold to a contractor.

The rubbish from which we obtain the most valuable by-products are:

Paper and rags. These may be sold to the paper-stock trade, and reappear in the form of paper boxes and common paper.

Tin cans. These are generally melted and molded into sash weights. The tin and the solder are often reclaimed. Cans are also melted and rolled out into sheets of tin from which buttons are punched out. These are

used for nailing down building paper. The tin sheets are used also in fireproof and burglar-proof safes.

Bottles. The unbroken white glass bottles are usually sold back to the firm whose name is blown in the glass. Broken bottles and old glass are melted and reblown. Glass in combination with other material is used in making artificial stone.

Empty Barrels. These are often returned to commission merchants to be used again for vegetables, and other produce.

Old Iron. This is used for low-grade castings.

Old Shoes. These are sold for burnishing and polishing castings.

In New York the Street Cleaning Department of the city is obliged to call for and cart the rubbish of the city to thirteen dumps on the North and East Rivers. At these dump-stations are scows, or big flat-bottomed boats. After the rubbish is on these scows it belongs to a contractor, who pays New York City hundreds of dollars a year for the privilege of looking over this refuse material and taking out anything of money value. Men hired for this purpose stand on the scow with long forks and pick out such material as is of commercial value. The contractor is obliged to return to milk-dealers their own milk-bottles, and for this collection and return he is paid by the milk-dealers. The rags are sold to paper-makers; tin cans, bits of copper and ticking from old mattresses are sold to various manufacturers. After each scow of rubbish is looked over it is leveled off and taken to the city's rubbish dump.

Until a few years ago all useless rubbish was generally taken out to sea and dumped. This was stopped because the rubbish washed back onto the shore or floated about in the water.

Garbage.

Garbage means animal and vegetable waste matter that has served its usefulness as food.

Swill is another word for garbage. This word was used in Connecticut and Rhode Island, and is used to-day in some parts of Massachusetts. Slops was the word used for years in Philadelphia.

The reason why it is necessary to define exactly what is meant by these words is that the public may understand the laws, and, also, that the contractors, who often are licensed to collect and dispose of garbage, may know the exact material for which they are contracting.

Garbage Laws from Different Cities.

“Rain water, liquids and dishwater must not be mixed with garbage.” “Garbage must be kept in proper receptacles.” “Wells, courts, passages, areas and alleys must be kept free from garbage.” In some places, “Garbage-cans must be outside in summer and inside in winter.” In one city, “Garbage-cans shall be placed two feet outside of lot line.” In another, they “shall stand outside of street line.”

These laws are for the householder, but a law that is made and not kept is worse than no law at all. There are three ways for the city to enforce garbage laws:

1. Educate the people, especially the children; “sanitary instruction is even more important than sanitary legislation.”
2. Fine those who will not keep the law.
3. Refuse to collect garbage if it is not placed according to the law, and report the negligent householder.

The city of Washington and many other cities make it a crime for any person to disturb garbage after it has been put in a garbage receptacle. This is to prevent

the turning over of garbage for the collection of possible junk, food, bones, fat and in so doing scattering it on the street.

Odors and Decay.

Garbage is subject to rapid decay, and as this decay goes on objectionable odors are given forth. This is one reason why the collection of garbage is such an insistent part of municipal house-cleaning, and why the dumping of garbage is offensive. Decay takes place more rapidly in warm weather than in cold, and there is half again as much garbage in summer as there is in winter. When we consider the fruit-skins, pea-pods, melon-rinds and other vegetable coverings that are thrown out during the summer months, it is easy to account for this increase.

Garbage Cans.

These are nearly always offensive, and how to keep them clean is a difficult matter. To disinfect these cans and to make laws that will insure their cleanliness have been attempted by many cities and by hundreds of individual experts; but the required size of the city's garbage-cans makes it impossible to force this labor on the women of the home. For example, in New York the cans must be large enough to contain the garbage for thirty-six hours; in Cleveland for forty-eight hours; in Yonkers for three days; in Rochester the can must allow one gallon of garbage for every member of the family. The law in Philadelphia is that no can shall be too large to be handled by one man. It has so far proved impracticable for the householder or the garbage collector to wash these cans. Therefore, in nearly all cities they are offensive in looks and odor. In Buffalo, from May 1 to October 30, there is a law requiring that all cans be

thoroughly disinfected every day to the satisfaction of the Board of Health. Water-tight, covered receptacles are required in all cities, and this requirement may be easily enforced, but a garbage receptacle is clean only when washed daily.

Final Disposition of Garbage.

In small places garbage is fed to swine, the farmers being willing to call for it for nothing on condition that garbage fit for this purpose be kept separate from other refuse. This method is not considered sanitary, because disease is spread by pigs eating contaminated meat. Hogs so fed are apt to develop disease and their feeding-places are necessarily dirty and offensive.

Dumping is never a method of garbage disposal, for the dumps would become unsanitary, and a breeding-place for flies. Any waste heap is a gathering-place for the poor of the city who hope to find junk or food.

In still other towns garbage is buried. This method is expensive, as it requires much unused land. It is also a nuisance, for such a burying-place has to be near the city, as a long haul is very expensive.

Garbage when carried out to sea and dumped in the water floats back to shore.

There are but two scientific methods of disposing of garbage:

First: Reduction method, cooking the garbage into grease.

Second: Incineration, burning and destroying it.

One or the other of these methods is now employed in most of the large cities.

Reduction Method.

When the reduction method is used, the garbage is

boiled down and made into grease. The grease made from garbage is the most valuable by-product of all city waste. Dead animals, in some states, are included with garbage, while in other places they are sold separately. Every part of an animal has value and can be turned into some by-product.

To understand this reduction method, take for example New York City. All the garbage of New York is taken by the street cleaning department to one of the seven garbage dumps and there loaded onto scows. These scows are separate from the ash and refuse scows. From the moment the garbage reaches the dump, the city has no more responsibility. It is sold to a contractor either by the ton or by yearly contract. In 1914 New York City received twenty-one cents a ton for its garbage. Another year the agreement was \$85,500 for the year's garbage, not including hotel garbage or dead animals. Hotels, realizing the value of this waste matter, are not willing to give it to the city but make separate contracts with soap makers; a large hotel receives as much as \$3,000 a year for its garbage.

All dead animals in New York belong to the Board of Health.

The New York contractor takes all garbage to Barren Island in Jamaica Bay. On Barren Island is a large garbage plant, where are huge boilers, presses and highly-heated furnaces. The garbage first runs down long narrow troughs, at the side of which little boys stand to pick out any pieces of glass, iron or hard material which may injure the boilers. The garbage is then cooked for eight hours. At the end of that time it comes out a pulpy mass the color and consistency of apple butter. Seventy per cent. of all city garbage is water, and before the grease can be used the moisture and fiber must be separated by

pressure. The pulpy mass is put into large hydraulic presses and pressed down until the moisture in the garbage is squeezed out and run into large basins. Here the grease rises and flows into tanks where the water — what is still left of it — is further separated from the grease. The grease then is drained into barrels. Until the late war, much of this grease was sent to Belgium for the making of soap. In Belgium they have a process of taking the glycerine out of the grease, and as this glycerine is very valuable, it is more profitable to sell it to the country where it can be extracted to the best advantage. At least one hundred and fifty barrels of grease were sent to Europe each day from New York alone.

After the grease has been extracted from the garbage, the fibrous part is left. The next step is to get this fiber very dry. This is done by the application of tremendous heat, but even this great heat cannot entirely extract the grease. So the fiber is put into great cylinders and naphtha is poured in, then pumped out again and again until the naphtha comes out perfectly white, which shows there is no more grease in the fiber. The fiber is used mostly for fertilizing the tobacco countries of the South.

ANOTHER EXAMPLE OF REDUCTION METHOD

Columbus, Ohio, is said to have the best reduction plant. Its garbage collections are made by the city and disposed of at the city's plant. These collections are made in covered carts, with spring seats for the drivers. The horses are provided with good stables, the men's quarters with bathrooms and lockers.

The carts dump the garbage into steel cars which carry it to the reduction building. There the garbage is weighed in the car, which then turns over, dumping the contents

upon a floor. In this floor are drains, and the water from the garbage drains into a gutter, from which it passes into a catch basin, thence into grease separating tanks, where any grease remaining may be freed from the water. The garbage is then shoveled into long troughs and conveyed to the top of the reduction building; thence it goes into big spouts, which discharge it directly into eight great digesters. Here it cooks from six to eight hours. It is then poured into receiving hoppers. From these hoppers this cooked mass passes into presses which press out the moisture and grease, leaving the fiber, used as fertilizer. The grease is then pumped into tanks, where it is separated from the remaining water. There are six of these tanks. The grease rises in the first and overflows into the second, and so on, until it reaches the sixth tank, when it is almost pure grease. Thence it passes to the drier, and the remaining water is evaporated.

After the grease has been taken off, what is left is a molasses-like compound called "stick," which is added to the fertilizer.

Incineration.

This means destruction by burning.

An incinerator burns and destroys rubbish as well as garbage. This method, because it destroys all germs of disease, is approved by the medical profession.

There are four classes of waste to be disposed of under this method:

First — *Wet Garbage*, which has no heat value. This includes dead animals.

Second — *Refuse that is combustible*, such as shoes, rubbers, bedding, paper, etc.

Third — *Refuse that is not combustible*, such as cans, iron, stones.

Fourth — Ashes, which have the heat value of the unburnt coal.

Incinerator Plant.

Generally, an incinerator plant consists of from two to twelve furnaces. It is usually three stories in height, with a chimney which must be very high in order to create sufficient draft. The raw material is received at the top of the building. Many incinerators have the refuse dumped on a moving platform. On each side of this stand "sorters," who pick out the non-combustible material as it passes, and these are later sold as by-products. The refuse remaining is then mixed for burning. This mixing is necessary, as there must be at least twenty-five per cent. of dry material in order to insure combustion. This mixture of garbage, ashes, rubbish and dead animals is fed into the furnaces, from the rear, first on to a grate where it is partly dried. It is then raked forward, where the heat, created by forced draft, passes over it, causing evaporation, and under it, causing combustion. After the refuse has been destroyed, the clinkers (broken up with bars) fall through to the basement and are raked into clinker cars. In nearly all incinerators coal, coke or shavings are added to help the material burn.

The by-products from this method of burning garbage and rubbish are:

First steam from the great heat. In Minneapolis, this steam is used to heat the poor-house, and to drive the machinery that produces the electricity used in the street-cleaning plant.

In Frederiksborg, Denmark, the steam from the incinerators heats twenty-four blocks of hospital buildings, and is sufficient for the washing, cooking and all disinfecting.

Second by-product — clinkers. This combined with asphalt makes a dustless, sanitary pavement. Building blocks, slabs, brick and mortar are also made from clinkers in combination with other material.

Third by-product — dust. The dust left from combustion, when mixed with asphalt, makes a good filler. Five hundred tons of dust (which is a good yearly average for a large incinerator) can be sold for about \$1200.

ARGUMENTS FOR AND AGAINST THE TWO METHODS

One of the arguments for the reduction method as against incineration is that refuse can be seldom entirely destroyed; which means that the remainder has to be dumped. To appreciate the difficulty of burning this wet material, one has only to think how hard it is to burn wet grass which easily becomes a smoldering mass. However, the material is sterilized by the cooking, and there is no danger of disease germs.

Another point against the practicability of incineration is that the principal by-product, steam, is too variable to be useful. In summer there is an excess of wet garbage and an equal decrease of ashes; in winter less moisture and more steam. Consequently the steam from an incinerator plant is very fickle.

On the other hand, an equal number of reasons are given why the incinerator is better than the reduction method.

Reduction plants, because of the odor, are usually built at a considerable distance from a city, and this necessitates long hauls at much expense. In Rochester, N. Y., the plant is in the center of the city. This is seldom possible,

however, for citizens will not have garbage reduction plants near their homes.

The reduction-plant machinery is expensive to operate and to keep in repair; but one reduction furnace is built for a city, as against many incinerator furnaces. It stands to reason that it would be a great calamity to a city to have its one garbage plant destroyed or even seriously injured. The incinerator furnaces being less expensive, many are built for a city and the temporary injury to one is not serious.

The greatest point for the incinerator over the reduction plant is that all infected matter is destroyed or sterilized. The chief argument for reducing refuse is that the by-products, especially grease, are very valuable and can be sold for the benefit of the city.

Only sanitary experts can decide these important questions, but surely every one, if intelligent in regard to the care of the city waste, can do his part in keeping the city clean. First, by knowing the laws; second, by keeping them; third, understanding as far as possible the street cleaning problem of his individual city, in order to help solve that problem.

WHAT THE BODY NEEDS.

The combined food material eaten gives the body the daily fuel needed.

Raw food when unfit for nourishment is made nutritious by cooking.

Blood, muscle, bone, tendon, brain and nerve — all organs and tissue of the body — are built from the nutritive part of food.

With every motion of the body, with every exercise of feeling and thought, material is consumed and must be resupplied by food.

Protein compounds supply the building and repair material; not more than $\frac{1}{5}$ of the food eaten should be of this tissue building quality.

Carbohydrates and fats supply the energy or fuel value: $\frac{1}{4}$ fats and $\frac{3}{4}$ starch or carbohydrates. Authorities differ as to the per cent. of food compounds needed.

Mineral in food give lime to the bones.

Calories are fuel units.

The calories required depend upon the size of the body and the energy exerted.

<i>Requirement per day For</i>	<i>Fuel Value Calories</i>
Man doing ordinary work	3,415
Man at hard labor	5,005
Professionals, teachers, etc.	3,220
Woman at moderate active work	2,700
Woman at light work	2,450
Boy of 15-16 years of age	3,069
Boy of 13-14 years of age }	3,000
Girl of 15-16 years of age }	
Child under 3 years of age	1,023

INEXPENSIVE COOKING RECEIPTS

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VALUE OF A FEW FOODS TAKEN FROM BULLETIN
UNITED STATES DEPARTMENT OF AGRICULTURE

<i>Fuel value of food material (as purchased)</i>	<i>Refuse</i>	<i>Water</i>	<i>Prôtéin</i>	<i>Carbohy- drate</i>	<i>Fat</i>	<i>Fuel value per pound</i>
	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Calories</i>
Beef, fresh sir- loin steak	12.8	54.0	16.5	....	16.	.975
Beef rump	20.7	45.0	13.8	....	20.2	1.090
Beef, corned beef	8.4	49.2	14.3	....	23.8	1.245
Veal, hind quar- ter	20.7	56.2	16.2	....	6.6	580
Mutton, loin chops	16.0	42.0	13.8	....	28.3	1.415
Pork chops	19.7	41.8	13.4	....	24.2	1.245
Soups :						
Cream of celery . . . . .	....	88.6	2.1	5.0	2.8	235
Beef . . . . .	....	92.9	4.4	1.1	.4	120
Tomato . . . . .	....	90.0	1.8	5.6	1.1	185
Poultry :						
Chicken	41.6	43.7	12.8	....	1.4	305
Turkey	22.7	22.7	16.1	....	18.4	1.060
Fish :						
Cod :	29.9	58.8	11.1	....	.2	220
Shad roe . . . . .	....	71.2	20.9	2.6	3.8	600
Canned salmon . . . . .	....	63.5	21.8	....	12.1	915
Canned sar- dines	5.0	53.6	23.7	....	12.1	950
Oysters (without liquor) . . . . .	....	88.3	6.0	3.3	1.3	225
Clams . . . . .	....	80.8	10.6	5.2	1.1	340
Eggs	11.2	65.5	13.1	....	9.3	635
Butter . . . . .	....	11.0	1.0	....	85.0	3.410
Whole milk . . . . .	....	87.0	3.3	5.0	4.0	310
Cheese . . . . .	....	34.2	25.9	2.4	33.7	1.885
Flour . . . . .	....	11.4	13.8	71.6	1.9	1.650
Macaroni . . . . .	....	10.3	13.4	74.1	.9	1.645
Corn meal . . . . .	....	12.5	9.2	75.4	1.9	1.635
Oat meal . . . . .	....	7.7	16.7	66.2	7.3	1.800
Rice . . . . .	....	12.3	8.0	79.0	.3	1.620
White bread . . . . .	....	35.3	9.2	53.1	1.3	1.200
Sugar, granu- lated . . . . .	....	....	....	100.0	....	1.750
Molasses . . . . .	....	....	....	70.0	....	1.225
Maple sirup . . . . .	....	....	....	71.4	....	1.250

<i>Fuel value of food material (as purchased)</i>	<i>Refuse</i>	<i>Water</i>	<i>Protein</i>	<i>Carbo- hy- drate</i>	<i>Fat</i>	<i>Fuel value per pound</i>
	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Calories</i>
Vegetables:						
Dried beans ..	....	12.6	22.5	59.6	1.8	1,520
String beans ..	7.0	83.0	2.1	6.9	.3	170
Beets	15.0	70.0	1.3	7.7	.1	160
Peas dried ...	....	9.5	24.6	62.0	1.0	1,565
Peas shelled, fresh	....	74.6	7.0	16.9	1.0	440
Cabbage	15.0	77.7	1.4	4.8	.2	115
Cucumber	15.0	81.1	.7	2.6	.2	65
Potatoes	20.0	62.6	1.8	14.7	.1	295
Corn, green, sweet .....	....	75.4	3.1	19.7	1.1	440
Fruits, fresh						
Bananas	35.0	48.9	.8	14.3	.6	260
Apples	25.0	63.3	.3	10.8	.3	190
Strawberries..	....	85.0	.9	8.0	.6	150
Fruits, dried:						
Apples	} average	5.0	20.0	3.0	68.0	2.0
Apricots						
Dates						
Figs						
Raisins						
Nuts, peanuts						
highest food value	24.5	6.9	19.5	18.5	29.1	1,775
Chestnuts low- est food						
value	16.0	37.8	5.2	35.4	4.5	915
Chocolate .....	....	5.9	12.9	30.3	48.7	2,625

one for the pot," but this is too much tea; usually two teaspoons for four or five people is enough.

Heat the tea-pot by rinsing it with hot water. Put tea into the warm tea-pot and pour in boiling water. Let it stand five minutes and serve. (Never give tea to children; never let tea boil.) If you wish to use the tea later, pour off all liquid from the tea-leaves and heat this liquid when desired. You will, thereby, avoid drawing the poisonous tannic acid from the tea-leaves.

Chocolate

2 squares chocolate	1 cup boiling water
	4 cups milk

Melt the chocolate and sugar in the boiling water. Allow it to boil hard for a minute or two. Add the milk and have it thoroughly mixed and very hot (but the milk not boiling) before taking from the fire. If sweetened condensed milk is used, omit the sugar. If sweetened chocolate is used very little sugar is needed.

CEREALS

Time-Table for Cooking Cereals

Cereal	Cups Amt.	Cups Water	Salt tsp.	Time min.
Rolled Oats	1	2½	1	40
Oatmeal (coarse) .	1	3½	1½	2 hrs.
Pettijohn's	1	2	1	40
Cream of Wheat ..	1	4	1½	40
Wheatena	1	4	1½	30
Rice	1	6	2	30
H. O.	1	2	1	30
Hominy (fine) ...	1	4	2	1 hr.
Cornmeal	1	4	2	2 hrs. or longer

All starchy foods, among them cereals, should be cooked long enough to be easily digested. The starch must be liberated by the bursting of the granules. If the cereal is cooked in a very high temperature a long time this starch will change into a substance called dextrine. If starch is eaten before it is changed, it is not easily digested. It is for this reason that such emphasis is laid on the necessity of cooking cereals a long time. Imperfectly cooked cereals are worse than nothing, and especially harmful for children.

Cereals for Children Under Three

Cook in boiling, salted water for at least three hours. Strain and mix with milk or thin cream. Season with salt but no sugar.

Gruel

Wash the grain to be used (wheat, oatmeal). Use four tablespoons of oats with one-half teaspoon salt; cook in two cups of water in a double boiler for three hours. It will then be thick and creamy. Be watchful to see that there is always enough boiling water in the under part of the double boiler. After this long boiling, strain through a fine sieve, mix with an equal quantity of hot milk, a little salt, and serve at once. Mix eight tablespoons of the strained cereal with eight tablespoons of top milk.

Barley Gruel

Dissolve two tablespoons patent barley in a little cold water. Stir in one pint of boiling water. Add a pinch of salt. Cook thirty minutes in a double boiler. Strain and add an equal amount of hot milk.

Pearl barley may be used by soaking four or five hours and then boiling four or five hours. Add water from time to time.

Oatmeal Gruel, Without Double Boiler

$\frac{1}{2}$ cup oatmeal	1 tsp. salt
3 cups boiling water	$\frac{1}{2}$ cup milk

Add oatmeal to boiling salted water, cook two hours. Add milk and scald for a few minutes before removing from fire. Strain before serving.

White Sauce

2 tbs. butter	1 cup milk
2 tbs. flour	$\frac{1}{4}$ tsp. salt

A little pepper

Measure flour, salt, pepper, and butter in upper part of double boiler. Cook together for three minutes. Take from fire, add milk slowly, stirring constantly to

water. Change water and repeat the washing three times, or until the water is clear.

CEREALS IN COMBINATION WITH OTHER FOODS

Hominy Mush with Prunes

Wash and pick over one-half pound prunes. Soak these in cold water two hours, then cook in same water until soft. When nearly cooked, add one-half cup sugar. Pour slowly one cup of hominy into four cups of boiling water, salt, and boil one hour. Pour prunes over hominy and serve hot. Hominy, or Indian corn, ranks in food value next to oats and with wheat. Prunes have seventy-five per cent. nutritive value.

Rice and Cheese

1 cup rice	$\frac{1}{4}$ lb. cheese
3 cups water	1 tsp. salt
2 cups white sauce	A little pepper

Boil rice as in boiled rice receipt and add white sauce. Fill a pudding dish with this cooked rice. Cover with fine shavings of cheese, and bake until brown.

Protein and fat lacking in rice are here supplied.

Rice Croquettes

Warm one pint of cooked rice in two tablespoons of hot milk. Add the beaten yolk of one egg, and salt to taste. Allow this rice mixture to cool, then shape it in rolls and fry in hot lard or deep fat of any kind. If too soft to shape add more rice.

Rice with Cheese

(For eight persons)

Steam one cup of rice. Cover bottom of buttered pudding dish with this rice. Add in small pieces one tablespoon butter. Sprinkle with thin shavings of cheese and a little paprika. Repeat until all the rice and one-fourth pound of cheese are used. Add milk to half the depth of contents of dish, cover with cracker crumbs and bake until cheese melts and top browns.

Cornmeal and Syrup

One cup cornmeal to six cups boiling salted water. Cook in double boiler for three hours, add more water if necessary. Serve hot with maple syrup.

Samp

Samp, or coarse Indian corn, is cheap and makes a delicious vegetable.

Soak two cups of samp over night. In the morning drain, and pour cold water over the samp in order to remove the outside starchy substance. Then boil in salted water for from three to four hours. If the water boils away add more. Drain all water from samp, and when dry add two tablespoons of butter and a little salt; serve hot.

Hominy Pudding

Cook one cup of hominy in four cups of boiling, salted water for one and one-half hours. Drain and let stand until partly cool, then mix hominy with one-half pint of milk, two beaten eggs, one tablespoon butter. Bake in pudding dish in oven for about ten minutes. Cheese can be sprinkled on top of hominy before baking, if desired.

Farina with Dates

3 cups boiling water 1 cup farina, a wheat prep-
1 tsp. salt aration

Put boiling water and salt in top part of double boiler. Add farina slowly while water is boiling, stirring constantly. Cook over fire until mixture thickens. Then place over hot water in double boiler. Steam thirty minutes. A few minutes before serving add one cup of dates washed and cut in small pieces. Dates have high nutritive value.

For Cereals made into puddings see *Desserts*.

SOUPS

Cream of Tomato Soup

1½ cups milk	1½ cups tomato
3 tbsp. flour	½ tsp. salt
3 tbsp. butter	¼ tsp. soda
Little sugar	

Melt butter, stir in flour. Add the tomato, stirring constantly. Add the soda to this tomato mixture. Have milk scalded and add milk to tomato until they are thoroughly blended and the mixture thickens. Add the seasoning before taking from the stove. Serve with croutons. Strain before serving soup.

To make croutons, cut stale bread into one-third inch slices, cut off the crusts. Spread thinly with butter. Cut slices into cubes. Place in a pan in oven and allow to get a delicate brown.

Fish Chowder

1 lb. fresh fish (cod or haddock) with bones	1½ pt. milk
3 large potatoes	3 water crackers
1 large onion	Pepper, salt and ¼ lb. salt pork

Boil fish with bones for about fifteen minutes. Save fish water by straining into separate pan. Pick fish from bones. Cut potatoes and onion into slices. Fry out pork and then fry onions until a light brown. Place in alternate layers in saucepan — first potatoes, then fish, then pork and onions. Dust with salt and pepper and continue in this order until all the materials are used. Cover

the whole with the fish water and let the mixture simmer for thirty minutes. Scald the milk and pour it over the whole. Water crackers can be split and put in at the last moment.

Vegetable Soup with Meat

1 lb. soup meat	1 onion (chopped)
2 carrots	Small stalk celery
4 or 5 potatoes (cut in squares)	(chopped)
	A few soup greens
½ cup tomato	½ cup rice
Pepper and salt to taste	

Put meat in cold water. Let it come to the boiling point and cook one-half hour. Take meat from water, cut in small pieces and return to the pot, adding more water, also the chopped carrot and celery. Boil twenty minutes. Wash the rice, and add this and the potato to the soup, with seasoning and chopped soup greens. Cook all together for twenty minutes more.

Scotch Broth

1 lb. lean beef and bones
1 cup dried green peas (washed and picked over)
½ cup barley
1 potato
Little chopped cabbage
Soup greens.

Soak peas over night. In the morning drain and cook in fresh water with meat, bones and barley for one hour. Add chopped cabbage, potato and seasoning. Cook for one hour more, be sure peas are soft.

Vegetable Soup with Spaghetti

1 cup cabbage, chopped	$\frac{1}{2}$ cup carrot
4 potatoes cut in cubes	1 cup tomato
$\frac{1}{2}$ lb. spaghetti	2 tbsp. lard or oil
1 onion	2 cents' worth soup greens

Salt and pepper to taste

Fry onion in fat until brown. Add this with cabbage, tomato and carrot to one quart of boiling water. Cook one-half hour, then add potato, spaghetti and chopped soup greens, and cook one-half hour more. Season with salt and pepper.

Tripe Soup

$\frac{1}{2}$ lb. tripe	2 tbsp. lard or drippings
2 cups milk	1 onion
2 cups cut up potatoes	$\frac{1}{2}$ tbsp. salt
2 tbsp. flour	$\frac{1}{8}$ tsp. pepper

Wash tripe and boil with sliced onion and cut up potatoes for one-half hour. Melt fat and mix with flour. Scald milk and add to this the flour, fat and tripe mixture; season, and let it all boil together until it begins to thicken.

Lentil Soup

1 lb. lentils	2 tbsp. lard, oil, or drip-
1 cup tomatoes	pings
Soup greens	1 onion

Salt and pepper to taste

Soak lentils over night. Allow them to cook in the morning for two hours. Fry onions in oil or drippings until brown. Add to this onion mixture tomato, seasoning and chopped soup greens. Fry for a few minutes and then add tomato mixture to lentils and boil all together for fifteen minutes or more.

Clam Chowder (without Tomato)

25 clams	1 tbsp. butter
1 onion	2 tbsp. flour
Small piece salt pork	2 cups milk
3 potatoes	$\frac{1}{2}$ tsp. pepper
	$\frac{1}{2}$ tsp. salt

Boil the clams in their own liquor for three minutes. Remove clams and return liquor to fire. Fry pork (cut in slices), and chopped onion together until both are brown. Add flour, stir, and allow flour to get well cooked. Then add this to clam liquor and season with salt and pepper. Have potatoes cut into dice, and cook in clam liquor until tender. When ready to serve add milk and clams, which have been chopped.

Corn Soup

1 can corn	2 tbsp. butter
$\frac{1}{2}$ pt. boiling water	2 tbsp. flour
1 pt. milk	1 tsp. salt
1 slice onion	Pinch pepper

Cook corn in boiling water for thirty minutes. Scald milk with chopped onion, and add milk to corn, then add butter and flour which have been cooked together with a little of the milk. Season with salt and pepper.

Celery Soup

Cut stalks and leaves of one large head of celery in one-half-inch pieces and add to one quart of boiling water. Boil until tender. Make white sauce of one tablespoon flour, one tablespoon butter, two cups of milk, and salt. Press the cooked celery through a sieve. Add this celery to the white stock and heat thoroughly before serving.

Mock Bisque

2 cups tomatoes	$\frac{1}{2}$ onion
2 tsp. sugar	2 tbsp. butter
4 cups milk	6 cloves
$\frac{1}{2}$ tsp. salt	$\frac{1}{8}$ tsp. pepper
Sprig of parsley	1 bay leaf
	$\frac{1}{2}$ tsp. soda

Scald milk with chopped parsley and the bay leaf. Remove bay leaf after milk scalds. Cook the tomato, onion, cloves, and sugar together; add soda and press through a sieve. Add this tomato mixture to the milk mixture, adding at the last the salt, pepper, and butter.

Oyster Soup

1 qt. oysters	4 cups scalded milk
3 tbsp. butter	3 tbsp. flour

Salt and pepper to taste.

Take oysters from oyster liquor and wash in cold water. Take out the hard muscle in each oyster. Strain liquor through cheese cloth and heat to boiling point. Add oysters and heat until edges begin to curl (about three minutes). Remove oysters with skimmer and add to the liquor the scalded milk and the flour and butter which have been cooked together. Chopped celery, or a little chopped onion and chopped parsley may be added. Season with salt and paprika. Just before serving put the oysters in. Be sure the soup is very hot.

If cream is used instead of milk no flour or butter are needed.

THE PREPARATION OF SOUPS FOR CHILDREN

Beef Juice

Buy one-half pound lean beef. Take off all fat and

gristle. Broil over a clear fire from six to eight minutes. Cut the meat into small pieces and squeeze out juice with a lemon squeezer (being sure it is perfectly clean). Add salt. When you are ready to warm this juice do not heat it directly over the fire but put it in a cup and set the cup in hot water.

Beef Broth

Buy chopped lean beef and use one pound of meat to one quart of water. (If the child is well grown, one onion can be used.) Soak the meat in cold salted water (with or without the onion) for from two to six hours, keeping it on ice or in a cool place all the time. Then in the same water let it slowly simmer on the stove for three hours. Cool over night. Remove the fat in the morning. Keep this broth covered in a cold place until needed, when it is reheated.

Clear Vegetable Soup

One hour before beef broth or stock is cooked, add any vegetables desired. First wash, scrape, and cut the vegetables into pieces. Just before soup is done add the salt. Take from fire, strain all through a fine sieve into an earthen bowl. Let it cool without covering. When ready to serve remove the grease, add more salt, and heat.

Mutton Broth

Buy one pound of the best meat from neck of mutton. Cover with one quart of cold water, add pinch of salt and one tablespoon of crushed barley. Let it stand at the back of the stove one hour. Then move it forward and let it simmer for three hours. Add water so that it will not fall below one-half pint. Strain and allow to cool. When cold remove the fat, adding more salt if necessary.

This can be thickened with a little cornstarch; cook for ten minutes, and then add three ounces of milk to one-half pint of broth.

Chicken Broth

Cut up a fowl into small pieces. Take out all skin and fat. Cover with cold water and let it simmer for six hours. Cool over night. Take the fat off that has risen to the top. Season, strain off the broth, and heat. A four-pound chicken will make one quart of broth.

A little cornstarch, flour, or arrowroot may be used to thicken the soup.

Cream Soups

Cream soups (which are very good for little children) can be made of any vegetables; asparagus, green peas, string beans, spinach, and celery being especially good. All of these vegetable soups are made in the same way. The vegetable is boiled until soft, and is then pressed through a sieve. A white sauce is made of one tablespoon of butter, one tablespoon of flour, a very little pepper, salt enough to season, and two cups of milk, or one cup of milk and one cup of beef or chicken broth. In the place of flour, two teaspoons of cornstarch may be used as thickening. Add the strained vegetable to the milk, replace on the fire, and allow it to simmer for a few minutes.

EGGS

There are four reasons why raw eggs are given to the sick.

1. They contain much food value.
2. They are easy to eat.
3. They are easily digested when raw or soft cooked.
4. They are free from bacteria.

How to Tell if an Egg is Fresh.

1. Observe the shell. A fresh egg has a thick rough shell.

2. Drop the egg into cold water. If it sinks it is fresh. If it floats it is stale.

Care of Eggs.

1. Wash the eggs with a damp cloth when they first come from the store.

2. Keep the eggs in a cool, dry place.

3. Never throw away the shells of eggs, as they may be used to clear coffee.

RECEIPTS FOR EGGS

Soft-Boiled Eggs

Put water in a saucepan. Let it come to the boiling point. Lower the eggs into it with a spoon. Remove at once from the fire and let stand, covered, for about ten minutes.

Eggs in a Nest

Separate the white of an egg from the yolk. Beat the white stiff and dry. Put it in a cup or small dish, making in the top of it a hollow the size of the yolk. Into

this hollow slip the yolk. Set bowl in a covered saucepan containing boiling water. Cook until the top of the white of the egg is firm.

Goldenrod Eggs

1 cup white sauce
4 eggs boiled hard
6 slices toast

Separate the whites from the yolks of the hard boiled eggs. Cut the whites into rather small pieces and add to the well-seasoned white sauce. Press the yolks of the eggs through a strainer or potato ricer. Serve white of egg and white sauce on toast with the riced yolks sprinkled on top. A little parsley around the dish adds to the taste and the appearance.

Creamed Eggs

1 cup white sauce
4 hard boiled eggs
2 tbsp. grated cheese

Remove the shells of the eggs and cut in cubes. Place eggs in a baking dish and pour over them the white sauce. Sprinkle a little grated cheese on top and serve very hot. If the eggs have cooled in the preparation, place the dish in the oven for a few moments before serving.

Scrambled Eggs

4 eggs
 $\frac{1}{4}$ cup milk
 $\frac{1}{2}$ tsp. salt
A little pepper

Heat frying pan. Melt butter in it. Only enough to grease the bottom of the pan. Beat the eggs, whites and yolks together. Add milk, salt and pepper. (Water can be used instead of milk.) Be sure that the frying pan is very hot before eggs are poured in. Stir eggs and scrape from bottom constantly while cooking. As soon as eggs are creamy take from fire and serve.

Coddled Eggs

Have water boiling. Put eggs in saucepan. Pour over eggs the boiling water, cover and stand (away from the fire) for about ten minutes.

These eggs are cooked all the way through and are easily digested.

Poached Eggs

Break eggs carefully one at a time into a saucer and slip into a frying pan of hot salted water. Dip the hot water over the yolks with a spoon while the egg is cooking. When the white is firm, take up the eggs with a skimmer, and serve on hot buttered toast. Sprinkle over each egg a little salt and a little paprika.

Eggs in Spanish Style

1 cup tomato	4 hard boiled eggs
½ green pepper	2 tbsp. butter or oil
1 tbsp. chopped onion	Salt and pepper

Parsley

Cut eggs in half lengthwise; separate yolks from whites. Put yolks in a bowl and mix with salt, pepper and a little olive oil. Put the yolk mixture back in whites of eggs. Make hot tomato sauce (from receipt). Pour sauce over eggs: heat through and serve hot.

Omelet

Beat eggs, whites and yolks together, with a teaspoon of cream (or water) for each egg. Season with salt and paprika. Turn the beaten egg into a very hot pan which has in it enough butter to just grease the bottom of pan. Constantly run a silver knife under omelet as it begins to harden, allowing uncooked egg to flow under. When all is of a creamy consistency fold and serve at once on hot platter.

Albumen Water

This is ordered in case of vomiting, and a child will be able sometimes to retain albumen water when no other food will stay in his stomach.

White of one fresh egg 1 tsp. brandy

$\frac{1}{2}$ pint of cold water Pinch of salt

Shake all ingredients thoroughly together, and feed to child with a spoon or from the feeding bottle.

FISH

Codfish Hash

¼ lb. salt codfish ½ cup milk
6 medium-sized potatoes 2 tbsp. butter

Parboil codfish for fifteen or twenty minutes. Pick it over, taking out all bone or skin. Boil and mash potatoes, and add them to the fish. Have equal amount of fish and potatoes. Add the butter, and enough milk to make it a soft mass. Beat well, and season with salt and pepper. Put into the oven to brown or put into buttered frying pan, and cook on top of the stove without stirring, until brown underneath. Fold and serve.

Salt Codfish Balls

Soak the fish three hours in water hot but not boiling. Take from water and when thoroughly cold chop until like down. Boil and mash potatoes. Take equal quantities of fish and mashed potatoes (cup for cup), add butter and season with salt and pepper. Make into cakes three-fourths of an inch thick. Have frying pan one-half inch deep with pork fat or crisco. When very hot, roll cakes first in beaten egg, then a little flour and put in hot fat. In five minutes they will be a beautiful brown. Then turn. To be good, fish cakes should be eaten at once after taking from frying pan.

Shredded Codfish Balls

1 box shredded codfish 2 eggs
6 potatoes 1 tbsp. butter.

Salt and pepper

Soak codfish well and pick over. Put into saucepan and cover with cold water. Let it come to the boiling point, but do not boil it as that would make it hard. Strain water from fish. Put potatoes on to boil, cutting them in small pieces so that they will boil quickly, and at the same time put on the fire one and one-half pounds of lard in a deep kettle. This lard must be very hot before it can be used to fry the fish balls. Beat the eggs stiff, the whites and yolks separately. Mash the potatoes and mix with the butter. No milk should be used, but the potatoes and butter should be beaten until creamy. Add potatoes to fish. Mix fish and potato mixture and yolks of eggs together, beating hard. The last thing beat in the whites. Mold with a spoon, not with the hands, and drop in the hot fat. Cook until a nice brown.

Baked Fish

Blue fish, weak fish, or any whole fish can be used for baking.

1 cup cracker crumbs, or $\frac{1}{8}$ tsp. pepper	
bread crumbs	1 tbsp. chopped onion
$\frac{1}{4}$ lb. fat salt pork	1 tbsp. capers
$\frac{1}{2}$ tsp. salt	1 tbsp. pickle
$\frac{1}{4}$ cup melted butter	

Clean fish, and wipe thoroughly outside and in with cloth wrung out of cold water. Make a stuffing of the above ingredients, that is, bread crumbs, onion, parsley, capers, pickles, butter and seasoning. Mix these thoroughly together. Put the stuffing in the cavity of the fish and sew up the opening with clean coarse thread. Rub the fish thoroughly on both sides with butter and pepper and salt. Cut gashes across the sides of the fish about two inches apart, and in these put tiny strips of fat salt fork. Dredge the whole with flour. Put in

baking dish, with small pieces of pork placed on the back, and bake about ten minutes to the pound, basting frequently with the pork which will melt into the baking fish. When nicely brown serve on platter, with pieces of parsley, sliced lemon and, if desired, hard boiled eggs around the dish.

A Good Way to Cook Fish

1 sliced fresh codfish (about 1 lb.)	1 onion
1 carrot	2 tbsp. butter
1 turnip	Salt
	Paprika or pepper

Cut up the carrot, turnip and onion. Boil these vegetables gently, and when they are half boiled, drain and put into a stew pan or casserole with butter, one cup of vegetable water, parsley and seasoning. When these vegetables are nearly cooked add the fish, and baste fish with the vegetable mixture until fish is tender.

Baked Halibut with Tomato Sauce

2 lbs. halibut	$\frac{1}{2}$ tbsp. sugar
2 cups tomato	3 tbsp. butter
1 cup water	3 tbsp. flour
1 slice onion	$\frac{3}{4}$ tsp. salt
3 cloves	$\frac{1}{8}$ tsp. pepper

Cook the tomato with onion, cloves and sugar for twenty minutes. Mix butter and flour and stir into hot tomato mixture. Add salt and pepper. Cook for ten minutes and strain. Clean fish, wipe, put into baking pan and pour around it half the sauce. Bake thirty-five minutes, basting often. Remove to hot platter, pour around it the remaining sauce, and garnish with parsley. Add boiling water to the sauce if it is too thick.

Codfish Pudding

½ lb. dried codfish	4 good-sized potatoes
2 tbsp. butter	2 cups milk
2 tbsp. flour	

Soak the codfish over night. Throw away the water in which the codfish was soaked. Boil in fresh water for one hour. Boil and then mash the potatoes. Take the bones out of the codfish and mix fish and potatoes together. Make white sauce of the butter, milk and flour. Add fish mixture to white sauce. Put in a baking dish and brown in the oven with crumbs on top.

HOW TO COOK FISH FOR CHILDREN

Fish is a good food for children if it is absolutely fresh. It is nourishing and more easily digested than meat. As soon as the fish comes from the market it should be scaled, skinned, washed and put into a cool place at once. If the flesh of fish is not firm and hard it is not fresh. Never fry the fish for children, but boil, bake or broil it. In broiling fish, turn the flesh side to the fire first and then the skin side. Be very careful not to scorch the skin side. Fish for children can be served plain or with a milk sauce.

Milk Sauce for Fish

To white sauce add the well-beaten yolk of an egg. Do not add egg until you have taken the sauce from the fire.

MEAT DISHES

Casserole of Meat and Rice

2 cups cooked rice	¾ cup boiling water
1 lb. meat (chopped)	1 tsp. salt
1 egg	Dash of pepper
1 onion	1 tsp. celery salt
2 tbs. bread crumbs	1 tsp. parsley

Mix meat, rice and seasoning together with chopped onion and parsley. Beat egg stiff and add to meat mixture. Put this in a baking dish, sprinkle bread crumbs on top and cover. Bake in oven at least thirty minutes.

Beef Stew

2 lbs. upper part of shin of beef with bone	4 tbs. flour
3 qts. boiling water	2 onions
1 turnip	3 potatoes
2 carrots	1 tsp. salt
	1 tsp. pepper

Have meat cut in one and one-half inch pieces. Wipe the meat and bone with a damp cloth, and sprinkle meat with salt and flour. Put fat from meat in a hot frying pan and try out. Add the meat to this fat, turning it often until it is well browned. Then put the meat into a soup kettle with the bones and seasoning and boiling water, rinsing out your frying pan with some of the water and pouring the contents into the soup kettle so that none of the good of the meat will be wasted. Let the meat boil hard for five minutes, then set it back on the stove and allow it to simmer slowly for two

hours. Prepare vegetables by peeling and cutting them into one inch cubes. Add these to meat and allow them to cook thoroughly. Peel and cut potatoes in cubes and add them to the soup kettle about twenty minutes before serving.

Mince Meat on Toast

Use leftover meat, remove gristle and chop meat fine. Moisten with gravy and season with salt, pepper and celery salt. Put a little fat or butter in frying pan and when very hot add chopped meat and heat quickly, stirring so that it will not stick to the bottom of the pan. When thoroughly hot, serve on slices of hot buttered toast.

Pigs in Clover

Cut bacon very thin. Cut calves' liver about one-fourth inch thick. Drop the liver into water below boiling temperature and let it remain a few minutes to cook. Roll each piece of liver in a slice of bacon, holding bacon together with a toothpick. Cook in hot fat until a light brown. This is much improved when served on hot toast.

Hamburg Steak

I lb. chuck steak	I onion
I tbsp. butter	I tsp. salt
	$\frac{1}{8}$ tsp. pepper

Chop meat and onion together (every one should have her own meat grinder and grind her own meat). Season meat with pepper and salt. Make into firm balls, sear in butter. Turn balls often and serve rare. Chopped parsley and lemon juice may be added and one-fourth cup water.

Plain Stew

1 lb. breast of veal or lamb	1 onion
1 qt. water	1 carrot
1 tbsp. butter	1 turnip
1 tsp. salt	2 potatoes
$\frac{1}{6}$ tsp. pepper	

Gravy: 1 tbsp. flour, 2 tbsp. water

Cut meat in small pieces. Put in saucepan with salt, pepper and cold water or stock. Raise slowly to simmering point, and keep there until tender (two or three hours). Cut vegetables into small pieces, brown them in butter and add them to the stew, twenty minutes before serving add potatoes which have been peeled and cut into squares. Before taking from fire add the thickening made of flour and water. Boil hard for ten minutes after flour is added.

A Good Way to Use Leftover Meat

1 cup leftover meat, chopped	$\frac{1}{2}$ cup tomato
1 green pepper	$\frac{1}{2}$ cup rice, boiled
	Seasoning

Put in the center of a baking dish a mixture of the meat, chopped green pepper, tomato, pepper and salt. Cover this meat mixture with the rice and bake in a hot oven.

Corned Beef Hash

1 cup corned beef	$\frac{1}{2}$ cup milk
2 cups potatoes	2 tbsp. butter
1 tsp. salt	$\frac{1}{8}$ tsp. pepper

Drop corned beef into boiling water and simmer, allowing thirty minutes to the pound. When cold, chop meat, but not too fine. Do not use meat-grinder. Chop cold cooked potatoes, do not mash. Mix corned

beef, potato and seasoning together. Butter the bottom of a pan. Put in the corned beef and potato mixture. Over the top put half the butter. Pour the milk over the whole and put the pan in the oven. Let it remain there for a half hour, stirring the first ten minutes. Reserve half of the butter, and after the second stirring melt the butter and pour on top. Let the mixture remain in the oven without stirring until it is brown.

BAKED MEAT DISHES

Hot Pot

- 1 lb. of shoulder of beef cut up into 2 inch squares
- 4 potatoes sliced thin
- 1 onion cut up fine

In a deep dish, which has first been well buttered, place a layer of meat. Sprinkle with salt and pepper. Over this sprinkle one-half the onion, then a layer of potatoes and a little butter. Repeat this, having a thick layer of potatoes on top to brown nicely. Moisten with water in a covered dish and bake two hours in rather a slow oven.

Braised Beef

- 3 lb. of beef from lower part of round or face of rump
- 2 thin slices of fat salt pork
- $\frac{1}{2}$ tsp. peppercorns
- 3 cloves
- $\frac{1}{4}$ cup each of carrots, turnips, onions, celery (cut these in dice)

A little salt, pepper and one bay leaf

Try out pork and remove scraps. Wipe meat and sprinkle with salt and pepper, dredge with flour and brown entire surface in pork fat. Place in deep granite pan or in earthen pudding dish and surround with vege-

tables, peppercorns and three cups of boiling water. Cover closely and bake four hours in very slow oven, basting every half hour and turn after the second hour. Throughout, the liquid should be kept below the boiling point. Serve with brown sauce made from the liquid in pan.

Beef Croquettes

Chop very fine two cupfuls of roasted or boiled beef. Fry one teaspoonful of chopped onion and one table-spoonful of butter until a light brown, then add the chopped meat and one teaspoonful of chopped parsley. Now add one cupful of mashed potatoes, season with pepper and salt, stir in, the last thing, two eggs well beaten. Form into croquettes, dip in egg, then in crumbs, and fry in hot fat.

Stuffed Spare Rib

1 whole spare rib cracked in the middle
4 apples 1/4 lb. raisins.

Wipe meat with damp cloth. Slice apples, seed raisins, place apples and raisins on half of spare rib and fold balance over. Tie together (or sew). Put it on rack in roasting pan and into hot oven. After ten minutes or after the outside is seared reduce temperature of oven and put a little water in the pan with which to baste the roast occasionally. Cook three hours, serve with the gravy made in the pan.

Meat Pie

For meat pie it is not necessary to have always the same things. Leftover meat is needed and

1 cup flour	1/2 tbsp. lard
2 tsp. baking powder	1/4 cup milk (or milk and water)
1/2 tsp. salt	1/2 tbsp. butter

Cut up meat, add any leftover vegetables that may be on hand. A little gravy or stock that may be left from the day before will add richness. Season with salt, pepper and a little celery salt and cover with a crust made after the receipt of baking powder biscuits.

It is fully as necessary to learn how to put leftover materials together in an appetizing way without a receipt as to be able to follow a receipt book perfectly. This art comes with practice, by tasting frequently while preparing the dish; and it comes also by an appreciation of the value of every scrap of leftover food; thus saving many dollars during the year.

Crust of Meat Pie

Mix and sift flour, salt and baking powder. Cut in lard and butter. Add milk, mixing with knife. Bake in oven until dough is thoroughly cooked.

Cannelon of Beef

- 2 lbs. of beef from top of round
- 1 tbsp. of fine chopped parsley.
- 1 tsp. salt, 1 of onion juice and $\frac{1}{4}$ tsp. of mace.
- 1 egg beaten.
- $\frac{1}{3}$ cup soft bread crumbs
- $\frac{1}{4}$ tsp. pepper.

Put meat through the chopper several times. Add seasoning, the beaten egg, and the bread crumbs (which have been soaked and wrung dry). Mix thoroughly and shape in a roll. Bake for thirty or forty minutes. Baste frequently with fat from salt pork and hot water. Serve with tomato or mushroom sauce, or with macaroni and tomato sauce.

Chops — Lamb or Mutton

Chops should never be fried, always broiled over or under a hot fire. The broiler should be turned very

often. When the meat is puffy it is done. If you cook the chops too long they will be hard and dry. In cooking a chop sear the outside at once. Thus the juices are shut in. It is the steam shut into the chop that gives it the puffy look. It should not take more than eight or ten minutes to broil a chop. If your chop is two inches thick it is better than when thinner, as the thicker meat will be more juicy. Before broiling, trim off the fat and wipe with a damp, clean cloth. Be sure that the fire is lively, and not one that has begun to cool.

Beef Kidney Stew

Soak kidneys in salt and water for half an hour. Melt two tablespoonfuls of butter in a casserole. Add to butter a small onion chopped fine and the kidneys, which have been salted, add pepper, and dredge with flour. Then add two-thirds cup of hot water and slice of lemon. Cook ten minutes.

Cottage Pie

1 cup leftover meat	½ green pepper
1 cup gravy	1 onion
1 cup mashed potatoes	Salt and pepper

Chop onion and pepper, mix it with meat and gravy and season with salt and pepper. Line baking dish with potato and put meat mixture in the middle. Spread lightly over the top more mashed potato. Let the whole bake in oven until the top of potato is a good brown.

A Good Gravy to Use with Leftover Meats

½ cup soup stock	1 tbsp. butter or drip-
1 tbsp. flour	pings

Little salt and pepper

½ tsp. minced onion, or green pepper, or both

Melt fat, add flour and cool for about three minutes.

Add soup stock and onion, and bring to the boiling point. Add the seasoning the last thing.

Potato with Meat Gravy

2 cups freshly boiled potatoes

$\frac{1}{2}$ lb. meat

1 tbsp. flour

$\frac{1}{2}$ cup canned tomatoes

Mash the potatoes and season with pepper and salt. Put meat in cold water and allow it to boil until tender. Take out the meat and chop fine or put through meat grinder. Make a gravy of the stock, in which the meat was boiled, by adding onion, fried in drippings, and tomatoes and flour. To this gravy add the chopped meat. Have the mashed potatoes very hot and serve by pouring the meat gravy over the potatoes.

VEGETABLES

Potatoes.

Why is potato so valuable a food?

1. It is easy to cultivate.
2. It can be kept through the winter.
3. It is easy to prepare as a food.

4. Potatoes give us the needed bulk rather than any large amount of nutritive value. Because potatoes lack protein they should be used with meat or fish or eggs or in combination with milk and cheese. Potatoes are cheaper when bought by the quantity, and as they keep well, should not be purchased in small amounts unless necessary.

Potatoes keep best in cold dry cellars; in barrels or in bins. When the sprouts appear on potatoes they always should be removed, as these sprouts spoil the potato.

How to Buy

Select potatoes with smooth skins, and have the sizes as even as possible.

How to Boil a Potato

It is better to boil the potato with the skin on and peel afterwards, for the part of the potato just under the skin contains the minerals, which are very valuable, and if we peel a potato before boiling it we lose a great deal of this good mineral matter with the peeling. It is also true that when you peel a potato and then put it into water, some of this good tissue-building value is soaked out in the water.

Wash your potato, using a small vegetable brush to scrub it with. Take out any black spots with the point of a knife. Boil with the skin on, peeling off a narrow strip in order to prevent the potato from bursting. Put the potato at once in boiling water. Only very old potatoes are improved by being pared and soaked in cold water before boiling; this is done to restore the moisture that the potato has lost from being exposed to the air and from thus drying for so long a time. Potatoes must be boiled until soft in the middle. In boiling potatoes let the water boil gently. When the water boils too hard the outside of the potato gets very soft before the center is done. Do not let a boiled potato stand in the boiling water after it is cooked, because it will absorb the water and become very soggy.

Baked Potato

When you bake a potato it is the water in the potato that gets hot and softens the starch. This water changes to steam, and the starchy part is left dried and mealy. If you allow a baked potato to lie in the warm oven after it is thoroughly cooked, the steam will turn back to water and the potato gets soggy. For baked potatoes have a quick oven, for if your oven is slow the potato becomes dry and hard.

Browned Potatoes

Peel the potatoes and put in the dish with meat for roasting. When basting the meat, pour the liquid from the pan over the potatoes at the same time.

Baked Creamed Potatoes

Take leftover potatoes, cut in squares and mix with a white sauce; be sure that potatoes are well seasoned. Butter a baking dish, put in the creamed potatoes. Cover

the whole with buttered bread crumbs and bake until crumbs are brown. Half the quantity of bread crumbs and half grated cheese will make this dish more nourishing and, to many people, more appetizing.

Mashed Potatoes

Put hot boiled potatoes through a sieve or ricer, or mash with potato-masher. For six medium-sized potatoes add two tbsp. butter, one tsp. salt, few grains pepper, enough milk to very make creamy. Beat well to make light. Pile on hot dish and serve. Or put in oven and brown on top.

Rice Potatoes

Force hot boiled potatoes through a potato-ricer or coarse strainer. Serve, lightly piled on hot vegetable-dish.

Creamed Potatoes with Cheese for Six

- 4 cups cold boiled potatoes (diced)
- 1 pt. white sauce
- $\frac{1}{2}$ lb. store cheese (cut in small pieces)

Reheat diced potatoes in white sauce to which the cheese has been added.

Fried Potatoes

Cut cold boiled potatoes in cubes or slices. Melt in frying-pan three tbsp. butter for each cup cold diced potato. Put in potatoes. Fry until well browned.

Another Creamed Potatoes with Cheese

4 cups cold boiled potatoes cut in small squares or chopped

- $\frac{1}{4}$ lb. store cheese cut in small pieces
- 1 pt. white sauce

Heat the potatoes in the white sauce. Add the cheese and cook all together until cheese is well melted.

Potato Pancake

Take seven or eight good-sized potatoes, pare and grate raw. Drain through a cheesecloth to remove the brown water that gathers on them. Then turn the grated potato into a dish and pour over them a pint of boiling hot milk (this whitens the potato again). Salt to taste, add two beaten eggs, mold and fry in hot lard until a nice brown.

Do not squeeze the potato through the cloth. Only the brown water should run through.

Time Table for Cooking Vegetables

	Time for Cooking
Lima beans	1 to 1 $\frac{1}{4}$ hours
String beans	1 to 3 hours
Beets, young	45 minutes
Beets, old	3 to 4 hours
Cabbage	35 to 60 minutes
Cauliflower	20 to 25 minutes
Celery	Used raw
Corn	20 minutes
Lettuce	Used raw
Onions	45 to 60 minutes
Spinach	25 to 30 minutes
Tomatoes	Cooked or raw
Peas	20 to 60 minutes

To Cook String Beans

Wash the beans in cold water, string, cut into one-inch lengths. Put beans in fresh boiling water, and add salt the last half-hour of boiling.

The time for cooking any vegetable varies, some vegetables being fresher and younger than others. These take less time than the older vegetables. So each girl must test her beans to see when they are soft enough to

eat. The cooking will take from one to three hours. When soft, drain and season with butter and salt. These beans do not contain a great deal of nutritive value, and should be eaten with meat.

To Cook Peas

Peas contain a great deal of nourishment, and when young are easy to digest.

Take peas from pods, cover them with cold water and let them stand one-half hour. Skim off peas that rise to the top of the water and throw these away; drain the others free from all water.

Cook as you do the beans in fresh boiling salted water. Cook from twenty minutes to one hour. Season with butter, salt, and pepper. While these two vegetables are cooking talk with your teacher about the other vegetables.

As peas and beans have so much nutritive value, you can serve them as the main dish for a meal. It is a good thing, if there is time, to set the table and serve one of these vegetables with bread and butter, and a pitcher of cold milk. This is a good enough meal for any one on a summer's night.

Stewed Celery

Cut off roots and leaves. Separate stalks, wash, scrape and cut into one inch pieces. Boil in salted water one-half hour or more. Strain. Mix this celery with a sauce made of one-half celery water and one-half milk. Season with salt to taste.

Young Beets

These roots contain much sugar and are not, when fresh and young, indigestible for a child over five years

of age. Wash the root without bruising it. Cut off the top at least one inch from the beet. Cook in boiling water from one to two hours. Salt, drain and put into cold water. Then remove skins and chop fine.

Carrots

Wash and scrape carrots. Boil in salted water until soft enough to press through a sieve. The length of time of boiling depends upon whether the carrot is young or old.

Squash

Squash should be young, tender and thin skinned.

Wash squash and cut it in thick slices. Cook one-half hour (or until very soft) in boiling salted water. When done turn into a piece of cheesecloth, or a fine sieve and drain out all the water. Now mash, and strain again through the sieve. Season with a little butter, salt and (for children) very little, if any, pepper.

Baked Beans

One quart pea beans. Cover with cold water and soak over night. In the morning drain, cover with fresh water and boil on top of the stove at least two hours. Put beans in bean pot with a small piece of fat salt pork. Mix one teaspoon of salt, four tablespoons of molasses. Pour enough of the bean water over the beans to moisten them. Cover the bean pot, put in oven, and bake for about one hour.

If beans are baked over night it is not necessary to boil them first, cover with boiling water before baking.

Baked Corn

1 can corn

1½ tbsp. butter

2 eggs	1 pt. scalded milk
1 tsp. salt	$\frac{1}{8}$ tsp. pepper

Drain water from corn. Add to corn the eggs slightly beaten. Add salt, pepper, melted butter and scalded milk. Stir thoroughly and turn into a buttered baking dish. Bake in a slow oven.

Macaroni

Macaroni (or spaghetti) is a very nourishing food. It is formed chiefly of gluten, which is the more valuable part of wheat. It is more digestible than meat, and has some of the same tissue building quality.

To prepare macaroni, have the water boiling and salted in the saucepan before adding the sticks of macaroni. Drop these sticks in one by one so as not to stop the water from boiling. Boil for twenty minutes, drain off the water, pour over it cold water, put the macaroni back in the saucepan, adding a cream or white sauce, and allow it to simmer at the back of the stove for a few minutes.

Baked Macaroni with Cheese

(For eight persons)

Put a layer of boiled macaroni in a buttered baking dish. Sprinkle with grated cheese and white sauce. Repeat until all the macaroni is used. Cover the whole with butter, a few bread crumbs and a last layer of cheese; bake until the crumbs are brown.

VEGETABLES ESPECIALLY FOR CHILDREN

Many of the following receipts give the preparation of vegetables for children. In cooking for adults it is not necessary to put the cooked vegetable through a sieve.

Vegetables good for little children are: asparagus tips,

string beans, stewed celery, young beets, carrots, squash, potatoes.

White Potatoes

These should be baked, boiled or mashed, never fried for children. They may be served with beef juice or milk.

Peas

Cook peas, if possible, the day they are picked. Boil for at least thirty minutes in a granite saucepan. Salt before taking from the fire. Press through a sieve before giving these peas to a young child.

Spinach

Carefully pick over, take out wilted leaves, wash in four or five waters, or until there is not a trace of sand on the bottom of the pan in which the spinach is washed. If at all wilted let it stand in cold water until fresh. Cook in boiling salted water for ten minutes. Let it boil with cover partly off to let steam escape. At the end of ten minutes drain off hot water and pour cold water over and at once let it drain well. When spinach is young and tender, it will boil in its own moisture and no water needs to be added. Chop and mix with butter, and salt. Allow two tbsps. to half peck of spinach.

Asparagus Tips

Use only the soft part that will snap off. Wash, remove scales and boil in salted water for one-half hour. Strain and press through a sieve, or serve whole.

SAUCES

Horseradish Sauce

$\frac{1}{2}$ cup horseradish	$\frac{1}{2}$ cup cream
$\frac{1}{2}$ cup cracker dust	1 tsp. mustard
1 tsp. salt	$\frac{1}{4}$ cup vinegar
Pepper	2 tsp. powdered sugar

Mix salt, pepper, cracker dust and horseradish. Make paste of mustard and cream and add it, with rest of cream, to mixture. Add full amount of vinegar if horseradish is fresh, and heat the whole over boiling water. Serve hot.

German Horseradish Sauce

$\frac{1}{2}$ cup horseradish
Vinegar to cover
2 tsp. sugar
1 tsp. salt
1 sour apple grated

Milk all thoroughly and serve cold.

Tomato Sauce

1 cup tomato	1 onion
$\frac{1}{2}$ tsp. salt	$\frac{1}{2}$ green pepper
$\frac{1}{2}$ tsp. sugar	A little parsley
1 tbsp. butter	

Fry butter, chopped onion and green pepper together. Cook tomato until quite thick (at least one-half hour). Add this tomato to butter and onion. Chop parsley and add to tomato mixture. Cook all together for a few minutes with salt and pepper and sugar. Serve hot.

White Sauce

(For six persons)

2½ tbsp. butter	½ tsp. salt
3 tbsp. flour	Pepper
	1 pt. milk

Melt butter in upper part of double boiler or saucepan. Add flour and salt and stir to a smooth paste. Remove from fire. Stir in milk. Put back on fire, or over hot water if made in double boiler, and cook until sauce thickens.

Cream Sauce for Oysters

4 tbsp. flour
Piece of butter the size of 2 eggs
Cut up 1 cup celery and boil it. Press through a sieve.
Scald 1 qt. milk.

Cream together flour and butter, add this to scalded milk. Add celery and cook about fifteen minutes. Cook oysters in their own liquor a few minutes and then add oysters to cream sauce with a part of the oyster liquor. Serve on toast.

Onion Sauce

2 tbsp. drippings, before melting	3 onions
3 tbsp. flour	Salt and pepper

Melt drippings, add flour. Let this brown in the frying pan. Add enough water to make a creamy sauce. Let this cook for ten minutes. Cut onions in rings and fry in the sauce until a golden brown. Season with salt and pepper.

Mint Sauce

¼ cup chopped mint	1 tablespoon sugar
	½ cup vinegar

Let mint stand in sugar and vinegar for half an hour on back of stove. Be sure that mint is washed well before chopping.

SALADS

Boiled Dressing

2 tbsp. sugar	1 egg (not absolutely necessary)
½ cup milk	2 tbsp. flour
½ cup vinegar	1 tsp. salt
1 tbsp. butter	1 tsp. mustard
¼ tsp. pepper	

Mix dry ingredients and stir to a smooth paste with the milk. Beat this well, add the vinegar and blend together thoroughly. The last thing add the butter and the beaten egg (if egg is used). Cook until the mixture thickens.

Mayonnaise Dressing

Yolk 1 egg	1½ tsp. lemon juice or vinegar
½ tsp. salt	A little pepper
About 1 cup salad oil	

Be sure that the oil and egg are cold before beginning the dressing. Also, the dish in which the dressing is made must be cold. In summer it is often necessary to chill the plate with ice.

Have yolk of egg free from all white. Add oil to yolk very slowly, at first drop by drop. After the egg begins to thicken the oil can be added a little faster. Add oil until egg will hold no more and the dressing is too thick to pour, now add seasoning and vinegar and a little mustard.

The difficult part of mayonnaise dressing is to keep it from curdling. The cold egg, cold oil and cold dish should prevent this, if oil is added drop by drop at first. If the dressing does curdle, a tiny piece of ice added sometimes brings it back.

Do not throw away the egg if it does curdle, but add the curdled mayonnaise slowly to a fresh yolk.

French Dressing for Salad

$\frac{1}{2}$ tsp. salt	1 tbsp. vinegar
$\frac{1}{4}$ tsp. pepper	6 tbsp. oil
$\frac{1}{2}$ tsp. mustard	Onion

Mix salt, pepper and mustard together (a little onion juice adds much to the flavor). Pour oil slowly on mustard and salt mixture, stirring thoroughly. Add vinegar the last thing. No good cook will depend absolutely on a written receipt for French dressing, but will depend upon her own taste as to whether there is salt or pepper enough, or whether she should add a little more oil or a little more vinegar.

When greens are used for salad they should first be washed and then allowed to stand in very cold water until thoroughly crisp. Take greens from cold water; wrap in clean dry towel or white cotton bag kept for the purpose. Put in cold place until ready to use.

Potato Salad

6 good-sized cold potatoes

1 onion

A little parsley

At least, 1 cup French dressing as potatoes absorb a great deal.

It is better to boil the potatoes with skins on and remove them after potato is cold.

Cut potatoes into small thin pieces. Chop parsley and onion, and mix all with French dressing. Serve on lettuce leaves.

Remember you never can trust entirely to a receipt; taste before serving to be sure the seasoning is perfect.

Potatoes can be mixed with boiled dressing instead of French dressing.

Water Cress and Apples

Have water cress cold, crisp and dry, as with lettuce. Slice apples thin. Serve with French dressing.

Celery used for a salad should be washed, scraped and cut into pieces one-half inch long.

Cucumber and Tomato Salad

Slice cucumbers and tomatoes, and so arrange them as to look well on lettuce.

Salad with Hard-Boiled Eggs

Boil eggs, slice and serve on lettuce, or stuff egg as in picnic receipt, serve in halves on lettuce with French dressing or mayonnaise.

Celery and Walnut Salad

Use one-third as much chopped walnuts as chopped or cut up celery. To prepare celery, wash it, scrape it and cut it in even pieces. Cover it with very cold water until ready to use. Mix well the celery and nuts with mayonnaise. Serve one spoonful of the mixture on each lettuce leaf.

Fruit Salads

Such fruits as orange, grape fruit and grapes make a delicious salad, and can be used in place of dessert.

Be sure there are no seeds left in the fruit.

Cut the orange in thin slices.

Separate grape fruit from skin. This can be done by cutting grape fruit in half and cutting good part away from bitter skin with sharp knife.

Cut grapes in halves and remove seeds.

Fruit salads are served with boiled or French dressing. Cold meats and cold fish make good salads.

The meat must be free from all skin and gristle, and the fish free from bones and flaked.

Serve meats and fish with mayonnaise dressing.

Vegetable Salads

Salads such as lettuce, water cress, cucumber, tomato, contain very little nourishment, but they help the appetite and are valuable for the water and salts they contain. The olive oil used in the dressing contains much nourishment and is a valuable fat for the system.

Nearly all vegetables can be served as salad. They must be fresh and they must be cold. If there is any green, the leaves must be crisp and dry.

In serving lettuce, be sure no water is on the leaves when French dressing is added, for the water will spoil the dressing and the oil will not adhere to the lettuce.

Never put dressing on lettuce until the moment of serving.

Beets, peas, beans, cauliflower, lima beans, all make delicious salads.

If fresh vegetables are used:

Boil vegetables in salted water. Drain and allow to get very cold. Then mix with French or boiled dressing, and serve on lettuce leaves.

If left over vegetables are used, be sure they are cold and arranged in an attractive way.

Beets should be cut in even cubes.

String beans in tiny lengthwise strips.

Cauliflower into small flowers.

Where several vegetables are used in the same salad, each should be separately mixed with dressing before putting into dish.

CHEESE

A pound of cheese has as much food value as a gallon of milk. It contains all the protein and fat of the milk with the water taken out. Therefore, it is very necessary for each housekeeper to know as many ways as possible for using cheese.

Cheese Crackers

Spread grated cheese on Uneda biscuit, or on any plain cracker, and sprinkle with a few grains of cayenne pepper. Put these cheese crackers in a baking tin and brown in the oven. These are very good served with salad, or with afternoon tea.

Cheese Fondue

1 tbsp. butter	1 cup grated cheese
1 cup milk	2 eggs, well beaten
1 cup bread crumbs	$\frac{1}{4}$ tsp. mustard
	$\frac{1}{4}$ tsp. salt

Melt the butter and add milk, bread crumbs, cheese, salt and mustard. Cook over hot water until the cheese melts. Then add the eggs and cook for two or three minutes longer. Pour into a greased baking dish and bake about twenty minutes in a moderate oven. This must be served at once.

Cottage Cheese

Put thick sour milk into a pan on the back of the stove until the curd has separated from the whey. Then pour

MUFFINS, BREADS, ETC.

Johnny Cake

1 tbls. butter	1 cup cornmeal
1 egg	1 cup flour
1 cup milk	3 tps. baking powder
	1 pinch of salt

Cream one tablespoon butter with one of sugar. Add one beaten egg, one cup of milk a pinch of salt, one cup flour and three teaspoons baking powder. Now add one cup cornmeal. Mix all thoroughly together and fill muffin tins with this mixture. Bake in a moderate oven twenty minutes.

One Egg Muffins

(For eight persons)

2 cups flour	1 tbsp. melted fat or butter
1¼ cups milk	3 tsp. baking powder
1 egg	1 tsp. salt

Mix and sift dry ingredients. Add milk and beaten egg. Beat thoroughly. Add melted butter or fat the last thing. Bake about twenty minutes in buttered gem pans.

No Egg Muffins

(For eight persons)

2 cups flour	1 tbsp. butter
1 cup milk	3 tsp. baking powder
	½ tsp. salt

Mix and sift dry ingredients. Stir in milk and beat

well. Add melted butter last. Bake about twenty minutes in buttered gem pans.

Oatmeal Muffins

$\frac{2}{3}$ cup rolled oats 1 cup scalded milk

Mix these together and allow to stand until cold. Add

3 tbsp. sugar $1\frac{1}{2}$ cups flour

2 tbsp. melted butter 1 egg

4 tsp. baking powder $\frac{1}{2}$ tsp. salt

Mix well and bake twenty or twenty-five minutes.

Corn Bread

2 eggs 2 cups wheat flour

2 tbsp. sugar (heaping) 2 tsps. baking powder

2 tbsp. butter (heaping) (heaping)

1 cup Indian meal 2 cups sweet milk

Beat the eggs well. Add sugar to eggs. Sift three times salt, baking powder, flour and Indian meal. Add the dry ingredients and milk to the egg, putting in first a little of one and then a little of the other. The last thing, add the butter partly melted. Beat hard, and bake in flat baking pan, having the batter not more than three-fourths of an inch thick in pan.

It may be necessary to use a little less or a little more milk. This can be ascertained by trying the receipt once or twice. The mixture should be very thin. Bake in hot oven for twenty-five or thirty minutes.

Baking Powder Biscuits

(For twelve persons)

2 cups flour 1 tsp. salt

$\frac{3}{4}$ cup milk and water in 1 tbsp. lard

equal parts 1 tbsp. butter

4 tsp. baking powder

Mix dry ingredients and sift twice. Cut in butter and lard. Add liquid, mixing with a knife. Toss on a floured board, pat and roll. Cut with biscuit cutter. Bake in hot, buttered pans fifteen minutes.

Short Cake

(For twelve persons)

2 cups flour	1 tbsp. lard
$\frac{3}{4}$ cup milk	1 tbsp. butter
4 tsp. baking powder	1 tsp. salt

Mix dry ingredients and sift twice. Cut in butter and lard with a knife. Gradually add the liquid. Roll to a thickness of one-half inch.

When short cake is cooked, take from oven and slit open. Fill with any fresh fruit; strawberries are the best. Mash these slightly, keeping out a few of the best to put on the top of the cake. Place the crushed fruit between the upper and lower crust.

Peaches cut up and sugared are also a good fruit to use.

Dried Bread

Cut the bread into thin slices. Place in the oven with the door open. Dry until crisp, but do not burn.

Buckwheat Griddle Cakes (prepared flour)

For all griddle cakes, a soap stone griddle is the best.

1 cup buckwheat flour	2 tsp. baking powder
$\frac{1}{3}$ tsp. salt	$\frac{3}{4}$ cup cold water
1 tbsp. sugar	$\frac{3}{4}$ cup milk

Sift dry ingredients. Add water and mix thoroughly. Drop on hot griddle and turn with pancake turner when brown on one side.

Buckwheat Cakes (ordinary not prepared flour)

3 cups buckwheat flour

1 cup Indian meal
 1 cup bread crumbs, soaked in cold water
 $\frac{1}{2}$ cake of yeast with water enough to make a sponge.

Salt.

Put this compound in a stone jar, warming the jar first. Then put in a warm place for six or seven hours. When ready to make cakes, add one teaspoon of soda, one tablespoon molasses and melted butter the size of an egg. Make the batter as thin with water as is possible and still turn the cake. Have the griddle very hot (a soap stone griddle is the best). One minute will brown the cakes. Serve at once.

If the batter has fomented, sometimes more soda is needed.

Corn Meal Griddle Cakes

2 cups milk	1 tsp. salt
$\frac{1}{2}$ cup corn meal	3 tsp. baking powder

Enough flour to make a smooth batter, but thin. Stir all together and bake on hot, well-buttered griddle or large frying pan. If sour milk is used, use one-half teaspoon soda dissolved in one-fourth cup hot water and two teaspoons baking powder instead of three teaspoons baking powder.

Sour Milk Griddle Cakes

$2\frac{1}{2}$ cups flour	2 cups sour milk
$\frac{1}{2}$ tsp. salt	1 egg
	2 tsp. soda

Mix and sift dry ingredients. Add sour milk and beaten egg. Have griddle very hot and greased. Turn when brown and cook on other side. Serve hot with syrup or molasses.

Brown Bread

2½ cups corn meal	1 cup molasses
2½ cups rye meal	3 cups very nice sour milk
Rye meal is purchasable only in certain stores	4 even teaspoons baking soda
A little salt	

Mix all together. Beat and beat very hard. In mixing begin with the milk, and gradually add other ingredients to this. Steam three hours, and then bake in oven one-half hour.

Oatmeal Muffins

For these muffins use cooked oatmeal.

1½ cups cooked oatmeal	½ cup milk
1 cup flour	2 tsp. melted butter
2 tbsp. sugar	½ tsp. salt
4 tsp. baking powder	

Mix and sift dry ingredients (flour, sugar, baking powder, salt). Add to this one-half of the milk and whole egg well beaten. The remainder of the milk should be mixed with the oatmeal and beaten thoroughly. Now add dry ingredient mixture to oatmeal mixture, adding to the whole the melted butter. Bake in buttered muffin pans for fifteen or twenty minutes.

Bread Omelet

½ cup soft bread crumbs	2 eggs
4 tbsp. milk	¼ tsp. salt
1 tsp. butter	Pepper

Soak the bread crumbs in the milk until the milk has been absorbed, and then add salt and pepper. Separate the yolk from the white of egg. Beat the white stiff. Add beaten yolk to the bread crumbs. Fold in the white and proceed as in a plain omelet.

Mushrooms and Bread Omelet

5 mushrooms	1 cup bread crumbs
2 tbsp. butter	1 tbsp. cheese
2 eggs	Leaf of marjoram

Peel mushrooms, cut into rather small pieces and put in a frying pan with butter and salt. Fry lightly until the mushrooms are brown. In the meantime beat up separately yolks and whites of eggs, add to the eggs the bread crumbs which have been soaked in water, add also the cheese grated and two leaves of marjoram. Go on beating until the bread has become absorbed by the eggs. Pour this mixture into the frying pan with the mushrooms, mix all together and make omelet in usual way.

Zwieback

Zwieback or rusks. Cut bread into slices and dry in a slow oven until the bread is of a deep yellow color.

TOASTS

Dry Toast

Bread is best for toast when one or two days old. Cut bread in one-fourth-inch slices and place on a broiler or hold on a long fork over clear red coals until done golden brown. When brown on one side, turn and brown on the other side. Toast should be served as soon as made.

White Sauce for Toast for Six

2½ tbsp. butter	½ tsp. salt
3 tbsp. flour	1 pt. milk

Melt butter in upper part of double boiler or saucepan. Add flour and salt, and stir to a smooth paste. Remove from fire, stir in milk. Put back on fire, over hot water, and cook until it thickens. Pour over toast.

If cream is used, do not use flour or butter. Heat cream and season with salt and paprika.

Cream-Toast with Cheese

Make toast

Make white sauce as in last receipt.

To white sauce add three or four tablespoons of grated cheese just before taking from fire. When cheese is melted pour sauce over toast.

SANDWICHES

These are only a few of the many kinds of sandwiches that can be made.

Cheese Sandwiches

Mash very smooth two tablespoonfuls of cream cheese. Add one tablespoonful of melted butter and one tablespoonful of chopped parsley. Spread bread with cheese paste, being careful that none squeezes out between the slices of bread. In this case it is not necessary to butter the bread before spreading, as there is butter with the cheese.

Cheese and Nut Sandwiches

Chop any nuts fine, and mix the nuts with cheese which has been mashed smooth. The amount of nuts depends upon the taste of the maker. Spread between bread as in cheese sandwiches.

Egg Sandwiches

Boil eggs hard. The number of eggs must be determined by the number of sandwiches you wish to make. Separate whites from yolks and chop whites fine. Mash the yolks and season with pepper and salt. Or make a French salad dressing and mix it with the yolks. Stir in the whites and spread on buttered bread.

Cheese and Olive Sandwiches

Make cheese sandwiches as in cheese sandwich receipt. Chop olives fine and sprinkle on top of spread bread.

Lettuce Sandwich

Make French dressing. Dip lettuce leaves in the dressing and lay them between the slices of bread. Any green salad can be used in this way for a sandwich.

Celery Sandwich

Make mayonnaise dressing and spread the bread with it instead of butter. Wash, scrape and chop (or cut in very small pieces) the tender part of celery. Put this between the mayonnaise spread bread. Nuts chopped in with the celery add to the food value, as well as to the taste.

Meat Sandwiches

Any cold leftover meat can be used. Chop this meat and mix it with mayonnaise dressing and spread between slices of bread.

or

Spread bread with butter and use sliced meat simply seasoned with salt and pepper. A little chopped celery added to the meat gives a good flavor.

or

Cold meat can be cut in thin slices and placed between slices of buttered bread. Sprinkle a little salt over the meat.

Fish Sandwiches

Any cold, cooked fish may be used. Take from the cooked fish all bones and skin. Mash fish to a paste, season with salt and pepper and a little lemon juice. Spread this paste between slices of buttered bread.

Raw Beef Sandwiches

Raw meat is more easily digested than cooked meat, and

for this reason is given to persons who need the nourishment but cannot digest the cooked meat.

Buy beef from the round, scrape with grain of meat and with a silver spoon or knife; spread between thin slices of bread. Sprinkle with salt and pepper. These sandwiches can be eaten cold, or put on a toaster and heated through.

Water Cress Sandwiches

Wash first, and then chop one bunch of water cress. Mix this water cress with a French dressing. Cut the bread in thin slices and butter. Between two slices of this buttered bread spread the water cress. These sandwiches are better served cold.

DESSERTS

Indian Meal Pudding

Three tablespoons of meal in one pint of boiling milk. Let it boil a few minutes. Add one pint of cold milk, two beaten eggs, four tablespoons molasses, one tablespoon butter, one-half teaspoon salt and one-half teaspoon ginger. Butter dish, and bake slowly three hours.

or

Indian Pudding

1 qt. scalded milk	$\frac{1}{3}$ cup molasses
8 tbsp. corn meal	1 tsp. salt
	1 tsp. ginger

Pour milk slowly on meal. Cook in double boiler fifteen minutes. Add molasses, salt and ginger. Pour into buttered baking-dish. Bake two hours in slow oven.

Bread and Butter Apple Pudding

Put in bottom of a baking dish some apple sauce. Cut stale bread in slices and cut in small squares. Spread with softened butter and brown slightly in the oven. Arrange closely together over the apple. Sprinkle generously with sugar, to which add a few drops of vanilla. Bake in a moderate oven and serve with hard sauce (or any pudding sauce desired).

Apple Dumplings

(For six persons)

2 cups flour	3 tbsp. butter
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$\frac{2}{3}$ cup milk
6 apples

$3\frac{1}{2}$ tsp. baking powder
 $\frac{1}{2}$ tsp. salt

Mix dough as for biscuits (see Baking Powder Biscuits). Roll and cut large enough to cover an apple. Pare and core apple, fill center with sugar and squeeze in a little lemon juice. Place this apple in the middle of dough and draw piece of dough up over each apple, pressing the edges together at the top. Put on floured tins and bake in a moderate oven until apples are tender. Serve with hard sauce or molasses sauce, or melted butter and sugar. (See Pudding Sauces.)

Apple Pudding

Fill a buttered pudding dish with alternate layers of bread crumbs and apple sauce which has been sweetened with brown sugar and slightly spiced. A tablespoonful of melted butter mixed with the top layer of crumbs will give a crisp crust. Cover with a plate and bake slowly for one-half hour. Remove the cover for the last five minutes and brown on top. Raw apples sliced or chopped may be used, but in that case the pudding must be baked for an hour or until the apples are tender. Serve hot with sauce.

Spiced Pudding

Soak one packed cup of the browned crusts of bread in one pint of scalded milk until soft. Then add one-half cup of molasses, one tablespoon salt, one-fourth teaspoon of spices, one-half cup of raisins. Stir occasionally at first, and bake in a very moderate oven. Serve with hard sauce.

Steamed Rice with Chocolate Sauce

Steam rice in double boiler, or boil for thirty minutes,

as in "Boiled Rice" receipt. Serve this rice with hot chocolate sauce.

Scalloped Apples

(For six persons)

1½ cups apples	Nutmeg
1 cup bread crumbs	Cinnamon
1½ tbsp. butter	⅛ tsp. salt
¼ cup sugar	½ cup boiling water

Melt butter and stir crumbs and butter together. Put one-fourth of them in bottom of buttered pudding dish. Then put in a layer of one-half of the apples. Mix sugar, salt, spices and lemon rind and sprinkle one-half of this over apples in dish. Now repeat with another layer of crumbs, apples and lemon. Add the water. Sprinkle crumbs on top. Cover and bake thirty to forty-five minutes, or until apples get soft.

Apple Snow

First make apple sauce from dried or fresh apples.

1 cup apple sauce (strained)

¼ cup sugar

White of 1 egg

Lemon juice and grated rind

Beat all together until white and fluffy. Serve with boiled custard.

Apple Tapioca

(For eight persons)

¾ cup minute tapioca 2½ cups boiling water

½ tsp. salt ½ cup sugar

7 sour apples

Add four more cups of water and one-half tsp. salt. Cook in double boiler until transparent.

Core and pare apples and put in buttered pudding dish. Fill cavities of apples with sugar and a little lemon juice. Raisins and nuts may be put in the center also. Pour the tapioca over the apples and bake in a moderate oven until the apples are soft. Serve with sugar and cream or with one of the pudding sauces.

Peaches, pears, bananas, cooked figs or quinces can be substituted for apples. Bread crumbs sprinkled on top of pudding will brown, also keep the moisture in.

Plain Bread Pudding

1 cup bread crumbs	1 egg
2 cups milk	3 tbsp. sugar
	$\frac{1}{2}$ tsp. salt

Lemon Bread Pudding

1 cup bread crumbs	4 tbsp. sugar
2 cups milk	$\frac{1}{2}$ tsp. salt
1 egg	Rind of 1 lemon

Chocolate Bread Pudding

1 cup bread crumbs	8 tbsp. sugar
2 cups milk	$\frac{1}{2}$ tsp. salt
1 egg	1 oz. chocolate

Soak crumbs and milk until crumbs are soft. Beat eggs with sugar and salt and add this to the soaked crumbs. Put into a buttered dish and bake in a moderate oven for thirty or forty minutes, or until a knife can be put into the pudding and come out clean.

Serve plain puddings with milk and sugar. Chocolate pudding with chocolate sauce, and lemon pudding with a lemon sauce.

French Toast

1 egg	1 tbsp. butter
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$\frac{1}{2}$ cup milk	$\frac{1}{8}$ tsp. each salt and pep-
1 tsp. sugar	per
	4 slices bread

Beat egg slightly, and add salt, sugar and milk. Soak bread in mixture until soft. Have buttered griddle very hot. Fry bread on griddle, browning first on one side and then on the other. This can be served for breakfast or luncheon, or with a sauce can be served as a dessert.

Rice Pudding

4 cups milk	$\frac{1}{2}$ tsp. salt
$\frac{1}{3}$ cup rice	$\frac{1}{3}$ cup sugar

Few gratings of nutmeg or 1 tsp. vanilla

Wash rice. Mix all ingredients together in bowl, pour into a buttered baking dish. Bake three hours in slow oven.

When time is limited, wash rice, put in four cups scalded milk and steam twenty minutes. Add sugar, salt and flavoring. Pour in buttered baking dish. Bake thirty minutes.

Parson's Pie

Cut apples into eighths and fill your pie plate full. Pour over the apples two-thirds of a cup of molasses and one teaspoon of cinnamon. Cover this with a pie crust and bake until the apples are soft.

Soft Custard

2 cups scalded milk	$\frac{1}{8}$ tsp. salt
Yolks of 3 eggs or 2 whole eggs	$\frac{1}{4}$ cup sugar
	$\frac{1}{2}$ tsp. vanilla

Scald milk. Beat eggs slightly, add sugar and salt.

Add hot milk to egg mixture so slowly as to prevent lumping. Pour all back into double boiler and cook until mixture coats the spoon. Now remove at once from the

fire and flavor and cool. If cooked too long the custard will curdle. If eggs are expensive two tablespoons of cornstarch may be substituted for one egg.

Junket

Heat one cup of sweet milk in a clean enameled saucepan. Dissolve a junket tablet in one tablespoon of cold water. Turn this into the warm milk, and stir just enough to mix it. Add a very little sugar and vanilla or chocolate flavor. Turn into a bowl to cool. A beaten egg added just before taking from the fire adds to the nourishing quality.

Blanc Mange

Into a pint of boiling fresh milk stir two tablespoonfuls of cornstarch made smooth in a little cold milk. While thickening, add two tablespoons of sugar and one-half cup of the juice of some fruit or chocolate. Turn into a double boiler and let it steam for half an hour. Pour into molds and let it cool. Serve with cream.

Ice Cream

Scald a pint of milk in a double boiler. Thicken with one tablespoonful of cornstarch, which has first been rubbed smooth with a little cold milk. Add one egg (beaten) and one cup of sugar. When it thickens set aside to cool. Flavor and freeze. A pint of cream whipped and added before freezing will make the ice cream richer.

Baked Custard

4 eggs	$\frac{1}{2}$ cup sugar
4 cups scalded milk	$\frac{1}{4}$ tsp. salt
A little grated nutmeg	

Beat eggs slightly, add sugar and salt and scalded milk. Strain into buttered pudding dish. Sprinkle with nut-

meg. Place dish in pan of warm water. Bake in slow oven until firm. Run a knife blade into custard. If knife comes out clean custard is done.

Caramel Custard

(For six persons)

$\frac{1}{2}$ cup sugar	$\frac{1}{8}$ tsp. salt
2 cups milk (scalded)	$\frac{1}{4}$ tsp. vanilla
	2 eggs

Melt sugar in saucepan. Add scalded milk and cook until free from lumps. Pour slowly into beaten egg. Add vanilla. Bake in dish placed in pan of hot water in a moderate oven until knife blade put in center comes out clean.

Lemon Milk Sherbet

1 qt. milk Juice of 3 lemons $1\frac{1}{2}$ cups sugar

Mix the juice and sugar together and gradually stir in the milk. Freeze in an ice cream freezer and serve.

Junket Ice Cream

Heat three-fourths cup of sugar in one quart of milk and one cup of cream. When lukewarm add one junket tablet dissolved in cold water. Pour directly into the freezer. When it begins to thicken flavor with vanilla, chocolate or any fruit syrups and freeze.

Arrowroot Blanc Mange

$\frac{1}{4}$ cup sugar	2 tbsp. arrowroot
1 pt. milk	1 tsp. lemon

Heat milk to boiling point. Mix arrowroot and sugar together and a little milk to make paste. Add this paste to hot milk. Cook all in double boiler for twenty minutes

and then strain. Add flavoring just before taking from fire.

Arrowroot can be purchased from any drug store.

PUDDING SAUCES

Brown Sugar Sauce

1 cup water	1½ tsp. flour
2 tsp. lemon juice	¾ cup brown sugar
1 tbsp. butter	A little nutmeg

Mix sugar and flour together, pour over it boiling water. Cook until clear and slightly thick. Add butter just before taking from the stove, and lemon juice before serving.

Caramel Sauce

½ cup caramel	½ cup water
4 tbsp. flour	3 tbsp. sugar
	½ tsp. vanilla

To make caramel, melt one-half cup of sugar, stirring constantly but not allowing it to burn or get dark. Take it from the fire for a minute and add one-half cup boiling water. Return to fire and boil until smooth. This caramel will keep for a long time.

Mix flour and sugar with a little water until smooth. Add this to the caramel and cook until slightly thick and clear. Add vanilla.

Fruit Sauce

White of 1 egg	¾ cup powdered sugar
¾ cup of fruit juice	Lemon juice

Put unbeaten white of egg in bowl, add fruit and sugar gradually, beating it with the Dover egg beater. Beat until smooth and thick. Lemon juice is added to bring out the flavor of the fruit and less sugar is needed if fruit is sweet.

Hard Sauce

Pour one tablespoon boiling water over one-half cup of butter. Stir until creamy and then mix in one cup of granulated sugar. Flavor with nutmeg or lemon or vanilla. Serve cold.

Molasses Sauce

1 cup golden drip syrup	Pinch of salt
2 tbsp. vinegar or juice ½ lemon	1 tbsp. butter A little vanilla

Cook all together until the mixture begins to thicken, then take from stove and cool, or the sauce can be served hot.

Chòcolate Sauce. No. 1

1 cup sugar	1½ tbsp. cornstarch
2 tbsp. cocoa	2 cups boiling water
Pinch salt	1 tsp. vanilla

Mix dry ingredients. Add boiling water slowly, stirring constantly. Cook on slow fire for ten minutes. Remove from fire, add vanilla and serve hot with rice or any pudding.

Chocolate Sauce. No. 2

1 cup water	1 oz. bitter chocolate
½ cup sugar	½ tsp. vanilla
	1 tbsp. flour

Mix sugar and flour. Pour over it boiling water. Cook until clear, and slightly thick. Add melted chocolate and vanilla just before taking from the stove.

CAKES AND COOKIES

To Test an Oven

1. Place a piece of clean white paper in oven and time with the clock. If paper browns in five minutes, oven is hot; if paper burns in five minutes, oven is too hot; if paper browns in eight minutes, oven is moderately hot.

2. Another test is holding the hand in the oven and counting. Your hand should feel very hot in six counts for a hot oven and in eight counts for a moderate oven.

To Test a Cake

1. Take a clean toothpick and pierce center of cake when it begins to seem done. If toothpick comes out dry and clean, cake is done. If moist, the cake is not done.

2. A cake shrinks from the sides of the pan when done, excepting a pound cake.

3. Press a cake lightly with tip of finger; if it rebounds cake is done, if not cake is not done.

Spanish Cake

$\frac{1}{4}$ cup butter	1 scant cup flour
$\frac{1}{4}$ cup milk	1 egg
$\frac{1}{2}$ cup sugar	$1\frac{1}{2}$ tsp. baking powder
$\frac{1}{2}$ tsp. cinnamon	Pinch of salt.

Mix dry ingredients. Cream together butter and sugar. Beat the yolk of egg and add this to the milk. Now add milk and egg mixture to flour mixture, and then sugar and butter, and lastly the white of the egg beaten.

Spice Cake

$\frac{1}{2}$ cup sugar	1 egg
$\frac{3}{4}$ cup sour milk	1 tsp. soda
$\frac{1}{2}$ cup molasses	1 tsp. ginger
$1\frac{1}{2}$ cup flour	1 tsp. salt

Mix and sift dry ingredients, excepting sugar. Combine sugar and molasses. Add to this the beaten egg, and then add to the molasses and egg mixture the flour and the milk alternately. Bake twenty minutes in muffin tins.

Dutch Apple Cake

2 cups flour	3 tsp. baking powder
1 cup milk, scant	2 tbsp. sugar
3 tbsp. melted butter	1 egg
	$\frac{1}{2}$ tsp. salt

Mix dry ingredients together. Add milk and egg (beaten). Add melted butter. Spread this batter about three-quarter inch thick on a buttered tin. Stick this full of thin slices of apple. Sprinkle with sugar and cinnamon, and bake until brown. This can be served with a number of sauces, one of which is Brown Sugar Sauce.

Feather Cake

(For twelve persons)

4 tbsp. butter	$2\frac{1}{2}$ tsp. baking powder
1 cup sugar	2 eggs
$1\frac{1}{2}$ cup flour	$\frac{1}{2}$ cup milk

Put butter in a mixing bowl and work it with a spoon until creamy. Then gradually add sugar, continuing to cream it. Sift salt, baking powder and flour together. Separate the yolks of the eggs from the whites, beat yolks and add to milk. Now add the milk and egg mixture and the flour mixture to the creamed butter, alternating first one then the other. Add a little vanilla, and the last

thing stir in the whites of the eggs beaten to a stiff froth. Bake in a shallow pan. Either butter this pan slightly or line with buttered paper. Bake about thirty minutes.

Ginger Bread

(For twelve persons)

2 cups flour	$\frac{3}{4}$ cup sour milk
$\frac{1}{2}$ cup brown sugar	1 tsp. cinnamon
$\frac{3}{4}$ cup molasses	2 tbsp. butter or
1 tsp. soda	1 tbsp. butter and
1 tsp. ginger	1 tbsp. lard

Sift together dry ingredients. Mix soda and molasses and milk, and stir slowly into the dry ingredients. Melt the butter (or the butter and lard) and add this to the whole. Bake from twenty to thirty minutes in moderate oven. Test with a toothpick kept for the purpose, not with a broom straw.

Cinnamon Cakes

(For twelve persons)

$\frac{1}{2}$ cup butter	$1\frac{3}{4}$ cups flour
1 cup sugar	3 tbsp. baking powder
Yolks 2 eggs	1 tbsp. cinnamon
$\frac{1}{2}$ cup milk	Whites 2 eggs

Cream butter and sugar. Beat yolks of eggs, add milk. Add egg and milk to butter and sugar. Sift all dry ingredients and add to wet mixture. Beat whites of eggs stiff and fold in to mixture. Put in well buttered muffin pan and bake until done when tested.

Chocolate Frosting with Nuts

3 cups brown sugar	1 cup cream or milk
A little butter	2 squares chocolate
1 cup walnuts	Vanilla

Boil all together like fudge. Add a few drops of vanilla and the nuts at the last.

Cookies

1 cup butter	2 cups flour
2 cups sugar	2 eggs
1 cup milk	$\frac{1}{2}$ tsp. vanilla
	2 tsp. baking powder

Beat butter and sugar together and to this add milk and beaten egg. Sift flour and baking powder together and add this to butter mixture.

Cookies

(For twelve persons)

1 cup sugar	3 tbsp. butter or
$\frac{1}{4}$ cup milk	3 tbsp. fat
2 cups flour	2 tsp. baking powder
1 egg	$\frac{1}{2}$ tsp. salt

Little Nutmeg

Beat butter and sugar together (hard). Add beaten egg. Sift dry ingredients together, and add to butter and egg mixture flour and milk alternately.

Hermits

$\frac{1}{2}$ cup butter	1 tsp. cinnamon
$\frac{1}{2}$ cup sugar	$2\frac{1}{2}$ cups flour
3 eggs	1 cup sour milk
2 tsp. soda	1 cup molasses
1 tsp. ginger	1 cup chopped raisins
1 tsp. cloves	$\frac{1}{2}$ cup chopped nuts

Sift dry ingredients. Add to this butter creamed, molasses and sour milk in which soda has been dissolved. Lastly add the beaten eggs, raisins and nuts. Drop as thin as possible onto buttered tin.

Oatmeal Cakes

1 cup sugar	1 tbsp. butter
2½ cups Quaker Oats	1 tsp. baking powder
2 eggs	1 tsp. vanilla

Cream together sugar and butter. Add to this eggs (beaten) and Quaker Oats mixed with baking powder. Add vanilla at the last. Butter pans and dredge with flour. Drop batter on to pan and bake in hot oven.

COOKED FRUITS

Baked Apple

Wash and core tart apples. Place in a shallow baking-pan. Fill centers with one tbsp. sugar for each apple. Pour over boiling water enough to cover bottom of pan well. Sprinkle with nutmeg or cinnamon. Bake in moderate oven until very tender. During baking, baste apple with the syrup at least every fifteen or twenty minutes. Serve hot or cold, with or without cream.

Stewed Apples

Select sour apples for cooking.

Wash, pare, and cut into quarters. Remove cores. For every four whole apples make a syrup of the following:

1 tbsp. lemon juice, or $\frac{1}{2}$ tsp. nutmeg.
1 cup sugar $\frac{1}{2}$ cup water

Drop apples into this syrup and cook until clear, stirring carefully to avoid breaking.

Apple Sauce

Wash and pare six nice sour apples. Cut in slices. Put in saucepan with water enough to prevent their burning. Cook until apple is soft. Just before taking from fire, add one tbsp. sugar for each apple and the juice of one lemon. Stir hard. Take from fire, and strain through fine strainer. A sprinkling of nutmeg or cinnamon adds to flavor.

Dried Apple Sauce

1 cup dried apples $\frac{1}{4}$ cup sugar or molasses
 3 cups cold water A little nutmeg

Wash apples and let them soak in cold water about a half hour. Stew in same water until soft. Add sugar and nutmeg (lemon juice can be added in place of nutmeg). Serve hot or cold.

There are many desserts made from dried fruits and thus utilize this food with its high nutritive value: for example, Fig Pudding, Prune Soufflé, Prune Pudding, Fig Sandwiches, Fig filling for cake, Dried Apple Pie, Dried Apple Pudding.

Stewed Prunes

1 lb. prunes Pinch of salt
 Cold water 2 tbsp. sugar

Wash and pick over prunes. Put in a saucepan of cold water and soak for two hours. Then in the same water allow the prunes to cook until soft. When they seem nearly soft enough add the sugar and salt. Molasses can be added instead of sugar, or cook prunes with no sugar.

Prune Jelly

$\frac{1}{3}$ lb. prunes 2 tbsp. almonds
 1 cup sugar $\frac{1}{2}$ box Cox's gelatine or
 2 tbsp. granulated gelatine

Soak washed prunes in cold water as for stewed prunes, and stew until tender. Take out the stones and add sugar. Dissolve the gelatine in a little cold water. Add this gelatine to the prunes while boiling hot. Also add the juice of one lemon and the almonds, which have been blanched and chopped. Pour the jelly into a mold and put on ice, or cover it and put it in a cold place. This is better eaten with cream or milk.

Stewed Apricots

½ lb. apricots	1 tsp. lemon juice
1 tbsp. sugar	Pinch of salt

Pick over and wash the apricots. Put in saucepan and allow to soak for at least two hours. Then cook in the same water until soft, adding more water if necessary. Add sugar, lemon and salt, and serve hot or cold.

FRUITS FOR CHILDREN**Stewed Fresh Fruits**

Raw fruits are seldom good for children or persons with delicate stomachs. The steamed or stewed fruit is prepared by washing the raw fruit, peeling, coring it, and cutting it into quarters. It can be cooked with a little sugar.

or

Fruit can be cooked without extra sugar, as the sugar in the fruit is enough for children.

Steamed Apple

Pare and core the apple and drop it at once into cold water, for if it begins to discolor it is bad for the child. Put the apple into the top part of the double boiler, adding no water to the apple, but having plenty of boiling water in the lower part. When apple is soft, beat it with a spoon. Add a very little sugar and strain through a fine strainer. An agate strainer is better than tin, as the latter destroys the flavor of the apple. Apple sauce may be made instead of steamed apple, and strained in the same way.

Orange

Squeeze the juice from the orange. Strain it through a fine strainer so that no pulp remains. At first give a child two tablespoonfuls, and very gradually increase.

Other fruit juices which are good for children are: Peach, red raspberry, strawberry, pineapple. All of these should be strained very carefully, as neither pulp nor seeds should be given to a child. To extract the juice, it may be necessary to cook the fruit for a few moments before straining. Give fruit juice to a child in the morning; never at night.

RECEIPTS FOR MARMALADE, JAM AND JELLY

Grape Marmalade

Pick over, wash, drain and remove stems from grapes. Separate pulp from skins. Put pulp in kettle and cook until seeds separate, then strain through sieve. Return pulp to kettle with skins. Add three-fourths as much sugar as fruit. Cook slowly twenty minutes, stirring occasionally. Put in sterilized stone jars or jelly glasses.

Rhubarb Marmalade

One quart bright red rhubarb stalks. Yellow rind and pulp of six oranges. One and a half pounds of granulated sugar.

Wash and cut rhubarb in small pieces, add orange pulp and cook until thick when tried on a cold saucer. Remove from fire and add one cup of nuts which have been cut in small pieces. Cut the orange rind in strips and cook until tender; then cut in still smaller pieces and add to rhubarb. Also add one cup of raisins. Put back over the fire and boil ten minutes. Pour into sterilized jars or tumblers.

Raisins and rhubarb may be cut with scissors.

The orange rind is what imparts the bitter taste to the marmalade.

Orange Marmalade

6 large sour oranges	3½ pts. cold water
3 lemons	4 lbs. sugar

Scrub and cut fruit in slices, rejecting ends and seeds.

Cover with the water and soak over night. The following morning add sugar and cook one hour. Two cups of shredded, blanched almonds may be added just before taking from the fire.

Raspberry Jam

Pick over raspberries, wash, put in a preserving kettle and mash fine with a potato masher. Heat to boiling point and add an equal quantity of sugar. Cook slowly until thick when tried on a cold saucer. Put in sterilized jars or jelly glasses. Any berries may be used in the same way.

Grape Jelly

Pick over grapes, wash, remove stems, put in a preserving kettle and heat to boiling point. Then mash and cook for thirty minutes. Strain through a coarse strainer to remove skins and seeds. Then put in a jelly bag and drain. Measure juice, put in the kettle and boil five minutes. Add sugar (equal portion), boil three minutes, and pour into sterilized glasses.

Do not squeeze pulp for jelly; it makes the jelly *cloudy*.

Currant Jelly

Currant jelly is made the same way as grape jelly, only currants do not need to be removed from stems at the beginning.

Crab-apple Jelly

Crab-apple jelly is made the same as grape, after apples are wiped and cut in quarters, stems and stem ends being rejected. In making crab-apple jelly, the apples are cooked in enough water to come to the edge of apples in the kettle, and are cooked until tender.

Cranberry Jelly

Pick over and wash berries. For every four cups of berries use one cup of boiling water. Cook until soft. Rub through fine sieve, add two cups of sugar and cook for five minutes. Turn into glasses or a mold.

Cranberry Sauce

Pick over and wash three cups berries. Put in a saucepan with one and one-fourth cups of sugar and one cup of cold water. Boil until soft. Skim and cool.

ITALIAN RECEIPTS

Beans and Pasta

$\frac{1}{2}$ lb. pasta	1 tbsp. chopped onion
2 tbsp. oil or drippings	$\frac{1}{2}$ red pepper
1 cup or $\frac{1}{3}$ lb. beans	Little salt

Boil beans about two hours after soaking over night; add pasta and cook about half an hour more; heat oil in separate saucepan with red pepper, and chopped onion. Add this to beans at the time pasta is added.

Macaroni with Tomato

1 lb. macaroni	1 green pepper
2 tbsp. oil or drippings	Salt
1 pt. can tomatoes	1 tbsp. onion

Boil tomato, drippings, pepper, seasoning, and onion together for one hour slowly; cook macaroni in boiling water for about half an hour; drain off hot water and pour cold water over macaroni to remove starchy scum. Fill dish with dry hot macaroni and pour tomato mixture over the whole. A quarter of a pound store cheese grated should be added to the hot macaroni just before serving.

Rice and Pea Soup

$\frac{1}{2}$ cup rice
1 cup whole dry green peas

Cook same as pasta and beans.

Lentils and Rice

Put lentils to soak night before; drain off water, add

lentils to fresh boiling water, and boil until soft. Fry separately two tablespoons drippings, half chopped small onion, pepper and salt; fry until onion is brown; add to this two tablespoons chopped celery and a like quantity chopped parsley. Add this fried mixture to the cooking lentils. Add at the same time the rice well washed. Cook the whole together for half an hour.

Dried Lima Beans and Pasta

These are cooked the same as beans and pasta. Lima beans may be used with rice instead of pasta.

If it is desired to have the lentils, macaroni, peas and beans more of a soup consistency, cook longer in more water.

Polenta

1 cup corn meal Parmesan cheese $\frac{1}{2}$ lb.
4 heaping tbsp. butter

Salt and pepper. Boil cornmeal in boiling water and salt, for at least two hours; have it the consistency of mush and pour into a shallow dish; the mush not more than one inch thick. When cold cut mush in squares. Place layer of cornmeal squares in baking-dish; cover the layer with pieces of butter and sprinkling of cheese, more corn meal and then more butter and cheese. Sprinkle grated cheese on top, brown in oven.

Rice with Tomato and Cheese

One cup rice. Tomato sauce, as for macaroni. Four tablespoons grated cheese (Roman cheese is used by Italians). Cook rice in boiling water for half an hour; drain off water, pour tomato mixture on the rice, and just before serving sprinkle grated cheese on top.

Rice and Beans

Rice and beans are cooked in the same way as pasta and beans. To half cup of rice and half cup of beans, a little garlic is always added by the Italians.

Menestra

2 cups tomato	1 small cabbage
1 onion	3 good-sized potatoes
1 green pepper	$\frac{1}{2}$ tsp. salt
2 tbsp. olive oil	2 cents' worth soup greens
1 stalk celery	A little garlic
	3 carrots

Chop onion, green pepper and garlic, and fry in oil. Chop cabbage and soup greens, and boil for about ten minutes in one quart of water. At the end of ten minutes add the carrot sliced and the potato cut in cubes, and allow to boil for half hour more. Add the tomato and the oil and onion mixture. Season, and when all are thoroughly blended together, serve.

Risotto

$\frac{1}{2}$ cup rice	Small piece veal or sweet-
1 cup strong stock	bread
1 cup tomato (canned)	3 small onions
or 1 fresh tomato	1 tbsp. butter (heaping)

Fry onion, chopped fine, in butter, add tomato and let it boil hard for half an hour with just enough water to thin the tomato so that it will boil easily. Chop the pieces of veal very fine, or put it through the meat grinder. Ham can be used instead of veal or sweetbread, chopped fine. Add this meat to the tomato with one cup of good stock.

Wash rice and add slowly to boiling stock. Stir carefully so that rice is quite cooked but not pulpy. Mix in

at least four tablespoons of grated Parmesan cheese. The rice should be the consistency of a vegetable not a soup.

KOSHER RECEIPTS

Noodles and Cheese

$\frac{1}{2}$ lb. noodles $\frac{1}{2}$ lb. pot cheese
Butter size of walnut Salt to taste

Put water on to boil, with salt. Cook noodles in boiling water about half hour. Strain off water, add butter and cheese to noodles after taking from fire. Stir before serving.

Oatmeal and Potatoes

1 pound potatoes Butter size of walnut
1 onion Salt to taste
 $\frac{1}{4}$ cup oatmeal 1 cent's worth soup greens

Put one and half quarts water to boil, with salt. Cook oatmeal in boiling salted water quarter of an hour. Add potatoes cut in cubes and boil half hour longer. While potatoes and oatmeal are boiling, fry the onion in the butter with the chopped soup greens. Add this to potato and oatmeal mixture. Season to taste.

Noodles and Milk

$1\frac{1}{2}$ qts. milk $\frac{1}{2}$ lb. noodles
Salt to taste

Cook noodles in boiling salted water until soft. Do not strain off quite all of the water. Add boiling milk just before serving. Season to taste.

Pea Soup

1 cup dried split peas 2 cents' worth soup greens

1 onion	Salt to taste
$\frac{1}{2}$ lb. noodles	Butter size of walnut

Soak peas over night. In the morning boil peas slowly for about one hour. Fry chopped onion, soup greens, and butter together in a frying pan. Add to cooked peas half pound of noodles twenty minutes before serving. Add the fried onion and butter at least ten minutes before taking from fire.

Lima Beans and Barley

1 cup dried Lima beans	$\frac{1}{2}$ cup barley
1 onion	Butter size of walnut
Soup greens	Salt to taste

Cook beans two hours, add barley, and cook one hour longer. Add fried butter and onion mixture, as in receipt for oatmeal and potatoes.

White Beans and Rice

1 cup white beans	$\frac{1}{4}$ cup rice
Butter size of walnut	1 onion
1 cent's worth soup greens	

Cook beans two hours, add rice and cook for twenty minutes longer. Just before serving, add fried butter, onion, and chopped soup greens mixture, as in receipt for oatmeal and potatoes.

Beans and Green Peppers

$\frac{1}{2}$ lb. red kidney beans	$\frac{1}{2}$ lb. cheese
2 peppers	

Cayenne pepper and salt to taste

Soak beans over night. In the morning, cook slowly for one hour. Chop peppers and cook with beans. Just before taking from fire, add cut-up cheese to hot beans and peppers. Serve hot on toast.

Nut Loaf

1 cup peanuts	1 cup chopped walnuts
2½ cups bread crumbs	2 eggs
1 tsp. salt	Pepper
	1 tbs. butter

Mix together ground peanuts and chopped walnuts or almonds, salt, pepper, fine bread crumbs. When well blended, add eggs, slightly beaten, and mold into a loaf. Place in a well buttered roasting tin, and cook in moderate oven about ten minutes. Then pour over it one cup hot water in which the butter has been stirred, and bake half hour, basting as in meat. Make a gravy from the drippings.

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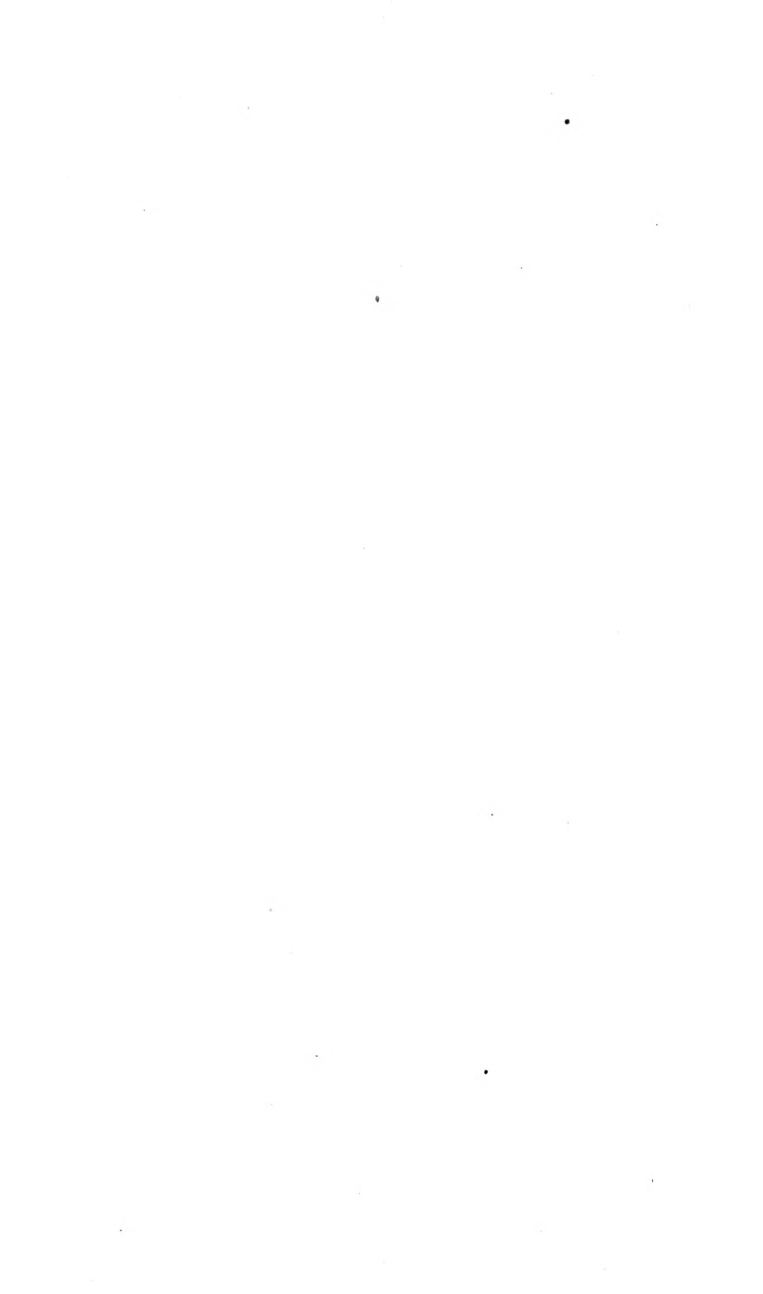
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