



Class TX145

Book M82
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HOME, SWEET HOME, By JOHN HOWARD PAYNE

'Mid pleasures and palaces tho' we may roam,
Be it ever so humble, there's no place like home;
A charm from the skies seems to hallow us there,
Which, seek thro' the world, is ne'er met with else-where.

An exile from home, splendor dazzles in vain;
Oh! give me my lowly thatch'd cottage again.
The birds singing gaily, that came at my call -
Give me these, with the peace of mind dearer than all.

How sweet 'tis to sit 'neath a fond father's smile,
And the cares of a mother to soothe and beguile.
Let others delight 'mid new pleasures to roam,
But give me, oh! give me the pleasures of home!

To thee I'll return, overburdened with care,
The heart's dearest solace will smile on me there.
No more from that cottage again will I roam,
Be it ever so humble, there's no place like home.

The New
**HOUSEHOLD
DISCOVERIES**
*AN ENCYCLOPEDIA of
RECIPES and PROCESSES*

Edited by
SIDNEY MORSE



**SUCCESS COMPANY'S
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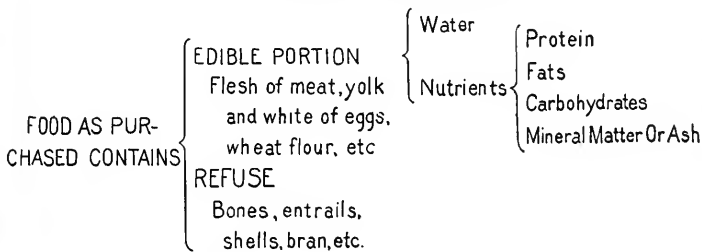
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JUL 23 1917

JUL 21 1917

FUNCTIONS AND USES OF FOOD.

CONSTITUENTS OF FOOD



USE OF FOOD IN THE BODY.

PROTEIN----- Builds and repairs tissue

White (albumen) of eggs,
curd (casein) of milk,
lean meat, gluten of wheat, etc.

FATS----- Are stored as fat

Fat of meat, butter,
olive oil, oils of corn
and wheat, etc

CARBOHYDRATES--- Are transformed into fat

Sugar, starch, etc

All serve as fuel to
yield energy in the forms
of heat and muscular
power.

MINERAL MATTER OR ASH--- Shares in forming bone,

Phosphates of lime, assists in digestion, etc.
potash, soda, etc

Food is that which, taken into the body, builds tissue or yields energy.

U.S. Department of Agriculture
Office of Experiment Stations
A.C. True, Director

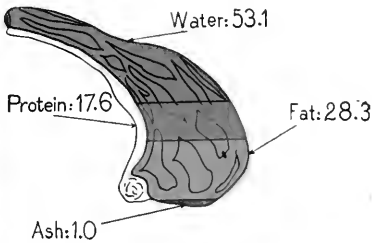
Prepared by
G.F. LANGWORTHY
Expert in Charge of Nutrition Investigations

COMPOSITION OF FOOD MATERIALS.



LAMB CHOP

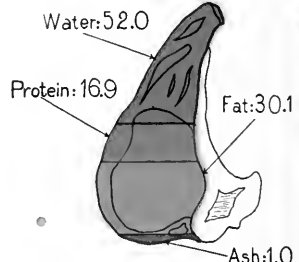
EDIBLE PORTION



FUEL VALUE:
 1475 CALORIES
 PER POUND

PORK CHOP

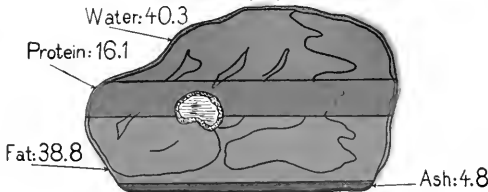
EDIBLE PORTION



FUEL VALUE:
 1535 CALORIES
 PER POUND

SMOKED HAM

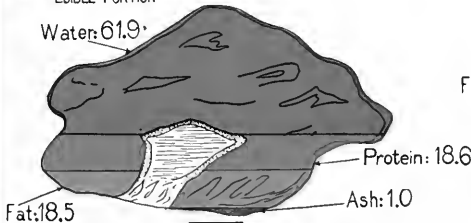
EDIBLE PORTION



FUEL VALUE:
 1875 CALORIES
 PER POUND

BEEF STEAK

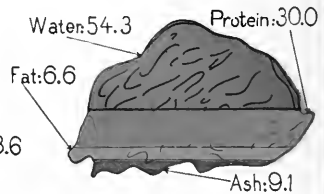
EDIBLE PORTION



FUEL VALUE:
 1090 CALORIES
 PER POUND

DRIED BEEF

EDIBLE PORTION

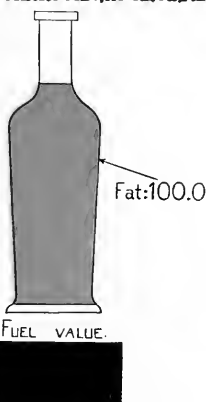


FUEL VALUE:
 810 CALORIES
 PER POUND

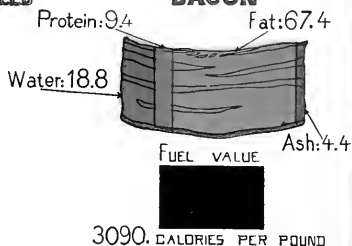
COMPOSITION OF FOOD MATERIALS.



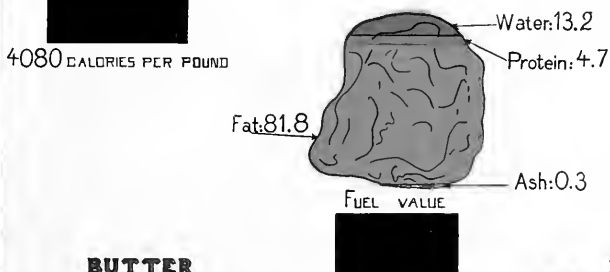
VEGETABLE OILS, AS OLIVE, PEANUT AND COTTONSEED



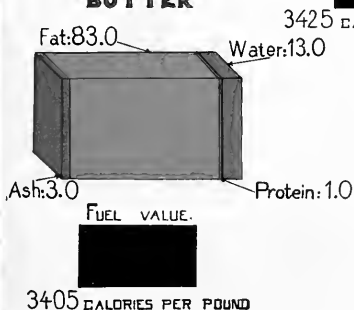
BACON



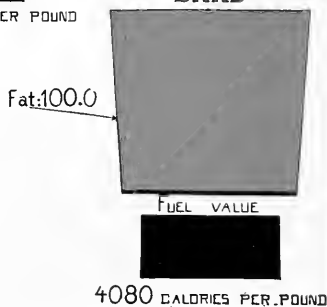
BEEF SUET



BUTTER



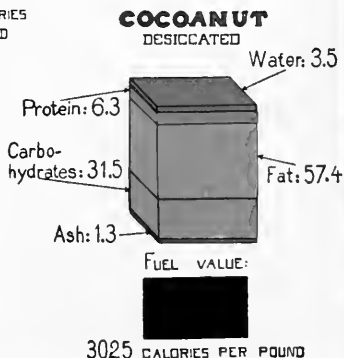
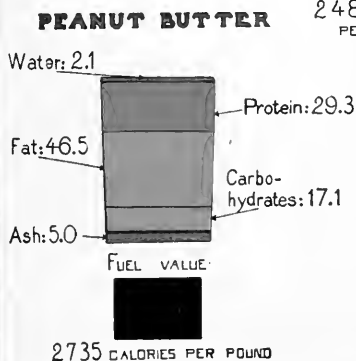
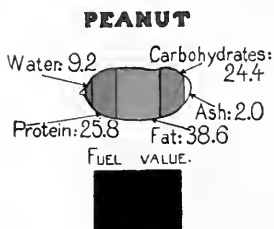
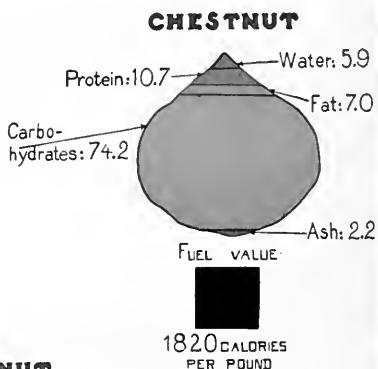
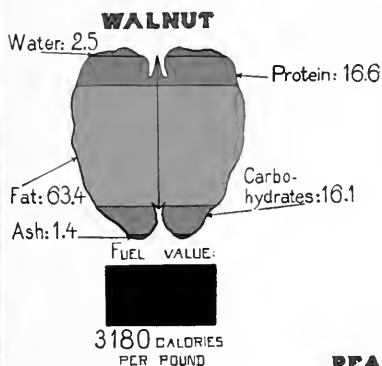
LARD



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Office of Experiment Stations
A.C. True: Director

Prepared by
C.F. LANGWORTHY
Expert in Charge of Nutrition Investigations

COMPOSITION OF FOOD MATERIALS.



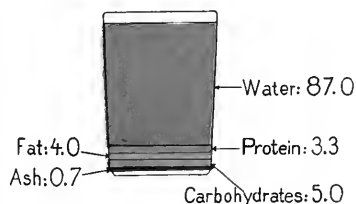
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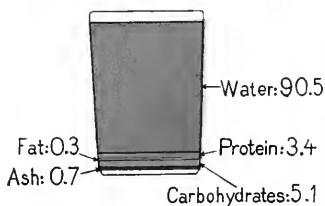


WHOLE MILK



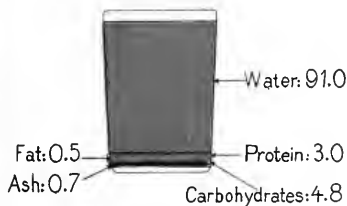
FUEL VALUE: 315 CALORIES PER POUND

SKIM MILK



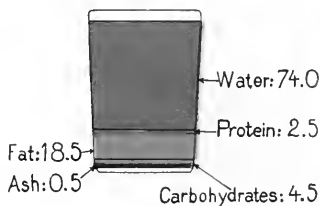
FUEL VALUE: 165 CALORIES PER POUND

BUTTERMILK



FUEL VALUE: 160 CALORIES PER POUND

CREAM



FUEL VALUE: 880 CALORIES PER POUND

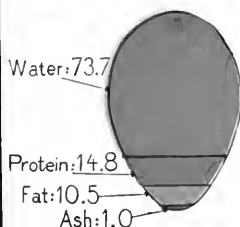
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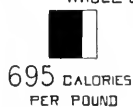
COMPOSITION OF FOOD MATERIALS.



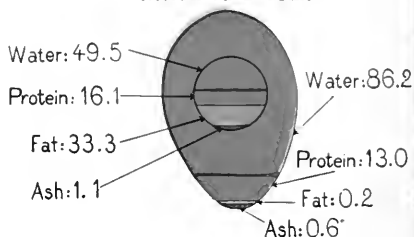
WHOLE EGG



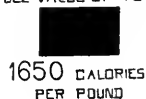
FUEL VALUE OF
WHOLE EGG:



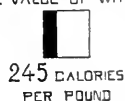
EGG WHITE AND YOLK



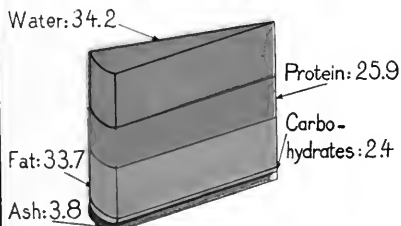
FUEL VALUE OF YOLK:



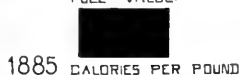
FUEL VALUE OF WHITE:



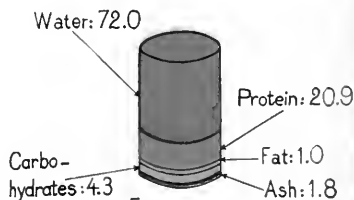
CREAM CHEESE



FUEL VALUE:



COTTAGE CHEESE



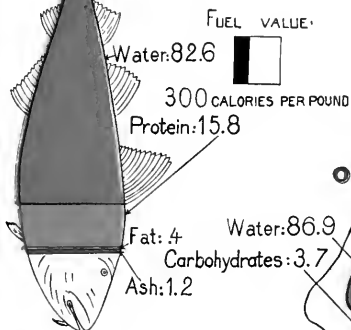
FUEL VALUE:



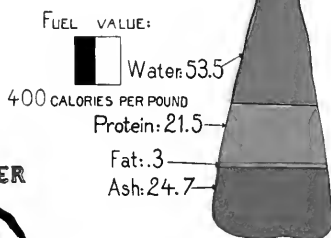
COMPOSITION OF FOOD MATERIALS.



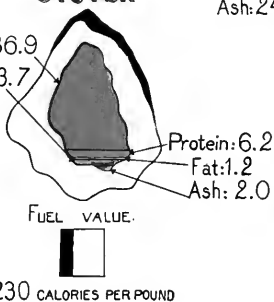
COD
Lean Fish



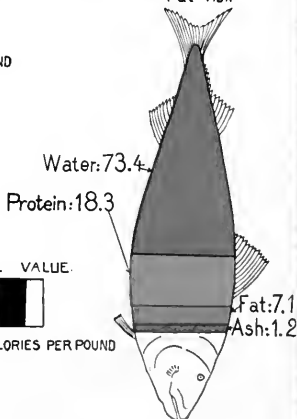
SALT COD



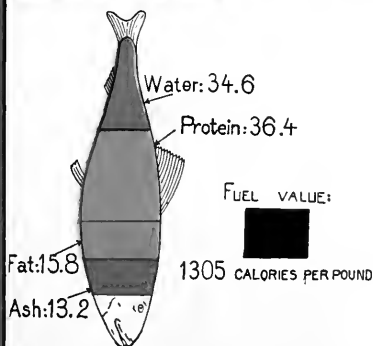
OYSTER



MACKEREL
Fat fish



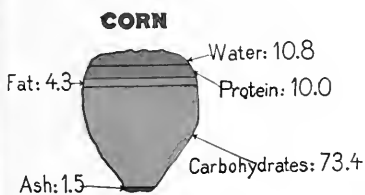
SMOKED HERRING



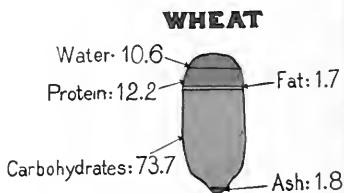
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A. C. True: Director

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COMPOSITION OF FOOD MATERIALS.



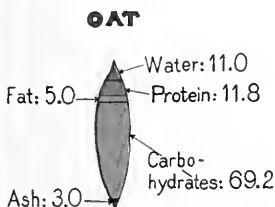
FUEL VALUE:
1685 CALORIES
PER POUND



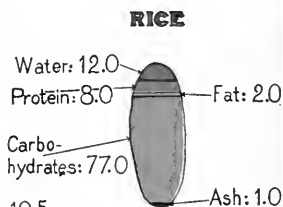
FUEL VALUE
1625 CALORIES
PER POUND



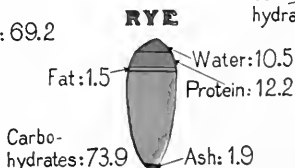
FUEL VALUE
1595 CALORIES
PER POUND



FUEL VALUE:
1670 CALORIES
PER POUND



FUEL VALUE
1620 CALORIES
PER POUND

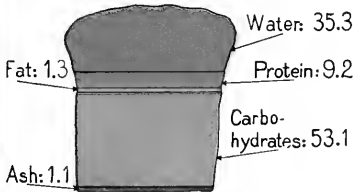


FUEL VALUE:
1620 CALORIES
PER POUND

COMPOSITION OF FOOD MATERIALS.

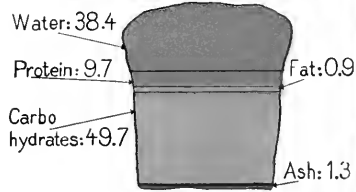


WHITE BREAD



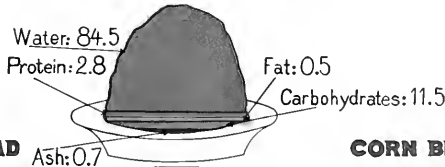
FUEL VALUE:
1180 CALORIES
PER POUND

WHOLE WHEAT BREAD



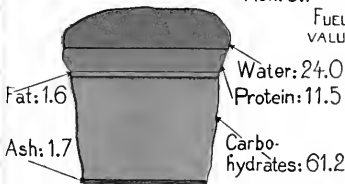
FUEL VALUE:
1110 CALORIES
PER POUND

OAT BREAKFAST FOOD COOKED



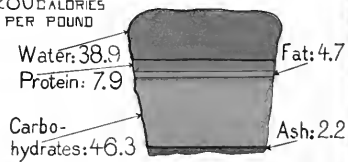
FUEL VALUE:
280 CALORIES
PER POUND

TOASTED BREAD



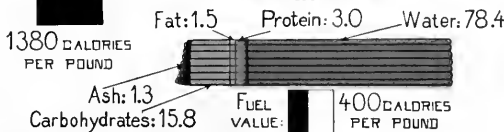
FUEL VALUE:
1380 CALORIES
PER POUND

CORN BREAD



FUEL VALUE:
1175 CALORIES
PER POUND

MACARONI COOKED



FUEL VALUE:
400 CALORIES
PER POUND

COMPOSITION OF FOOD MATERIALS.

Protein

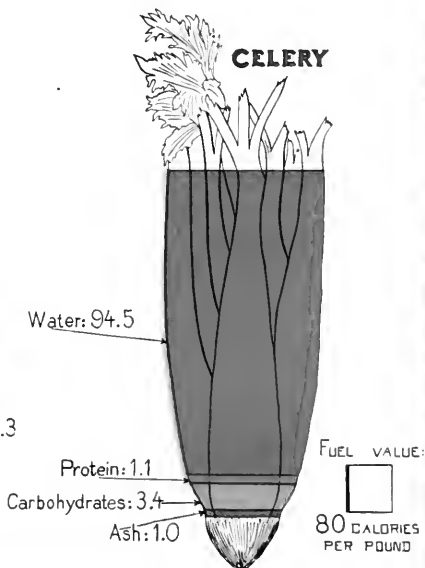
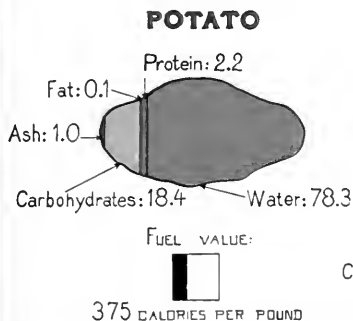
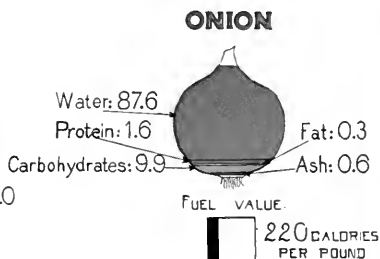
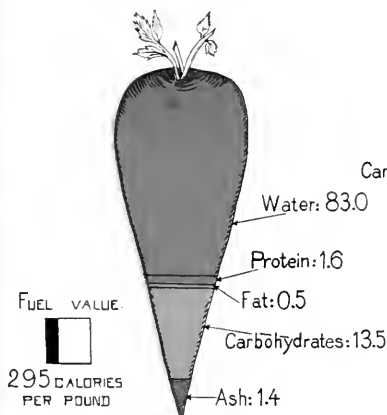
Fat

Carbohydrates

Ash

Water

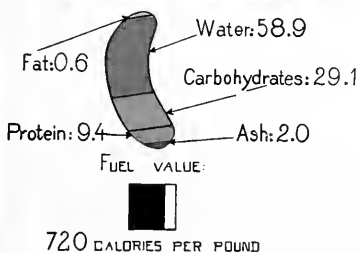
Fuel Value
1/4 Sq. In. Equals
1000 Calories



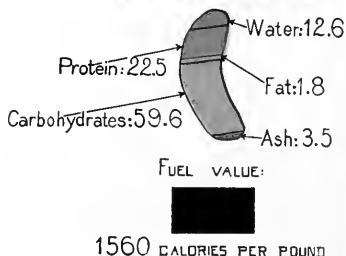
COMPOSITION OF FOOD MATERIALS.



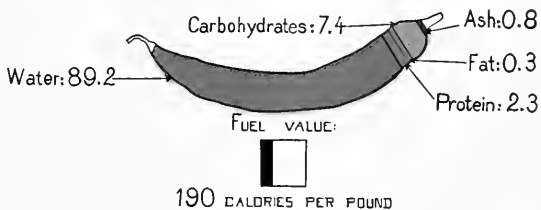
SHELLED BEAN FRESH.



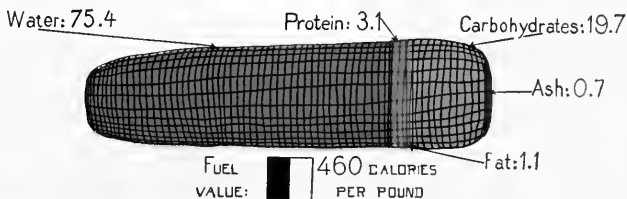
NAVY BEAN, DRY.



STRING BEAN, GREEN.



CORN, GREEN EDIBLE PORTION



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COMPOSITION OF FOOD MATERIALS.

Protein

Fat

Carbohydrates

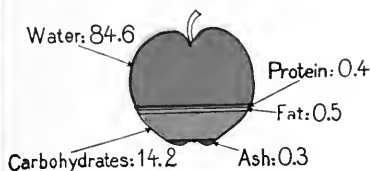
Ash

Water

Fuel Value
1/4 Sq. In. Equals
1000 Calories

APPLE

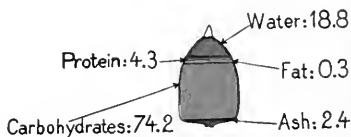
EDIBLE PORTION



FUEL VALUE: 285 CALORIES PER POUND

DRIED FIG

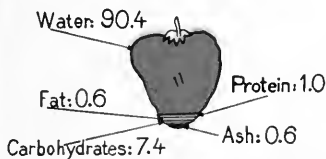
EDIBLE PORTION



FUEL VALUE: 1435 CALORIES PER POUND

STRAWBERRY

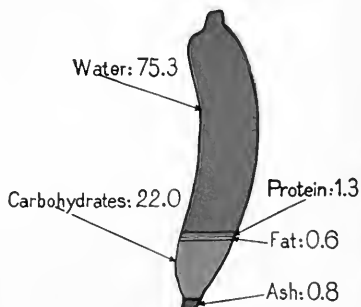
EDIBLE PORTION



FUEL VALUE: 175 CALORIES PER POUND

BANANA

EDIBLE PORTION

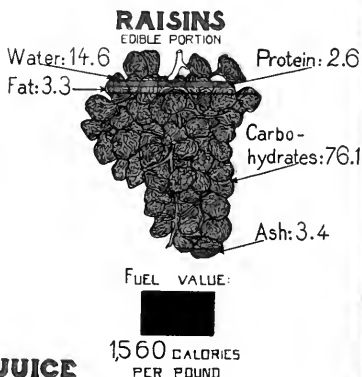
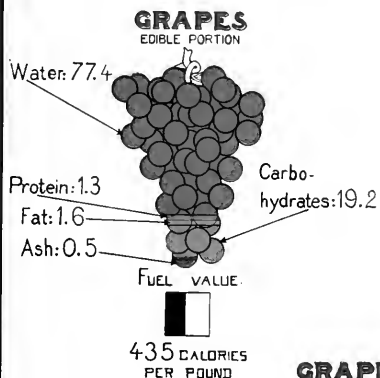


FUEL VALUE: 445 CALORIES PER POUND

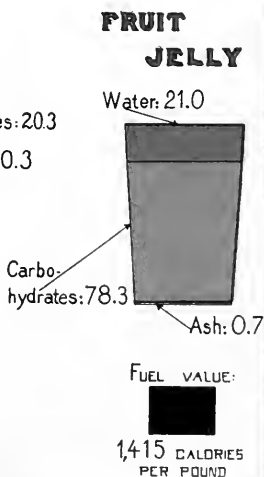
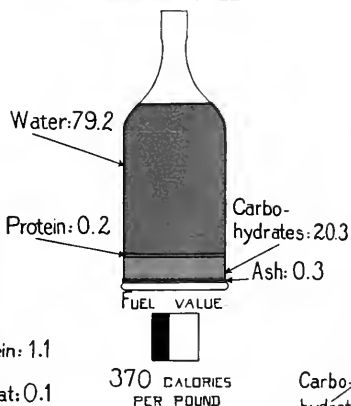
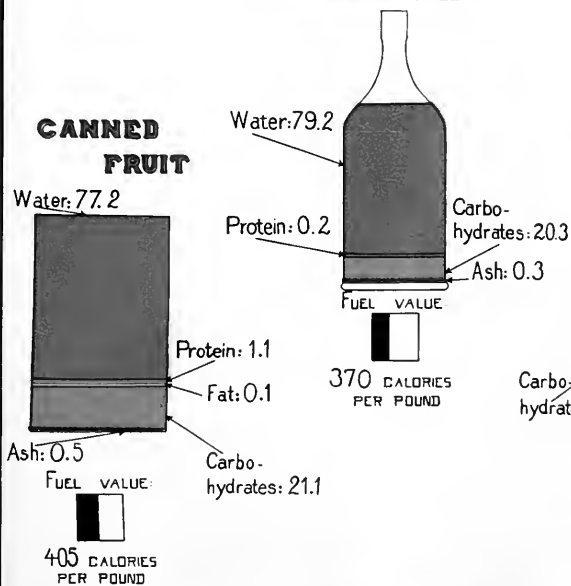
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COMPOSITION OF FOOD MATERIALS.



GRAPE JUICE UNFERMENTED



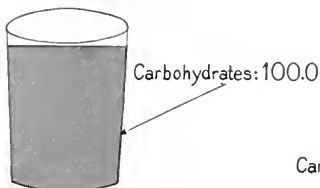
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COMPOSITION OF FOOD MATERIALS.



SUGAR GRANULATED

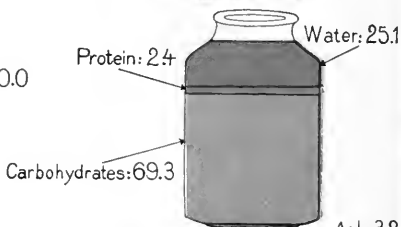


FUEL VALUE:



1810 CALORIES
PER POUND

MOLASSES

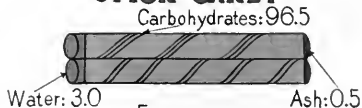


FUEL VALUE:



1300 CALORIES
PER POUND

STICK CANDY

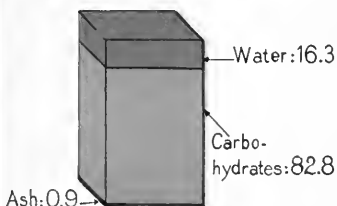


FUEL VALUE



1745 CALORIES
PER POUND

MAPLE SUGAR

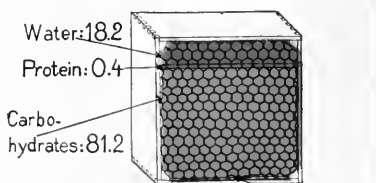


FUEL VALUE:



1500 CALORIES PER POUND

HONEY



FUEL VALUE:



1475 CALORIES PER POUND

PREFACE

IN an address to his fellow-countrymen on April 16, 1917, President Wilson said: "Let me suggest . . . that every housewife who practices strict economy puts herself in the ranks of those who serve the nation. This is the time for America to correct her unpardonable fault of wastefulness and extravagance."

Before anyone can respond efficiently to this appeal two things are necessary. One must understand in what respects American housekeeping is wasteful and extravagant; and one must learn by what means these faults can be corrected. Such are the objects of this book, namely, to show American housekeepers how they can economize in foods, in fabrics, in prevention of disease, in time, and in labor — each and all of which are equivalent to direct economy of money.

Nearly every woman, when she marries and begins housekeeping, copies into a scrapbook the favorite recipes that have been handed down in her immediate family from mother to daughter for generations. And through life she continues adding from time to time the favorite recipes of others to her collection. Household suggestions of this character are perhaps the most practical and economical of any, because they are being subjected daily to the test of actual experience. Such is the nature of this book; for its original basis consists in some fifty thousand labor-saving and money-saving ideas contributed to a popular magazine by practical housekeepers.

In addition, the editor has laid under contribution every important book of household recipes previously published in the English language (over fifty in all), as well as the rich literature of household suggestions resulting from scientific research. For many costly investigations have been conducted during recent years in college and university laboratories, and in the experiment stations of the several states and of the nation, the results of which have been made available in countless reports and bulletins, as well as in the newspapers and popular magazines. From all these sources were gathered more than one hundred thousand separate recipes and suggestions, and the present volume contains the cream of them all.

The combination thus effected of money-saving and labor-saving suggestions of practical housekeepers, with the conclusions of scientific investigators, is believed to be unique. And by the explanation in popular language thus afforded of the scientific principles at bottom of the recipes and processes recommended, this book, in the opinion of authorities, has taken a long step in advance of its predecessors. Having been based upon contributions from practical housekeepers, it was designed expressly for the home-maker and, at its inception, no thought was entertained that it would be of interest or value to teachers of domestic economy for use in schools. Hence the very cordial reception accorded

PREFACE

it by educators, and its general adoption as a text book and work of reference in schools and libraries throughout the United States, have occasioned both editor and publisher surprise as well as gratification.

In the several revisions of this work the editor has freely availed himself of both practical and scientific information — if adapted in form to popular use — wherever found. Hence — in addition to the general acknowledgment due the many thousands of housekeepers and others who have contributed favorite family recipes — the following special obligations are gratefully acknowledged: To E. H. S. Bailey, Ph.D., of the Kansas State Board of Health, and Bigelow & Howard of the United States Department of Agriculture, Bureau of Chemistry, for tests for detecting adulterants in foods; to M. Edouard Panchard, managing chef of the Hotel McAlpin, the Hotel Claridge, and Café Savarin of New York, and the Trouville, Long Beach, for the article on Catering, Cooking and Carving; to C. F. Langworthy, Ph.D., and Caroline L. Hunt, A.B., for articles on the economical use of meat and cheese; to Maria Parloa for the article on the preparation of vegetables for the table; to Isabel Gordon Curtis, formerly editor of *Good Housekeeping Magazine*, and author of "Left-Overs Made Palatable," "The Everyday Cookbook," "The Making of a Housewife," and "The Progress of a Housekeeper," for the bulk of the cookery recipes comprised in Chapters VII to XV and XVIII to XXXII, inclusive, and also for the article, "What the Home Nurse Ought to Do"; to the Public Health authorities of the principal cities of the United States, and the several States of the nation, for material on the prevention of disease and care of babies comprised in Chapter XXXVIII to XLI, inclusive; to Dr. George J. Fisher of the International Y. M. C. A. for the article on "First Aid to the Injured"; and to sundry other authorities too numerous to mention.

Already upward of a million copies of *HOUSEHOLD DISCOVERIES* have been distributed, and there is abundant evidence that the American people regard the millions of dollars paid for them not as an expense, but as an investment. For the keynote of the letters of endorsement received by the publishers is economy. Multitudes have said that by the use of a single recipe they have saved as much or more than the cost to them of the entire volume. Indeed, it would be difficult to over-estimate the possibilities of saving in time, in money, and in human suffering that would result if every family in the land should observe the teachings on Diet, on Laundering and Dry-cleaning, on the Care of Infants, and on the Prevention of Communicable Disease, approved by the leading authorities and set forth in these pages. It is believed that no volume before the American people is better calculated to enable its owners to effect needful economies, and that no service could be more patriotic than to promote to the utmost possible extent its distribution and use.

THE PUBLISHERS.

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HOUSEHOLD DISCOVERIES

CHAPTER I

FOOD VALUES AND ADULTERATIONS

HUMAN NUTRITION—DIETARY STANDARDS—KINDS OF NUTRIENTS—PROBLEMS OF DIET—MEAT IN THE DIET—FISH AS FOOD—POULTRY AND DAIRY PRODUCTS—SOURCES OF CARBOHYDRATES—FOOD ADULTERATIONS—CANNED VEGETABLES AND FRUITS—FLAVORING EXTRACTS AND CONDIMENTS—BAKING CHEMICALS—TEA, AND COFFEE—DAIRY AND MEAT PRODUCTS

The choice, preparation, service and care of food are topics of vital importance in every home. Until quite recently experience—as represented by the traditions of the best housekeepers—has been about the only source of information on these subjects. And such experience is still in many respects the best and safest guide. But of late a great many scientific investigations as to food values and adulterations have been made—notably under the direction of the United States Department of Agriculture—and very practical results have been secured. The most essential facts and principles are here condensed for ready reference. In many respects the result of scientific study has been to confirm popular impressions derived from everyday experience. Yet it has been shown that certain very widespread beliefs are wholly groundless. All the conclusions here stated have been abundantly confirmed by practical experiments and may be accepted without hesitation. Such knowledge is valuable because it dispels doubt and uncertainty. It confirms good practices. It also draws attention to

mistakes and shows how they may be corrected.

HUMAN NUTRITION

The human body has often been likened to a steam engine in which the food we eat takes the part of fuel. This comparison is partly true but is inadequate. A steam engine gradually wears out with use. Then the worn or broken parts must be replaced from some source without itself. The human body also wears away, but—unlike the steam engine—it has the power of rebuilding its own parts from the fuel (food) which it consumes. It can also bring about certain chemical changes whereby its fuel (food) is converted into new forms either for immediate use or for storage within the body against future needs. Hence the value of food depends in part upon its capacity to produce needed heat and energy, and in part upon its capacity to supply material for growth and repair of bodily waste.

Food Wastes.—The relation between the cost of food and its actual value to supply bodily needs is af-

fectured by at least three different kinds of wastes. These differ greatly in different kinds of food. They are among the things which should be most jealously watched and studied by the housewife. There is considerable loss between some kinds of foods as purchased and as cooked or served. Familiar examples are the shells of eggs, skins and seeds of fruit and vegetables, bones and offal of meat, bran of cereals and the like. These are commonly known as refuse. Some are of no value since they are wholly indigestible (for example egg shells). Others may be utilized in various ways as meat bones, which may be used for soup stock.

A second kind of waste is that caused by cooking. This is less important since, in most cases, it cannot be helped. But with some of the more expensive kinds of food, the choice among methods of cookery may be affected by the fact that some ways are more economical than others.

A third waste is due to the fact that a part of the food actually eaten is not taken up into the lymph and blood channels but passes through the digestive tract and is excreted from the body. This is said not to be "available" to digestion.

The net product which finally gets into the blood is called nutritive material, or nutrients.

Nutrients in Food.—Formerly a great many scientific terms were used in discussing the nutritive value of foods. This made the subject uninteresting to most persons because difficult to understand. With the increase of popular interest, efforts were made to simplify the language of science. It was found that all nutrients may be classed under five heads and referred to by means of terms, all but two of which are in every-day use. These unusual terms are "proteid" and "carbohydrate." Of these the former is indispensable. There is no other word which can take its place. It refers to that part of foods which contains (among other things) the element nitrogen. These include, chiefly, the lean of meat; the gluten of wheat and other

cereals; the curd (casein) of milk; and the white (albumen) of eggs. The two words sugar and starch can be used in place of the term "carbohydrate" as the word refers chiefly to these two substances. These and other carbohydrates are so called because they contain the element hydrogen in the same proportions in which it occurs in water but combined with the element carbon; hence the name. Good examples of carbohydrates are potato or corn starch, and cane, grape, or milk sugar.

The names of the other three classes of nutrients are in common use. These are water, fat and ash. Water occurs in varying percentages in nearly all foods, even those which we are accustomed to think of as entirely dry, such as wheat and other dry grains, or dried peas and beans. Common examples of fat are lard, suet, butter and olive oil. The ash in foods consists of various kinds of mineral matter which are left as a residue when the foods are burned. The only kind of mineral matter usually added to foods in cookery is common salt.

In addition to these five kinds of nutrients, there is another class of substances in food which is of some value in cookery, although it is not believed that they furnish fuel or contribute to the growth of bodily tissue. They are called "extractives." They include various volatile oils and similar flavors which are "extracted" from foods in the process of cookery, whence the name. They give to certain foods the characteristic taste and odor which "make the mouth water." They aid digestion by stimulating the palate and prompting the flow of the saliva, gastric juice and other secretions which are necessary to good digestion. An example is the well known meat extract used for bouillon. This is not a food but merely an appetizing condiment.

Interest in the subject of food values centers in the three classes of nutrients—proteid, carbohydrate, and fat. Water is plentiful in every diet and is usually taken freely to satisfy thirst. Ash or mineral matter rep-

resents only about 1 per cent of most foods and is thought to be abundant in the ordinary diet. It is most plentiful in the natural food of the young, as in milk and eggs, and is of special importance to furnish material for bony structures during the period of growth and also in some diseased conditions. The housekeeper's problem is thus narrowed to the supply of sufficient proteid, carbohydrate and fat in the right proportions, as cheaply as possible, and in readily available, that is easily digestible, forms.

Uses of Nutrients in the Body.—The three principal classes of nutrients,—proteid fat and carbohydrate, all serve as fuel to yield energy in the forms of heat and muscular power. But the chief source of fuel is fat. Hence the Eskimo eats freely of tallow and blubber to keep up the bodily heat in winter. Any excess of fat may be stored in the body against future needs. Thus the bear lives on his fat during his long winter's sleep, and comes out lean in the spring. The carbohydrates—sugar and starch—may be immediately consumed as fuel, or they may be converted into and stored as fat. The proteids may also be consumed as fuel. But this does not ordinarily happen unless there is a deficiency of fat and carbohydrate in the diet. The normal use of proteid is in the growth and repair of the bodily tissues. The importance of this class of nutrients in food is due to the fact that none of the others can take its place. This explains why an infant fed wholly on condensed milk—which is rich in sugar and fat, but deficient in proteid (curds), may be fat but not strong. Roughly speaking, fat and carbohydrate supply heat and energy, and proteid forms tissue. This broad distinction is very serviceable and should be kept clearly in mind.

DIETARY STANDARDS

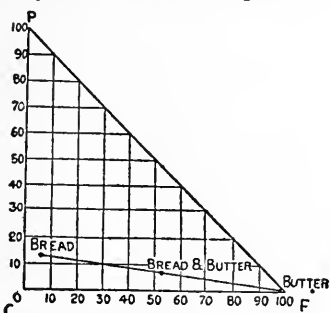
Balanced Diet.—A diet is said to be balanced when it contains available proteid, carbohydrate and fat in the right proportions. A great many

experiments have been made to determine the ratio which the different classes of nutrients should sustain to one another in human food. In American publications the conclusions of Atwater and Chittenden are most often taken as standards. The Atwater standard, for a man with light exercise, is 100 parts (by weight) of proteid, 100 parts of fat and 360 parts of carbohydrate. The Chittenden standard is that for every 100 food units about 10 should be proteid, 30 fat, and 60 carbohydrate. These figures are interesting chiefly as showing that there can be no universal rule of proportion fixed by science. So-called standards are merely attempts to arrive at a general average on the basis of experience. In practice it will be sufficient if each of the principal nutrients is present in the dietary in sufficient quantities and without marked excess or deficiency of either. If this is the case the normal appetite will ordinarily select a well balanced diet.

The Graphic Method of Diet Calculations.—Prof. Irving Fisher has devised a method of making "food maps" which show the proportions of proteid, fat, and carbohydrate in graphic form. He says: "Any food is represented on the food map by a point the relative distance of which from the three sides of the triangle represents the proteid, fat and carbohydrate. Fatty foods are represented by points near the fat corner, F; starchy and sugary foods by points near the carbohydrate corner, C; and proteids by a point near the proteid corner, P. A food devoid of proteid is evidently located on the base line CF. A food devoid of fat on the side, CP, and a food devoid of carbohydrates on FP. . . . In each case the position of the point relative to the sides of the triangle represents the proportions of proteid, fat and carbohydrate and the number opposite each name represents the weight in ounces of a 'standard portion.'"

The accompanying food maps prepared by Dr. Fisher are a much more convenient means of comparing the values of different foods than

tables of percentages. If carefully studied they will be found to contain about as much information as most persons would be apt to need



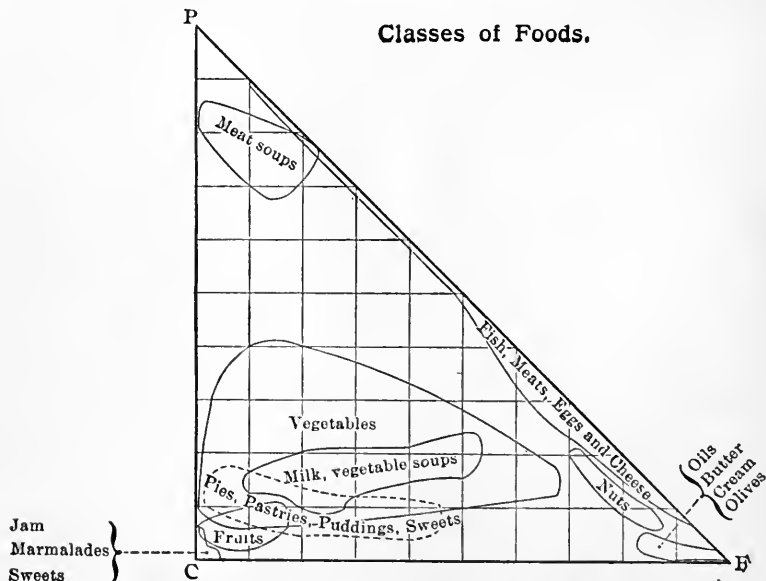
Food map showing combination of one "portion" of bread and one "portion" of butter.—Dr. Irving Fisher.

or use. Roughly speaking, a balanced ration should contain one or more foods from each of the three corners of this triangle. To take an extreme illustration, butter, white of

egg and sugar combined in standard proportions—if such a combination were possible in cookery—would give an example of a well balanced ration because they consist of almost pure fat, proteid and carbohydrate respectively. Or, a food located near either corner of the triangle may be balanced by one which is about equidistance between the opposite corners. The food map "Flesh and Cereals" affords many good illustrations of this principle. The different kinds of flesh are seen to contain both fat and proteid, but practically no starch or sugar. But the cereals are nearly all carbohydrate. For example, beef tongue and brown bread make a well balanced ration. Observe that brown bread is shown by the food map to be near the carbohydrate corner. Its food values are practically all sugar or starch. Beef tongue is about half way between the fat and proteid corners. Its food values are about equally divided between these two kinds of nutrients.

The foods that are represented on or near one of the side lines of the

Classes of Foods.

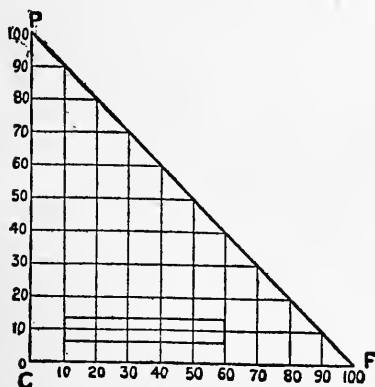


Food Map Illustrating Classes of Foods.—Dr. Irving Fisher.

triangle show absence or marked deficiency of the kind of nutrient represented at the opposite corner. Those at or near one of the corners show absence or deficiency of the kinds of nutrients represented at both the opposite corners. The foods appearing at or near the center of the triangle contain each of the three classes of nutrients and, according to their position, afford a naturally more or less well balanced ration.

By reference to the standards given on page 19 it will be seen that the body requires, according to Chittenden, about one part proteid to three parts fat and six parts carbohydrate. Hence foods constituting a naturally

culating food values, a unit which he calls the "standard portion." This is a quantity of each kind of food which will produce 100 calories of energy. The "calory" is the unit of measurement of heat, just as the pound is the unit of weight, or the acre the unit of land measure. A calory is approximately the amount of heat that is required to raise the temperature of one pound of water 4° F. The figures after the names on the food maps give the weight of "standard portions" in ounces. They are useful as a means of comparing the values of different kinds of foods, since the value of food to the body is determined by the number of calories of heat or energy that it can produce. Referring to the food map "Flesh and Cereals," for example, it will be seen that $1\frac{3}{10}$ ounces of white bread are the equivalent of $2\frac{2}{10}$ ounces of round of beef (uncooked), and many other interesting comparisons are suggested. A few words about each of the principal kinds of nutrients and a brief discussion of each of the chief classes of food from which they may be obtained—with the aid of the food maps for purposes of comparison—will enable any housewife to provide a reasonably well balanced diet.



Food map showing normal rectangle for a balanced diet, Chittenden's standard.—Dr. Irving Fisher.

well balanced ration appear toward the bottom of the food map. Here they fall within what is called the "normal rectangle" shown in the accompanying illustration. The position of all possible combinations of food can be worked out upon the food map and thus a perfectly balanced diet can be calculated. But the process is too complex for the ordinary person.*

Standard Portions.—Dr. Fisher has adopted for the purpose of cal-

* Those who wish to give the subject further study should send 10 cents to the American School of Home Economics, Chicago, for its bulletin, "Food Values."

KINDS OF NUTRIENTS

Water.—Water makes up a very large part of many kinds of food, such as milk, fresh meat, and fresh fruits and vegetables. It is present in practically all food products. Roughly speaking, over one-half of fresh lean meat and fish, and about three-fourths of fresh fruit and vegetables are water. It forms over 60 per cent by weight of the average human body and is a component part of all the tissues. It is thus an important constituent of our food. But it cannot be burned and hence does not yield energy to the body. For this reason the water contained in foods is usually set aside together with the refuse and nutrients not available to digestion. Only the values of the digestible solids need be calculated. To the housewife, the

—especially in certain kinds of diseases — for the mineral salts they contain.

Proteid.—The proteid compounds form about 18 per cent by weight of the average human body. They include the white of egg, the lean of meat, the curd of milk and the gluten of wheat. They also occur to some extent in animals in the tendons, skin and bones. They are most important constituents of our food since they make the basis of bone, muscle and other tissues. They may also be used as fuel or even, to some extent, transformed into fat and stored in the body, especially if there is a deficiency of fats or carbohydrates. The chief sources of proteid are animal foods—meat, fish, eggs and dairy products. Butter and lard are exceptions; they represent only the fat of milk and meat.

The proportion of proteid present in meats and fish varies greatly with the kind and cut. In beef, veal, and mutton it composes between 14 and 26 per cent of the edible portion. It is somewhat less abundant in the flesh of fish, because the latter is more watery than meat. The fatter the meat, the smaller is the proportion of proteid. Lean pork has less than beef and mutton, and fat pork almost none. It is very abundant in cheese (28-38 per cent) and likewise in dried beans and peas (18-25 per cent). Proteid makes up, roughly speaking, from 7 to 15 per cent of the cereals, being least abundant in rye and buckwheat and most abundant in oats. Wheat flour averages not far from 11 per cent and bread not far from 9 per cent of proteid. Fresh vegetables and fruits contain almost no proteid, seldom if ever more than 5 and often only 1 per cent or less.

Fats.—These form about 15 per cent by weight of the body of an average man, but the amount varies greatly with food, exercise, age and other conditions. As a general rule any excess of the diet tends to be converted into fat and stored in the body. But the tendency to fatness or leanness cannot be controlled by the diet alone. It depends also on

individual peculiarities which are not well understood. Fats occur chiefly in animal foods, as meat and dairy products. They are also abundant in some vegetable products, such as olives and cottonseed. From these they are expressed as oil. They occur to a less extent in some cereals, as oatmeal and corn, and also in all common edible nuts.

Fats may be stored in various parts of the body in masses, or may be scattered through the tissues in minute particles. The quantities present in meat vary from less than 10 per cent in some cuts of beef and veal, to over 40 per cent in a side of pork, or over 80 per cent in fat salt pork. Lean fish, like cod and haddock, contains a small amount, but fatter kinds, like shad, mackerel, and notably salmon, often contain from 5 per cent to 10 per cent and sometimes as high as 15 per cent of fat. The chemical composition of salmon is not unlike that of lean meat. Milk averages about 4 per cent of fat. Butter is nearly pure fat, and cheese contains from 25 per cent to 40 per cent of fat, according to the richness of the cream or milk from which it is made. Vegetable foods are as a rule very deficient in fats. The principal exceptions have been noted.

Carbohydrates.—The carbohydrates form only a very small part of the body, less than 1 per cent. They are either immediately consumed as fuel or transformed in the body as fat. They include such compounds as starches, different kinds of sugar and the fiber of plants or cellulose. They are very abundant in vegetable foods like cereals, green vegetables and potatoes, but unlike the fats, are almost entirely absent from the animal foods except milk. Carbohydrates make up from 70 per cent to 80 per cent of the cereals, 60 per cent to 70 per cent of the dry legumes (peas and beans) and the bulk of the nutrients of fresh fruits and vegetables. Sugar, molasses, honey and the like are almost entirely carbohydrates. Milk also contains a considerable amount of carbohydrates in the form of milk sugar. They are a very important portion of the diet,

because they are an excellent source of energy and are easily digested.

Atwater says:

"In brief then, the chief source of proteid is animal foods, legumes and cereals; of fats, animal foods; and of carbohydrates, vegetable products and milk. Mineral matters are found in all food materials. Refuse and water are most abundant in meats, fish, eggs, milk, fresh vegetables and fruit. The fuel value varies within wide limits, being greatest in those materials which contain the most fat and the least water.

"The ingredients of food and the ways they are used in the body may be briefly summarized in the following schematic manner:

moved at will. Beaumont's table giving the average time required for the stomach to digest various articles of diet has been frequently published. More recent experiments show that his conclusions are by no means a safe guide. The process of digestion is not confined to the stomach. It continues in the intestine. The digestibility of foods is also affected by the quantity taken, its mechanical condition, and other causes.

As a general rule the less attention given by housewives to this question the better. Recent experiments seem to indicate that all well-cooked ordinary foods are about equally well digested by normally healthy persons. The question of modification of diet

NUTRITIVE INGREDIENTS (OR NUTRIENTS) OF FOOD

Food as purchased contains —	{ Edible portion e. g., flesh of meat, yolk and white of eggs, wheat, flour, etc. Refuse. e. g., bones, entrails, shells, bran, etc.	{ Water. Nutrients	{ Proteid. Fats. Carbohydrates. Mineral matters.

USES OF NUTRIENTS IN THE BODY

Proteid e. g., white (albumen) of eggs, curd (casein) of milk, lean meat, gluten of wheat, etc.	Forms tissue	} All serve as fuel to yield energy in the forms of heat and muscular power.
Fats e. g., fat of meat, butter, olive oils, oils of corn and wheat, etc.	Are stored as fat	
Carbohydrates e. g., sugar, starch, etc.	Are transformed into fat...	
Mineral matters (ash) e. g., phosphates of lime, potash, soda, etc.	Share in forming bone, assist in digestion, etc.	

PROBLEMS OF THE DIET

Digestibility.— Many experiments have been made to learn the comparative value of different kinds of food as affected by their digestibility and by various processes of cookery. Some of the earliest and most famous of these were made by Dr. Wm. Beaumont, U. S. A., between 1825-33. His subject was a French-Canadian trapper, a man whose stomach had been torn open by a gunshot wound but had healed, leaving an opening closed only by a valve which developed over it. By pressing this valve inward the contents of the stomach could be observed or re-

moved on the grounds of digestibility, is of importance only in some kinds of disease. It should then be referred to the attending physician. It is true that some kinds of foods do not agree with certain individuals. But this is a matter which does not admit of general rules. It can be settled in each case only on the basis of experience. Each person must learn what kinds of food yield him nourishment with the least discomfort and must avoid those which do not agree with him.

The value to persons in good health of special diets consisting exclusively of vegetables, fruits and nuts, or of an exclusive diet of un-

cooked foods is often grossly exaggerated. The ordinary mixed diet has been shown by scientific tests to be by far the most wholesome and economical. As general rules, however, it may be said that carbohydrates—especially in the form of sugar—are more completely digested than proteids and fats; and that the proteid of animal foods—as meat, fish, milk and eggs—is more digestible than that of vegetable foods.

Economy in Diet.—The needs of individuals differ, but it has been estimated that an average man at moderately active labor—as a farmer, carpenter or mason—should have about one-fourth of a pound of available proteid each day, and sufficient fats and carbohydrates, in addition, to bring the total fuel value of the whole diet up to about 3000 calories. A man at sedentary employment would require only one-fifth of a pound of proteid, and other nutrients enough to produce a total of only 2700 calories of energy. A woman under similar conditions would need about eight-tenths as much food as a man. Children require lesser amounts, varying with their ages. The proportions usually stated are about seven-tenths for a boy from the ages of 12 to 14; six-tenths from 10 to 12; five-tenths from 6 to 9, and four-tenths from 2 to 5 years of age. Girls require slightly less nutrient than boys of the same age, but in practice the difference is negligible.

The cost of the amounts of different nutrients required varies greatly with the different kinds of food at ordinary prices. For example, one-fourth of a pound of proteid from a sirloin of beef at 25 cents a pound would cost 40 cents. The same amount from a shoulder clod of beef at 12 cents a pound would cost 19 cents, and from a piece of beef stew meat at 5 cents a pound only 9 cents; yet the actual value of each in the diet would be identical. The table on the next page of the comparative cost of digestible nutrients and energy in different food materials at average prices, prepared by the Department of Agriculture, is very useful and suggests many similar comparisons.

The most common errors in food economy are (1) the needless waste of expensive foods, (2) the use of a one-sided diet, (3) waste of food from over-eating, (4) table waste, and (5) neglect of the value of refuse. Many housekeepers buy the more expensive kinds of meat and pay higher prices for vegetables and eggs out of season, from a mistaken belief that such foods are enough more nutritious to be worth what they cost. In point of fact equal amounts of nutriment could be obtained from other foods at very much lower price. The result is a great waste of money. The maxim that "the best is the cheapest," as popularly understood to apply to high prices, is not true of food. The larger part of the price of the costlier foods is paid for appearance, flavor or rarity. While often more pleasing to the palate and sometimes more easily cooked or of finer flavor, the dearer articles are no more digestible or nutritious than the cheaper ones. The plain, substantial standard food materials—like the cheaper cuts of meat and fish, milk, flour, cornmeal, oatmeal, beans and potatoes—are as digestible and nutritious and as well fitted for the nourishment of persons in good health as are any of the costly materials.

A one-sided or badly balanced diet is one in which either proteid or fuel ingredients are in excess. If we eat too much meat and too few vegetables, the diet will be too rich in proteid and may be harmful. Or, if we eat too much pastry and other food rich in fats and sweets, the diet furnishes too much energy and too little building material. The result is injurious to health as well as false economy. Waste from over-eating is perhaps not common except among persons of sedentary occupations—brain workers, as distinguished from hand workers—but table waste is almost universal in America. In many families it is a matter of pride to furnish more food than is needed. The waste in the preparation of food materials for consumption is also considerable. This is especially the case with animal foods which are the

COMPARATIVE COST OF DIGESTIBLE NUTRIENTS AND ENERGY IN DIFFERENT FOOD MATERIALS AT AVERAGE PRICES

[It is estimated that a man at light to moderate muscular work requires about 0.23 pound of proteid and 3,050 calories of energy per day.]

Kind of food material	Price per pound	Cost of 1 pound proteid <i>a</i>	Cost of 1,000 calories energy (a)	Amounts for 10 cents				Energy
				Total weight of food material	Proteid	Fat	Carbo-hydrates	
	Cents	Dollars	Cents	Pounds	Pound	Pound	Pounds	Calories
Sugar	6	.....	3	1.67	.....	.....	1.67	2,920
Beef, sirloin	25	1.60	25	0.40	0.06	0.06	.....	410
Do	20	1.28	20	.50	.08	.08	.....	515
Do	15	.96	15	.67	.10	.11	.....	685
Beef, round	16	.87	18	.63	.11	.08	.....	560
Do	14	.76	16	.71	.13	.10	.....	620
Do	12	.65	13	.83	.15	.10	.....	740
Beef, shoulder clod..	12	.75	17	.83	.13	.08	.....	595
Do	9	.57	13	1.11	.18	.10	.....	795
Beef, stew meat....	5	.35	7	2	.29	.23	.....	1,530
Beef, dried, chipped..	25	.98	32	.40	.10	.03	.....	315
Mutton chops, loin..	16	1.22	11	.63	.08	.17	.....	890
Mutton, leg	20	1.37	22	.50	.07	.07	.....	445
Do	16	1.10	18	.63	.09	.09	.....	560
Roast pork, loin....	12	.92	10	.83	.11	.19	.....	1,035
Pork, smoked ham...	22	1.60	13	.45	.06	.14	.....	735
Do	18	1.30	11	.56	.08	.18	.....	915
Pork, fat salt.....	12	6.67	3	.83	.02	.68	.....	2,950
Codfish, dressed, fresh	10	.93	46	1	.11	.....	.....	220
Halibut, fresh	18	1.22	38	.56	.08	.02	.....	265
Cod, salt	7	.45	22	1.43	.22	.01	.....	465
Mackerel, salt, dressed	10	.74	9	1	.13	.20	.....	1,135
Salmon, canned	12	.57	13	.83	.18	.10	.....	760
Oysters, solids, 50¢ per quart	25	4.30	111	.40	.02	.....	.01	90
Oysters, solids, 35¢ per quart	18	3.10	80	.56	.03	.01	.02	125
Lobster, canned	18	1.02	46	.56	.10	.01	.....	225
Butter	20	20.00	6	.50	.01	.40	.....	1,705
Do	25	25.00	7	.40	.....	.32	.....	1,365
Do	30	30.00	9	.33	.....	.27	.....	1,125
Eggs, 36¢ per dozen..	24	2.09	39	.42	.05	.04	.....	260
Eggs, 24¢ per dozen..	16	1.39	26	.63	.07	.06	.....	385
Eggs, 12¢ per dozen..	8	.70	13	1.25	.14	.11	.....	770
Cheese	16	.64	8	.63	.16	.20	.02	1,185
Milk, 7¢ per quart... 3½	3	1.09	11	2.85	.09	.11	.14	885
Milk, 6¢ per quart... 3	3	.94	10	3.33	.11	.13	.17	1,030
Wheat flour	3	.31	2	3.33	.32	.03	2.45	5,440
Do	2½	.26	2	4	.39	.04	2.94	6,540
Corn meal, granular.. 2½	2	.32	2	4	.31	.07	2.96	6,540
Wheat breakfast food 7½	4	.73	4	1.33	.13	.02	.98	2,235
Oat breakfast food... 7½	4	.53	4	1.33	.19	.09	.86	2,395
Oatmeal	4	.29	2	2.50	.34	.16	1.66	4,500
Rice	8	1.18	5	1.25	.08	.....	.97	2,025
Wheat bread	6	.77	5	1.67	.13	.02	.87	2,000
Do	5	.64	4	2	.16	.03	1.04	2,400
Do	4	.51	3	2.50	.20	.03	1.30	3,000
Rye bread	5	.65	4	2	.15	.01	1.04	2,340
Beans, white, dried.. 5	5	.29	3	2	.35	.03	1.16	3,040
Cabbage	2½	2.08	22	4	.05	.01	.18	460
Celery	5	6.65	77	2	.02	.....	.05	130
Corn, canned	10	4.21	23	1	.02	.01	.18	430
Potatoes, 90¢ per bu. 1½	1	1.00	5	6.67	.10	.01	.93	1,970
Potatoes, 60¢ per bu. 1	1	.67	3	10	.15	.01	1.40	2,950
Potatoes, 45¢ per bu. ¾	1	.50	3	13.33	.20	.01	1.87	3,935
Turnips	1	1.33	8	10	.08	.01	.54	1,200
Apples	1½	5.00	8	6.67	.02	.02	.65	1,270
Bananas	7	10.00	27	1.43	.01	.01	.18	370
Oranges	6	12.00	40	1.67	.01	.....	.13	250
Strawberries	7	8.75	47	1.43	.01	.01	.09	215

a The cost of 1 pound of proteid means the cost of enough of the given material to furnish 1 pound of proteid, without regard to the amounts of the other nutrients present. Likewise the cost of energy means the cost of enough material to furnish 1,000 calories without reference to the kinds and proportions of nutrients in which the energy is supplied. These estimates of the cost of proteid and energy are thus incorrect in that neither gives credit for the value of the other.

most expensive. The trimmings of meat left with the butcher or thrown away in the kitchen often represent one-eighth of its value. Much of this might be saved by its use in soups, stews and the like. But persons who wish to get the most nutriment for their money should avoid such cuts as loin of beef, rib chops of lamb, and others, one-fifth or more of which are bone, and buy more economical cuts in which there is less waste. The common remark that "the average American family wastes as much food as a French family would live upon" is greatly exaggerated. Yet it contains considerable truth. Tests have shown that the waste in private families is often as high as twenty per cent. A study of the information here given is important for both health and purse.

MEATS IN THE DIET

Reference to the food map will show that the nutritive part of meat contains no carbohydrate but consists of proteid and fat in varying proportions. It is possible to live on animal food alone. And this is done in the arctic regions where vegetable food is lacking. But the diet is better and more wholesome if the proteid and fat of meat are balanced by the sugar and starch contained in vegetables. Meat is an expensive source of proteid as compared to some foods of vegetable origin, but is to be preferred upon the ground that it is more easily digested. Meats are more similar in composition to the tissues of the human body than foods of vegetable origin. Hence they require less change in the body to make them available to digestion.

A comparison of the nutrients in the different cuts of meat shows that they vary chiefly in the amounts of fat and water which they contain, but that there is very little difference in the proportion of proteid. Langworthy says, in substance, that for every day purposes the proportion and net value of the proteid obtained from a given weight of meat differs very little either with the kind of meat or the cut, with the exception

of fat salt pork or bacon. This makes it easy for the housekeeper to be sure that her family is getting enough of this nutrient.

The total amount of proteid needed each day for a man at moderate labor is estimated at $3\frac{1}{2}$ ounces. Of this, one-half is usually taken in the form of animal food, including milk, eggs, poultry and fish, as well as meat. The remainder is taken in the form of bread and other cereal foods, or beans and other vegetables. An ordinary helping of three to five ounces of lean meat may be considered to contain about one-half of the required proteid. An egg or a glass of milk contains about one-twelfth of the needed daily supply. Hence the housekeeper who gives each adult member of her family a helping of three to five ounces of cooked meat each day with eggs, milk or cheese — together with puddings or other dishes which contain eggs or milk — can feel sure that she is supplying sufficient proteid. The remainder necessary will be supplied by bread, cereals and other vegetable foods.

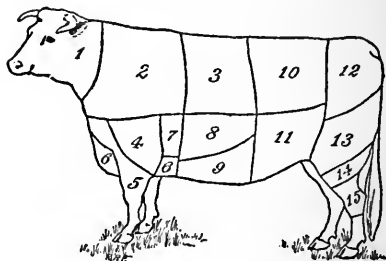
Langworthy says further, that there is practically no difference between the various cuts of meat, or the meats from different animals, with respect to either the thoroughness or the ease with which they are digested. Red meat is equally as digestible as white meat, pork is as digestible as beef, and the cheaper cuts are equally as digestible as the tenderest steak. Meats of all kinds and cuts are therefore to be classed as easily digested foods. Those who wish to use the cheaper cuts need not feel that, in so doing, their families are less well nourished than by the more expensive meats. It is, however, true that some kinds of meat — as roast chicken, or veal, tenderloin of steak and lamb chops cooked rare — are tender, easily masticated, well flavored and appetizing. Hence so far as stomach or gastric digestion is concerned, they are somewhat more easily and rapidly digested than others. In other words, they pass quickly out of the stomach and into the intestine where the principal work of digestion actually takes place.

This agrees with the practice of using so-called white meats in diets for the sick room. It remains true, however, that nearly all of the proteid and about 95 per cent of the fat of all sorts of meat are digested by the average person.

Cuts of Meat.—The method of cutting sides of beef, veal, mutton and pork into parts for sale, and the terms used for the different "cuts" as these parts are commonly called, vary in different localities. The standard adopted by the U. S. Department of Agriculture is shown in the accompanying illustrations both for the live animal and the dressed carcass. Elsewhere the principal cuts are illustrated as they appear on the butcher's table. Both the lines of the different cuts and the names vary more or less in different parts of the country. The best way to learn the cuts of meat, as sold in your local market, is to ask the butcher to allow you to watch him cut up one or more sides of the different kinds of meat. Ask him to give you the names of the parts and also to give you his own ideas concerning them. In this way a great deal of valuable information can be obtained. Too many housekeepers are in the habit of buying only two or three of the highest priced cuts of meat. They do not realize that by proper methods of cookery equally as much nutriment can be obtained from cheaper cuts at from one-half to one-tenth the cost. The characteristics of the different cuts are described by Woods, in substance, as follows:

Cuts of Beef.—The diagram shows the general method of cutting up a side of beef. The neck piece is sometimes cut so as to include more of the chuck than is here shown. The shoulder clod is usually cut without bone, and hence is an economical cut, being free from refuse. The shoulder (not indicated in the diagram) includes more or less of the shoulder blade and the upper end of the foreshank. Shoulder steak is cut from the chuck. The blade is sometimes made to include all the parts of the forequarter here shown as brisket, cross ribs, blade and navel.

The different portions of the blade as thus cut are then spoken of as the "brisket" end of the blade, or "navel" end of the blade. This part of the animal is largely used for corning. The ribs may also be divided into first, second and third cuts. The latter lying nearest the chuck are slightly less desirable than the former. The chuck may also be divided in a similar way, the third cut being nearest the neck.

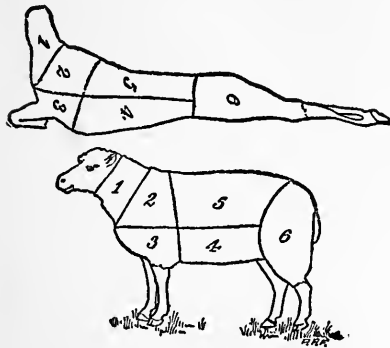


Diagrams of cuts of beef.
(Chas. D. Woods.)

- | | |
|-------------------|------------------------|
| 1. Neck. | 9. Navel. |
| 2. Chuck. | 10. Loin. |
| 3. Ribs. | 11. Flank. |
| 4. Shoulder clod. | 12. Rump. |
| 5. Foreshank. | 13. Round. |
| 6. Brisket. | 14. Second cut rounds. |
| 7. Cross ribs. | 15. Hind shank. |
| 8. Plate. | |

The names applied to different portions of the loin vary considerably. The part nearest the ribs is often called "small end of loin" or "short steak." The other end is called "hip sirloin" or "sirloin." Between the "short" and the "sirloin" is a portion quite generally called the "tenderloin" for the reason that the real tenderloin—the very tenderest strip of meat lying in the tenderloin—is found most fully developed in this cut. "Porterhouse steak" is the term usually applied to either the

short steak or the tenderloin. The flank may be cut to include more of the loin, in which case the upper portion is called "flank steak." The larger part of the flank is, however,



Diagrams of cuts of lamb and mutton.
(Chas. D. Woods.)

- | | |
|--------------|-----------|
| 1. Neck. | 4. Flank. |
| 2. Chuck. | 5. Loin. |
| 3. Shoulder. | 6. Leg. |

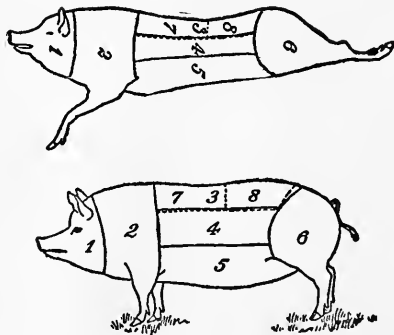
very often corned, as is also the case with the rump. Or, the rump may be cut so as to include a portion of the loin, which is then sold as "rump steak." The portion of the round on the inside of the leg is frequently preferred to the outside as more tender than the latter. As the leg lies upon the butcher's table, this inside of the round is usually the upper or top side and is therefore called "top round." Sometimes the blade is called the "rattle."

Cuts of Veal.—A side of veal cuts up into fewer parts and otherwise quite differently than a side of beef. The chuck is smaller and is often cut off with the neck. Or the chuck may be so cut as to take in part of the shoulder—more nearly like the chuck of beef. The shoulder of veal, as usually cut, includes the larger part of what is classed as chuck in the full grown animal. The under part of the forequarter, corresponding to the blade in beef, is often called the "breast" in veal. The part of the veal corresponding to the rump of beef is most often cut with the loin, but may be cut to form part of the

leg. The fore and hind shanks of veal are sometimes called "knuckles."

Cuts of Lamb and Mutton.—These number but six, three in each quarter. The chuck includes the ribs to the end of the shoulder blades. Beyond this comes the loin. The flank is made to include all the underside of the animal. Some butchers however include part of the "loin" and "chuck" in a cut known as the "ribs" and part of the flank and shoulder in a cut known as "brisket." The term "chops" is applied to parts of the loin, rib, chuck or shoulder, cut or chopped by the butcher into pieces for frying or boiling. The chuck and ribs are sometimes called the "rack."

Cuts of Pork.—A large portion of the carcass of a dressed pig is almost clear fat. This is used for salt pork and bacon. The cut designated as "back" is almost clear fat used for salting and pickling. The "middle" cut is used for bacon or for lean ends of salt pork. The "belly" is salted, pickled or made into sausages. Beneath the "back" are the ribs and loins. They furnish the "spareribs," "chops" and roasting pieces, here



Diagrams of cuts of pork.
(Chas. D. Woods.)

- | | |
|----------------|-----------|
| 1. Head. | 5. Belly. |
| 2. Shoulder. | 6. Ham. |
| 3. Back. | 7. Ribs. |
| 4. Middle cut. | 8. Loin. |

shown by dotted lines. The hams or shoulders may be cured or sold fresh as "pork steak." The tenderloin proper is a very small strip of comparatively lean meat lying under the

bones of the loin. It usually weighs a fraction of a pound. Some fat is usually trimmed from the hams and shoulders. This is called "ham and shoulder fat" and is often used for sausages. The kidney fat from the inside of the back is often called "leaf lard."

Cost of Different Cuts.—The table below is useful as showing the proportion of bone or other waste in the different kinds of cuts and the effect of this waste in the actual, as com-

makes it appear that the chuck ribs are less than half as expensive as porterhouse steak and two-thirds as expensive as the round. But apparent economy is not always real economy. In this case the bones in the three cuts should be taken into account. Of the chuck ribs, more than one-half is bone or other materials usually classed under the head of 'waste' or 'refuse.' Of the round, one-twelfth is waste, and of the porterhouse, one-eighth. In buying the

NET COST OF EDIBLE PORTION OF DIFFERENT CUTS AS COMPARED WITH ASSUMED MARKET PRICE (a) PER POUND

Kind of meat	Proportion of bone or waste in cut	Proportion of edible material in cut	Assumed market price per pound	Net price per pound of edible portion
BEEF:	<i>Per Cent</i>	<i>Per Cent</i>	<i>Cents</i>	<i>Cents</i>
Brisket	23.3	76.7	7.0	9.0
Rump	19.0	81.0	10.0	12.5
Flank	5.5	99.5	7.0	7.5
Chuck rib	53.8	46.2	10.0	22.0
Porterhouse	12.7	87.3	20.0	23.0
Neck	32.2	68.8	7.0	10.0
Ribs	20.1	79.9	15.0	20.0
Round	8.5	91.5	15.0	16.0
Shin	38.3	61.7	3.0	5.0
Heart	5.9	94.1	5.0	5.3
Tongue	26.5	73.5	22.0	29.8
VEAL:				
Cutlets	3.4	96.6	20.0	21.0
Breast	24.5	75.5	12.5	17.0
MUTTON:				
Leg	17.7	82.3	15.0	18.0
Chops	14.8	85.2	15.0	17.5
Forequarter cut for stewing..	21.2	78.8	12.5	20.0
PORK:				
Loin	19.3	80.7	15.0	20.0
Salt pork	8.1	91.9	12.5	13.0
Bacon	8.7	91.3	20.0	22.0
Ham	12.2	87.8	20.0	23.0

a Prices vary greatly in different parts of the country. These prices are assumed for the purpose of making it possible to compare nominal with net prices.

pared with the apparent cost of meat. Langworthy says: "The relative retail prices of various cuts usually bear a direct relation to the favor with which they are regarded by the majority of persons. The juicy, tender cuts, of good flavor, sell for the higher prices. When porterhouse steak sells for 25 cents a pound, it may be assumed that in town or village markets round steak would ordinarily sell for about 15 cents, and chuck ribs, one of the best cuts of the forequarter, for 10 cents. This

chuck, then, the housewife gets, at the prices assumed, less than one-half pound of food for 10 cents. This makes the net price of the edible portion 22 cents a pound. In buying round, she gets eleven-twelfths of a pound for 15 cents. This makes the net value about 16½ cents. In buying porterhouse, she gets seven-eighths of a pound for 25 cents. This makes the net value about 28½ cents a pound. The relative prices, therefore, of the edible portions are 22, 16½ and 28½ cents. Or to put

it in a different way, a dollar at the prices assumed will buy $4\frac{1}{2}$ pounds of solid meat from the cut known as chuck, 6 pounds of such meat from the round, and only $3\frac{1}{2}$ pounds of such meat from the porterhouse."

Owing to the extremely high price of meats in recent years a special study has been made by the United States Government on the economical use of meat in the home. The conclusion has been reached that the expense for meat can be reduced in a number of different ways. Among these may be mentioned lessening of the amount of meat used as food; buying meat in quantity for home use; utilizing the fat, bone and trimmings and the left-over cold meats; extending the flavor of meats to various vegetables and cereals by means of mixed dishes; utilizing the cheaper cuts; and developing and improving the flavor by proper methods of cookery, including use of herbs, spices, sauces and the like.

To accomplish these results a number of valuable recipes have been prepared by Miss Caroline L. Hunt, an expert in nutrition, under the supervision of Dr. C. F. Langworthy, who has been in charge of this investigation, many of which are so valuable as to merit reproduction elsewhere in this volume.

In general, it is suggested that most American families eat too much meat and that the simplest way to reduce the meat bill would be to serve meat once only, instead of two or three times a day, or to use less meat at a time. One good meat dish a day will furnish sufficient proteid, provided other and cheaper substitutes such as eggs, milk, cheese and beans are used instead. Fish might well be substituted for meat for the sake of variety as well as of economy, wherever it can be obtained fresh and cheap. Canned or salt fish also makes a useful and economical variation of the diet.

FISH AS FOOD

The flesh of fish is included with that of other animals on the food map on page 22. This shows that

fish is similar in composition to meat and occupies much the same place in the diet. It contains practically no carbohydrates but consists almost wholly of proteid and fat in varying proportions. Some fish, such as fat mackerel, shad and salmon, contain a high percentage of fat. And these are believed to be less easily and readily digestible than the leaner kinds such as cod, haddock, perch, pike, bluefish and others. The ash or mineral matter in fish does not vary greatly in quantity or value from other foods. The notion that fish are richer in phosphorus, and hence more valuable as a brain food for students and other sedentary workers, has no scientific foundation. Experiments do not indicate that fish contain a larger percentage of phosphorus than other kinds of flesh used as food, nor that phosphorus is any more essential to the brain than nitrogen, potassium or other elements. The percentage of available nutrients per pound is somewhat less in fish than in most kinds of meat because fish contains a much larger proportion of water. But this difference is offset by the difference in cost under ordinary conditions and prices.

A careful comparative study of different sources of proteid shows that shell fish are the most expensive and the cheaper meats, fish and cereals less expensive in the order mentioned. As sources of energy, shell fish are higher in price than common fish. The ordinary kinds of meats and the cereals are most economical. Both fish and the leaner kinds of meat are deficient in materials which yield muscular power. But when supplemented by bread, potatoes and the like, they are the more important parts of a well-balanced diet.

Cautions Concerning Fish.—Avoid fish which is not perfectly fresh and especially that which has been frozen and kept for a time after thawing and before being cooked. Such fish is liable to rapid decomposition with the forming of ptomaine poisons. As a general rule fish are unfit for food if the eyes are dull, the ball of the eye clouded, the gills pale and frothy, the scales dry and easily

loosened, or the meat so soft that it can be dented with the finger like putty. To test fish about which you are in doubt, lay them in water. If they sink they are probably good. But if they float they are certainly unfit for food. Remove canned fish promptly from the can and use at once. If left in the can there is danger of poisoning from metallic oxides formed by the action of the air on the inside of the can. Moreover, canned fish deteriorates very rapidly after being opened.

Do not buy or use clams in the shell unless they are alive. That is, use only clams which close the shell when taken out of water. Also avoid oysters which are not perfectly fresh. Oysters dead in the shell and even slightly decomposed may be extremely poisonous. When removed from water good oysters close the shell, move when touched, are of normal size and color and have a clear fluid inside the shell. In the case of dead oysters the shells remain open. The oysters in a short time become discolored and very soft. They have a stale odor and show blackish rings inside the shell. Oysters are sometimes "floated" or "fattened" in water contaminated with sewage, and death sometimes results from eating them from typhoid fever and other diseases. The only safeguard against such conditions is to buy oysters only from the most reliable dealers.

POULTRY AND DAIRY PRODUCTS

In addition to meat and fish, the chief sources of proteid in the ordinary mixed diet are poultry and dairy products. Poultry differs very little in composition from other kinds of flesh used as food and is but slightly more digestible than beef, pork or mutton. The difference in digestibility between the different kinds of poultry depends chiefly upon the amount of fat present. Fat birds such as fat geese are least easily digested. Tenderness assists digestion; hence young birds are more easily digested than old. The less used muscles such as those of the breast are also more digestible than the

much used muscular tissues of the thighs or "drumsticks." Experiments indicate that there is very little difference in digestibility between the white fleshed and dark fleshed birds, or between the white and dark meat of the same species.

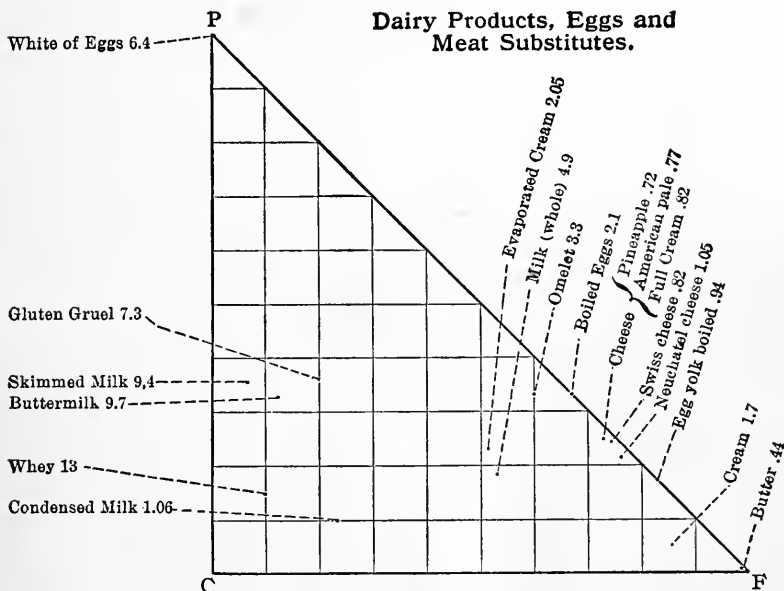
From the standpoint of economy, home-grown chickens fed chiefly upon table scraps, sour milk and other by-products are among the cheapest and most wholesome kinds of food. Reckoning the cost of the actual nutrients, chicken as purchased in city markets at low or average prices is the cheapest kind of poultry. It then compares favorably in economy with the cheaper cuts of beef and pork. Turkey and goose may be compared in value and economy to sirloin of beef and leg of lamb. Out-of-season chicken and turkey, capon, duck and green goose are more expensive. Squabs, pheasant and quail are so dear as to be luxuries. Their place can be filled, however, in most localities at little or no expense by trapping the ordinary English sparrow. These birds are equally as fine as game birds in flavor. They are especially valuable as delicacies in sickness, either broiled or used as the basis of stews or broths. The chief value of game and poultry to invalids is found in the extractives they contain. These under proper methods of cookery give the characteristic flavor which makes the patient's "mouth water," i. e., they start the digestive juices flowing and stimulate the appetite.

Eggs are a very important part of the average dietary. They furnish a light, easily digested food, rich in proteid and especially suitable for breakfast or other light meals and useful for persons of sedentary habits. It is the practice of many families of moderate means to serve fresh meat for only one meal a day — i. e., dinner. They use for breakfast such foods as bacon, dried beef, cod fish or left-over meats. For lunch or supper, they have bread and butter, with cold meats and other left-overs, and perhaps the addition of cooked, fresh or preserved fruits. It is not sound economy to omit eggs

from such a diet. At ordinary prices they are among the cheapest sources of proteid and should be used freely as meat substitutes. Eggs at 25 cents a dozen are cheaper than meat, especially if one egg is sufficient to satisfy each person or if the average is less than two eggs per person, as will usually prove to be the case. Even at high prices the occasional use of eggs in the place of meat need not be regarded as a luxury.

equivalent to three-fourths of a pound of meat or 6 ounces of bread.

On the other hand milk is sometimes spoken of as the only perfect food. This is perhaps true in the sense that it is possible to sustain life indefinitely upon an exclusive milk diet. Such a diet is sometimes prescribed in the treatment of rheumatism and in some other diseases. Persons doing ordinary sedentary or light work can take sufficient milk to



Food Map for Dairy Products, Eggs and Meat Substitutes.— Dr. Irving Fisher.

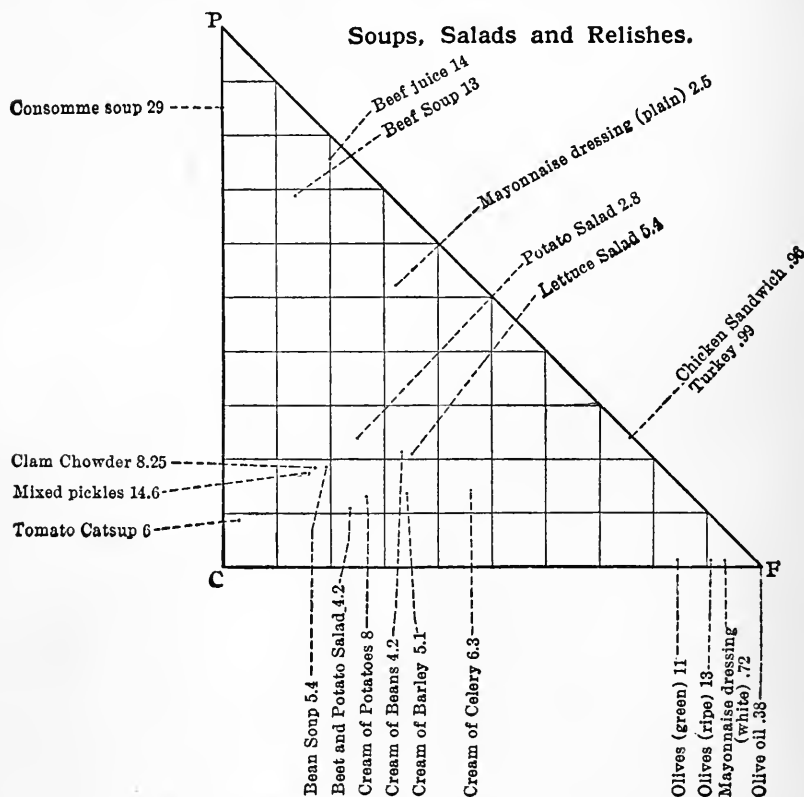
Milk and Skim Milk.— While milk is universally recognized as the standard food of infancy and childhood its value as a food for adults is often underestimated. Milk is most commonly thought of merely as a beverage like coffee, tea or water. It is taken or not according to taste— or to satisfy thirst— rather than as a substitute for meat or other substantial portion of the diet. Yet a single glass of milk contains about as much of the nutritive value of a meal as a quarter of a loaf of bread or a good slice of roast beef. A quart of fresh milk contains nutrients

sustain themselves in good health and to furnish normal energy for periods of several months. But such a diet is not advisable for adults under ordinary conditions for the reason— among others— that to secure the required amount of carbohydrate it is necessary to take a much larger amount of proteid than is necessary. Yet these facts indicate that milk should be regarded as a substantial food.

Skim milk is often regarded on the farm as having little food value. It may be purchased in cities at a very low rate, usually about 2 or 3

cents a quart. Yet even after the bulk of the butter fat has been removed from milk by skimming, the solid nutrients make up nearly one-tenth of its entire weight and it affords one of the cheapest sources of proteid generally available. A lunch or meal of bread and skim milk is very nutritious in proportion to its

Many housewives hesitate to remove the cream from whole milk in the belief that they are thus robbing members of their family, and especially growing children, of a necessary kind of nutriment. But this is not the case. The fuel value of the butter fat removed in cream can be supplied in the ordinary diet more



Food Map of Soups, Salads and Relishes.—Dr. Irving Fisher.

cost and convenience. Eight ounces of bread eaten with a pint of skim milk will furnish very nearly one-third of the proteid required for a day's nutriment at a cost of 5 cents. As compared with the ordinary mixed diet of meat and potatoes, bread and skim milk make a better balanced and equally wholesome ration.

cheaply by the use of butter, meat, sweets and other carbohydrates. And the skim milk is rich in carbohydrates and proteid. Many families in moderate circumstances who are in the habit of drinking whole milk and buying cream, would be quite as well off if the top of the milk for 2 or 3 inches were poured into the cream

pitcher. And there would be a marked saving in the cost of cream.

Growing children will ordinarily drink freely of skim milk, if it is available, and nothing could be more wholesome for them. But since the older members of the family may not take kindly to skim milk as a food, it is an excellent plan to use it freely in cookery. Skim milk should be preferred to water for making bread and for all other recipes for which it is available.

Milk soups furnish an excellent means of increasing the food value of a meal or using up superfluous milk. Milk may be mixed with stock made from meat, or used as a basis of vegetable purées, such as bean, pea, potato, corn and celery soups, or tomato bisque and the like. Oyster stew made of milk owes its food value to the milk more than to the oysters.

Milk "white" or "cream" sauces are also very useful. They are nutritious and are a convenient and economical way of using up left-overs. Numerous recipes found elsewhere in this volume for puddings, desserts, blanc-mange, ice cream and junket, illustrate the many ways in which surplus milk may be used up in the ordinary mixed diet. Among ordinary by-products of milk may be mentioned — junket, cottage cheese, butter milk, whey, sour milk or clabber, and koumiss. All of these may profitably be employed to give variety.

Cheese.—One of the most important among dairy products is cheese. This has been a common article of diet among civilized people since the earliest times. Yet, oddly enough, its food value is not fully appreciated and it labors under what seems to be an unfounded prejudice, being supposed to cause certain digestive disturbances. Cheese is among the best of all meat substitutes and, at ordinary prices, is one of the cheapest sources of proteid. Its flavor is so pronounced that there may be one or more members of a family who do not relish it. And from lack of experience most housekeepers are unskillful in the use of cheese in cookery. Yet when properly cooked and

relished it may fill an important place in the diet.

A series of careful experiments under the auspices of the Department of Agriculture have led to the conclusion that cheese, when used by normal healthy persons in sufficient quantity to be a substitute for meat, is not indigestible. Nor does it seem to cause any digestive disturbances. While there are persons with whom cheese does not agree, the same is true with many other articles of diet. If it should have a tendency to produce constipation, this may be offset by adding fruits and fruit juices to the diet. Bread and cheese taken with fruit is a thoroughly well balanced and very economical ration. A number of suggestive bills of fare and recipes for the use of cheese, prepared under the supervision of the Department of Agriculture, are given elsewhere.

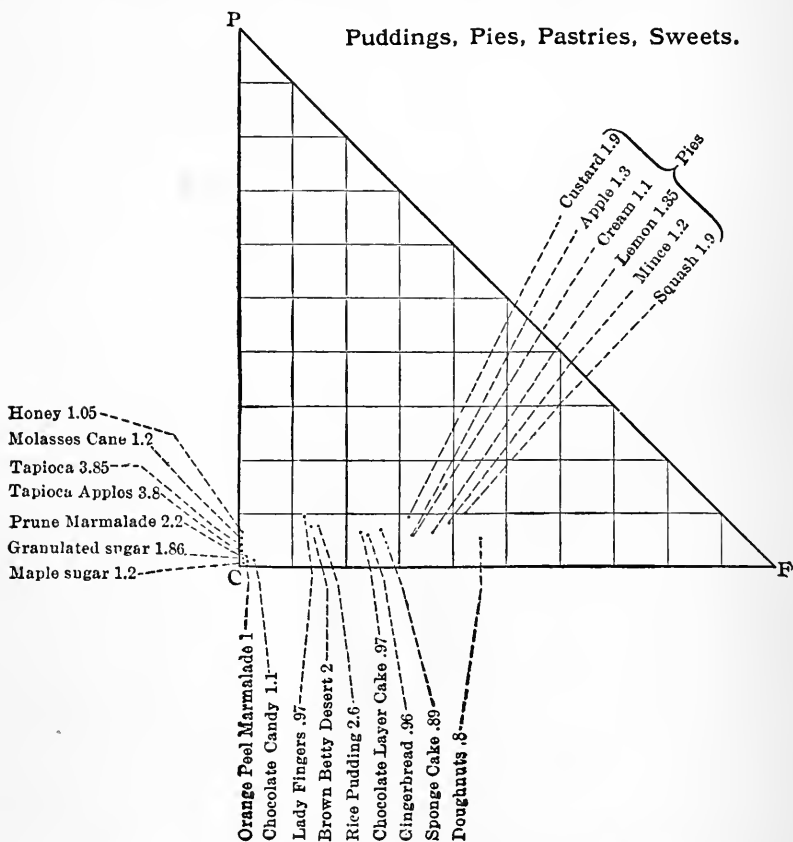
SOURCES OF CARBOHYDRATES

Sugar as Food.—Sugar, on account of its pleasant flavor and high nutritive value, is among the most deservedly popular of all food products. It occurs in several forms of which the best known are cane sugar — the ordinary granulated sugar and other well known kinds used in cookery — glucose, made from starch; milk sugar, grape sugar and honey. Sugar is also produced in large quantities from the sugar beet. And maple sugar is an important article of commerce. Roughly speaking, sugar is the equivalent of starch after the latter has been digested and made soluble. Thus a mealy potato is very nearly akin to sugar, but — like all forms of starchy food — it must be turned into a kind of sugar by the digestive juices before it can be absorbed by the system. This process is started by a ferment contained in the saliva. It is continued and completed in the intestine. Sugar in proper quantity is very fully and rapidly digestible and is one of the most important sources of heat and energy in the diet. For this reason men employed at hard labor — especially in cold climates, as lumbermen

in the northern forests—use large quantities of sugar in the form of molasses. And, for similar reasons, it is relished by children to supply the energy required by their active habits.

Sugar, like starch, is fattening since, when taken in excess, it may

valuable as flavors. They have high food value and may properly be regarded as economical sources of heat and energy. Well-to-do families in our country consume about 2 pounds of sugar per week per person. Most of the bad effects sometimes ascribed to sugar are due to its use in excess.



Food Map for Puddings, Pies, Pastries and Sweets.—Dr. Irving Fisher.

be transformed into fat and stored as reserve fuel. On this account sugar should be used sparingly by persons who tend to become corpulent.

Sugar, confectionery, and the various sweet table sirups and molasses are not luxuries. They are not only

Sugar is not any more harmful to the teeth than other foods. If allowed to cling to the teeth after eating it rapidly ferments and forms acids that may be injurious. But this is true also of starchy foods. The remedy is to be found in proper care of the teeth as elsewhere recom-

mended. Neither does sugar produce gout; although it may be injurious in large quantities in certain classes of illness.

In addition to being used as a flavor in cooked foods and otherwise, considerable quantities of sugar are taken in fresh fruits—of which it sometimes forms one-tenth or more—and dried fruits such as figs, dates and raisins, of which as much as 50 per cent may be sugar.

Large quantities of sugar are also taken as confectionery. Cheap candies are made largely from glucose. This is no longer considered an injurious adulterant, although it is not quite so digestible as sugar and may, therefore, overload the stomach more easily. The best authorities seem to agree that, while sugar is a valuable food for growing children, it should be withheld from infants under two years of age. Nor should it be used for older children to sweeten cereal foods which form their staple food. Mush, porridge, and similar preparations of wheat or other grain, should be eaten only with milk or cream. They are then in the same class as bread and milk and form the simple, wholesome basis of a meal. Sugar should preferably be given afterward in a simple pudding, or dessert, or in the form of lump sugar or homemade candy. Indeed, the best manner and time for giving candy to children is in the form of a few bonbons for dessert rather than at all hours of the day between meals.

Cereals.—Wheat bread and loaves of corn, rye or other cereal products, together with the cereal breakfast foods, form a very essential part of the ordinary mixed diet. The various cereals are similar in chemical composition. They contain little fat, but consist, on an average, of 10 per cent proteid and from 60 to 80 per cent carbohydrate with varying proportions of water and ash. The cereals rank with milk and other dairy products as among the cheapest sources of nutriment. An average man at moderately active work requires about $\frac{1}{4}$ of a pound of proteid with enough fats and carbohydrates daily to make a total of 3,000

calories of available energy. Milk contains all three classes of nutrients but not in the proper proportions for healthy adults. Meats and cheese are rich in proteid and fat. Vegetables are especially rich in carbohydrates. Cereals contain both proteid and carbohydrates but in such proportions that, in order to get the requisite amount of proteid from bread alone, one would have to take more carbohydrate than would otherwise be necessary. Hence, the combination of bread with such foods as meat, milk or cheese, which are rich in proteid, makes a much better balanced ration.

All of the cereals contain an inner kernel surrounded by one or more outer hulls. These hulls are ordinarily removed in the process of milling and sold as bran which is fed to stock. The popular opinion that bread made from the entire grain is more wholesome is not sustained by scientific experiments. The bran contains a large proportion of cellulose, or woody fiber, which is wholly indigestible. This substance may have some value as a laxative in cases of constipation, since, by mechanical action it stimulates the peristaltic action of the bowel. But it adds very little nutritive value to the loaf. On the contrary, experiments indicate that its presence somewhat lessens the digestibility of the finer portion of the grain. On the whole it may be taken for granted that the ordinary white bread is not only more palatable, and preferable for appearance sake, but is actually a more economical source of nutriment. However, all kinds of bread are nutritious and are to be recommended for the sake of variety. This is equally as important in bread as in meats, vegetables and puddings.

The cheaper grades of flour are about as nutritious as the more expensive and may be used without hesitancy if economy is required. Crackers, macaroni, and the various kinds of cake made from white flour have practically the same nutritive value as bread and are equally well digested by healthy adults. Hot bread in the form of rolls and bis-

cuit is also found to be digestible, if properly masticated. The value of toast for invalids and others is due to several changes produced by heating. A portion of the carbohydrates becomes more soluble and hence more easily digested. If the heating is strong enough any ferments and bacteria present may be killed. Toast, on account of its dryness, is likely to be well masticated. And partial caramelization gives a crispness and flavor which stimulate the digestive juices. Bread made with skim milk makes a better balanced ration than that made with water alone and is preferable since it does not materially increase the cost. The common custom of eating butter or some other fat with bread is justified by the fact that the cereals, with the exception of corn, have little or no fat content.

Breakfast Foods.—Careful studies in large numbers of American families show that the various cereals furnish over one-fifth of the total food, about one-third of the total proteid and considerably over one-half of the total carbohydrates of the average dietary. Of these about 2 per cent are furnished by the modern cereal breakfast foods. Notwithstanding that the percentage is small, the total quantity of such foods consumed is very great. And the millions of dollars expended in advertising the claims of superiority made for these foods by their manufacturers give the subject popular interest. A careful study of the principal breakfast foods, made under the supervision of the Department of Agriculture, indicates that their nutritive value and digestibility are practically the same as the old-fashioned porridge and similar dishes. The ready-to-eat cereals economize time and, to some extent, fuel. This advantage may justify the difference in their cost under certain conditions in the household. The process of preparation in most cases is thoroughly cleanly and sanitary. And the small pasteboard packages in which these products are put up protect the contents from all possible contamination. They also afford a convenient means of storage in the pantry. In general it was found that

the less expensive kinds of raw cereal breakfast foods selling for about 4 cents a pound in bulk were as economical as flour, meal, or other forms of cereals with which they may be properly compared. The higher prices of ready-to-eat brands, however, do not yield any additional nutriment. Their advantage, if any, lies in their convenience and the pleasant variety they afford. Some of these are excessively high in price, the maximum being about 15 cents per pound, or nearly four times as much as their nutritive value would justify.

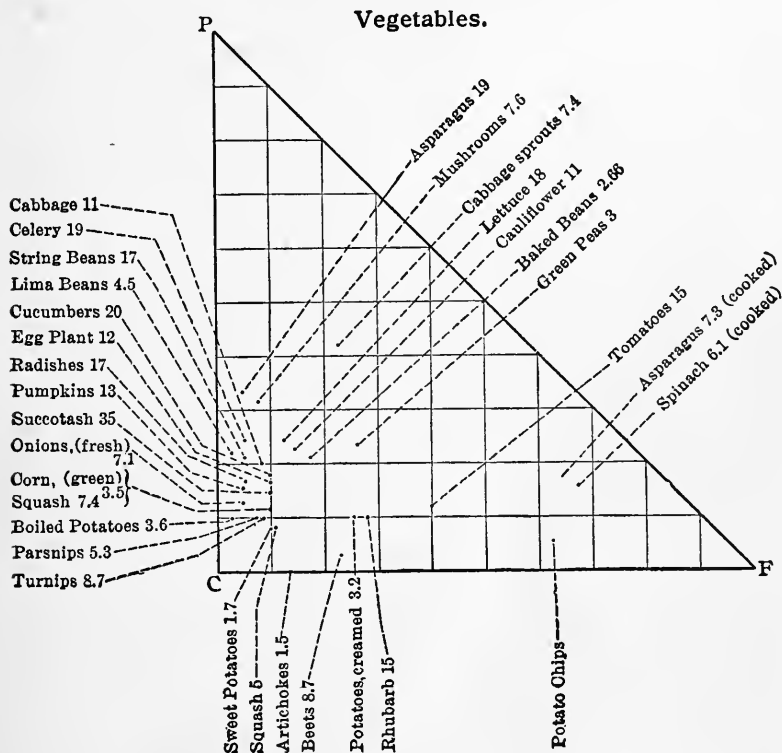
The so-called malted foods and others said to be predigested, are perhaps the most objectionable of any. The claims made for them are largely fraudulent. The addition of malt and similar processes are designed to transform the starch content of such foods into sugar and other soluble forms. Experiment with most of the advertised foods shows that this has really not been done to any appreciable extent. Moreover, healthy adults are more likely to be injured than benefited by the use of predigested foods. Nor should they be used by invalids except upon the advice of a competent physician. Hence, while these foods are really more wholesome than they would be if actually predigested, they are sold under misrepresentation, and at excessively high prices which are in no way justifiable.

Coffee Substitutes.—Cereal products as coffee substitutes appear to be made of parched barley, wheat and other grain, sometimes mixed with pea hulls, corn cobs or bran. Such grain parched with a little molasses in an ordinary oven makes something undistinguishable in flavor from the cereal coffees on the market. The claim of the manufacturers that these substitutes yield more nourishment than coffee is entirely unfounded. They contain little or no nutriment, skim milk being about twenty times as nutritive. If strict economy is necessary it will be found equally as satisfactory to use old-fashioned "crust coffee" made by toasting broken crusts of white, brown, or preferably "rye and In-

dian" bread, steeping them in hot water and straining until comparatively clear. Or parched corn, rye, sweet potato or other old-fashioned coffee substitutes may be used.

Vegetables in the Diet.—In addition to the cereals, vegetable foods may be classified as legumes, tubers, roots and bulbs, green vegetables and fruits. The principal legumes used

important nutrient, that they may well be used for the sake of both economy and variety, as substitutes for meat in the daily dietary. The lack of fat in legumes suggests the addition of butter or other suitable fat, as salt pork, in the process of cooking. Dietary studies and experiments with legumes indicate that, when properly cooked and combined



Food Map for Vegetables.—Dr. Irving Fisher.

as food are peas, beans, cow-peas and lentils. While about one-half of these consists of carbohydrate in the form of starch, they also contain about one-fourth proteid. The remainder is chiefly water and refuse, since the proportion of fat which they contain is small. The dried legumes are so rich in proteid and comparatively so cheap a source of this most

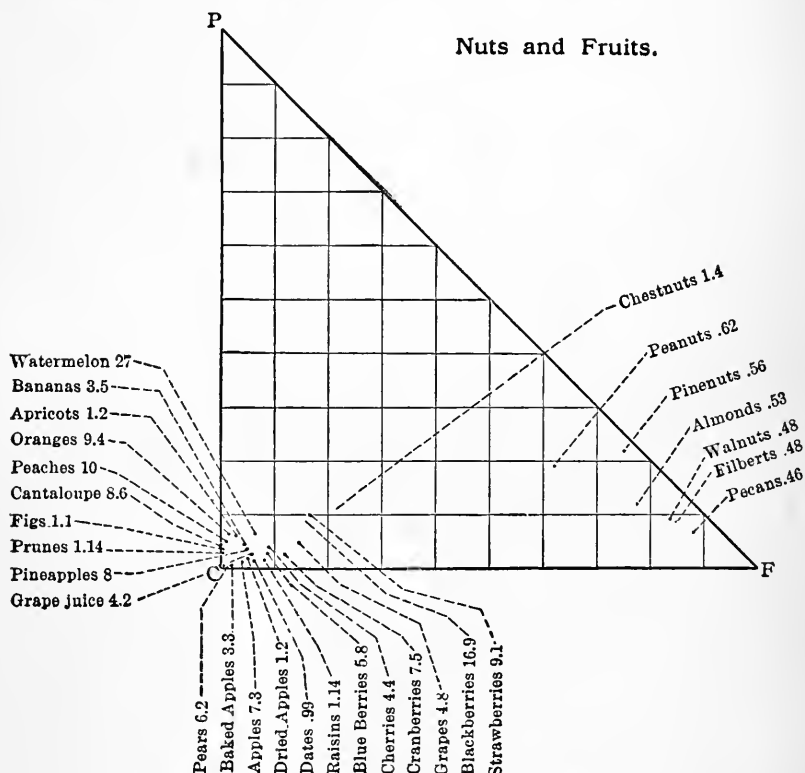
with other foods in the ordinary mixed diet, they are well digested. Their tendency to cause flatulence may be corrected by soaking in soda and water and parboiling to remove the skin. Also by the addition of soda and salt in cooking. There can be no doubt that such foods as baked beans, purée of peas, and the like, are a valuable and economical part

of the diet, especially for men employed at muscular work and for growing children. In view of their low cost, high nutritive value and wholesomeness, they may profitably be used to a much greater extent than they are at present.

The potato, among roots and tubers, is most commonly used as food.

butter and similar sources of fat and proteid. Mashed potato, prepared with milk and butter, is for this reason more wholesome and palatable than plain boiled potato.

Use preferably young potatoes of the early varieties, of medium size, smooth and regular in shape and with comparatively few eyes. Avoid old



Food Map for Nuts and Fruits.—Dr. Irving Fisher.

This and other root crops contain from 70 to 90 per cent of water. Hence the digestible nutrients present are somewhat less than 10 to 30 per cent. The greater part of the solid matter consists of carbohydrate. The amount of proteid and fat furnished by root crops is negligible. Hence, potatoes and other roots must be balanced in the diet by meat, milk,

potatoes especially about the time they begin to sprout and become soft and watery. Discard, especially in the case of old potatoes, any which have been turned green by the sun. The green portion contains solanin, a virulent acid poison. The danger from this increases the longer the potato is kept before being used. Potatoes rank next to bread stuffs

as a source of carbohydrate in the diet.

The sweet potato resembles the white potato in composition although it contains a larger proportion of sugar and there are some other differences. It is equally as wholesome. While slightly more expensive it is to be recommended, at ordinary prices, as a substitute for the white potato for the sake of variety.

Succulent roots, tubers and bulbs such as beets, carrots, parsnips, turnips, onions and the like are much less important as source of nutrients than the cereal foods, or the starchy roots and tubers such as the potato. Their chief value lies in their flavors as aids to digestion. They also supply the body with mineral salts and by their bulk and the proportion of cellulose which they contain stimulate the peristaltic action of the bowel.

Fresh fruits are similar to green vegetables in composition, but they often contain considerable percentages of sugar. They are very dilute foods and usually contain 80 per cent or more of water. With the notable exception of the olive, fruits contain very little fat, nor do they have any importance as sources of proteid. They have some nutritive value as sources of carbohydrate, chiefly in the form of sugar, the percentage of which in common fruits ranges from 1 to as high as 15 per cent. But like green vegetables their value is chiefly in their flavors and mineral salts as aids to digestion and in their laxative effect.

Experiments have shown that persons living on an exclusive fruit and nut diet may apparently maintain their health and strength for a considerable length of time. The cost of such diet, however, does not differ greatly from that of an ordinary mixed diet. Nor is there anything to show that it is in other respects equal or superior. Dried and preserved fruits form an especially important part of the diet since they may contain 50 per cent or more of available carbohydrates in the form of sugar, in addition to many characteristics of fresh fruit. In short fruits are a valuable part of a well-balanced diet

and may well be eaten in larger quantities than at present.

FOOD ADULTERATIONS

A preservative added to a food is an adulteration, because it is a foreign substance and neither a food nor a condiment. It is an entirely different question whether the food thus preserved is wholesome. A commercial sausage may contain a considerable amount of starch, which is added in order to allow the use of more fat or water to the product. This is not injurious, but the customer buys the product at a high price believing that he is getting a genuine sausage and nothing else.

On account of the frequent use of adulterants, some simple tests are here given. These can be performed without any special chemical knowledge by carefully following the directions given. Any housekeeper or teacher can do the work. These instructions were compiled by E. H. S. Bailey, Ph. D., for the Kansas State Board of Health. The complete details of many of the processes are given in the recent article by Bigelow and Howard, in Bulletin No. 100, United States Department of Agriculture, Bureau of Chemistry. From this excellent publication many of the following tests are taken.

Kitchen Tests.—In addition to the ordinary kitchen dishes and utensils the following will be required: One glass funnel, three inches in diameter; white cut filter-papers, five inches in diameter; and one medicine-dropper. The chemicals required are: One four-ounce bottle of strong hydrochloric (muriatic) acid; one four-ounce bottle of aqua ammonia; one eight-ounce bottle of chloroform; one one-quarter pound bottle of hydrogen peroxide; one one-ounce bottle of tincture of iodine; one-quarter of an ounce of ferric alum; one-half an ounce of logwood chips; one-quarter of a pound of fuller's earth; a few pieces of sheet zinc; a few square inches of turmeric-paper.

All of the above can be readily obtained at any drug store. If it is proposed to have the chemicals about

the house, the bottles should be provided with poison labels by the druggist.

CANNED VEGETABLES

Vegetables put up by reputable manufacturers who think it worth while to keep a good brand on the market are usually of good quality and wholesome. Sometimes, however, coloring matter and preservatives are present. Notice the appearance of the tin can containing canned vegetables or fruit. If it is convex instead of concave at the ends, and if when water is poured on the end of the can and the can is punctured, bubbles of gas come out through the water, the contents have begun to ferment and are not fit for use.

Copper.—The only artificial coloring matter usually found in canned vegetables is copper. This is added to produce a natural green color. This is most likely to be found in peas and string-beans. It has also been frequently used in pickles.

To test for copper: Mash two heaping tablespoonfuls of the sample with a stiff spoon, and put the pulp in a teacup, with three times as much water. With a medicine-dropper add thirty drops of hydrochloric acid, and set the cup in a pan of boiling water on the stove. Drop a bright two-penny nail in the mixture, and keep the water in the pan boiling for about twenty minutes. Take care to stir the solution occasionally with a splinter. Pour out the contents of the cup, rinse off the nail and examine it. If any appreciable quantity of copper is present in the food the nail will be plated red.

PRESERVATIVES

The preservatives most commonly used in canned vegetables are borax, sodium benzoate and salicylic acid. Sodium sulphite is also sometimes added both to bleach the product and to act as a preservative. Saccharin, which acts very slightly as a preservative, is used with such vegetables as sweet corn and in tomato catsup, as a sweetening agent.

Borax.—To detect borax or boric acid, mash a sample, as for copper, with a tumbler used as a pestle in a tea saucer, add a few teaspoonfuls of water, and strain through a cloth, putting the wet, folded cloth in the funnel. Collect about a teaspoonful of the liquid that comes through the filter in a sauce-dish, and add to this four drops of hydrochloric acid. Dip into this solution a piece of yellow turmeric-paper about an inch square. Then dry the paper by placing it in a clean saucer over a teakettle of boiling water. If borax is present, the yellow paper will become cherry-red when dry. If a drop or two of ammonia be put upon it, when cold, the color will change to a greenish black.

Benzoic and Salicylic Acid.—To detect sodium benzoate or benzoic acid and salicylic acid, macerate and filter a sample as above. By gently squeezing the bag or cloth containing the sample, obtain two ounces of the liquid. Place this solution in a narrow bottle holding about five ounces. The ordinary quinine bottle of the druggist is convenient. Add a quarter of a teaspoonful of cream of tartar and about three tablespoonfuls of chloroform, and mix thoroughly with a splinter. Do not shake too vigorously or the chloroform will not separate readily from the rest of the liquid. Pour the mixture into a tumbler, and after the chloroform layer has settled to the bottom of the tumbler, take out with a medicine-dropper all the clear chloroform possible and divide it into two parts, A and B.

Place one-half of the chloroform solution (A) in a glass sauce-dish. Set the dish on the outside of a window-ledge close to the window, and allow the chloroform to evaporate. In cold weather the sauce-dish should be placed in a pan of hot water before being placed on the window-ledge. When the chloroform has evaporated, if the quantity of benzoic acid is sufficient it will be seen in the bottom of the dish in small flat crystals. If the dish is warmed slightly the odor of gum benzoin may be recognized. A better con-

firmatory test, however, is, without warming the residue left after the evaporation of the chloroform, to add to it a half teaspoonful of strong ammonia water and three teaspoonfuls of strong hydrogen peroxide, as obtained at the drug store, and let the solution stand over night. The next day pour the liquid remaining in the sauce-dish into one of the tall bottles used above, add a piece of turmeric-paper and then hydrochloric acid, drop by drop, stirring with a splinter, until the turmeric-paper changes from a brown to a clear yellow color, then add chloroform as in the first part of the test, and after stirring thoroughly take out the chloroform with the dropper and allow it to evaporate on the window-ledge. Finally treat the residue remaining in the sauce-dish for salicylic acid as noted below. The treatment with ammonia and hydrogen peroxide was for the purpose of changing the benzoic acid to salicylic acid.

To test the other half of the solution (B) for salicylic acid, pour it into a tall five-ounce bottle containing a tablespoonful of water, and add to the solution a piece of iron alum about as large as the head of a pin.

Shake the mixture and allow the chloroform to again settle to the bottom of the bottle. If salicylic acid is present, the upper layer of the liquid, or the line separating the two liquids, will be of purple color.

Sulphites.—To detect sulphites in food, as for instance in jelly or in sirups, place about an ounce of the material, with the addition of some water—if necessary—to make a thin liquid, in a tumbler, add a dozen small pieces of zinc, and about fifty drops of hydrochloric acid. Cover the tumbler with a sauce-dish, and allow to stand for a few minutes in a warm place. In the presence of sulphites the gas, hydrogen sulphide, which has a disagreeable odor like rotten eggs, can be recognized in the tumbler by the sense of smell.

If the hydrogen sulphide cannot be detected by its odor, it can often be found by proceeding as follows: Stick, by means of sealing wax, a

clean, bright ten-cent piece on a splinter of wood so that it will hold the silver coin above the liquid in the cup. Place the stick and coin in the tumbler and let it stand covered in a warm place for from thirty minutes to an hour or so, if the color does not appear before. If the coin is stained brown to black, sulphites are indicated; the greater the quantity, the darker the stain.

Saccharin.—Saccharin is used in the place of sugar to sweeten various food products. It is made from coal-tar and is about 500 times as sweet as ordinary sugar. To detect this substance, the sample of food is extracted with chloroform as described in the method for detecting sodium benzoate, and the chloroform solution is allowed to evaporate in a glass dish in the open air. If a considerable amount of saccharin is present the residue left in the dish will have an intensely sweet taste.

CANNED FRUIT AND PRESERVES

There is very little excuse for the use of preservatives, and not any at all for the use of artificial coloring matters in canned fruits. The preservatives mentioned under canned vegetables are those more commonly used, and the methods for their detection given in the previous section may also be applied to canned fruits.

Jams, Jellies and Preserves.—There is no class of food products, with the exception of spices, so commonly adulterated as jams and jellies. The basis for the cheap jellies is often the pomace or refuse from the cider-mill, the sweetening is glucose or corn sirup, the coloring matter is a coal-tar dye. Hence the use of a preservative is almost always necessary. Starch is often used as a filler or gelatinizing agent.

Dyeing Test.—To detect a coal-tar or anilin dye, mix a few teaspoonfuls of the jam or jelly with some water and filter first through cloth and afterwards through filter-paper. The filter-paper should be folded across the middle, and again at a right angle to this fold. Place in the funnel so that there shall be three thicknesses

on one side and one on the other. Moisten the paper with water to hold it in place. Add a few drops of hydrochloric acid to the filtered solution of the jelly, and place it in a teacup in a pan of boiling water on the stove. Boil a small piece (about an inch square) of white woolen cloth or nun's veiling with a little soap, and, after rinsing, place it in the colored solution to be tested. After heating for ten minutes, take out the cloth and rinse in clear water. If the cloth is not colored, the experiment may be discontinued.

If, however, the cloth is colored, to confirm the test, heat the cloth in a teacup in clear water containing about a teaspoonful of ammonia. This will dissolve the anilin color out of the cloth, but will have little effect on a natural fruit color. Take the piece of cloth and add enough hydrochloric acid to the contents of the cup so that the solution will not smell of ammonia. Put into this solution a new piece of washed woolen cloth and heat again in a pan of water. If an anilin dye is present, the cloth will be dyed, and after heating a short time, may be taken out and rinsed in clear water. This method of testing may also be applied to tomato catsup, which is frequently artificially colored.

Starch.—If considerable starch paste has been added to a jelly, it may be detected by adding to the cold filtered solution a few drops of tincture of iodine. The production of an intense blue color indicates starch. Observe that this color may be modified by any dye that is present in the sample examined.

FLAVORING EXTRACTS AND CONDIMENTS

Lemon Extract.—The extracts in most common use are those of lemon and vanilla. Extract of lemon, according to the United States Pharmacopœia, should contain 5 per cent of oil of lemon. About 85 per cent of alcohol is required to keep this in solution. Much of the extract of lemon on the market contains so little oil of lemon that it can with diffi-

culty be measured. The oil is also often replaced by some other essential oil, as that of lemon grass. To hold the small quantity of oil of lemon in solution, a 25 or 30 per cent alcohol is often used. The yellow color of this product is produced by the use of a yellow anilin dye. As oil of lemon is held in solution by alcohol, to test the character of the extract, add to a teaspoonful of the sample, in a tumbler, three times as much water. If the liquid does not become milky the sample is not genuine. If the solution remains perfectly clear on the addition of the water, or is slightly turbid only, the extract is of very poor quality. When buying lemon extract, shake vigorously. If the foam does not disappear immediately the extract is not genuine.

Vanilla Extract.—Extract of vanilla, if genuine, is made by exhausting vanilla beans with alcohol. Frequently Tonka beans are in part or wholly substituted for the vanilla beans. The coloring matter in the artificial extract is usually caramel, burnt sugar, or prune juice, and artificial vanillin is added to strengthen the ordinary product. To detect caramel, shake the bottle containing the extract, and observe the foam on the top of the liquid. If the extract is pure the foam is colorless and persists; but if caramel has been added, there is a brownish color at the point of contact of the bubbles until the last bubble disappears.

As pure extract of vanilla contains considerable resin, which is held in solution by the alcohol, a test may be made for this as follows: Evaporate about two tablespoonfuls of the extract in a sauce-dish placed over a teakettle of boiling water. When one-third of the liquid has evaporated off, pour the residue into a tumbler and dilute with water to the original volume. If the liquid is turbid, and the resin separates as a brownish substance, the extract is probably genuine. If, on the other hand, the liquid remains clear after dilution, though of course of a brown color, this indicates that it is artificial.

Vinegar.—Vinegar is usually made

from cider, wine, malt, or spirits. Much of the so-called "white wine vinegar" is made from spirits of alcohol. One method of detecting the source of a vinegar is to rinse out a tumbler with the sample and allow it to stand over night. The odor of the residue will enable one who is accustomed to these odors to detect the source of the vinegar. Another method is to evaporate some of the vinegar in a tea saucer over a teakettle of boiling water. The odor and taste of the residue left in the saucer are characteristic. From spirit vinegar the residue is very small in quantity and practically odorless.

To detect the addition of caramel to vinegar, add about two teaspoonfuls of fuller's earth to two ounces of vinegar, in a tall bottle of about five ounces' capacity. Shake vigorously, allow to stand a half hour, and filter. The first part of the filtrate should be poured through the filter a second time. Compare the color of this filtrate with the color of a sample of the vinegar which has not been filtered. This may be conveniently poured into another bottle of the same size as that containing the filtered sample. If the coloring matter is largely removed by filtration, this indicates that the sample has been colored with caramel.

Sulphuric Acid has often been used as an adulterant of vinegar. To detect it, moisten a lump of sugar with the suspected vinegar and place on a saucer. Place a second piece of sugar moistened with water on a second saucer, and put the two into a warm (not hot) oven. If the sugar moistened with the vinegar becomes brown to black after a short time, while the second piece remains white, the presence of sulphuric acid is indicated.

Sugar; Honey.—Artificial honey is sometimes made by the use of common sugar and glucose, which is flavored to resemble the natural product. To detect the latter, add to a somewhat dilute solution of honey at least an equal volume of alcohol and stir. The production of a white precipitate of dextrose, which finally settles to the bottom of the glass, indi-

cates the presence of glucose. This test may also be applied to a solution of candy. Glucose is not, however, properly considered an adulterant in candy.

To detect starch in candy, boil some of the solution, and after cooling add a few drops of a tincture of iodine. The production of an intense blue color indicates starch. White sugar, especially granulated, before the passage of the pure food laws, usually contained a little blue coloring matter, such as ultramarine. This may be detected by making a strong solution of sugar in a tumbler and allowing it to stand for several days. The blue coloring matter will finally settle to the bottom of the glass. If saccharin is added to candy or a food product, it may be detected by the test given under "Canned Vegetables."

Spices and Condiments.—Spices, especially those which are ground, are very often adulterated. If a sample has not a strong spicy odor and taste, this is an indication of adulteration. Coconut shells, prune pits and inert materials are often used as adulterants, but starchy substances are also extensively used. But observe that many spices also naturally contain starch. This is not the case, however, with cloves, mustard, and cayenne. Hence these may be tested for starch as follows: Stir a half-teaspoonful of the spice into half a cup of boiling water, and heat in a pan of water on the stove for a few minutes. Cool the mixture, and dilute with water so that the solution shall not be very strongly colored. Add a few drops of tincture of iodine. The production of a blue color indicates starch.

To test for turmeric,—a vegetable coloring matter in ground mustard—digest some of the sample with alcohol, and after a short time dip a piece of white filter-paper in the mixture. If the paper is colored a bright yellow turmeric is probably present.

BAKING CHEMICALS

Baking Powder.—As the statement that appears on the label of a bak-

ing powder can is often deceptive, it may be of interest to prove whether a sample contains alum or not. To test for alum, make a fresh extract of logwood, either from the chips or the solid extract, by treating with water and pouring away the first and second extracts. Use the third extract obtained and allow it to settle. Place two teaspoonfuls of baking powder in a teacup and add to it four teaspoonfuls of cold water. With a medicine-dropper add twenty drops of extract of logwood to the mixture and stir with a splinter. Place the teacup in a pan of hot water on the stove and examine the color after two hours. If the baking powder contains alum, or a compound of aluminum, a distinct lavender color will be produced, but if this substance is not present in the sample, only a dirty brown or pink color will appear. It is well to make a test at first on samples of known composition, so as to recognize the colors accurately.

Cream of Tartar.—The cream of tartar on the market is frequently adulterated with acid calcium phosphate, alum, and even plaster, and starch. A simple test to determine the purity of the sample is to stir one level teaspoonful of it into a cupful of boiling water. Pure cream of tartar will dissolve completely, but many of the adulterants will only partially dissolve. The solution may then be poured into a tumbler that has been previously warmed. When cold, the cream of tartar will crystallize out in very characteristic crystals. To detect starch, add to a little of the cooled solution a few drops of tincture of iodine. The production of a blue color indicates that starch or flour is present.

TEA AND COFFEE

There is hardly any adulterated tea on the market, although there are some very poor grades and there may be too much "tea siftings" in the sample. Ground coffee is very often adulterated. Some simple tests for adulterants may be made. If ground coffee is dropped into a glass of

cold water, the genuine coffee will float, and will not discolor the water for several minutes. Most of the adulterants sink to the bottom and leave a brown trail in the water. But little coffee is contained in the so-called "coffee substitutes." The proportion of coffee in a sample may be ascertained approximately by dropping it into cold water, as very few coffee substitutes will float.

Many of the substitutes are of a starchy nature. Starch may be tested for in the ordinary infusion prepared for the table, when cold, by diluting it until it is not too strongly colored, and then testing by tincture of iodine. (See test under "Sugar.")

DAIRY PRODUCTS

Milk, butter, ice cream and cheese are frequently adulterated. Milk is adulterated by adding water, coloring matters and preservatives. When water is added to milk, it changes the natural color, and the milk becomes bluish-white. If a yellow coal-tar dye has been added to the milk to restore the natural color when watered, this may be detected by adding an equal quantity of strong hydrochloric acid to a sample of the milk and afterwards heating. A pink coloration indicates the presence of the dye.

Another test is to allow the milk to stand in a tumbler for about twelve hours, or until the cream rises, and notice the color of the cream and of the milk layer. If the lower layer is of a yellow color, about the same as that of the cream, an artificial color is indicated.

To detect annatto, a yellow coloring matter, stir some washing soda into the milk, and after standing a few minutes filter through filter paper. Then wash the milk off the paper, and if annatto is present the paper is colored yellow to orange.

If the milk does not turn sour in the usual time, the presence of a preservative is indicated. Baking soda is sometimes added to correct the acid of the milk. If an appreciable quantity of this substance has

been used, the milk, after standing a few hours, will have a slightly alkaline reaction; that is, it will change a piece of yellow turmeric paper to an orange-red color.

Formaldehyde.— Other preservatives are sometimes used, but that which is the most common is formaldehyde or formalin, because a little goes a long way as a preservative. To detect this substance, place four tablespoonfuls of the sample in a teacup, with an equal quantity of strong hydrochloric acid and a piece of ferric alum about the size of the head of a pin. After mixing, by giving the contents of the cup a rotary motion, place the cup in a pan of boiling water on the stove, and allow to stand for five minutes. If formaldehyde is present, the mixture will be of a purple color. A similar test may be made for formaldehyde in ice cream, although if starch is present in the cream this may modify the shade of the purple.

Butter.— The substitutes for genuine butter are "process" or "renovated" butter, and oleomargarin or "butterine." Process butter is made by treating old or rancid butter by melting, skimming and allowing the brine and curd to sink to the bottom, whence it is drawn off. Air is then blown through the melted butter-fat, and the product is churned with milk or cream. Oleomargarin is made from various mixtures of oleo-oil, cottonseed-oil, neutral lard and milk or butter. It should always be sold under its true name.

The spoon test may be used to distinguish fresh butter from renovated butter and oleomargarin. A lump of butter the size of a hickory nut is placed on a large iron spoon and heated over the flame of a small kerosene or alcohol lamp or over a gas flame. Fresh butter will melt quietly, with many small bubbles throughout the mass, which produce much foam; oleomargarin or process butter will splutter and crackle, like hot fat containing water, and produce but little foam.

To make the "milk test," as it is called, place about two ounces of sweet milk in a wide-mouthed bot-

tle, which is set in a pan of boiling water on the stove. When the milk is hot, add a teaspoonful of butter, and stir with a splinter until the fat is melted. Place the bottle in a pan of ice water and stir continually while the fat is solidifying. If the sample is butter, either fresh or renovated, it will solidify in a granular condition and be distributed through the milk in small granular particles. If, on the other hand, the sample is oleomargarin, it solidifies practically in a single lump, so that it may be lifted from the bottle with a stirrer.

Eggs.— Probably the best method for testing the freshness of eggs is the time-honored one of candling. The egg is held between the eye and a bright light. A fresh egg shows a perfectly uniform rose-colored tint, while if not fresh there will be numerous dark spots.

In packed eggs there is a tendency for the white and yolk to slightly intermingle along the line of contact. Packed eggs also are apt to adhere to the shell on one side. If eggs have been in a nest for any length of time they are smooth and glossy and the appearance is entirely different from the dull, rough surface of fresh eggs.

MEAT PRODUCTS

The preservatives most commonly used in meat products are borax, boric acid and sodium sulphite. The latter chemical also develops a bright red color in the meat in imitation of the natural red of fresh cut meat. If the meat keeps an exceptionally long time without a tendency to spoil, or if it retains its red color, the presence of preservatives may be suspected.

The method of testing for borax, which has already been described under "Canned Vegetables," may be used in testing meat products. The meat must be finely divided, and should be warmed with water for some time, then the liquid which is filtered off should be tested. To test for sulphites, see process described under "Canned Vegetables."

Sausages.—The principal adulteration of sausages, in addition to the introduction of inedible meats into the product, is the addition of starch. This is added as a “filler” to allow the incorporation of more fat and water and on the ground that it prevents shrinkage when fried. It should be remembered in this connection,

however, that starch is cheaper than meat. To detect this adulteration boil the sausage in water, pour the resulting liquid into a teacup and allow it to cool thoroughly. Then take out some of the liquid below the fat with a dropper, and test with tincture of iodine for starch as described under “Jams and Jellies.”

CHAPTER II

HOUSEHOLD WEIGHTS AND MEASURES

PRINCIPLES OF MEASUREMENT—TABLE OF WEIGHTS AND MEASURES—TIME REQUIRED FOR COOKING—COOK'S COMPLETE TIME TABLE.

The uniform accuracy of results obtained by professional cooks, bakers, and caterers is due, in great degree, to the fact that the measurement of ingredients called for by their recipes is accurately determined by weight, and the temperature of their ovens is definitely ascertained by means of the thermometer. Thus the conditions surrounding the food cooked are made identical, and uniformity in the product necessarily follows. Any cook can obtain similar results by like means, and a good pair of scales in the kitchen may be regarded as one of the marks of a good housekeeper. There are numerous occasions when the use of scales is necessary, and there is no question but that measurement by weight could be advantageously made use of far oftener than is usually done at present.

As long as the housewife is content to measure rather than to weigh she will have to expect her products to be lacking in uniformity for no two people measure exactly alike and probably no one person measures twice in the same way. But if measurements are to be persistently used, it is necessary that the housewife shall take as many precautions as possible toward attaining a reasonable degree of accuracy in her work.

All dry ingredients, such as flour, meal, confectioner's and powdered sugar, should be sifted before measuring. Mustard, baking powder, cream of tartar, soda, salt, and spices should be stirred to lighten and free them from lumps. To dip a measuring cup into flour or other dry material

in order to fill it and then to shake the cup to level its contents, condenses or packs the flour and causes the cup to contain more than the recipe calls for. The material should be added tablespoonful by tablespoonful, taking care not to shake the cup until the cup is well filled. The contents should then be leveled by means of a case knife.

All ingredients, measured by the tablespoonful or teaspoonful, are measured level unless otherwise stated. To measure a spoonful, fill the spoon and level it with the back of a case knife. For a half spoonful, first measure a spoonful, then divide it in halves, lengthwise, with a thin knife blade. To measure a quarter spoonful, first measure a half spoonful and divide it crosswise, a little nearer the back than the point of the spoon, to allow for its curvature. This is equivalent to one saltspoonful. Butter, lard, and other solid fats are measured by packing them solidly into the spoon or cup and leveling with a knife. Butter should be measured before melting, unless melted butter is stated in the recipe, in which case it should be measured after melting.

A cup which holds half a pint, is the common standard of domestic measure. This cup has straight sides divided into fourths and thirds. It may be obtained at any good 5- and 10-cent store or mail-order establishment.

The following are tables of measurements, all measurements being level.

3 teaspoons equal.....1 tablespoon
 16 tablespoons equal1 cup
 2 cups equal.....1 pint
 2 pints equal1 quart
 4 quarts equal1 gallon

Weight of food stuffs used in cookery.—The following is an approximate comparative list of the bulk and weight of different articles of common domestic use. These will be found to vary slightly, but are as accurate as can be given and have been proved by experience to be sufficiently correct for all practical purposes.

TABLE OF WEIGHTS AND MEASURES

ARTICLES	QUANTITY	WEIGHT
Almonds (shelled)	1 cup	5 oz.
Barley	1 tablespoon	$\frac{1}{2}$ oz.
Barley	1 cup	7 oz.
Beans (dried)	1 cup	7 oz.
Bread crumbs, fine	1 cup	2 oz.
Butter	1 tablespoon	$\frac{1}{2}$ oz.
Butter	1 cup	9 oz.
Cheese (grated)	1 cup	$3\frac{3}{4}$ oz.
Citron (chopped)	1 cup	7 oz.
Cocoa	1 cup	$4\frac{1}{2}$ oz.
Coffee (unground)	1 cup	3.5 oz.
Coffee (ground)	1 tablespoon	$\frac{1}{4}$ oz.
Corn meal	1 cup	$\frac{1}{2}$ lb.
Corn meal	1 tablespoon	$\frac{1}{8}$ oz.
Cornstarch	1 cup	5 oz.
Currants (clean and dried)	1 cup	$5\frac{1}{2}$ oz.
Dates	1 cup	$5\frac{3}{4}$ oz.
Eggs (with shells)	8	1 lb.
Eggs (without shells)	9	1 lb.
Egg (white)	1	$\frac{3}{8}$ oz.
Egg (yolk)	1	$\frac{3}{8}$ oz.
Farina	1 cup	6 oz.
Figs	1 cup	6 oz.
Flour	1 tablespoon	$\frac{1}{4}$ oz.
Flour	1 cup	4 oz.
Lard	1 cup	7 oz.
Lard	1 tablespoon	$\frac{1}{2}$ oz.
Meat (chopped fine)	1 cup	8 oz.
Milk	1 tablespoon	$\frac{1}{2}$ oz.
Milk	1 cup	$8\frac{1}{4}$ oz.
Molasses	1 cup	11 oz.
Mustard (dry)	1 tablespoon	$\frac{1}{4}$ oz.

ARTICLES	QUANTITY	WEIGHT
Mustard (dry)	1 cup	3.5 oz.
Nutmegs (whole)	5	1 oz.
Nutmegs (ground)	1 tablespoon	$\frac{1}{4}$ oz.
Oats (rolled)	1 cup	$2\frac{3}{4}$ oz.
Peanuts (shelled)	1 cup	$6\frac{1}{4}$ oz.
Peas (dried, split)	1 cup	7 oz.
Prunes	1 cup	5 oz.
Prunes	3 med'm-siz'd	1 oz.
Raisins (seeded)	1 cup	5 oz.
Rice	1 cup	$7\frac{1}{2}$ oz.
Salt	1 cup	$9\frac{1}{2}$ oz.
Spice (ground)	1 tablespoon	$\frac{1}{4}$ oz.
Sugar (brown)	1 cup	6 oz.
Sugar (crystal domino)	4 lumps	1 oz.
Sugar (confectioners')	1 cup	$5\frac{1}{2}$ oz.
Sugar (granulated)	1 cup	8 oz.
Sugar (granulated)	1 tablespoon	$\frac{1}{2}$ oz.
Tapioca	1 cup	6 oz.
Tea	1 cup	2 oz.
Vinegar	1 cup	8 oz.
Walnuts (shelled)	1 cup	4 oz.
Water	1 cup	8 oz.
Wheat biscuit (shredded)	1	1 oz.

TIME REQUIRED FOR COOKERY

"How long is it necessary to cook this article?" is a question not easily answered because so many factors enter into the problem. There is much variation in the size of the product; its age; the amount of moisture it contains, dependent upon conditions of its growth; its tenderness or toughness; the texture of its fibers, etc.

The best of time tables therefore can simply act as a guide to the intelligent housewife who must temper its directions by her own experience.

Closely allied to the matter of time for cooking is the consideration of the temperature which should be applied to various food materials. One might almost say that all the problems of cookery would be solved if we could know more definitely than

we do at present the exact temperature to which each food should be subjected and the exact length of time to maintain it at that temperature. Our knowledge to-day is very incomplete on these matters, and investigations of time and temperature are continually being carried on in cook-

ery laboratories. Until the subject of cookery has become better standardized such tables as the following will undoubtedly be an aid to the housewife. The time will come when their place will be taken by much more definite and reliable information.

COOK'S COMPLETE TIME TABLE

Vegetables

ARTICLE	HOW COOKED	TIME
Artichokes, globe	Boiled	30 to 45 minutes
Artichokes, Jerusalem	Boiled	15 to 30 minutes
Asparagus	Boiled	15 to 30 minutes
Beans	Baked	6 to 8 hours or more
Beans, Lima	Boiled	30 to 40 minutes
Beans, string or shell, young	Boiled	1 to 2 hours
Beans, string or shell, old	Boiled	2 to 4 hours
Beets, new	Boiled	45 to 60 minutes
Beets, old	Boiled	4 to 6 hours
Beet Greens	Boiled	1 hour or longer
Brussels sprouts	Boiled	15 to 25 minutes
Cabbage	Boiled	30 to 80 minutes
Carrots, young	Boiled	20 to 30 minutes
Carrots, old	Boiled	1 hour, or longer
Cauliflower	Boiled	20 to 30 minutes
Celery	Boiled	2 hrs. or longer
Corn, green, on cob	Boiled	12 to 20 minutes
Dandelion Greens	Boiled	1½ hours
Kohl-rabi	Boiled	20 to 30 minutes
Lentils	Boiled	2 hours or more
Lettuce	Steamed	10 to 15 minutes
Mushrooms	Stewed	25 minutes
Okra	Boiled	30 to 45 minutes
Onions, young	Boiled	30 to 60 minutes
Onions, old	Boiled	2 hours or more
Oyster Plant	Boiled	45 to 60 minutes
Parsnips	Boiled	30 to 45 minutes
Peas, green, young	Boiled	15 to 30 minutes
Peas, green, old	Boiled	30 to 60 minutes
Potatoes, new	Baked	25 to 45 minutes
Potatoes, old,	Baked	30 to 60 minutes
Potatoes,	Boiled	20 to 30 minutes
Potatoes, raw	Fried	4 to 8 minutes
Potatoes, cooked	Fried	3 to 7 minutes
Potatoes, sweet	Boiled	15 to 25 minutes
Potatoes, sweet	Baked	45 to 60 minutes
Pumpkin	Stewed	4 to 5 hours
Rice	Boiled	25 to 35 minutes
Rice	Steamed	40 to 60 minutes
Salsify	Boiled	45 to 60 minutes
Sea Kale	Boiled	30 to 40 minutes
Spinach	Boiled	15 to 20 minutes
Squash, summer	Boiled	20 to 30 minutes
Squash, winter	Boiled	1 hour

ARTICLE	HOW COOKED	TIME
Tomatoes	Baked	25 to 40 minutes
Tomatoes	Stewed	15 to 20 minutes
Turnips, young	Boiled	15 to 20 minutes
Turnips, old	Boiled	30 to 45 minutes

Bread, Pastries, Puddings, Etc.

Biscuits (baking powder)	Baked	12 to 15 minutes
Bread (white loaf)	Baked	45 to 60 minutes
Bread (Graham loaf)	Baked	35 to 60 minutes
Brown Bread	Steamed	3 hours
Cake, fruit	Baked	2 to 3 hours
Cake, layer	Baked	20 to 30 minutes
Cake, loaf, small	Baked	25 to 40 minutes
Cake, loaf, medium or large	Baked	35 to 90 minutes
Cake, sponge	Baked	45 to 60 minutes
Cake, wedding	Baked	3 hours
Cookies	Baked	8 to 15 minutes
Custards, small or in cups	Baked	20 to 35 minutes
Custards, large	Baked	35 to 65 minutes
Doughnuts	Fried	3 to 5 minutes
Fritters	Fried	3 to 5 minutes
Gingerbread	Baked	20 to 30 minutes
Graham Gems	Baked	25 to 35 minutes
Macaroni	Boiled	20 to 50 minutes
Muffins, baking powder	Baked	20 to 25 minutes
Muffins, raised	Baked	30 minutes
Patties	Baked	20 to 25 minutes
Pie Crust	Baked	30 to 45 minutes
Pies	Baked	30 to 50 minutes
Puddings, batter	Baked	35 to 45 minutes
Puddings, bread	Baked	45 to 60 minutes
Pudding, Indian	Baked	2 to 3 hours
Pudding, steamed	Steamed	1 to 3 hours
Pudding, plum	Baked	2 to 3 hours
Pudding, rice	Baked	45 to 60 minutes
Pudding, tapioca	Baked	45 to 60 minutes
Rolls	Baked	12 to 25 minutes
Scalloped and au Gratin		
Dishes (cooked mixtures)	Baked	12 to 20 minutes
Tarts	Baked	15 to 20 minutes
Timbales	Baked	20 minutes

Sea Foods

Clams	Boiled	3 to 5 minutes
Fish, Shad, Bluefish and Whitefish	Broiled	15 to 30 minutes
Fish, Slices of Halibut, Salmon or Swordfish	Broiled	12 to 15 minutes
Fish, Codfish and Haddock, per pound	Boiled	6 minutes
Fish, Halibut, whole or thick piece, per pound	Boiled	15 minutes
Fish, Bluefish and Bass, per pound	Boiled	10 minutes

ARTICLE	HOW COOKED	TIME
Fish, Salmon, whole or thick cut, per pound	Boiled	10 to 15 minutes
Fish, small	Boiled	6 to 10 minutes
Fish, small	Broiled	5 to 8 minutes
Fish, whole, as bluefish, salmon, etc.	Baked	1 hour or more
Small fish and fillets	Baked	20 to 30 minutes
Lobsters	Boiled	25 to 45 minutes
Oysters	Boiled	3 to 5 minutes

Game and Poultry

Birds, game, small	Roasted	15 to 20 minutes
Chicken spring	Broiled	20 minutes
Chicken, per pound	Roasted	15 or more minutes
Chicken, 3 pounds	Boiled	1 to 1½ hours
Duck (domestic)	Roasted	1 hour or more
Duck (wild)	Roasted	15 to 30 minutes
Fowl, 4 to 5 pounds	Boiled	2 to 4 hours
Fowl, per pound	Roasted	50 to 45 minutes
Goose, 8 to 10 pounds	Roasted	2 hours or more
Grouse	Roasted	25 to 30 minutes
Partridge	Roasted	45 to 50 minutes
Pigeons (potted)	Baked	3 hours
Quails	Broiled	8 to 10 minutes
Quails, in paper cases	Broiled	10 to 12 minutes
Rabbit	Roasted	30 to 45 minutes
Squabs	Broiled	10 to 12 minutes
Turkey, 8 to 10 pounds	Roasted	3 hours
Turkey, 9 pounds	Boiled	2 to 3 hours
Venison, rare, per pound	Roasted	10 minutes

Beef, Pork, Lamb, Mutton, Veal, Etc.

Bacon	Broiled	7 minutes
Bacon	Cooked in oven	15 minutes
Beef, corned, rib or flank	Boiled	4 to 7 hours
Beef, corned, fancy brisket	Boiled	5 to 8 hours
Beef, fillet, rare	Roasted	20 to 30 minutes
Beef, fresh	Boiled	4 to 6 hours
Beef, ribs or loin, rare per pound	Roasted	8 to 10 minutes
Beef, ribs or loin, well done, per pound	Roasted	12 to 16 minutes
Beef, ribs, rolled, rare, per pound	Roasted	10 to 13 minutes
Beef, ribs, rolled, well done, per pound	Roasted	15 to 19 minutes
Beef, rump, rare, per pound	Roasted	9 to 10 minutes
Beef, rump, well done, per pound	Roasted	13 to 15 minutes
Chops, breaded	Fried	5 to 8 minutes
Chops, Lamb or Mutton	Broiled	6 to 10 minutes
Croquettes	Fried	1 to 2 minutes
Ham, 12 to 14 pounds	Boiled	4 to 6 hours
Ham, 12 to 14 pounds	Baked	4 to 6 hours
Lamb, well done, per pound	Roasted	18 to 21 minutes

ARTICLE	HOW COOKED	TIME
Liver	Broiled	4 to 8 minutes
Liver	Braised	2 hours
Liver, whole, stuffed	Baked	1½ hours
Meat, for bouillon	Simmer	6 or 7 hours
Mutton, leg or shoulder	Boiled	3½ to 5 hours
Mutton, leg, rare, per pound	Roasted	10 minutes
Mutton, leg, well done, per pound	Roasted	14 minutes
Mutton, saddle, rare per pound	Roasted	9 minutes
Mutton, forequarter, stuffed, per pound	Roasted	15 to 25 minutes
Mutton, loin, rare, per pound	Roasted	9 minutes
Ox Tongue	Boiled	3 to 4 hours
Pork, per pound	Roasted	25 to 30 minutes
Steak, 1 inch thick	Broiled	4 to 10 minutes
Steak, 1½ inches thick	Broiled	8 to 15 minutes
Veal, well done, per pound	Roasted	18 to 25 minutes
Veal, leg	Roasted	3½ to 4 hours
Veal, loin	Roasted	2 to 3 hours

TABLE OF PROPORTIONS

The following are the proportions which are advocated by almost all of the leading authorities on cooking and which are exemplified in most standard recipes:

Baking powder, for biscuits and muffins	2	teaspoons to 1 cup flour
Batters, pour	1	cup liquid to 1 cup flour
Batters, drop	1	cup liquid to 2 cups flour
Bread, yeast	1	cup liquid to 3 cups flour
Cake, plain	1	teaspoonful flavoring extract to one loaf
Cream of Tartar	2½	teaspoons to 1 teaspoon soda
Custard	4	eggs to 1 quart milk (cup custard baked)
Custard, baked, molded	6	to 8 eggs to 1 quart milk
Custard, baked	½	cup sugar to 1 quart milk
Custard, boiled	3	egg yolks to 1 quart milk
Farina	1	cup farina to four cups water
Flavoring extract	1	teaspoon to 1 quart of custard, or cream
Flavoring extract	1	tablespoonful to 1 quart of mixture to be frozen
Meat, for soup stock	1	pound meat, fat and bone to 1 pint water
Gelatine	1	oz. to 1 quart of liquid
Rice (steamed)	1	cup to 3 cups water
Salt	¼	teaspoonful to 1 pint flour
Salt	¼	teaspoonful to 1 quart milk for custards
Soda	1	teaspoonful to 1 pint thick, sour milk
Soda	1	teaspoonful to 1 cup of molasses
Sauce	¼	or 1 cup sauce to 1 cup cooked meat or fish, cut in cubes
Sauce	2	tablespoonfuls of butter, and 2 tablespoonfuls of flour to one cup liquid.

CHAPTER III

MENUS AND MENU MAKING

PRINCIPLES OF MENU MAKING—TWO WEEKS IN APRIL—
VEGETARIAN WEEK IN APRIL—LUNCHEON OR SUPPER IN
APRIL—TWO WEEKS IN JUNE—MENUS FOR ENTERTAIN-
MENTS—SUGGESTIONS FOR PORCH ENTERTAINMENTS—
DIET FOR SCHOOL CHILDREN, FIVE TO SIX YEARS OF AGE—
DIET FOR ADOLESCENT CHILDREN—MENUS FOR SCHOOL
LUNCH BOXES.

PRINCIPLES OF MENU MAKING

One of the most important duties of the housewife is her daily menu, and in order to have the three meals each day attractive and nutritious, she must give careful thought to several fundamental considerations.

From the standpoint of nutrition the question what foods may properly be combined is of first importance for each meal should be made up of foods which balance each other; that is, it must contain all the food elements that are necessary for life. That part of food which supplies nourishment and repairs waste protein is found in meat, fish, eggs, and cheese; hence these foods should be used interchangeably, rather than together. Bread, potatoes, sweet desserts, butter, fat of meat, and olive oil (carbohydrates and fats) supply energy and heat to the body; while vegetables supply the necessary mineral matter. When green vegetables are used as a salad, double nourishment is given since the olive oil used in the dressing supplies additional fuel value.

The selection of a well-balanced menu may be much facilitated by reference to the food maps, the nature and use of which is elsewhere explained and illustrated.

In health, a combination of foods in a menu which are pleasing to the

eye, and which "taste good," is a safe one to follow. But a menu becomes uninteresting and monotonous, however attractive and appetizing the individual dishes may be, when it contains several dishes which possess the same general characteristics. Even repetition of flavors should be avoided in planning a menu, for instance, tomato soup and tomato salad should not be served at the same meal. For example, the first menu given below would leave the family with a decidedly neutral taste and a feeling of dissatisfaction; but if it were changed according to suggestions given in the second, a more pleasing result would follow.

Menu I

Cream of Potato Soup
Boiled Fish Mashed Potatoes
 Creamed Lima Beans
 Baked Custard

Menu II

Tomato Soup
Boiled Fish with Hollandaise Sauce
Fried Potatoes Spinach
 Fruit Pudding

No doubt the cost of food is increasing, but do we ever stop to consider that poor planning and waste

of materials are responsible for much of the "high cost"? The efficient housewife plans a weekly rather than a daily menu, and intelligently distributes the money allowed for food among the seven days. She plans for each day some attractive new dish, takes care that left overs do not accumulate and purchases perishable food when it can be used immediately. She watches closely the market and always gives the preference to seasonal foods; for when food is out of season it adds greatly to the meal budget.

By planning ahead the housewife can also distribute the different processes of cookery so that the oven will not be called upon to prepare all the food, in one meal, while, at the next, the oven will be empty and the upper part of the stove filled with surface cooking. Then, too, the preparation of a well-planned meal composed partly of simple and partly of more elaborate dishes, is much less difficult, as it is almost impossible for one person, no matter how willing, to prepare several intricate courses for the same meal. This last point is especially important to the woman who entertains without the assistance of a cook or maid. For the hostess should never be so rushed and tired at the moment of serving that her family are distressed or guests embarrassed.

The choice of food should also be influenced by the ages and occupations of the various members of the family. Particular consideration should be given to each member, and special food provided for the young, growing child, the elderly person, the student, and the man who works in the open air. For example, a light, delicate omelet would satisfy an elderly person, but it would not give enough energy to a hard working man. Griddle cakes might interfere with a student's digestion, since his sedentary work affords little opportunity for physical exercise.

The psychology of æsthetic appeal is another interesting phase of menu planning. Mere food as such is a negative consideration to many peo-

ple, and food is often served in such fashion as to destroy appetite, but when it is served in some unusually attractive shape, or is artistically garnished in harmonious colors, a touch of the æsthetic is added which, like the delicate aromas of well-cooked viands, stimulates the appetite. Physicians realize the importance of this kind of appeal, and skillful nurses habitually avail themselves of it. An invalid can often be won over by a few flowers placed on the tray who could not be tempted by the food alone.

In the menus which follow, seasonal food has been chosen, and the use of left-overs from day to day considered. The luncheon and supper menus given can be used interchangeably, with perhaps the addition of a more substantial hot dish for supper.

With the April menus, one or two suitable for entertaining at luncheon or supper are added. June being the month for weddings, suggestions for a wedding breakfast, an evening reception, and a luncheon are offered. August, or, in fact, any of the summer months, make porch teas and suppers possible. Four menus are therefore given suitable for such entertainment.

The school lunch box is important, since it is of supreme importance that the child be furnished with food which satisfies as well as nourishes. Hence several suitable combinations for such menus are suggested.

The menus for the formal dinners have all been tested, having been prepared and served and have been found to be satisfactory.

TWO WEEKS IN APRIL

Menu for Sunday.

<i>Breakfast</i>	
Stewed Rhubarb	
Rice Griddle Cakes	
Sausages	Coffee
<i>Supper</i>	
Sardines	
Lettuce Sandwiches	
Cocoa	Cake

Dinner

Clear Soup with Macaroni
 Roast Chicken Dry Bread Stuffing
 Boiled Rice Scalloped Onions
 Cranberry or some tart Jelly
 Caramel Ice Cream
 Cake Black Coffee

Menu for Monday.

Breakfast

Hominy with Cream
 Date Muffins Coffee

Luncheon

Cream of Onion Soup
 Toasted Bread
 Lettuce French Dressing
 Crackers Cream Cheese
 Tea

Dinner

Stuffed Shoulder of Lamb
 Macaroni with Tomato Sauce
 Canned Green String Beans
 Peach Meringue Pudding
 Black Coffee

Menu for Tuesday.

Breakfast

Sliced Oranges
 Scrambled Eggs with Bacon
 Corn Muffins
 Coffee

Luncheon

Cold Sliced Chicken
 (Left from Sunday)
 Rice Croquettes with Jelly
 Bread and Butter
 Orange Shortcake
 Tea

Dinner

Cream of Corn Soup
 Broiled Ham
 Potatoes au gratin Spinach
 Bread and Butter Pudding
 Lemon Sauce

Menu for Wednesday.

Breakfast

Wheat Cereal with Cream
 Minced Chicken on Toast
 Doughnuts Coffee

Luncheon

Scalloped Cheese
 Baked Apples
 Cookies Tea

Dinner

Mound of Lamb with Peas
 Fried Potatoes Stewed Tomatoes
 Lettuce Salad Cream Cheese
 Toasted Crackers Coffee
 Stuffed Dates

Menu for Thursday.

Breakfast

Fruit
 Fried Cereal
 Lamb Hash
 Coffee

Luncheon

Egg Salad Cooked Dressing
 Bread and Butter
 Sandwiches
 Tea Cake

Dinner

Braised Beef
 Baked Macaroni Fresh Rolls
 Vegetable Salad
 Apple Tapioca Pudding
 Coffee

Menu for Friday.

Breakfast

Corn Flakes and Cream
 "Boiled" Eggs Toast
 Coffee

Luncheon

Fish Chowder
 (Bones of Haddock)
 Crackers
 Prime Pudding

Dinner

Tomato Soup
 Haddock Fillets Stuffed and Baked
 Hollandaise Sauce
 Pickles Fried Potatoes
 Buttered Peas
 Bavarian Cream

Menu for Saturday.

Breakfast

Sliced Bananas and Cream
 Fresh Fish Hash
 (Fish left from Friday night)
 Plain Muffins Coffee

Luncheon

Cold Sliced Beef
Lettuce Salad
Warmred-over Muffins
Cocoa Cookies

Dinner

Baked Ham Spinach
Creamed Potatoes Cheese
Rhubarb Tarts
Coffee

Menu for Sunday.*Breakfast*

Grape Fruit
Fish Cakes
Corn Meal Muffins
Coffee

Supper

Tomato Rarebit Toast
Olives Stuffed Dates
Tea

Dinner

Vegetable Consommé
Baked Chickens
Cream of Celery Sauce
Fried Parsnips Currant Jelly
Sliced Tomato Salad
Peach Ice Cream (Canned Peaches)
Sponge Cake Coffee

Sunday Night Supper for Guests.

Jellied Chicken (Sauce Tartare) Rolls
Olives Welsh Rarebit Saltines
Orange Charlotte
Sponge Fingers
Coffee

VEGETARIAN WEEK IN APRIL**Menu for Monday.***Breakfast*

Grape Fruit
Fried Mush Poached Eggs
Coffee

Luncheon

Cheese Toast
Tomato Salad
Tea or Cocoa
Cake

Dinner

Cream of Corn Soup
Toasted Crackers
Roast of Green Peas
Carrot Timbales
French Fried Potatoes
Sliced Orange with Coconut
Sponge Cake

Menu for Tuesday.*Breakfast*

Baked Bananas
Cream of Wheat
Date Muffins Coffee

Luncheon

Egg Croquettes
Biscuits Cocoa
Gingerbread

Dinner

Cream of Tomato Soup Bread Sticks
Boiled Salmon Hollandaise Sauce
Green Peas (Canned)
Potato Croquettes
Ginger Ale and Fruit Salad
Cream Cheese Toasted Crackers
Coffee

Menu for Wednesday.*Breakfast*

Uncooked Cereal with Cream
Broiled Tomatoes on Cream Toast
Coffee

Luncheon

Salmon Croquettes
Hot Biscuits Cookies
Tea

Dinner

Soup Maigre
(Vegetable Soup without Stock)
Nut Loaf Tomato Sauce Rolls
Romanic Salad with Cream Cheese
Dressing
Caramel Custard
Coffee

Menu for Thursday.*Breakfast*

Stewed Prunes
Shirred Eggs Muffins
Coffee

Luncheon

Luncheon Cheese
Toast
Gingerbread Tea

Dinner

Stuffed Tomato Appetizer
Crab Meat Patties
Jellied Vegetables Fresh Rolls
Cold Pineapple Soufflé

Menu for Friday.

Breakfast

Cereal with Dates
Scrambled Eggs on Cream Toast
Coffee

Luncheon

Corn Fritters
Tomato Salad
Bread and Butter
Cocoa

Dinner

Tomato and Corn Soup
Toasted Crackers
Nut Croquettes Pimento Sauce
Boiled Rice
Dressed Lettuce
Caramel Ice Cream

LUNCHEON OR SUPPER IN APRIL

Suitable for Buffet Service

Chicken Broth Whipped Cream
Olives Bread Sticks
Halibut
(Creamed and Baked in Shells)
Vegetables in Aspic Jelly
Cold Sliced Tongue Rolls
Orange Ice Cream with Strawberry
Sauce
Cake Coffee

FIRST WEEK IN JUNE

Menu for Monday.

Breakfast

Oranges
Corn Meal Mush
Bacon Toast
Coffee

Lunch

Baked Bean Soup
Crisp Crackers
Lettuce and Cream
Cheese Salad
Rolls Cocoa

Dinner

Broiled Steak
Potato Cakes
Baked Stuffed Onions
Graham Bread Pickles
Cold Coffee Soufflé
Little Cakes

Menu for Tuesday.

Breakfast

Baked Bananas
Uncooked Cereal and Cream
"Boiled Eggs"
Hot Graham Rolls
Coffee

Lunch or Supper

Baked Hash with Peppers
Baking Powder Biscuit
Baked Custard

Dinner

Casserole of Chicken
Curried Rice Timbales
Asparagus Butter Sauce
Fresh Rolls
Rhubarb Pie

Menu for Wednesday.

Breakfast

Stewed Figs
Cooked Cereal
Toasted Muffins
Coffee

Lunch

Poached Eggs
Creamed Asparagus Tips
Nut Bread
Marmalade Tea

Dinner

Radishes
Cream of Chicken Broth
Baked Stuffed Shad
Fried Potato Balls
Cucumber and Lettuce Salad
Strawberry Shortcake
Coffee

Menu for Thursday.

Breakfast

Oatmeal and Cream
(Fireless Cooker)
Scrambled Eggs
Fresh Rolls Coffee

Lunch

Creamed Fish in Shells
Bread and Butter
Gingerbread
Tea

Dinner

Lamb Stew
Vegetables and Dumplings
Green String Beans
Apricot Pie Cheese
 Coffee

Menu for Friday.*Breakfast*

Oranges
Creamed Codfish
Baked Potatoes
Corn Bread Coffee

Lunch

Fish Chowder
Crackers Pickles
Prune Jelly
Cake Cocoa

Dinner

Clear Tomato Soup
with Rice
Scallops of Halibut
Hot Mayonnaise
French Fried Potatoes
Cucumber Salad
(Served with Fish)
Frozen Strawberries
Coffee

Menu for Saturday.*Breakfast*

Sliced Bananas
Fresh Fish Hash
(Fish left from dinner on Friday)
Baking Powder Biscuit
Coffee

Lunch

Tomato Cream Toast
Cold Tongue
(Canned)
Strawberries with Cream
Cookies Tea

Dinner

Cream of Pea Soup
Nut Loaf
Tomato Sauce
Spinach with Egg Rolls
Banana Puffs
Fruit Sauce

Menu for Sunday.*Breakfast*

Grape Fruit
Hominy with Cream
Fish Cakes and Bacon
Corn Muffins
Coffee

Dinner (Company)

Consommé Radishes
Baked Chicken
Rice Croquettes Jelly
Strawberry Bar-le-Duc
(Homemade)
Caramel Ice Cream
Chocolate Sauce
Coffee

Supper

Pineapple Salad
Cream Mayonnaise
Bread and Butter Sandwiches
Iced Chocolate

SECOND WEEK IN JUNE**Menu for Monday.***Breakfast*

Baked Prunes
Cooked Cereal with Cream
Popovers Coffee

Lunch

Minced Chicken on Toast
Bread and Butter
Cocoa Cookies

Dinner

Vegetable Soup
Corn Meal Sticks
Salmon Loaf Cream Sauce
and Peas
Rolls Sliced Cucumbers
Strawberries and Cream

Menu for Tuesday.*Breakfast*

Oranges
Plain Omelet
Graham Muffins
Coffee

Lunch

Fruit Salad
Peanut Butter Scones
Cocoa

Dinner

Casserole of Beef
Spinach with Egg
Boiled Rice
Caramel Bread Pudding
Coffee

Menu for Wednesday.

Breakfast

Stewed Figs
Cooked Cereal with Cream
Broiled Bacon
Toast Coffee

Lunch

Lima Beans baked with Red Peppers
Graham Bread and Butter
Strawberries
Tea

Dinner

Cream of Spinach Soup
Baked Ham
Buttered New Potatoes
Corn and Green Peppers
Mexican Style
Prune Whip Custard Sauce

Menu for Thursday.

Breakfast

Strawberries
Shirred Eggs
Muffins Coffee

Lunch

Beet and Lettuce Salad Mayonnaise
Graham Toast
Iced Cocoa

Dinner

Broiled Chops
Mashed Potatoes
Green Peas
Strawberry Sponge
Cake Coffee

Menu for Friday.

Breakfast

Hominy and Cream
Codfish Cakes
Corn Meal Muffins
Coffee

Lunch

Cold Ham with Potato Salad
Buttered Toast
Cocoa

Dinner

Tomato Soup without Stock
Toasted Crackers Radishes
Baked Stuffed Bluefish
Fried Potatoes Creamed Cucumbers
Lettuce Salad Cream Cheese
Toasted Wafers Coffee

Menu for Saturday.

Breakfast

Sliced Oranges
Creamed Ham on Toast
Rolls Coffee

Lunch

Scalloped Fish
Reheated Rolls
Gingerbread Tea

Dinner

Clam Soup Toasted Wafers
Braised Calf's Liver and Bacon
Stewed Potatoes
Broiled Tomatoes
Raspberry Shortcake
Coffee

Menu for Sunday.

Breakfast

Strawberries and Cream
Uncooked Cereal
Minced Liver on Toast
Hot Biscuits Coffee

Dinner

Chicken Soup with Rice
Boiled Salmon Hollandaise Sauce
New Potatoes with Parsley Butter
Green Peas
Lettuce and Cucumber Salad
Toasted Cheese Sandwiches
Frozen Fruit Cream
Coffee

Supper

Chicken Salad
Parker House Rolls
Olives Iced Tea

MENUS FOR ENTERTAINMENTS

There is no way in which a woman can entertain her friends more satisfactorily than by giving a well prepared luncheon or dinner, or an attractive tea or reception. The month of June in particular offers many occasions demanding such entertainments, for wedding breakfasts, luncheons for the "bride-to-be," and graduation teas and receptions are constantly occurring at this season.

The woman who does her own work, or who has but one maid—and there are many such—is the one for whom a part of these menus are prepared. The others require more preparation, but any of them can easily be cooked by two people in the kitchen, and served (if necessary) by waitresses hired by the hour.

The housekeeper in preparing these menus will gain much by systematizing her work. Such dishes as can be prepared in advance and left to stand should be considered first, then those which will require immediate service. The menu should be plainly written out upon a large sheet of paper and posted in some conspicuous place in the kitchen. All dishes required for service should be marked; those for hot food should be put in the warm oven, and those for cold food, in the ice box. The waitress will then be able to serve without confusion.

Menu for Wedding Breakfast.

Following is a simple menu for a wedding breakfast:

Strawberry Cocktail
 Veal and Sweetbread Croquettes
 Pimento Sauce
 Ripe Olives Small Hot Rolls
 Cold Sliced Ham
 Hearts of Lettuce
 with French Dressing
 Individual Cupid Soufflés
 Coffee with Cream and Sugar

A more elaborate menu might be the following:

Chicken Broth, Supreme, in cups
 Small Bread Sticks

Patties of Crab Meat and Mushrooms
 Broiled Lamb Chops
 Rolls New Peas
 Buttered Potato Balls
 Individual Strawberry Shortcakes
 French Cocoa
 Mints Salted Nuts

Menu for Bridal Luncheon.

For a bridal luncheon, the following menu can be served:

Strawberries, French Style
 Lobster à la Newburgh in Ramekins
 Broiled Spring Chicken
 Asparagus Salad Rolls
 Marron Ice Cream
 Bride's Cake Coffee

To prepare strawberries in the French style, large selected berries are washed or wiped, and the hulls left on. These are placed in a plate with a mound of powdered sugar in center.

Marrons are French chestnuts done in syrup and may be bought for different prices according to size of bottle. A sixty cent bottle would give enough for the ice cream for twenty people. Cut the chestnuts in small pieces, and add to the cream after it is frozen to a mush. Serve cream in glasses with a bit of beaten cream put through a pastry bag and tube on top, with one marron crowning the whole.

Menu for Evening Reception.

Clam Bouillon in Cups Wafers
 Jellied Chicken Asparagus Salad
 Tiny Baking Powder Biscuits Olives
 Olive and Lettuce Sandwiches
 Ice Cream Little Cakes
 Coffee Fruit Punch
 or
 Hot or Jellied Bouillon
 Small Brown Bread Sandwiches
 Fish in Shells
 Chicken Salad Rolls
 or
 Fruit Salad Sandwiches
 Ice Cream Cakes Coffee

FORMAL DINNER — FEBRUARY

Clear Tomato Soup Bread Sticks
 Olives Celery
 Halibut en Coquille
 (Creamed and Baked in Shells)
 Roast Lamb Currant Jelly Sauce
 Potato Croquettes Cauliflower
 Lettuce Cream Cheese Dressing
 Toasted Crackers
 Caramel Ice Cream
 Fancy Small Cakes
 Black Coffee
 Salted Nuts Mints

FORMAL DINNER — MAY

 Assorted Canapés
 Tomato Consommé Olives
 Steamed Fillet of Sole, Lobster Sauce
 Fried Potato Balls
 Dressed Cucumbers
 Fresh Asparagus Hollandaise Sauce
 Roasted Squabs Currant Jelly
 Watercress Salad
 Strawberry Coupe
 (Strawberry Ice, Vanilla Cream,
 Whipped Cream, Served in Glasses)
 Small Fancy Cakes Black Coffee
 Salted Nuts Mints

ONE WEEK IN AUGUST

Menu for Sunday.

Breakfast

Melon
 Baked Eggs
 Popovers Coffee

Dinner

Iced Fruit Juice
 (Served in Glasses)
 Roast Lamb Spanish Rice
 Stuffed Tomatoes
 Green Apple Pie and Ice Cream
 Coffee

Supper (Company)

Jellied Chicken
 Lettuce Sandwiches
 Iced Chocolate Cake

Menu for Monday.

Breakfast

Berries
 (Kind most Plentiful)
 Broiled Tomatoes on Cream Toast
 Coffee

Dinner

Cold Roast Lamb
 Potatoes au gratin
 Corn on Cob Shelled Beans
 Cucumber and Tomato Salad
 Boiled Custard in Glasses with
 Whipped Cream

Supper

Cream of Rice Soup
 Lamb Croquettes
 Hot Biscuits
 Tea (Iced or Hot)

Menu for Tuesday.

Breakfast

Corn Flakes with Cream
 Blueberry Muffins
 Coffee

Dinner

Cream of Cucumber Soup
 Hamburg Roll Brown Gravy
 Boiled Potatoes
 Mexican Corn
 Steamed Blueberry Pudding
 Vanilla Sauce (Liquid)

Supper

Meat and Tomato Pie
 Vegetable Salad
 Bread and Butter
 Raspberries and Cream

Menu for Wednesday.

Breakfast

Blackberries and Cream
 Omelet with Bacon
 Hot Rolls Coffee

Dinner

Tomato Soup (Without Stock)
 Crisp Crackers Pickles
 Broiled Bluefish
 Buttered New Potatoes
 Swiss Chard or Spinach
 Beet and Lettuce Salad
 Blackberry Roly-Poly

Supper

Salmon Salad
 Bread and Butter
 Gingerbread Whipped Cream
 Tea

Menu for Thursday.*Breakfast*

Cooked Cereal with Bananas
and Cream
Toast Coffee

Luncheon

Left over Bluefish
Creamed and served in shells
or Ramekin dishes
Brown Bread Toast
Cucumbers
Iced Cocoa

Dinner

Veal Cutlets Brown Gravy
Mashed Potatoes Shelled Beans
Corn on Cob
Lettuce and Tomato Salad
Blueberry Pie

Menu for Friday.*Breakfast*

Fruit
Corn Toast
Muffins Coffee

Dinner

Cream of Tomato Soup Croutons
Dressed Cucumbers

Broiled Fresh Mackerel
Lemon and Parsley Butter
Fried Potatoes Buttered Beets
Spanish Cream
Iced Tea or Coffee

Luncheon

Scalloped Corn and Veal Bread
Potato Cakes (Mashed Potato
Left Over)
Blueberry Muffins (Rich)
Tea

Menu for Saturday.*Breakfast*

Stewed Prunes
Corn Omelet
Popovers Coffee

Dinner

Ragout of Mutton with Farina Balls
Boiled Potatoes
Fried Tomatoes
Fruit Salad Cream Cheese
Crackers Coffee

Luncheon

Scotch Broth
Shrimp Salad Cucumbers
Biscuits
Berries and Cake

SUGGESTIONS FOR PORCH ENTERTAINMENTS

At a lawn party or porch tea much the same kind of refreshment is served as at an indoor reception. The following menus are simple, easily prepared, and may be served with the help only of daughter, friend, or maid. Arrange one, two or more small tables with flowers on each and the most attractive of linen, silver and china. The main course to be served may be arranged for on one table, with its service of silver and china. On the second, the beverages, with their service, may be arranged. On the third table may be placed the cakes, sandwiches and sweets. The frozen dessert may be served either from this or from a fourth table. The frappé in the first menu is served from a punch bowl into small glasses. This arrangement of the refreshments divides the service, each table being

presided over by some friend or member of the family, and only one helper behind the scenes is needed to replenish the foods and to assist in the service.

In menu No. 4, but one table is required, and the serving may be undertaken by the hostess alone. As all of the dishes served are chilled, the preparations may be completed early in the day. Instead of punch or frozen ices served separately, there is a new and decidedly attractive mode of service. Partially fill the punch bowl with punch, then in the center, and at the last moment, place the molded water ice. The water ice takes the place of plain ice, and mingles its flavors with the punch in a delightful way.

Frappé is a fruit water ice, frozen by using equal parts of salt and ice,

and is not so smooth as ice cream or sherbet. It is always served in glasses, sherbet or lemonade cups.

Menu No. 1

Cold Chicken and Ham, thinly sliced,
with slices alternating, and
garnished with Watercress
Cucumber Jelly and Tomato Salad
with Mayonnaise
Lettuce and Plain Sandwiches
Raspberry and Currant Frappé
Cakes Tea

Menu No. 2

Veal Loaf Hot Buttered Biscuits
Lettuce Sandwiches
Fruit Salad Cream Mayonnaise
Almond Sandwiches
Frozen Chocolate
with
Whipped Cream

Menu No. 3

Cold Tomato Bouillon
Chicken Salad
Assorted Sandwiches
French Vanilla Ice Cream with
Preserved Pineapple
Cakes Coffee (Hot or Iced)

Menu No. 4

Iced Chocolate Iced Tea
Small Cakes Plain and Sweet
Sandwiches

DIET FOR SCHOOL CHILDREN¹

The rapid development of mind and body in children during their school days demands liberal and wisely planned meals. Digestion and assimilation are more active at this period of childhood than at any other time during life, and as children grow older they require not only more food but a greater variety.

The child on first entering school often suffers from hunger and fatigue. His daily life is radically changed.

¹ The following valuable suggestions are offered by R. K. Bliss, director of home economics in Home Economics Bulletin No. 2, Iowa State College, Agricultural Extension Department.

He has certain prescribed times for work, and although this is not large in amount, more or less of a nervous strain is caused by the change in his daily habits. He must be properly fed for bodily growth, for energy at play, and for mental development.

A school lunch, if possible, should be provided at least once a day. If all the children from the kindergarten to the third grade were served in the middle of the forenoon, the children would suffer less from fatigue and could grasp their work with less mental effort. If all were served none would suffer from humiliation because of carrying a lunch to school. The parents could assist greatly in this matter if they would furnish such foods as crackers, bread or sandwiches for lunch, which, with a cup of milk, would provide an abundance.

The following daily menus are suggested:

MENUS FOR SCHOOL CHILD FROM FIVE TO SIX YEARS OF AGE

[NOTE.—This also illustrates type of meal for child of eight years, but the quantity of food must be increased.]

Menu for Monday.

Breakfast
Stewed Prunes
Oatmeal and Cream
Toast Milk

Lunch at School
Graham Crackers—buttered

Dinner
Pea Soup Croutons
Baked Potatoes Creamed Onions
Ginger Bread
Milk

Lunch After School
Bread and Butter Jam

Supper
Creamed Toast
Rice Pudding with Apples
Milk

Menu for Tuesday.*Breakfast*

Orange
 Cream of Wheat
 Toast Milk

Lunch at School

Whole Wheat Bread and Butter with
 Dates

Dinner

Potato Soup Butter
 Baked Potatoes
 Poached Egg on Toast Asparagus
 Baked Apple with Cream

Lunch After School

Glass of Milk Crackers

Supper

Peanut-butter Sandwiches
 Prune Whip Graham Crackers
 Milk

Menu for Wednesday.*Breakfast*

Raspberries
 Puffed Rice Cream
 Toast Milk

Lunch at School

Oatmeal Crackers Buttered

Dinner

Cream of Celery Soup
 Broiled Beefsteak Baked Potatoes
 Bread and Butter
 Sliced Peaches

Lunch After School

Graham Crackers Jelly

Supper

Rice with Dates
 Bread and Butter Milk

Menu for Thursday.*Breakfast*

Baked Apple
 Cracked Wheat
 Toast Milk

Lunch at School

Date Sandwiches

Dinner

Chicken Creamed Potatoes Lettuce
 Bread and Butter
 Baked Custard

Lunch After School

Bread and Butter Honey

Supper

Shredded Wheat Biscuit
 Prunes Ginger Cookies
 Milk

Menu for Friday.*Breakfast*

Cream of Wheat with Dates or Figs
 Soft Cooked Egg in the Shell
 Toast Milk

Lunch at School

Nut Bread Sandwich

Dinner

Creamed Codfish Baked Potatoes
 Butter Carrots
 Bread and Butter
 Fruit Gelatin Cream

Lunch After School

Fresh Fruit

Supper

Cream of Wheat
 Baked Pears Sponge Cake
 Milk

Menu for Saturday.*Breakfast*

Grape Fruit
 Oatmeal and Cream
 Wheat Muffins Milk

Lunch at Home

Puffed Wheat Milk

Dinner

Creamed Eggs Mashed Potatoes
 Boiled Onions Bread and Butter
 Apple Tapioca Milk

Lunch at Home

Graham Bread Jam

Supper
 Cream Soup
 Peaches
 Milk
 Cookies

Menu for Sunday.

Breakfast
 Strawberries
 Steamed Rice
 Toasted Graham Bread
 Milk
 Cream

Lunch at Home
 Bread and Butter
 Apple Sauce

Dinner
 Vegetable Soup
 Baked Chicken
 Creamed Asparagus
 Bread and Butter
 Ice Cream
 Mashed Potatoes
 Sponge Cake

Supper
 Bread and Butter
 Prune Sauce
 Oatmeal Cookies
 Milk

DIET FOR ADOLESCENT CHILDREN

While the study of food for the infant is a matter of prime importance, the study of foods for the adolescent can hardly be considered of less interest, since the foundation of physical inefficiency is so often laid during that period (from 13 to 16 years of age). There is no time in the whole life history of the individual during which there is more urgent need of the materials required to build up red blood. For this reason foods containing iron are most essential. This makes beef, eggs, raisins, prunes, spinach, and the various vegetables used for greens and salads of great importance in the diet. An ample diet consisting of the proper proportion of all food principles is required to repair the wastes of the body, and to aid in the development of the new tissues. As a matter of fact, the adolescent boy or girl in school or in the office or factory will eat quite as much as an adult and will be far more seriously injured if he eats less than he needs than will the adult in a similar fasting. Not infrequently a lunch of some kind is needed at half past three or four in the afternoon in the case of a girl. If she has begun to show signs of pallor, frequently observed in high school girls, let her prepare for herself an egg lemonade, using two egg yolks in place of the yolk and white of one egg. Such a lunch will not interfere with her appetite for dinner, and should result in bringing back the color to her cheeks.

The child's diet should provide a sufficient amount of protein, starch, sugar, fat, and organic salts. To this end it becomes the problem of the parents to vary the meals in such a way as to provide these food principles. The tactful mother educates the child's taste with regard to food just as she educates his taste with regard to books, music, and recreation.

Farmers and stock raisers have known for a long time that it is absolutely necessary to make a serious study of the care and feeding of their young animals. Does not their interest teach us a lesson worth while?

Not long ago a certain stock raiser said, "There are thousands of children in this world who are not fed as wisely as I feed my pigs." This statement seems a hard one but who can doubt its truth?

SUGGESTIONS

No child should go to school without breakfast.

A light breakfast is not sufficient for a school child.

A cold luncheon should be avoided when possible.

Sufficient time should be allowed for the noon-day meal.

Rural school children should be encouraged to eat the noon lunch in a deliberate, orderly manner, rather than to take a hasty bite between the games of ball or marbles.

AIDS IN PLANNING MEALS

Well-made whole wheat bread.
 A generous amount of butter.
 An abundant supply of milk.
 Ample amounts of starch and sugar.
 Bacon for heat and energy, especially for active children.
 Other meat not more than once a day.
 Free use of fish.
 Green vegetables in abundance.
 Light suppers when possible.
 Wisdom in satisfying in moderate amount the craving for sweets.
 Free use of simple vegetable and fruit salads.
 Simple, appetizing foods.

Total absence of rich, highly seasoned foods.

Free use of eggs.

HABITS OF EATING

Avoid over-use of sugar and seasonings.

Do not over-eat.

Eat slowly.

Masticate thoroughly.

Child's breakfast should precede any difficult task.

Child's play should not immediately follow a meal.

Child's bath should not immediately follow the meal.

Eat at regular intervals.

TYPICAL MENU FOR SCHOOL CHILD FROM TEN TO FIFTEEN*Breakfast*

Grapes (1 bunch)
 Oatmeal, one ample portion, with
 Sugar and Cream
 Dry Toast, two slices
 Cocoa

Lunch

Creamed Soup (Potato, Tomato,
 Celery, with Croutons)
 Bread and Butter
 Fruit (baked Apple, stewed Apple,
 Rhubarb, or Prunes)
 Cake, and glass of milk.

Dinner

Roast Beef, with Brown Gravy
 Potatoes
 A Vegetable (Cabbage, Spinach,
 Cauliflower, or Other Non-starchy
 Vegetable)
 Bread and Butter
 A Fruit (Apple Sauce, Rhubarb,
 Cranberry Sauce or Canned Fruit)
 Rice Pudding, with Lemon Sauce

MENU FOR HIGH SCHOOL BOY*Breakfast*

Fruit (Grapes, Banana, Apple, or
 Orange)
 Two Eggs
 Cereal, with Cream and Sugar
 Two Slices Buttered Toast

Lunch

Soup, a Rich Cream or Purée, with
 Croutons
 Two Lamb Chops
 Creamed Potatoes
 Bread and Butter
 Fruit (Stewed or Canned)
 Cake
 A Glass of Milk

Dinner

Clear Soup (Vegetable or Meat,
 small portion)
 Roast Leg of Mutton, with Brown
 Gravy
 Baked Potatoes
 Vegetables (Beans, Peas, Corn, Pars-
 nips, Carrots, etc.)
 Fruit (Apple Sauce, Rhubarb, Cran-
 berry, or Stewed or Canned Fruit)
 Bread and Butter
 Dessert (Cup Custard or Rice Pud-
 ding or Bread Pudding, or
 Tapioca and Fruit)

MENU FOR RURAL SCHOOL BOY

Breakfast
 Apple Sauce
 Bacon and Eggs
 Corn Bread Muffins
 Potatoes (Rice or Grits as Substitute)
 Butter

Dinner
 Meat (Beef, Mutton, Veal, or Pork)
 Potatoes, Boiled or Baked

Vegetables (Cabbage, Turnips, Beets,
 Carrots, etc.)
 Prune Sauce and Cookies

Supper
 Cream of Potato, Tomato, or Celery
 Soup
 Rice with Cream or Butter and Sugar
 Bread and Butter
 Fruit, Stewed
 Cake

MENU FOR HIGH SCHOOL GIRL

Breakfast
 Fruit (Fresh)
 Eggs, Two Soft Boiled
 Toast Cocoa

Lunch
 Purée of Split Peas Croutons
 Celery-nut Salad, Mayonnaise Dress-
 ing
 Bread and Butter
 Fruit, Fresh, Stewed or Canned
 Cake

Dinner
 Bouillon
 Tenderloin Steak or Lamb Chops
 Potato, Baked
 Spinach, Egg Garnish
 Sliced Tomatoes, Mayonnaise
 Dessert, Custard, Gelatine, Fruit,
 Cornstarch, Fruit, or Ice, with
 Lemon or Vanilla Cream Sauce

THE SCHOOL LUNCH BOX

Many children must carry a lunch to school and the mother's task of preparing it each day is always a trying and perplexing one. In the first place, if one wishes to use the same receptacle day after day, a box of suitable size should be obtained. If it be tin, it should be well scalded each day, and thoroughly aired overnight. Plenty of oiled paper and paper napkins should then be provided so that the coverings can be thrown away when the lunch has been eaten.

Every child and every young girl or boy is more interested in sweet things than in the more substantial foods, and contrary to the prevailing popular belief sweet foods, if of good quality, are not only wholesome, but necessary, to active youths. The desire for them can be satisfied by well chosen candies, and especially by sweet chocolate. These will make the

box attractive, and will save the money which the child would probably spend for sweets, and perhaps not wisely.

Bread and butter either in the form of rolls or sandwiches; various fillings to vary the latter; eggs either hard cooked, removed from the shells, rolled in pepper and salt, and done up in oiled paper, or deviled; and a suitable salad, should form the hearty contents of lunch boxes.

Nut bread, with dates or orange peel in it, and with a filling of marmalade or stewed figs, makes excellent sandwiches. Nuts, plain or salted, are always appreciated, and supply a good deal of nourishment. Small cakes, cookies, or pieces of gingerbread or sponge cake furnish dessert. Dates stuffed with cream cheese or nuts, or prunes stuffed with nuts and preserved ginger, make a dainty and satisfactory sweet. For five cents

one can buy a pretty blue cup, to be used as a custard mold, and a custard baked in this will be appreciated the more at lunch time on account of its æsthetic appeal.

Small jars such as cheese comes in are excellent for holding a little salad to be eaten with a roll. Nor should one forget to put in occasionally a pickle or a few olives.

If one is fortunate enough to have a Thermos or other insulated bottle, hot drinks can be carried, or water, chilled instead of being iced.

The same principle which governs the preparation of the well-balanced meal should govern the preparation of the lunch box. In addition to that we must consider the fact that these foods are packed closely together and must remain so packed for several hours before serving. This fact makes careful packing an urgent necessity, if the lunch is to be an appetizing one.

Cake or other soft food should be done up in a separate piece of paper, and each sandwich should be wrapped by itself, so that each bit of food may have its own flavor and not be affected by its neighbor.

Suggestive Equipment.

Paper Napkins
Paraffin Paper
Porcelain or glass cup with cover
Knife, Fork, Spoon, Plate, Cup.

Suggestions for Packing.

Wrap each article in paraffin paper. This applies particularly to sand-

wiches, cake, cheese, or any soft, moist, or highly flavored food. Use porcelain jar for fruit, beans, cottage cheese, or similar articles.

Suggestions for Planning.

Protein.—Sandwiches of fish, meat, egg, cheese, or beans. Dish of cottage cheese, baked beans, or Lima beans.

Carbohydrates.—Hot creamed potatoes, potato soup, creamed macaroni or rice prepared at school. Bread, cake, cookies, sweets in form of jelly or jam sandwiches, dates, figs, raisins, prunes, home-made candy, simple cakes.

Fat.—Butter, olives, peanut butter, crisp dry bacon.

Vegetables.—Lettuce, radish, celery.

Suggestions for Serving.

Provide place for knife, fork, spoon, plate, and cup.

Teach children to set table on their own desks.

Have each child sit at his desk while eating.

Have crumbs disposed of.

Have dishes washed and placed in order.

Have lunch boxes put in place.

Advantages.

Children eat more slowly and calmly than if left to themselves.

Children learn habits of neatness.

Children acquire a sense of responsibility.

MENUS FOR SCHOOL LUNCH BOXES

Suggested Menus.

Lunch No. 1

Cup of Baked Beans
Egg Yolk Sandwich
Plain Bread Sandwich
Gooseberry Jam Sandwich
Ginger Drops
Three Stuffed Dates

Lunch No. 2

Hot Potato Soup (Made at School)

Cup Cottage Cheese
Bread and Butter
Apple
Two Small Frosted Cakes

Lunch No. 3

Roast Beef Sandwich
Jelly Sandwich
Radishes
Graham Crackers
Orange

Lunch No. 4

Hot Cocoa
Egg Sandwich
Lettuce Sandwich
Apple Sauce
Peanut Cookies

Lunch No. 5

Peanut Butter Sandwich
Lettuce Sandwich
Olives
Ginger Cake
Cup Custard

Lunch No. 6

Creamed Potatoes
Minced Fish and Pickle Sandwich
Lettuce Sandwich
Cup of Prunes
Cookies

The following combinations are good and appropriate for school lunches:

Lunch No. 7

Cheese Sandwich	} Composed of two	
Lettuce Sandwich		slices of bread
with Mayonnaise		cut in smaller
Apple	shapes.	
	Sponge Cake	

Lunch No. 8

Two Graham Bread Sandwiches
(Filling of Figs and Nuts)
1 Cup Custard Six Hard Crackers

Lunch No. 9

Two Egg Sandwiches
Dates stuffed with Cream Cheese
Peanut Cookies

Lunch No. 10

Ham and Egg Sandwich
Olives Stewed Prunes
Cake

Lunch No. 11

Two slices Nut Bread
Apple and Celery Salad
Gingerbread Cream Cheese

Lunch No. 12

Buttered Roll Hard Cooked Egg
Small Jar of Salad Dressing
Salted Peanuts Two Pieces of Fudge

Lunch No. 13

Bacon Sandwich Jar of Potato Salad
Olives Banana
Hot Cocoa (Carried in Thermos
Bottle or Bought)

CHAPTER IV

THE ART OF CORRECT TABLE SERVICE

THREE FORMS OF SERVICE—PRELIMINARY ARRANGEMENTS —LAYING THE COVERS—RULES FOR WAITRESSES—SERV- ICE A LA RUSSE—THE ENGLISH STYLE OF SERVICE—THE AMERICAN SERVICE.

Much of the comfort, cheerfulness, and refinement of family life depends upon proper table service. Lavishness and perfection in the preparation of food will never compensate for poor arrangements and poor service in the dining-room. The best order and yet the greatest freedom should exist.

The way of serving meals varies widely, of course, in different sections of the country and in different classes of society. But, in general, three styles of table service are in use in refined American homes. These are known as the Russian, the English, and the American styles.

The Russian style of service is the most formal and the most elegant. All food is served from the side table or pantry by the attendants, upon whom falls the entire responsibility of the service. Upon the table are placed only decorations and the individual covers and, sometimes, such dishes as olives, nuts, almonds, bonbons, which may very properly form a portion of the table decorations. Formal dinners and luncheons are the meals for which this form of service is best adapted. It is also used for all meals by those who care for form and have a full staff of well trained waitresses. It should not be carried out in its entirety at any meal unless there be at least one waitress for each eight persons.

The English style of service breathes hospitality rather than for-

mality. It allows personal attention on the part of those sitting at the head and at the foot of the table to the needs of those about them. The food is served from the table, the hostess serving the soup, the salad and the dessert, and the host carving and serving the fish and roast. Place is found on the table for the vegetables, also, which may be served by some one at the table or passed by the waitress. Except for relishes, bread and butter, and such articles of food as pertain alike to all courses, only one course appears at a time on the table. Everything pertaining to one course is removed before another course is served. This is the style of service often employed in homes where no servant or only one or two are kept.

The American style of service is a combination of the Russian and the English styles. In some courses, the food (especially if it presents an attractive appearance) is served from the table according to the English custom; in other courses, the food is served in the Russian manner. It is a simpler and more home-like service than the Russian and somewhat more formal than the English.

In deciding which of these styles of serving is to be used, due consideration must be given to the number of servants, as well as to individual preferences and the style best suited to the occasion. Likewise, the time that can be given to serving, and

clearing away a meal should be considered.

PRELIMINARY ARRANGEMENTS

Whatever the style of service there are certain fundamental principles of arranging the dining-room, laying the table and serving the meal that ought to be observed in any well ordered home, though the decorations and minor services may vary and should have distinct individuality.

The dining-room should be in perfect order, thoroughly cleaned, properly dusted, well lighted, well heated and carefully ventilated. The temperature should be about 68° F. Screens should be used when necessary, to shield against direct draught from any quarter or too generous blaze from an open fire. The dining-room table should be in the center of the room, if practicable. If there is a central light, the center of the table should come directly under this. The table should be large enough to avoid crowding people or dishes, but it should not be too large for the number to be seated. One rule is to allow from twenty to thirty inches in length and about fifteen in depth for each person; another is to allow six inches of space between the seats of the chairs. Either rule gives every person abundant elbow room and affords ample space for serving.

No less important than the general arrangement of the dining-room is the laying of the table. The covering for the table is a matter of first consideration. It should be of as fine a quality as one's purse will allow. Every one may have clean if not fine table linen. Beautiful well laundered linen is a strong factor in making a table look attractive. Table cloths should be laundered without folds, if possible, save one lengthwise in the center of the cloth. Cloths folded in this way should be kept on a pole in a drawer, or laid in loose folds to avoid creasing. Where this is impracticable, three lengthwise folds are used and the cloth is laid in the drawer so as to avoid cross folds. In regard to the use of table covers, the

custom differs according to the meal to be served. It is correct to use at any meal a cloth that entirely covers the table. But for a breakfast, luncheon, or supper, a bare table, carefully polished, may be used with a luncheon cloth, runners, or doilies placed upon it. If doilies are used, a doily is placed where each plate is to be set. The doilies and the centerpiece should be of the same pattern. The doily on which a hot dish is to be placed should have a flannel lining under it to preserve the polish of the table.

Provided a cloth that entirely covers the table is to be used (as is customary for a dinner), the first proceeding in the laying of the table is to place a thick cloth of felt, of double canton flannel, or of one of the many thick materials that are made for this purpose. This cover not only protects a polished table but prevents noise in setting silver and china in place. A third advantage is that a linen cloth may be laid over such a cover more smoothly than over a bare table. When the under cloth is in place with the opposite edges of the cloth at a uniform distance from the floor, the linen cloth is placed over it. The size of the table cloth should be suited to the size of the table. One-quarter to one-third yard should be allowed to drop on all sides below the edge of the table. In placing the cloth, let the center fold come exactly in the middle of the table, straight with the edges, with the opposite edges of the cloth at equal distances from the floor. If carving is to be done at the table, a carving cloth may be placed in the center of the end of the table occupied by the carver; likewise a tea cloth may be placed in the center of the end from which tea or coffee is to be poured by the hostess.

After the cloth is laid, the center decorations should next be put in place. A center piece of linen is not used with a cloth of beautiful design, but when employed it should be placed exactly in the center. A vase of flowers, a plant, a dish or basket of fruit which is to be the center

decoration of the table should be placed exactly in its center. The table decorations should be simple and plain, and should never obstruct the view across the table. If flowers are used, those free from objectionable odor and of a color to correspond with lighting arrangements or with the color of the food should be selected. Discords in color should be avoided, as color plays a very important part in table service.

The decorations vary in elaborateness with the meal served. A simple souvenir to be worn by the guests—such as a rose—may be placed in front of each plate or on the napkin. Anything in table decorations that goes beyond simplicity in design should have some element of individuality—something appropriate to the day, the occasion, or the guest. For most occasions, aside from some simple floral ornament, the decorations should be fine linen, immaculate and well laundered, good china, well polished silver, and clear crystal. The use of candles is permissible only when the lighting is inadequate or the day is dark. At formal dinners and receptions candles may form part of the decorations. They should be placed artistically about the table with reference to the other decorations. Usually they stand near the corners or sides rather than near the center, being so placed as not to obstruct the view across the table.

The arrangement of the table in general and of each cover in particular is of the utmost importance. There should be mathematical regularity. All articles should be systematically and regularly disposed upon the table. The small trays or compotiers holding bonbons, transparent jellies, preserves, or crystallized fruits should be placed symmetrically upon the table where they will be at once most convenient and most effective to the eye. Sometimes these are set between the candelabra, sometimes a trifle outside the candle-sticks toward the edge of the table. Dishes of olives, celery, radishes, pickles, and similar esculents are sometimes placed upon the table, though they are, as

are the nuts, bonbons, and relishes, more commonly offered at proper times by the waitress. They are often passed between courses to bridge delays. The table should not be littered with objects that belong on the side table. The cruets of oil and vinegar that properly find place on the family table are never used on formal occasions. It is then presumed that the salad will be dressed and the food properly seasoned when served. Other condiments as mustard and horseradish never appear as part of the table appointments at a formal meal; they are served from the side table with courses that require them. As a general thing the host and hostess should be seated directly opposite one another and the "covers" arranged symmetrically on either side.

LAYING THE COVERS

A "cover" is the place at the table for each person and consists of the plate, napkin, glass, silver, and other articles needed for that particular meal. The plates should be placed with monogram or decorations in normal position. On formal occasions, the place plate—an elegant plate about ten inches in diameter—is the basis of each cover. This plate must be of dinner size and is usually the ordinary dinner plate. The place plate is placed right side up, one inch from the edge of the table. It is used only to mark the cover and is removed when the first course is placed in position. On less formal occasions the place plate is used as a service plate. The oyster plate and soup plate may be placed in turn upon it and later it is exchanged for the plate upon which the first hot course after the soup is served. At the simple everyday home meal a napkin may occupy the place between the knife and fork.

The silver is placed in the order in which it is to be used beginning with that farthest from the plate. All silver is placed one inch from the edge of the table and at right angles to it. The knives are placed at the right of the plate with the cutting

edge turned inward; the spoons at the right with the inside of the bowl turned up; and the forks at the left with the tines up. When the fork is used alone, as for oysters or fruit, it is often placed at the extreme right. When the number of courses is such that little silver is required, all silver may be placed on the table before the meal is announced; when more than that placed on the table is required it is laid quietly with the course with which it is to be used. On any occasion the table is not often set with more than three pieces on each side of the plate. It is best to lay dessert spoons and coffee spoons by the plate or on the saucer at the time of serving. All silver should be kept at an equal distance from the edge of the table, on a line with the plate and napkin. The napkin is simply folded and laid at the left of the forks if there is space; otherwise, on the place or service plate; if this plate is in use, the napkin is laid between the knives and forks. The hem and selvage of the napkin should be parallel with the forks and the edges of the table. Napkins are sometimes given additional folds to save space. The napkin should be of the same pattern as the cloth and in size suitable to the meal to be served. The dinner napkin—serviette—should be folded in a large square, the monogram corner uppermost and the right side up.

The glasses are placed at the right hand of the plate near the tip of the knife. They are placed in the order of size, the tallest being to the left. Glasses are turned up, not down. At dinners in America, water is invariably used and very often apollinaris or other sparkling table water added. When both are served a goblet is placed for the water and a small tumbler of clear thin glass for the other. When water alone is served, a tumbler is usually placed to contain it.

Bread and Butter.—At formal dinners and luncheons where butter is not usually served, the butter plate does not appear. When butter is served, a small butter plate or a bread and butter plate is placed at the tip

of the fork but slightly to the left. The bread and butter spreader may be placed at the right with the other knives, at the side of the butter plate, or across the right hand side of the bread and butter plate with the blade turned toward the center of the plate.

Though bread is not always served on formal occasions, sometimes a roll, a bread stick or a square of bread cut two inches thick is either laid upon the napkin or slipped between the folds of the napkin.

Condiments.—Open individual salt cellars are not widely used at present, but when used should be placed with a small spoon for each at the top of each plate. Salt and pepper shaker sets may be placed between each two covers or at the corners or sides where they may be used by several people. At formal meals no salt or pepper is placed on the table, the assumption being that the food is so perfectly seasoned that their use will not be required.

At the formal dinner or luncheon, tiny dishes of salted almonds are sometimes placed at every cover, to the left of the plate near the tips of the forks or just in front of the plate. But these are often served in larger bonboniers and may be placed on the table or passed from the side table.

All articles pertaining to one cover should be placed as close together as possible without having the pieces touch or appear crowded. The whole table has a neater appearance if the cover is compact, not loosely spread.

Place Cards and Menu Cards.—At formal dinners the place card is often used for convenience in seating the guest—a simple plain card of best quality inscribed in the hostess' own hand across the length with the name of the person for whom the seat is intended. These cards may have in the upper left hand corner, or in the center, the monogram, or initials of the hostess, or a dainty painting. They are placed upon the napkins.

Menu cards are seldom used at small dinners. On special occasions they are sometimes designed to serve as souvenirs. The place card may on such occasions serve a double purpose

by having the menu on the reverse side. Menu cards should be placed upon the napkins.

The chairs are placed after the table has been laid, the front of the chair on a line with the edge of the table so that the line of the cloth will not be broken. The chair should be close enough so that it does not have to be moved nearer the table after one is seated.

Any additional china, silver, or glass that the courses may call for should be at hand. The side board was used formerly to hold many of these articles. The serving table has taken its place while the side board is used more for decorative purposes, usually holding a few choice pieces of silver. However, cold food, such as bread, butter, cream, sugar, carafe, or pitcher of water, olives, bonbons, and nuts, may be placed on the sideboard, if these do not appear on the table and there is not room on the side table for them.

The side table should be laid with care. Extra silver and napkin, like that pertaining to an individual cover — to be used in case of an emergency, such as the accidental dropping of a fork or overturning a glass of water — are placed on the table. Any other extra china, glass, serving silver or cutlery which may be required is ready on the side table or buffet or on a table in the pantry. The napkin and tray to be used for crumbing is placed on the side table. Napkins for handling hot plates and dishes should be at hand here. If a serving-tray is used, room should be left on the table for it. On informal occasions, salad, dessert, coffee cups and saucers and the finger bowls resting on small plates may be placed on the side table or sideboard in order to facilitate the service.

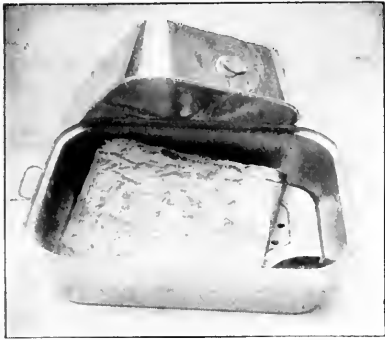
In the pantry there should be table space to lay out relays of knives, forks, spoons, china, and glass. There should also be a table upon which to serve the soup and the meat if this is done in the pantry. If the soup and meat are served from the buffet, plates, serving dishes, and silver are placed there as required for

each course. Dishes needed for cold food should be put where they will become chilled; and those needed for hot food, placed to warm. The success of a meal depends much upon the strict observance of this rule.

RULES FOR WAITRESSES

A few established rules relative to the personal appearance and general duties of those in attendance may be mentioned here. Careful attention to these matters is an extremely important factor in the successful serving of a formal meal and is never neglected by a competent hostess. Absolute cleanliness of person and dress on the part of the attendants should be required under all circumstances. Hands and nails should be faultlessly clean. When serving dinner, a waitress wears a plain black gown with white collar and cuffs and a dainty white apron, unless it is the wish of her mistress that her dress be white. A cap may be worn but the custom is not so general as formerly. A butler when serving dinner wears complete livery with a white tie and without gloves. All attendants should be required to wear shoes having soles of thin leather, felt or rubber that will not creak in order that their tread may be absolutely noiseless.

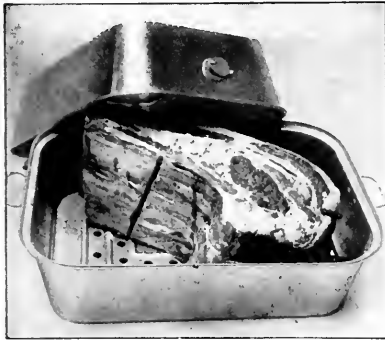
Sufficient help is essential if a formal meal is to be served. A well trained waitress, seconded by a cook, with whom she works harmoniously, can serve a meal to six people with ease and celerity. With a larger number of covers there should be an extra maid in the pantry to clear away the dishes or in the dining-room to assist with the serving. An efficient waitress must not only be quick and skillful in handling dishes and serving food, but she must know just what to do and when to do it. She should be alert and observing and should perform her duties in such a manner that the service will be prompt, orderly and unobtrusive. Plates should always be handled without clatter. One plate should never be placed upon another for conven-



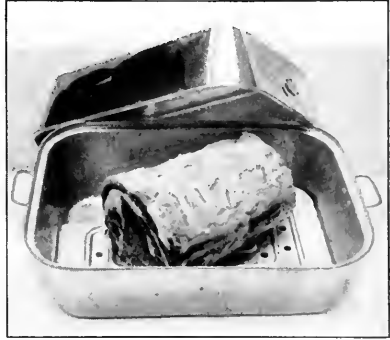
SHORT LOIN



TENDERLOIN



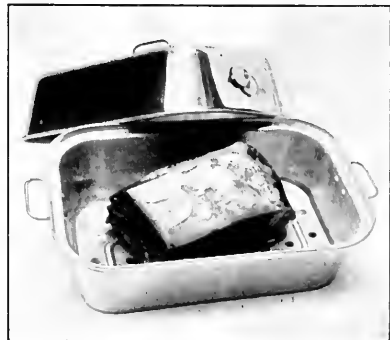
RIB ROAST NOT BONED



RIB ROAST BONED AND ROLLED



RUMP



CHUCK

I. ROASTS OF BEEF READY FOR THE OVEN



RIB ROAST READY TO SERVE



TENDERLOIN READY TO SERVE



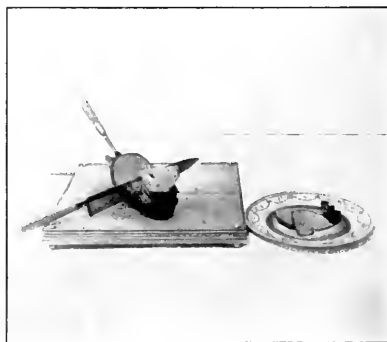
CARVING RIB ROAST



CARVING TENDERLOIN

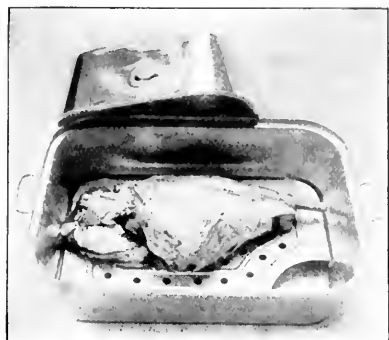


SERVING RIB ROAST



SERVING TENDERLOIN

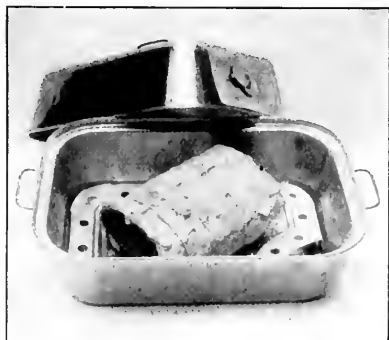
II. CARVING ROASTS OF BEEF



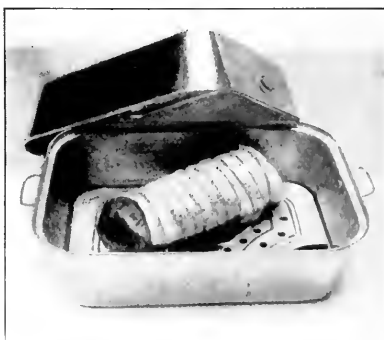
SHOULDER OF LAMB



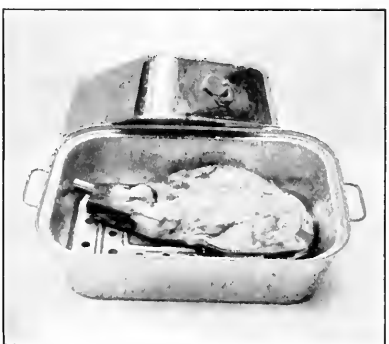
LOIN OF PORK



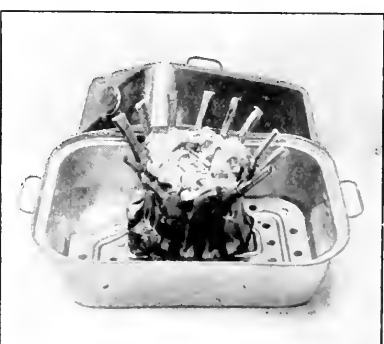
SADDLE OF LAMB



LOIN OF VEAL



LEG OF LAMB



CROWN ROAST OF LAMB

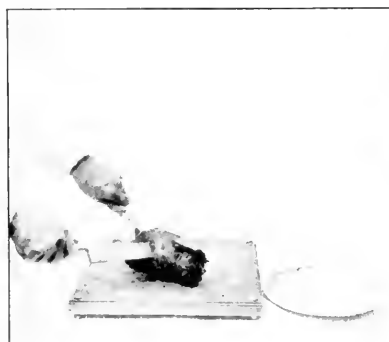
III. ROASTS OF LAMB, VEAL, AND PORK READY FOR THE OVEN



LEG OF LAMB READY TO SERVE



CROWN ROAST READY TO SERVE



CARVING LEG OF LAMB



CARVING CROWN ROAST

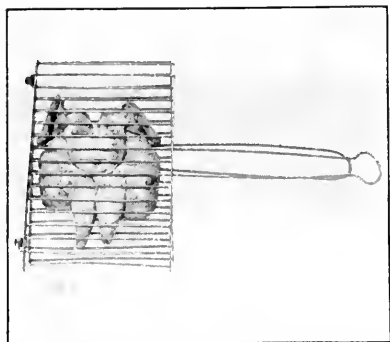


SERVING LEG OF LAMB

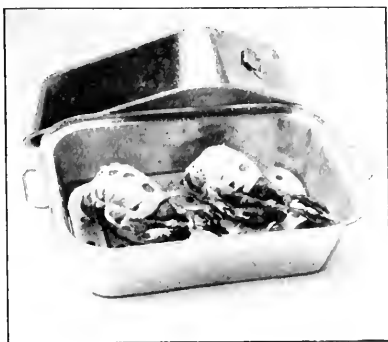


SERVING CROWN ROAST

IV. CARVING ROASTS OF LAMB



BROILING CHICKEN



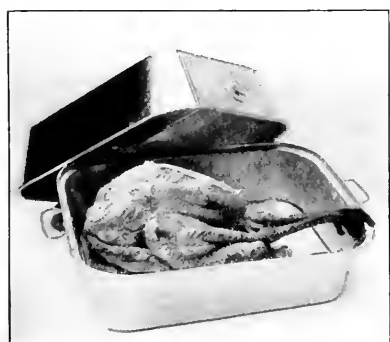
PARTRIDGE



DUCK



GOOSE



TURKEY



CAPON

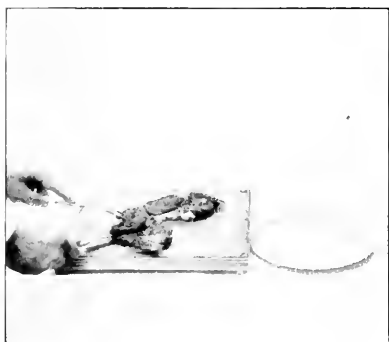
V. POULTRY AND GAME READY FOR THE OVEN



BROILER READY TO SERVE



TURKEY READY TO SERVE



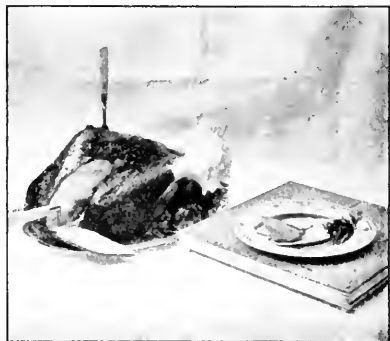
CARVING BROILER



CARVING TURKEY

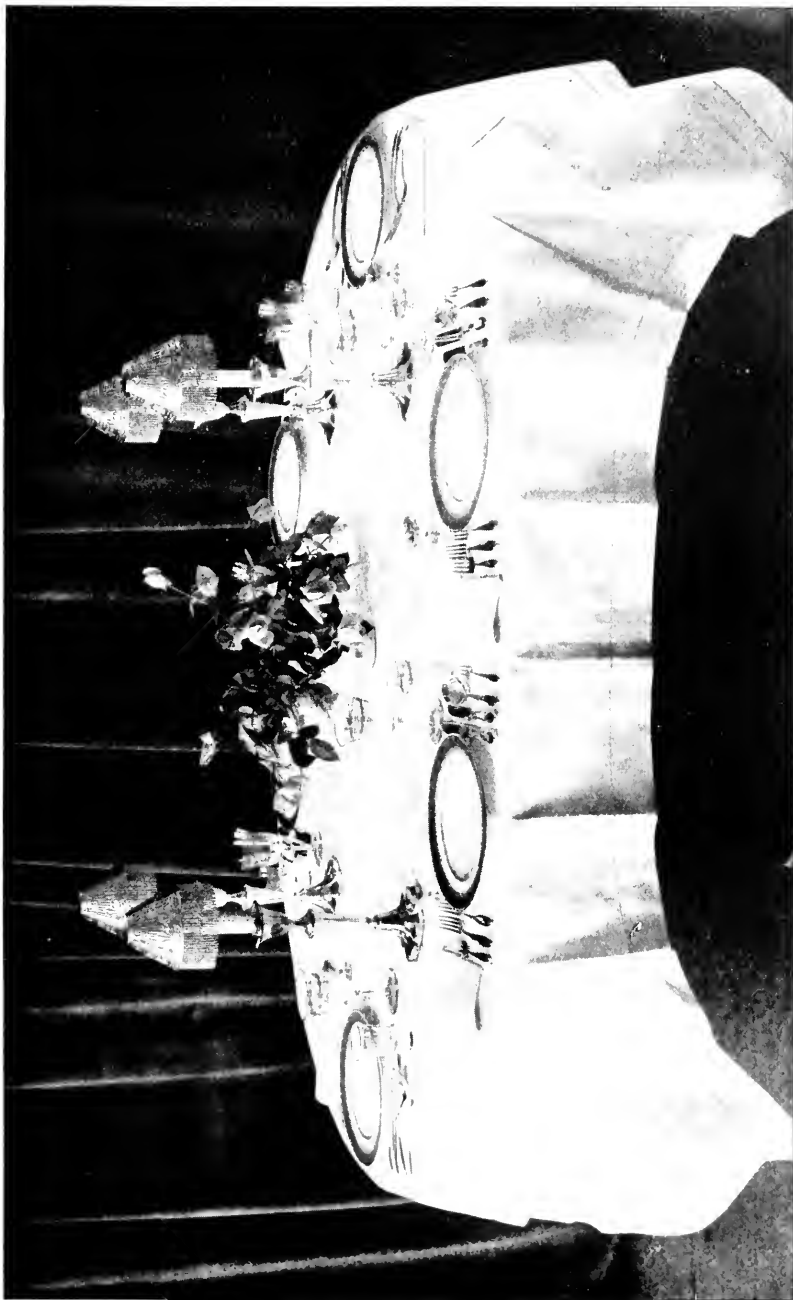


SERVING BROILER



SERVING TURKEY

VI. CARVING POULTRY



VII. DINNER TABLE LAID FOR FORMAL SERVICE À LA RUSSE



BLUE POINTS ON HALF-SHELL WITH
COCKTAIL SAUCE IN CUP



BROILED MUSHROOMS ON TOAST



CONSOMMÉ À LA ROYAL



ROAST FILLET OF BEEF POTATO BALLS
HORSERADISH SAUCE STRING BEANS



FRIED SMEELTS SAUCE TARTARE



APRICOT SORBET

VIII. SERVICE OF TWELVE-COURSE DINNER



SQUAB, ROASTED HEARTS OF LETTUCE
PARISIAN FRENCH DRESSING



MANHATTAN ICE CREAM
LITTLE CAKES



CHEESE SOUFFLÉ TOASTED WAFERS



FRUIT NUTS BONBONS



PLUM PUDDING HARD SAUCE



COFFEE

IX. SERVICE OF A TWELVE-COURSE DINNER



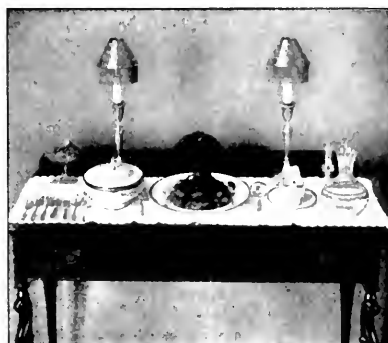
GRAPE FRUIT COCKTAILS



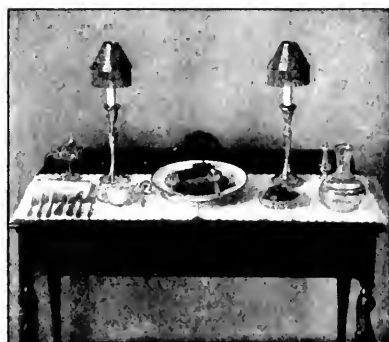
BROILED MUSHROOMS ON TOAST



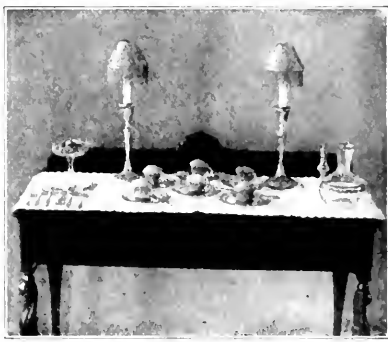
CONSOMMÉ À LA ROYAL



ROAST FILLET OF BEEF HORSERADISH SAUCE
POTATO BALLS STRING BEANS



FRIED SMEETS SAUCE TARTARE



APRICOT SORBET

X. SERVICE OF TWELVE COURSE DINNER FROM BUFFET OR SERVING TABLE



SOUAB. ROASTED HEARTS OF LETTUCE
PARISIAN FRENCH DRESSING



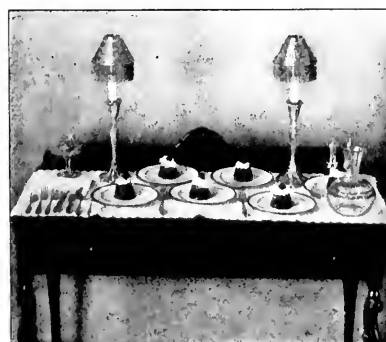
MANHATTAN ICE CREAM LITTLE CAKES



CHEESE SOUFFLÉ TOASTED WAFERS



FRUIT NUTS BONBONS

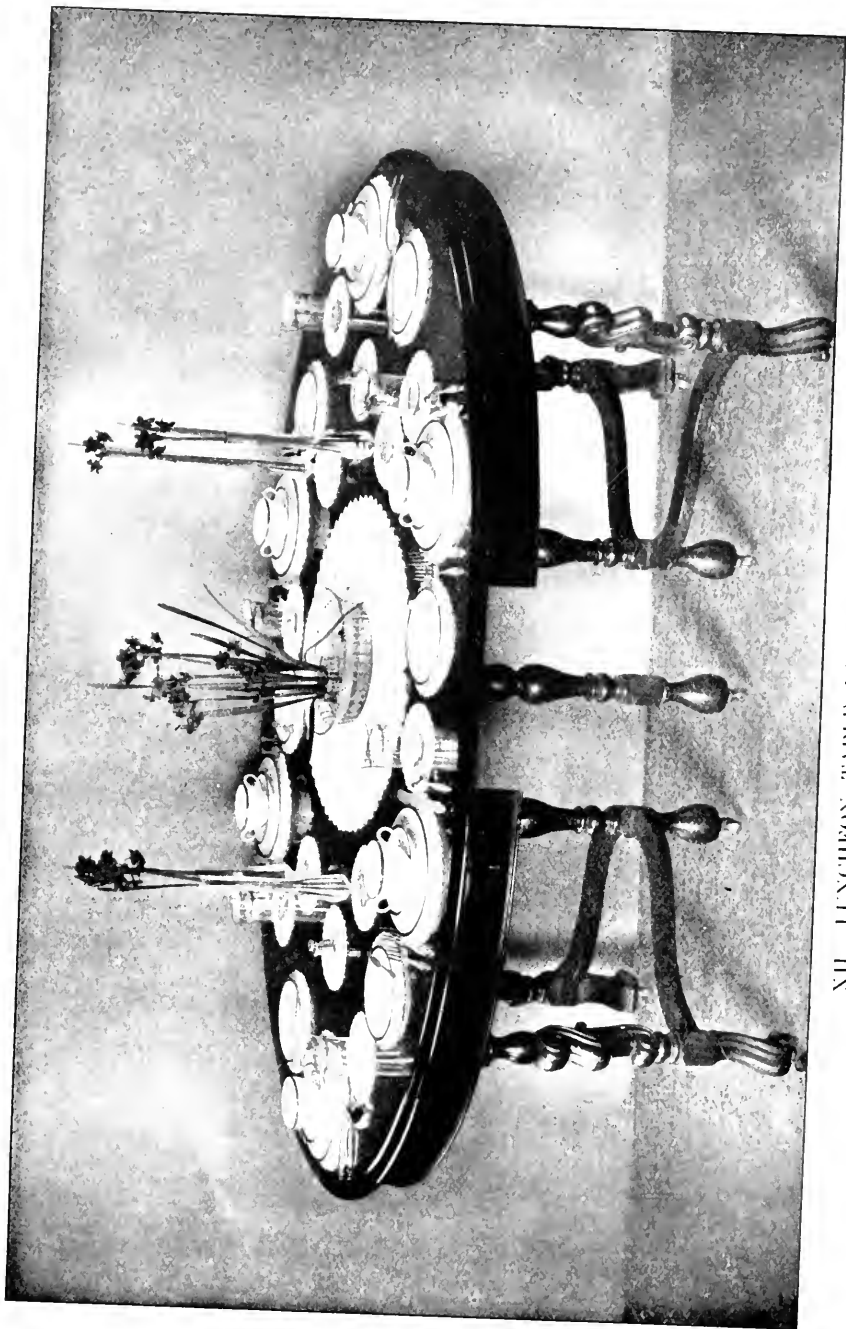


PLUM PUDDING HARD SAUCE

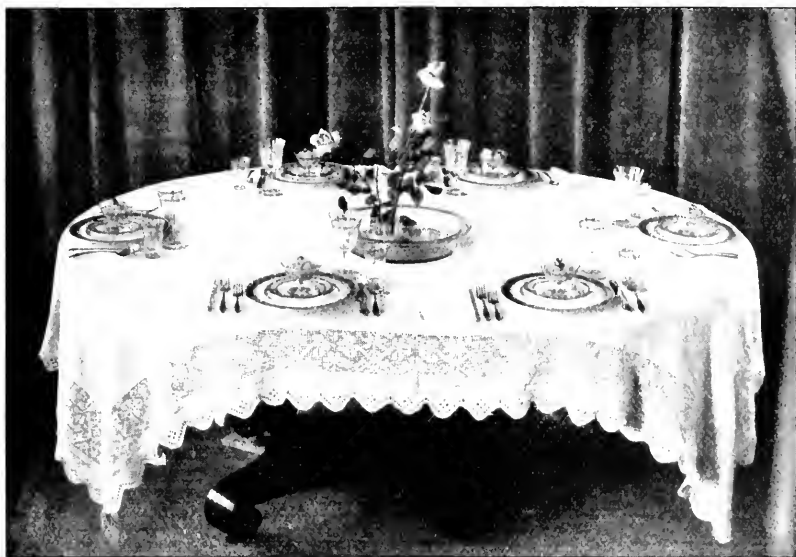


COFFEE

XI. SERVICE OF TWELVE COURSE DINNER FROM BUFFET OR
SERVING TABLE



XII. LUNCHEON TABLE LAD WITHOUT A CLOTH



LUNCHEON TABLE LAID WITH CLOTH FOR A FORMAL LUNCHEON



DINNER TABLE LAID FOR INFORMAL FAMILY DINNER

XIII. SERVICE FOR FORMAL LUNCHEON AND FAMILY DINNER



BREAKFAST TABLE FOR SERVICE OF CEREAL AND COFFEE.



SUPPER TABLE FOR CHAFING DISH SUPPER

XIV. SERVICE FOR FAMILY BREAKFAST AND CHAFING DISH SUPPER



BUFFET LAID FOR SERVICE OF REFRESHMENTS AT A RECEPTION



TABLE LAID FOR SERVICE OF REFRESHMENTS AT A RECEPTION

XV. SERVICE OF REFRESHMENTS AT RECEPTIONS



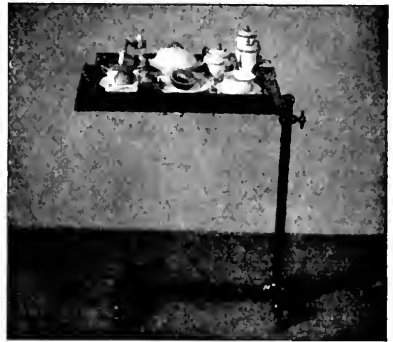
AFTERNOON TEA SERVICE



DRAWING ROOM SERVICE FOR COFFEE



TEA CART



INVALID'S BEDSIDE TABLE WITH TRAY



CHOCOLATE SERVICE



PUNCH BOWL FOR RECEPTION OR DANCE

XVI. SERVICE OF BEVERAGES AND BEDSIDE SERVICE

ience, in removal, even at less formal meals, nor should a waitress carry piles of plates in her hands and distribute them about the table. Soiled dishes should not be allowed to accumulate upon the side table, but should be removed promptly from the dining room.

When a dish containing food is passed by the waitress, the dish is placed on a napkin on the palm of the left hand. The napkin is not used when placing or exchanging plates or in removing the table dishes containing food. The serving silver is placed on the dish in a position convenient to be served; this silver should be arranged at the side table, not as the dish is being presented. Two pieces of silver arranged at either end of the dish are essential in most cases for the best service. The serving dish should be held firmly and low and near the person to be served. It should be held in the left hand and if too heavy for one hand, steadied with the right hand on the edge of the dish. The waitress should stand slightly back and to the left of the person served when passing food.

Before a meal is announced, all doors and drawers should be closed, all shades properly drawn and all candles lighted. All food pertaining to the first course should be ready to serve. At informal meals the first course may be placed on the table. The water glasses may be filled before the meal is announced or just after the guests are seated. At less formal meals the carafes or water pitchers are kept filled upon the side table, the waitress being trained to replenish the glass. If apollinaris or other aerated water is served, the small tumbler to contain it stands empty; for effervescent waters are not poured until after the guests are seated. Glasses are filled three-quarters full—never to the brim.

A formal meal is always announced by the waitress in person. In announcing the meal, the waitress appears at the door of the drawing-room and stands in silence for her mistress to recognize her; or she may say "Dinner is served." Other meals

are announced according to the preference of the hostess, sometimes by the Japanese gong, sometimes by personal announcement.

As has been explained, the style of service varies according to the formality of the meal and the individual preferences of the host and hostess. A description of the style of service for more formal meals will be given first and remarks regarding the less formal styles will follow.

SERVICE A LA RUSSE

For a ceremonious dinner the Russian style is commonly used. It permits of two methods of serving. Either the food is arranged on individual plates and placed before each person, or the plates are placed, empty, for the successive courses and all food is passed, the food being attractively arranged on suitable dishes from which each person helps himself.

The menu is divided into courses that succeed each other according to a conventional order. It is good taste not to have too many. Five or six courses are regarded as sufficient; eight, as adequate; and most hostesses advise against the serving of more than ten courses in any circumstances. The order of courses is usually as follows: A first course of oysters or clams on the half shell or canapés of sardines, caviar, or some other light relish; or of fruit such as grape fruit, strawberries or melon according to locality and season; or the dinner may begin with a soup. This is followed by the fish, an entrée, roast and vegetables, sorbet, game, and salad, an entrée of cheese or vegetables, hot dessert, ice-cream, fruit, nuts, bonbons, and coffee.

A discussion as to the way these courses may be served at a large and ceremonious dinner will suggest the way a meal may be served when fewer courses constitute the menu.

The Shell Fish.—After the guests are seated and have removed their napkins, the waitress takes up the place-plates and puts down a plate holding the first course of fruit or oysters. These are in their re-

spective dishes which rest on a service plate; both plates together are placed in position on the table. To expedite the service, they may be arranged on the side table just before the dinner is announced; or it is permissible for the waitress to bring two plates of food at a time to the dining-room, placing one on the serving table and the other on the dining-table, and returning to the serving table for the second plate rather than to the pantry, thus saving steps and time. All plates are removed and placed one by one, the waitress taking up with the left hand the plate to be removed and with the right hand slipping a fresh plate into the vacant place. No cover is left at any time throughout a formal dinner without a plate except when the table is cleared for the dessert. Sometimes a place-plate is exchanged for the soiled plate and this plate removed when the next course arranged on individual plates is placed. When the guests have finished the first course, the oyster plates are removed; the service plates left in position. On these the soup plates are placed.

The Soup Course.—Before the soup is served, the soup tureen, soup plates, and soup ladle should be laid in order on the side table in the dining room or pantry and here the soup is served, a ladleful or half ladleful—according to the size of the ladle—being given to each guest, the soup plates never being more than half full. If the soup is served from the pantry, the waitress may bring in two plates of soup and proceed as in the first course. The bread sticks or other soup accompaniments are next passed. The most important accompaniments of a course are always passed first and the others in the order of their importance.

At the conclusion of the soup course, all the soup plates are removed. When a course of hors d'œuvre—celery, radishes, olives, and salted nuts—follows, the place plates are left in position and these relishes are passed. Otherwise, the place plates are removed with the soup plates upon them, and warm, flat plates for the fish are set down.

The Fish Course.—The fish may be disposed on a large platter, the whole attractively garnished, or it may be arranged in individual portions on the plates. Should the fish be small, one or more are placed on each plate; otherwise, a small portion of fish is served. A sauce is commonly passed with the fish, together with potatoes cooked in some dainty fashion. In addition, cucumber salad is frequently served with the fish, in which case it is either placed directly upon the plate with the fish or upon small plates placed to receive it. After the fish has been disposed of, the plates are taken away and warm plates for the entrée placed.

The Entrée.—The entrées are served from the pantry or side table usually in individual forms such as pastry shells. A sauce is either served on the plate or handed at the left in order that each guest may help himself.

The apollinaris is poured just before the roast is served.

The Roast and Vegetables.—The fresh warm dinner plates for the roast displace those on which the entrée was served. The carving is done in the pantry. The roast is then placed on a platter containing slices both rare and well done, so arranged that the guests may readily help themselves to the kind preferred. A single vegetable may accompany the roast. More than two vegetables are very rarely served. One vegetable may be arranged on the platter with the meat or both may be brought in in vegetable dishes and passed, each guest taking a helping on the plate with the meat. A single waitress passes the roast to all guests and then retraces her steps to pass the vegetables in the same order as that in which she passed the meat. Two waitresses may perform the same duties on opposite sides of the table or one may pass the roast and the other follow closely with the vegetable. The roast and vegetables are often served in the pantry. A plate containing portions of these is then placed before each guest.

The sorbet.—Which is a frozen punch or ice—is served after the

roast. This course is served in a sherbet glass on a small plate with a doily between, and a small spoon. These are always arranged in the pantry; a heaping tablespoonful of sorbet is sufficient for each glass. The plates containing the roast are removed as the sorbet is placed.

Laying Additional Silver.—The knives, forks, and spoons used at each course are removed on the plates and—unless a complete cover has been laid—fresh ones should be brought when those originally supplied have been used. This fresh silver should be placed from a napkin on the hand or from a tray just before or just after the plate is placed. But when rapid service is desired or when a dinner of many courses is served (especially with such courses as sorbet, salad, dessert and coffee), it is permissible to bring in the fresh silver on the plate on which the course is served.

Silver should always be put down from the right. A knife and fork are not put down side by side. The fork is placed at the left of the cover and the knife at the right. If a fork alone is to be used, as for salad, it is placed at the right. When the hostess' supply of china or silver is limited the articles first used are washed in the pantry and brought in again when needed. This is the duty of the maid who helps in the pantry; it must never be left to those who wait upon the table, as this would delay the service.

The Game and Salad.—After the sorbet cups and plates have been taken away, warm plates are placed for the game. Venison is carved and served from the pantry, or side table and handled in all respects the same as the roast. Poultry and game birds are carved and served on warm platters. In case of chicken and turkey, both dark and light meat should be so disposed that each guest may select either or both. Small game or birds are served in the pantry or from the side table.

When the salad is served with the game it may either be upon plates containing the game or passed from the left, each guest helping himself

directly upon a small plate laid for that purpose to the left of each cover before the salad is offered; or it may be served from the side table on separate plates and placed at the left of each person. Should a vegetable be served with the game, however, the salad follows, constituting with cheese and wafers a separate course. Cold plates are used for the salad to keep it crisp. In removing this course, the waitress takes the salad plate and then the game plate. When salad is served with the game, cheese may be served as a separate course after the game. Such a course of cheese is often served as savories, being arranged on individual plates and placed before the guests after the game plates are removed.

Clearing the Table.—Before the dessert is brought in, the table is cleared and crumbed. With the exception of the glasses, everything in front of each guest should be removed. At less formal meals the table is likewise cleared; relishes, bread and butter plates, salts and peppers which may have been upon the table are removed. Only the nuts, bonbons, decorations and illuminations are left in place. Any crumbs are removed with a napkin on to a small plate. The goblets are filled with water and the dessert is then brought in.

The Hot Dessert.—At a formal dinner, a hot dessert (often omitted to shorten the meal) may precede a frozen cream or ice. It is usually arranged on individual plates and placed from the right.

The Ice.—After the removal of the hot dessert, the ice-cream is next served. If in individual molds, it is placed before the guest; if in a large mold, it is passed, the cold ice-cream plates having been placed as the plates of the preceding course were removed.

The Finger Bowl Service.—As the ices are removed, the finger bowl service is placed. This consists of a plate of dessert size with doily in its center and the finger bowl which rests on the doily. The bowl should be about one-third full of tepid water and may contain a very thin slice of

lemon, or a sweet scented leaf or small blossom. If a course follows for which a spoon or a knife is needed one or both may be placed on the plate, one on each side if both are used. The guest will remove the bowl, doily and silver before the next course is offered. The bowl and doily are placed to the left of the plate; the silver is laid in position at the sides.

The Fruit, Nuts and Bonbons.—A dish of fruit is passed after the finger bowls have been removed and, sometimes, is afterwards placed on the table. Grapes should be accompanied with grape scissors by means of which clusters are clipped from the stem. After the fruit, nuts and raisins with bonbons are frequently passed. Instead of fruit, a course of cheese and wafers may be offered if a similar course has not been served earlier in the meal.

The Coffee.—Coffee in small cups — demi-tasse — is now brought in and set down from the right, and sugar on a small tray is passed to the left of each guest. Cream may be offered though few people take it. Coffee is sometimes served from the table; the complete coffee service being brought to the table and set before the hostess. Often, however, at formal dinners, coffee is served to the men in the dining-room after the women have withdrawn and to the latter separately in the drawing-room. Or, it may be served to the men and to the women together in the drawing-room. In either of the latter cases, the coffee service may be placed before the hostess who pours and the coffee passed by a waitress; or, if preferred, all the cups filled may be placed on a large tray with sugar bowl, sugar tongs, and creamer and the tray passed. Another way to serve coffee is as follows: One waitress passes a tray containing the coffee cups — a coffee spoon lying on each saucer — and a sugar bowl and creamer; another follows with a silver coffee pot upon a tray and pours the coffee for each guest.

Coffee in large cups is served with the meals only at family meals or similar informal occasions.

THE ENGLISH STYLE OF SERVICE

The service of a meal after the Russian style requires one or more people to be constantly busy attending to the orderly progression of the courses. The mistress of a home who wishes to have a meal served after this fashion, but who does not have the necessary servants must employ extra help. For company dinners in small households, therefore, as for ordinary meals, the English or American style of service is used. The host who can skillfully carve and the hostess who understands the art of serving, need not hesitate to entertain in one of these fashions, from fear that their hospitality will be less acceptable than that characterized by the formal service. A meal of few courses may be cooked and served by the hostess herself as acceptably, in every respect, as if prepared and served by trained helpers. But for a meal that makes any pretense of formality, at least one maid is required in order that the hostess may not be obliged to leave the table to wait upon her guests. If only one maid is in attendance the menu should be simple and the number of courses few. When a meal is served after the English style, the duties of the maid are to bring the food to the table, to remove all soiled dishes from the table, to pass the plates containing individual portions, to offer, at proper time the vegetables, relishes, etc. The maid should stand back of the carver, and she should take each plate as it is served and place it before the person for whom it is intended. If a sauce or vegetables are to be served with any course she should offer them as promptly as possible. In order to lighten the work of serving it is customary not only to place bonbons, and salted nuts upon the table but also to add at proper intervals the accessories of the various courses. These accompaniments of courses the maid may pass or allow the guests to help themselves at the invitation of the hostess.

Whether the dinner begins with shell fish or fruit, the first course may be served in all respects the same

as on a more ceremonious occasion. If the dinner begins with soup a covered soup tureen is placed in front of the cover of the hostess. The soup ladle is laid at the right of the soup tureen. A pile of warm soup plates may be placed at the right or left of the hostess' cover if space is adequate, or these may be in position on the serving table. As soon as every one is seated the maid removes the tureen cover and places the ladle in the soup. If the soup plates are on the side table the maid takes one and places it before the hostess. A fresh soup-plate is placed when the one filled is removed. If the plates are beside the hostess' cover, it is the custom for the hostess to place the plate in position before serving the soup. The maid passes the plates of soup as served by the hostess, one at a time, precisely as above directed for the Russian service. As it is not customary to offer a second serving of soup—except at a family dinner—the maid should re-cover and remove the soup tureen as soon as the soup and its accompaniments have been served. After every one has finished with the course, the maid removes the soup and service plates and brings to the side table the dinner plates, the vegetables, and the roast.

The roast is placed directly in front of the cover of the host. The carving knife and serving spoon are placed at the right of the platter and the carving fork at the left. The warm dinner plates may be placed as were the soup plates. The maid places one plate containing a portion of the roast while the carver is preparing another.

After the roast has been served, the maid takes the vegetables from the side table, passes them and returns them, covered, to their former position. The vegetables and roast are left in place until all have finished in order that second helpings may be served if desired. The platter containing the roast is removed with the carving set and serving spoon upon it. If frozen punch follows the roast, it is served as for the formal dinner. Game and fowl, if any, are served in precisely the same manner as the

roast. Salad may be served with game or may constitute a separate course. In either case, a salad may be prepared in advance and kept in a cool place until required, or a large salad bowl and necessary ingredients may be set before the hostess in order that she may prepare and dress the salad at the table. She may then serve the portions on plates brought to her by the maid. These are placed before the guests. At the small dinner, salad often constitutes a separate course. The salad may be served as above or the salad plates may be placed as the dinner plates are removed. The bowl of salad is placed upon the table before the hostess. The plate before her is filled and this exchanged for the plate at the cover of the one first served. This in turn is filled and so on. Cheese and wafers may be passed. As the dessert, puddings, ice-cream and the like, are usually served by the hostess, cake is either passed by the maid and finally set upon the table, or placed upon the table in the first place and passed by the guests. After the dessert, the hostess passes the bonbons. Coffee may either be poured by the hostess at the table or served in the living room; but usually for dinners served after the English fashion, the men and women take their coffee together in the dining-room. Otherwise, when a simple dinner is given, the maid in attendance follows the custom for a formal dinner as though the Russian service was used.

THE AMERICAN SERVICE

In our American homes, the combination of the two forms—the Russian and the English forms—is widely used, especially for small dinners and luncheons. When this form (previously designated as the American style of service) is used, such dishes as present an attractive appearance are served from the table after the fashion of the English; in other courses, the food, in dishes from which each guest helps himself, is passed or arranged in individual portions and placed by the waitress according to the Russian form.

A meal may be prepared and served without a maid. Families with average incomes find service without a maid imperative. When a woman has all the work of the home to do, she must consider how she may conserve her health and energy. The menu, therefore, must be simple and consideration must be given to the details of service before the meal is begun. Even if the service is simple it is of the greatest importance to have the table clean and dainty in appearance. In laying the table, special pains should be taken to provide everything necessary, that there may be as little occasion as possible for leaving the table. The carving cloth and carving set, if to be used, should be in place; also sufficient silver for each dish to be served. The vinegar and oil cruets and relishes, if served, may be placed when the table is laid. Bread and butter plates may be placed on the table. The use of bread and butter plates is not necessary but gives a daintier service than if the butter is placed on a hot plate. Butter may be neatly cut and placed on a plate on the table, likewise bread. A pitcher of ice-water may be placed on the table near some member of the family who will replenish the glasses. If a hot beverage is to be served during the meal, sugar and cream together with the cups and saucers may be on the table before the family are seated. All

foods which need not be served very hot or very cold may be placed on the dining table or on the serving table. Food on the serving table may be covered with a napkin until required. The style of serving is necessarily simple. For this kind of service, it is not practicable to carry out all the rules observed by a waitress. One who must prepare and serve a meal should not be expected to take additional steps for the sake of form. Therefore, for this kind of serving it is allowable to dispense with the place plate, to remove two plates at a time, etc.; the leading principle is to dispense with that which is unnecessary. A small tray or serving wagon at the right or left of the hostess is very convenient. Children should be permitted and taught to help with the serving. They should have daily share in such duties as filling the glasses, passing food, arranging for the change of courses and the like. The one who sits near the carver may serve the vegetables that are to be on the same plate with the meat and thus save time and confusion in passing them. Sometimes the making of a beverage at the table or the cooking of an article in the chafing dish will give variety and add a charm to the meal as well as simplify the service, especially when breakfast or supper is the meal to be served.

CHAPTER V

CATERING, COOKING AND CARVING JOINTS, POULTRY AND GAME

BY M. EDOUARD PANCHARD

Managing Chef of the Hotel McAlpin, Hotel Claridge, and Café Savarin,
New York, and the Trouville, Long Beach.

METHODS OF COOKING JOINTS, POULTRY, AND GAME—SELECTION OF BEEF, VEAL, LAMB AND MUTTON, PORK, POULTRY AND GAME BIRDS, DUCKS AND GEESE—DRESSING POULTRY—ROASTING AND CARVING POULTRY AND GAME—UTENSILS FOR CARVING.

Catering or marketing—i.e., the selection and purchase of food stuffs for the table—is most often considered, in the ordinary American household, primarily from the standpoint of convenience. The housewife's choice of meat, fish, and other perishable food stuffs that form the principal part of the daily meals is usually determined by the resources of the grocer or butcher that she patronizes. And in most parts of the country orders for the day's supplies are given to a clerk who calls upon the housewife to receive them, or given direct to the tradesman over the telephone, the selection being, as a rule, intrusted wholly to the latter's discretion. Within recent years, however, as a result of scientific study of foods, and of popular instruction in the subject in cooking schools and other institutions, the wholesome old-fashioned custom of going to market and selecting in person one's meats, fish, vegetables, and other supplies, has been quite generally revived, and the lore of the market has resumed, to a great extent, the place that it formerly occupied as among the fashionable accomplishments of our grandmothers.

To know how intelligently to select, every day in the year, the best that the market affords, is of far greater importance, both from the standpoint of the physical well-being of the family, and from that of conserving the family income, than is commonly supposed. Yet many women in their everyday routine are very careless and indifferent concerning these matters. But every housekeeper becomes more or less solicitous concerning her catering upon occasion of giving a breakfast, luncheon, or dinner-party, or even a family meal to which guests are to be entertained. The instinct of hospitality impels most persons to feel that nothing is too good for the invited guest; yet the best intentions of the housekeeper who habitually entrusts the choice of meats, poultry, and game to the butcher, and of vegetables to the green-grocer, are often unhappily defeated by the dealer's carelessness or by her own inability in an emergency to recognize the best, so as to insist upon having it. Every woman, out of regard for the welfare of her family, should do her own marketing. But certainly the woman who entertains should cultivate this practice and the nice skill in catering

that it gives, will add immeasurably to the success of her dinner-parties and other entertainments.

The Selection of Meats.—Not many housekeepers give enough thought to the characteristics of the various cuts of meat resulting from their natural relation to the living animal. Indeed, the cook or the carver who knows just what part of the living animal is represented by the piece before him, or what relation the bone in a steak or roast sustains to the animal's skeleton, is doubtless the very rare exception. Yet nothing could be simpler than to familiarize oneself with the various cuts of meat, as exemplified in the accompanying plates, or to identify these upon the butcher's counter. Indeed, any housekeeper can readily arrange, by appointment with the butcher, to be at hand when the latter is cutting up a side of beef, veal, mutton, or pork, and thus receive without expense a practical demonstration of the art of meat cutting.

The method of cutting the various sides of meat has been described elsewhere. It is sufficient in this place to discuss the special characteristics by which the best grades of meat may be recognized when marketing, and the qualities of the various cuts from the standpoint of catering, especially for dinner-parties and other entertainments.

Full directions for cooking the various meats and meat dishes are also given elsewhere but it seems desirable to give in this connection certain suggestions of special interest to the woman who entertains.

METHODS OF COOKING JOINTS, POULTRY, AND GAME

There are three typical methods of cooking meat: first, by the application of intense heat to keep in the juices, as by roasting, baking, or broiling; second, by placing the meat in cold water and cooking for a long time at a low temperature, i.e. boiling; and, third, by a combination of the two processes, first searing, and then afterwards stewing the meat. The first method is suitable only for the most tender cuts, young poultry, and game

birds, and as these are the kinds of meat most often selected for meals at which company is to be entertained, the processes of roasting, baking, and broiling, and the kinds of meat, poultry, and game that are best adapted to these methods of cookery are of chief interest in this connection.

Cooks recognize a distinction between roasting and baking. The word roasting, properly speaking, applies to the old-fashioned method of cooking by the direct radiant heat from the open fire; whereas baking is cooking by heat reflected by the sides of the oven. The older method of roasting is now very little practiced in private houses, and the term roasting is now most often improperly applied to baking in an oven. The rules for the treatment of the meat, however, are substantially the same in both cases, and the two processes therefore may properly be dealt with together.

Meat which is to be roasted should never be washed, but only wiped over on the outside with a clean, damp cloth. For roasting in the older sense of the term, it should then be hung on the roasting spit or hook. For baking it should be set on the trivet or meat stand, and placed in a dripping-pan large enough to project two or three inches all around it. The modern double dripping-pan, having a close-fitting cover, with a vent to allow the escape of gases and steam from the meat juices is infinitely superior to the old-fashioned single pan, and the purchase of at least two such pans—one of about 8 inches for small roasts, game birds, and the like; and one of about 18 inches for large joints, roasting chicken and turkey—is to be earnestly recommended to every housewife.

A very essential point in roasting or baking meat properly is to expose the joint or bird for the first few minutes to a very high temperature to sear the surface and thereby harden the albumen on the outside so as to prevent the escape of the meat juices, and then to lower the temperature and keep it at a substantially lower point for the remain-

der of the time that the joint requires for roasting or baking, with the object of preventing a similar hardening of the albumen in the interior of the meat. The proper temperature for a large piece of meat at the beginning is about 550 degrees, but after the surface is well browned, the temperature should be dropped to about 400 degrees, and kept at this point until the process is finished. To accomplish this, a roast of meat should be hung close to the fire, and meat to be baked should be placed in the hottest part of the oven, until the surface is thoroughly browned. Then it should be drawn back or moved to a cooler part of the oven. If a gas oven is being used, the gas should be turned on full, in advance, and allowed to burn about ten minutes. Then it may be turned down slightly to reduce the temperature. In the absence of an oven thermometer the cook, must of course learn by experiment the proper management of her own oven.

Basting and Larding.—Meat, while being cooked, whether by roasting or baking, must be often basted, i.e., the melted fat which has run from it must be poured over its surface with a spoon or ladle, to prevent the roast from drying out or burning. In order to insure that there may be sufficient dripping for this purpose, the cook must take notice whether the meat has enough fat; otherwise a little additional fat should be put in the pan, and also upon the top of the roast. Lean joints of meat, or poultry, game, and the like—which have no natural fat on the outside—should be larded by having slices of fat bacon laid over them and tied tightly with a cord to protect the meat from browning too rapidly. Or a piece of buttered paper may be used for this purpose, which may be taken off during the last fifteen minutes so that the surface may become brown. Larding is usually necessary for thick pieces only. Meat roasting before an open fire requires frequent basting, at intervals of about ten minutes. Meat baking in the oven—except for very small pieces—requires basting only about half as often, or at intervals of twenty minutes.

How Long to Cook a Roast.—Some experience is required to determine when a roast is sufficiently done. The inexperienced cook should consult the Complete Time Table, elsewhere given. But one must also consider that the time required depends upon the weight and the quality of the roast. As a general rule, a thick piece of beef requires fifteen minutes to the pound, and fifteen minutes over. A similar piece of pork or veal will require twenty minutes to the pound, and fifteen minutes over; poultry, fifteen minutes to the pound.

With a little experience, the cook should be able to tell when the meat is done by pressing with the finger upon the outside. If the roast is well done, the outside will recover slowly from the pressure of the finger. If done, it will rebound at once. If overdone, it will scarcely yield at all.

Broiling.—Broiling, like roasting, is cooking by the direct rays of the fire but, unlike roasting, it is adapted to small and thin pieces of meat, such as chops, steak, chicken, and smaller game birds. The whole of the cooking is accomplished by sharp heat applied to the outside, but so regulated as to allow the outside to be hardened while the inside is being gently cooked. To accomplish perfect broiling, some care and experience are required, and lack of care and judgment many times causes failure in broiling, the meat being either tough and dry or underdone. In cooking on the grill, the state of the fire must be taken into consideration. The coals must be glowing, without smoke or flame. Should flame arise, a few drops of cold water sprinkled over the coals will cause them to subside. For broiling by gas, the gas must be lighted long enough in advance to radiate a strong heat, both over and under the grill. The grill must be greased with suet or pieces of larding pork, and the steak or other pieces of meat to be broiled laid on this, held at a proper distance from the fire, and turned once in a while till done. A chop or steak, when properly grilled, should look plump in the middle, and should be

rare and juicy, rather than dry and hard.

For full instructions as to the time required for broiling, consult the Cook's Complete Time Table. But observe that, in general, the time is regulated, not by weight, but by the thickness of the meat, and is approximately as follows: For a steak, one and one-half inches thick, underdone, fifteen minutes; welldone, twenty minutes. For a steak, one inch thick, underdone, twelve minutes; welldone, fifteen minutes. For spring chicken, fifteen minutes, squab chicken, ten

served with good taste at any season of the year.

Beef is affected as to quality by several conditions, such as the breed of the animal, the manner of feeding, the amount of exercise, the age when killed, and the length of time the meat is allowed to cure before being used. The beeves from the ranges of the West and Southwest—commonly known in America as Western or Chicago beef—are to be preferred, as a rule, to local beef; indeed, there is very little of the latter nowadays in the American market. A grass-

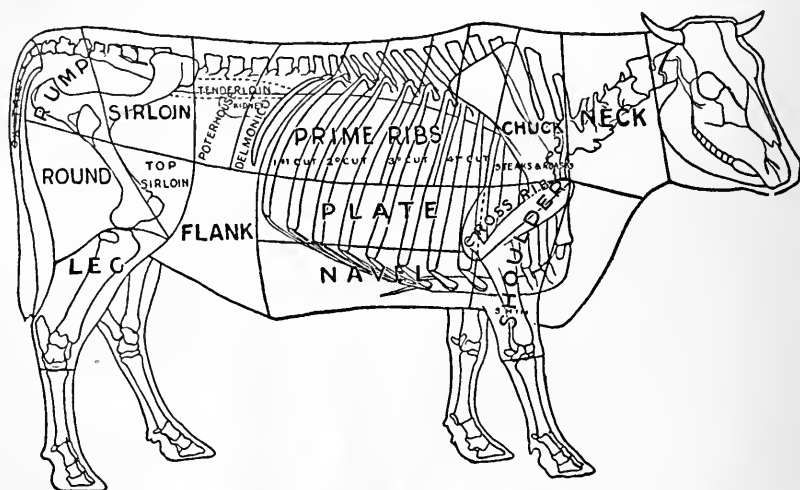


Chart Illustrating American Method of Cutting Side of Beef

minutes. For a lamb chop, seven minutes; and for a veal chop, fifteen minutes.

SELECTION OF BEEF

Characteristics of Beef.—Beef is a staple article with the butcher and the housekeeper the year round, for not only is a fresh supply constantly coming into the market, but a surplus is always kept in cold storage. Lamb and veal are especially seasonable in early spring and summer, mutton and pork in late fall and winter; but beef of good quality may be had at any time, and may be

fed steer, allowed to range on the open plains so as to receive a moderate amount of exercise, yields, in general, the best beef, as these conditions make the animal healthy and give the meat the finest flavor; but the stall-fed steer also develops beef of good quality. The age of the animal at killing for prime beef is four years, but the beef continues to be good up to the eighth year of the animal's age, after which it is likely to become tough and stringy.

Both the flavor and texture of beef are very much improved by hanging, that is, being kept as long a time as possible before using. The objects of

hanging are to allow the skins to dry thereby closing the pores so as to exclude the germs that cause decay and to allow the muscular fibers and other tissues to relax and soften. To accomplish these results a side of meat should be hung up (never laid flat on a table or shelf) either in the open air—which is to be preferred in a hot, dry climate—or in cold storage. The larger the side or cut, the longer it may be safely hung before being used, and for this reason the heaviest sides of Western beef are quite commonly shipped to England, where the market demands large cuts with a "high" flavor resulting from long hanging.

To select good beef, one should preferably go to the butcher-shop and inspect the meat in the full side, or at least before the cut is trimmed, and should require the cut selected to be set aside and trimmed in one's presence. The beef from a medium sized carcass, weighing eight hundred to nine hundred pounds, is likely to be best. The side or cut should be medium fat, not over fat, but certainly not lean.

With the aid of a little experience anyone can learn to distinguish between the fine texture and bright color of young beef, and the coarse, dry texture and dark color of that from older animals. The flesh in healthy young beeves is firm and of fine texture; the color of the lean meat, bright red, that of the fat, yellowish white. But observe that a dark color in beef may be a mere surface discoloration due to exposure to the air, which may be trimmed off, leaving the rest of the cut entirely acceptable for use; or it may be an indication that the beef is old, or even tainted. The difference can easily be detected when the cut is trimmed. One may judge the quality of beef not only by the thickness of the layer of fat underlying the skin and about the kidneys, but also by the extent to which the meat is "marbled," i.e., shot through with yellowish white streaks and spots of fat.

The portion of any animal that gets the least exercise is naturally the finest, both in texture and flavor.

Hence the portion of all animals surrounding the backbone, contains the choicest cuts, and is preferred to the limbs, neck, and similar pieces. In the beef, the choice cuts are the prime ribs, commonly served as roasts, and the Delmonico, porterhouse, sirloin, and tenderloin cuts, which may be served either in the form of roasts or steaks. The chuck or shoulder clod and the rump, round, and top sirloin, stand next in order of general desirability.

When the beef carcass is first divided into halves, the backbone is split lengthwise so that the cuts taken from the portions surrounding the backbone—including the rib roast, the Delmonico, the porterhouse, etc.—each contain a triangular piece of bone, representing one-half of the animal's vertebræ. The side is next divided into quarters, called, respectively, the fore- and hind-quarters, of which the muscles of the former having received more exercise are coarser and tougher than those of the latter. By reference to the accompanying illustrations the sections of bone that are found in the various cuts of beef can be readily identified. From the standpoint of economy, it is apparent that, in general, the amount of bone in the cut should be small in proportion to the amount of meat. But in this connection the table given elsewhere, showing the relative amount of bone in the different cuts of meat, should be consulted.

Perhaps the most fashionable cut of beef for a dinner-party is the filet roast, i.e., the entire tenderloin detached from the backbone and roasted. The filet should be cut from a young, fat beef, and should be well marbled with fat. But since the filet is essentially a piece of lean meat, it is customary to lard the tenderloin by drawing ribbons of fat pork through the upper surface by means of a larding needle—a hollow implement designed expressly for this purpose—in such wise as to leave both ends protruding. The larding can be seen in the accompanying illustration of carving the tenderloin.

The filet or tenderloin of beef is, in the opinion of many, greatly over-

rated. For, although the tenderest of all cuts of beef, it is neither as juicy nor as rich in flavor as the rest of the loin. When planning for a filet roast, it is sound economy to buy the entire loin, i.e., the Delmonico and porterhouse cuts — or such part of them as may be necessary to secure a filet of the described size — remove the tenderloin for the filet roast, and reserve the rest to be served as steaks, or to be roasted subsequently. The thin end of the tenderloin, extending toward the rump, is less desirable, and would better be omitted, unless a very large filet is desired.

Next to the tenderloin, the short loin — including the porterhouse, and Delmonico cuts — makes the juiciest and tenderest roast, and excels even the filet in flavor. This cut makes an excellent roast for the family dinner to which one or more guests are invited. The short loin may be prepared for roasting in either of two ways, with or without the bone. Many hostesses prefer to have the bone removed to facilitate carving, in which case the butcher should be instructed to this effect when the roast is ordered.

ROASTING, CARVING AND SERVING BEEF

In buying a roast, allow about one pound, or slightly less, for each adult member of the company. That is, order a roast of from four to six pounds for a dinner-party of six people. To prepare the rib roast, or similar roast of beef, for a dinner-party, first make ready the roast as shown in the accompanying illustrations, or request the butcher to do so, and lay it in the dripping-pan upon the rack or trivet, as illustrated. Add salt, pepper and, unless the meat is very fat, a few drippings or pieces of fine fat. Put the skin side down and set the meat in a very hot oven, so that the fierce heat may sear and hold the juices in the lean part. When this part becomes brown, showing that the meat has become seared, baste with the fat, and reduce the heat. For a dinner-party or company dinner, beef should be roasted rare,

the condition of beef roasted to a turn being indicated by the expression, "the blood should follow the knife."

The time required for a thick piece of beef is about fifteen minutes to the pound, and fifteen minutes over, and the roast should be ready at least a half an hour before being carved, in order to allow the albumen inside to set. A somewhat longer time should be allowed for a roast which has been boned and rolled into symmetrical form as such a roast is more compact and the interior heats through more slowly.

No water should be placed in the dripping-pan unless there is danger that the fat in the bottom may be burned, in which case a tablespoonful at a time may be added. The juices from the meat will ordinarily form a sufficient gravy. But the flavor of the gravy may be very much enhanced by placing around the roast in the pan a few small carrots and onions, and a sprinkling of bay leaves, thyme, and parsley. Many hostesses also add small, new potatoes in season, previously peeled, to be baked, browned, and flavored by the roast.

Lean roasts of meat and poultry or game birds, that are deficient in fat, may also require larding, i.e., the addition of some meat or vegetable fat, such as fine drippings, lard, crisco, or the like. Butter should not be used for this purpose, as it is likely to burn at the bottom of the pan. The gravy, however, should not be suffered to become too rich and greasy. If any fat is evident upon the surface of the gravy, it should be poured off before the gravy is served or thickened.

The gravy may be thickened or not, as the hostess prefers, the unthickened or "dish gravy" being usually given preference at formal meals, and the thickened gravy being perhaps more customary at family dinners. French cooks, in order to make a somewhat richer gravy, commonly sprinkle dry flour over the roast before placing it in the pan. After becoming browned and flavored by contact with the roasting meat, this flour, gradually falling into the bot-

tom of the pan, browns and flavors the gravy and slightly thickens it. After the meat is done and has been removed to the platter, hold the corner of the dripping-pan over a bowl, pour off the fat from the top of the gravy, and save it. Then pour one pint of good stock into the pan, dissolve in it all the sediment of the coagulated albumen and juices, simmer until it has been reduced about one-third in bulk and pour into the sauce bowl. For further suggestions on the length of time required for roasting, consult the Cook's Complete Time Table.

The prime ribs of beef are used chiefly for roasts, and constitute the best part of the fore-quarter.¹ Between the four cuts of prime ribs there is a very decided preference. The first cut, that nearest the hind quarter, is very nearly equal in quality to the short loin, and is valued accordingly. The second cut is also a very good roast. The others are less desirable in their order. Rib roasts may also be had boned and rolled by the butcher, if desired, but these cuts are quite commonly roasted with the bones, upon the ground that they give the roast additional flavor, and also cause it to present a more attractive appearance. Other less desirable, but also less expensive roasts, are the top of the round, i.e., the inside of the hind quarter of the animal—so named because that side usually lies uppermost on the butcher's counter—the rump, and the chuck, or shoulder clod, a solid piece of meat of low cost, but of fair quality.

Carving and Serving Roast Beef.—The filet or tenderloin, properly larded, presents a very attractive appearance, especially when garnished with a few sprigs of watercress or parsley. To carve, it should be held firmly with a fork, grasped in the left hand, and cut into slices slightly less

than a half inch thick, beginning with the thicker or forward portion of the tenderloin, and continuing toward the thin end. The slices should be cut squarely across the grain of the tenderloin, which is usually at a slight angle from the plane on which the filet lies.

To serve a filet of beef, serve each person one slice, add a few sprigs of parsley or cress, and put a spoonful of mushroom sauce upon the side of the plate.

The short loin, the top of the round, the rump, and the chuck roasts are carved and served in the same manner as the tenderloin, i.e., in slices cut vertically across the grain, except that they should be sliced as thin as possible. The top of the round, especially, should be in very thin slices, as it is rather tough, although juicy and well flavored.

The process of carving a porterhouse, Delmonico, or rib roast depends upon whether or not the bones have been removed. In the latter case the roast should be rolled into symmetrical shape, and fastened by means of either metal or wooden skewers, preferably the former, or by means of cord. The proper cord for this purpose is rather large and soft, and should be cut into the right lengths, drawn tightly around the roast, and knotted at intervals of about one inch throughout its entire length. The cord should not be continuous, else the carver will have difficulty in separating it and it will present an untidy and awkward appearance.

The accompanying illustration shows a rib roast from which the bones have not been removed, the ends of the ribs being decorated with paper frills, and the platter garnished with watercress. To carve such a roast, observe that it should be placed before the carver with the ribs protruding to his left. He then steadies the roast by grasping the uppermost rib with the left hand, and cuts very thin slices transversely across the grain, until the edge of the knife encounters the rib. He then draws the point of the knife across the slices near the bone, so as to separate them.

¹ In New York, all the ribs are cut on the forequarter; but in Boston and some other localities only ten ribs are cut on the fore-quarter, the remaining three being left on the hind-quarter. Other differences in the customs of cutting meat will be encountered in different cities and, as a rule, will be cheerfully explained, on request, by the local butchers.

The process of carving a porterhouse, Delmonico, or rib roast from which the bone has been removed is precisely similar, except that the roast is steadied by means of a fork, firmly inserted at a point just below the slice that is next to be taken, and that the skewers or cords with which the roast is fastened together must be removed, one by one, as they are encountered. If the skewers are inserted, as they should be, directly across the grain of the meat, so as to be parallel with the slices, they can usually be loosened without difficulty, and should be placed upon the side of the platter or carving board. If the roast is bound with cords, only one cord should be cut at a time. This should be loosened with the fork, and allowed to fall upon the side of the platter or carving board, with due care that it does not come in contact with the cloth. The other cords should be left in place until the rest of the roast is sliced down to them, in order to keep it in shape and preserve the uniformity of the slices, and also to prevent the juices from running out.

Carving and Serving Beefsteak.—The Delmonico, porterhouse, and sirloin cuts are very commonly served as steaks, either broiled or planked, broiled steak being a favorite dish in American households for informal family dinners, to which one or more guests are invited. Instructions for broiling and planking steaks are given elsewhere, but observe that any steak worthy of the name should be cut very thick—an inch and a half, or even two inches being about the proper thickness—and that they should be broiled or roasted very rare, so that the meat will be bright red, rather than white, or even brown, in color. One of the most common and flagrant errors of the American cook is to order (or accept) steaks cut a half inch or less in thickness, and to fry them until they are done brown through and through, and of a tough and leathery consistency.

The carving of steak will be greatly expedited if the butcher is instructed to take out the bone—which can be done to very much better advantage before the steak is cooked than after-

ward—and steaks to be planked are invariably boned before planking. Otherwise the carver should first remove the bone by cutting along its edge with the thin round-pointed knife, which is elsewhere recommended for this purpose. He should then divide the entire steak, except the thin portion at the small end, into sections of an inch or more in width, depending upon the thickness of the steak and the number of guests, beginning with the wide or bone end of the steak.

In serving porterhouse Delmonico and similar beefsteaks, the fact should be borne in mind that the tenderloin and wider portion of the steak, opposite the tenderloin, is superior in texture and flavor to the narrow portion at the opposite end. Hence, in justice to all, it is desirable to divide the steak, if possible, into about twice as many strips as there are guests, and to serve each guest with one of the less desirable, as well as one of the more desirable portions.

A steak should preferably be garnished with sprigs of watercress, one or two of which should be placed beside each portion served, and a spoonful of gravy should be added upon the side of the plate. The planked steak is served with an assortment of vegetables, the various vegetables being placed around the steak in orderly array, each kind by itself, so as to form a most effective garnish. Planked steak is first divided in the same manner as any other; then one or more slices are served to each plate, and a helping of each of the various vegetables added, with care to preserve their separate identities and to avoid jumbling all together.

SELECTION OF VEAL

The subject of veal is of very slight importance from the standpoint of catering for entertainments, as roasts of veal are rarely employed for this purpose, and perhaps never except from the standpoint of economy. Veal is very much inferior to beef, both in flavor and in nutritive qualities, being immature at best, but the quality depends largely upon the age of the animal when killed, and the

manner of feeding. The flesh of the calf killed under four weeks of age — “bob” veal — should never be used for food, and six to ten weeks of age is preferable as the time for killing. Veal should be very fine grained, tender, and either clear white or slightly pinkish in color. If the flesh is flabby, watery, and gray or bluish in color, the meat is immature and unwholesome. The skin should be very dry and white rather than of a grayish color. Veal is not very fat, as a rule, but there should be some

pounds and makes a suitable roast for twelve or more people. These various roasts are sometimes served at informal family dinners, but are not usually regarded as suitable for formal meals or preferred when guests have been invited. The leg of veal is usually divided into cutlets. The loin or rack is frequently divided into chops.

The loin of veal is carved precisely as the tenderloin or Delmonico roasts of beef, except that, being the entire joint, the roast is placed upon its

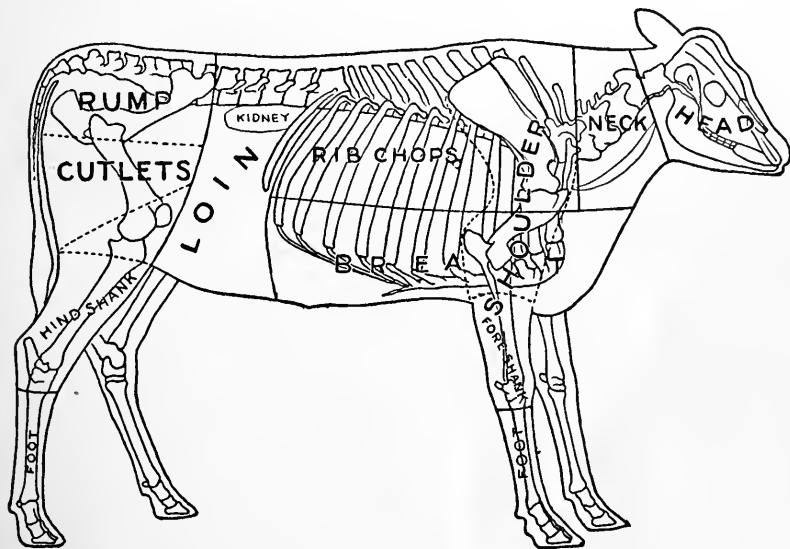


Chart Illustrating American Method of Cutting Side of Veal

fat to indicate that the animal has been properly nourished. The method of cutting up a side of veal is sufficiently shown in the illustration. The principal roasts are the loin and the shoulder. The loin of veal is prepared for roasting by being rolled up with the kidney in the center, and either tied with cord or fastened by means of skewers, after the same fashion as boned roasts of beef. The shoulder, or even the entire fore-quarter, is so small that it can be easily boned and rolled for a roast. A shoulder of veal weighs about ten

side, with the backbone next the platter. The slices are cut vertically across the grain and then detached by cutting with the point of the knife along the bone. The shoulder of veal is usually boned and stuffed and is carved in the same fashion as the short loin, rump, chuck and similar cuts.

While veal is seasonable in many markets the year around, the quality, as a rule, is best in the spring and summer. It is usually in its prime in May.

SELECTION OF LAMB AND MUTTON

From the standpoint of catering for entertainments, lamb and mutton rank next after beef in order of interest and importance, the leg of lamb, the crown roast, and the loin roast being esteemed as delicacies suitable for the most formal entertainments. The earliest, or so-called hot-house lambs, come into the market toward the end of winter, weighing about twelve or fifteen pounds. Around Easter time comes the so-called Easter lamb, weighing fifteen to twenty pounds.

means equally as well flavored, in the judgment of epicures, as good mutton. Mutton, moreover, is much less expensive than lamb, is more economical to carve and serve, and, from the standpoint of family meals, is more desirable in every way. For formal entertainments and company dinners, however, the more delicate young lamb is advisable.

The best young lamb is from a carcass of medium weight, of fine, firm texture, clear pink in color, and neither too fat nor too lean. The fat should be clear white. The age of

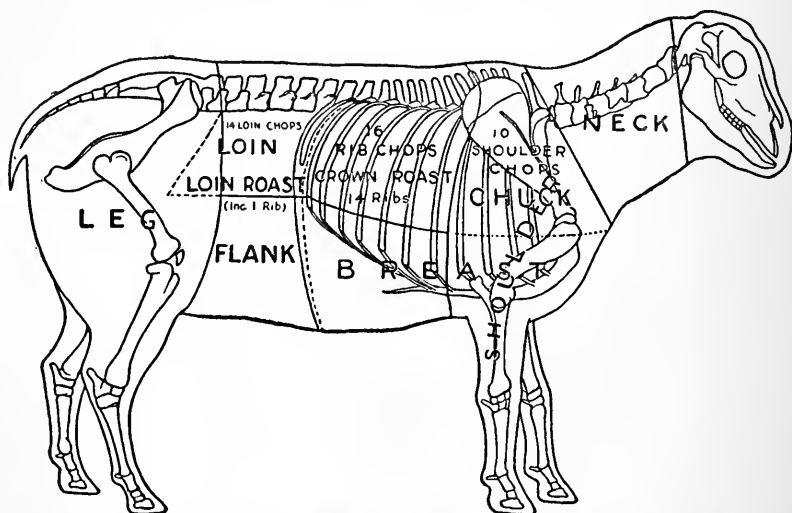


Chart Illustrating American Method of Cutting Side of Lamb or Mutton

These are followed by the spring lamb, weighing eighteen to twenty-four pounds, during the months of May, June, and July. Spring lamb is at its prime in the latter part of June and July and continues in the market until about September. After that, the animal being a year or more old, its flesh is known as mutton.

Young lamb meat has a characteristic pinkish color, which gradually deepens and becomes red in mutton. While spring lamb is esteemed as a great delicacy, it is, like veal, relatively immature meat, and is less digestible, less nutritious, and by no

the animal may be determined by the bone in the foreleg, that of the young lamb being smooth, and that of the older animal showing ridges, which increase in depth with age. The quality of mutton may be judged by the amount of fat, the texture, and the weight. Mutton should be fatter than lamb, the flesh of fine rather than of coarse grain, and the carcass small to medium. A large carcass usually indicates age. Coarseness of texture indicates toughness. For good mutton the animal should be plump, with small bones, and under five years of age. Lamb or mutton

should be hung at least three weeks, and preferably longer, before serving. The average mutton carcass weighs from thirty to forty pounds.

The lamb or mutton carcass is usually divided, like the beef, first into halves or sides, and afterward into fore- and hind-quarters. But where a larger roast than the loin or crown roast is desired, the entire back portion of the animal, including the loin on both sides of the backbone, is taken out, this cut being known as the saddle of lamb or mutton. The leg and shoulder of lamb or mutton are commonly roasted whole. As in the case of beef, the loin of lamb is esteemed a great delicacy, and either single or in the form of saddle, is a favorite roast for company dinners, especially in England. The crown roast consists of the fourteen ribs of the fore-quarter, trimmed and arranged in circular form, fastened with skewers, and stuffed with the portions trimmed off in dressing the roast which are chopped fine for this purpose. If a larger roast is required, additional ribs can be inserted, taken from the opposite side.

Lamb and mutton, although delicious when properly cooked, are often very uninviting from carelessness in cooking and serving. When properly decorated and garnished, the crown roast of lamb makes a very attractive dish, especially when carved at the table, after the English or the American style of service. For family meals, the loin and rack are commonly divided into loin and rib chops, respectively. These are broiled and served singly.

The average leg of lamb weighs about six or seven pounds, and is sufficient to serve about seven or eight persons. A loin roast weighs about three pounds, and is sufficient for three persons. The saddle is, of course, exactly double the loin in quantity. The shoulder weighs four to five pounds, trimmed ready for roasting. The rack—that is, the portion of the spine on the fore-quarter to which the ribs are attached—weighs from two to four pounds. The shoulder, or rack, should serve three or four persons.

CARVING AND SERVING LAMB AND MUTTON

Roast Leg of Lamb.—To get the most from a leg of lamb, and to carve it easily, the butcher should be instructed to remove the hip bone. The joint should be put on the rack in the dripping-pan with the fleshy part up. French cooks flavor roast lamb by inserting four or five cloves of garlic at intervals over the surface, in small openings, made by thrusting the point of a wooden skewer through the fat and into the meat. A better flavor will also be imparted to the meat and to the gravy if a few carrots and onions are placed around the roast in the pan. Small new potatoes may also be baked in the pan, as with the roasts of beef.

When served, the bone in the leg of lamb may be decorated with a paper frill, and the platter garnished with sprigs of watercress or parsley. To carve this joint, it should be placed before the carver with the bone to the left and the skin side down and steadied by inserting the fork well down toward the end of the roast. Thin slices should then be cut, beginning at the right end, or thickest portion of the roast, at an angle of about thirty degrees, working back to the left until the roast is sliced to the bone. Larger slices can be had by slicing horizontally across the top of the roast, but such slices, being cut with the grain, are not equally as tender or palatable. Some persons prefer to carve this roast vertically, making the first cut about the middle of the roast and taking slices from either side. And this plan has the merit of cutting directly across the grain, which is always an advantage. This method is objected to, however, by many, as not being economical of the roast, for the reason that the slices at either end are too small to serve and a portion of the roast is thereby wasted; whereas, by the method first above recommended, the slices taken at an angle across the grain, are sufficiently tender and palatable, and yet permit of carving the entire upper portion of the roast into good-sized slices. If more per-

sons remain to be served after the upper part of the roast has been sliced down to the bone, the bone should be removed by making an incision on either side of it, loosening it at the end, and running the knife underneath, between the bone and the meat. The lower part of the roast may then be sliced the same as the upper part, the knife being held at such an angle as to increase to any desired extent the size of the slices.

Saddle of Mutton.—Few joints are more toothsome or nutritious than the well cooked prime saddle of mutton, whether roasted entire or grilled in the form of English mutton chops, which include the kidney lying just

may then be carved according to two entirely different methods. The English method of carving is to slice the meat lengthwise. The French method is to slice each piece crosswise, precisely as in serving a tenderloin of beef but in very thin slices.

The crown roast, when properly trimmed, roasted, decorated, and garnished, makes an extremely attractive dish, and is especially suitable for the formal breakfast or luncheon. The end of each rib should be decorated with a paper frill, and the platter garnished with cress or parsley. To carve a crown roast is most simple, the divisions between the ribs being clearly indicated, and no more

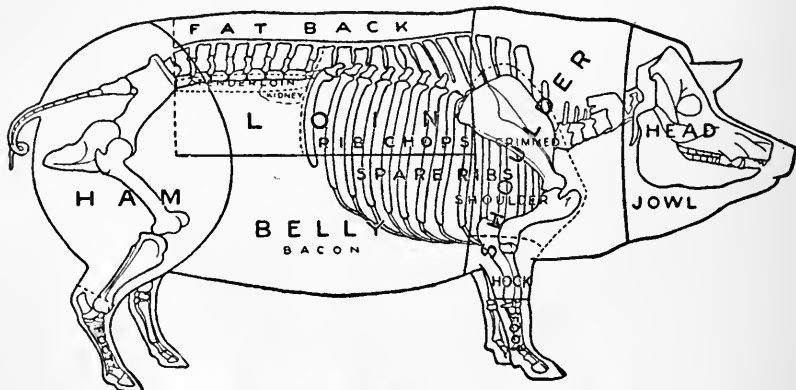


Chart Illustrating American Method of Cutting Side of Pork

under the vertebræ. The best saddle of mutton comes from the short-legged breeds, having black legs and feet, and short, thick, stubby tails, such as the Southdown, in which the meat comes well down the leg, nearly reaching the feet. The saddle of lamb or mutton is rolled and fastened with skewers or tied with cords, and otherwise prepared and roasted after the same manner as the equivalent roasts of beef. This joint should first be boned. To this end place it with the bone resting upon the platter and the end toward the carver, make an incision the entire length down to the backbone and remove the meat from the bone in two pieces. It

care being required than is necessary to cut the portions of equal thickness. A single chop, with a portion of stuffing, a few sprigs of cress or parsley, and a spoonful of gravy is served to each person.

THE SELECTION OF PORK

Pork is seasonable only in autumn and winter. The great bulk of the animal is so fat that it is unsuitable for food while fresh, and is therefore cured and salted as bacon, salt pork, and the like. The hams are served either fresh or cured, and may be baked, boiled, or broiled in the form of steaks. But with the exception of

baked cured ham, sliced cold, no joint of pork is really suitable for service at entertainments. The ribs and loin are the most desirable fresh cuts, and may be either roasted or served in the form of chops.

Fresh pork should be of firm texture, and fine grain, the lean, pink and the fat, clear white in color. The loin of pork is prepared for roasting either with or without the bone, in much the same fashion as the loin of beef or mutton, except that, being a lean piece of meat, it may require to be larded with a strip of bacon or salt pork, laid over the top of the joint and fastened with cords, as shown in the illustration. This joint is carved in the same manner as the similar joints of beef.

SELECTION OF POULTRY

Chicken, turkey, geese, and domestic ducks are classified as poultry; wild duck, wild geese, partridge, red birds, quail, and other small birds, as game. Poultry is a staple article of diet, being more or less available at every season of the year. The first broilers come into the market very early in the spring, and continue to become more plentiful, and to decrease in price during the spring and summer. The season for broilers may be said to be at its height in May and June, at which time they make an excellent dish for formal breakfasts, luncheons, and similar entertainments, and afford a substitute for game birds for formal dinners. The so-called milk-fed and early spring chickens begin to become available in July, and continue in the market until August. They are commonly cooked, either à la casserole, or roasted, and make an admirable dish for luncheons, breakfasts, and dinner-parties, in the form of supreme of chicken, i. e., breasts of chicken, either sautéd or broiled and served with any suitable sauce. Philadelphia capons suit to come in about the same time as roasting chicken, namely, in September. They are commonly served at dinner, usually roasted. The capon has a somewhat larger and plumper carcass than other chicken,

and is further distinguished by its richer flavor.

Chicken and other poultry is usually most plentiful before Thanksgiving, and the supply of local stock is generally exhausted on or before the holidays. After this the city markets are supplied chiefly with cold storage stock, and hold the local stock at an average level of about one-third higher. As the season advances, the tendency is for the local stock to increase in relative price as the cold storage stocks shrink and deteriorate in quality.

The season for turkey is now very similar to that for chicken. Not many years ago turkeys were thought to be at their best only on or after Thanksgiving Day, but young turkeys, comparable to chicken broilers and milk-fed chicken, are now commonly cooked and accepted as a summer delicacy. Young Guinea hen broilers and roasting chickens are also very delicious, being even more tender when properly cooked, than chicken, and having a distinctive flavor that makes them an excellent substitute for game birds.

The season for domestic ducks is the same as that for chicken. The quality of poultry depends upon the breed, the method of feeding, the age of the bird when killed, the manner in which the carcass is dressed, and the length of time that it has been upon the market. No other kind of meat requires more knowledge, skill, and care in catering than poultry. As to breed, the black and red feathered birds are always to be preferred over the light feathered varieties, and the gray feathered birds are always to be avoided. The best chickens have soft, yellow feet, smooth, thick legs, and smooth yellow or white skins. The yellow skinned birds are likely to be more plump, those having white skin more tender. The skin should be moist and tender, and the breast plump and firm. The cartilage of the breastbone should be soft and pliable. But observe that this cartilage is sometimes broken to deceive purchasers, a device which, however, if the purchaser is upon his guard, can be very easily detected.

As to feeding, grain-fed chickens are to be preferred to those fed upon table scraps or garbage. Fowls fed upon rice, as is quite customary in certain parts of the South, have white fat, and the Southern barnyard fed turkey, fattened on small rice, is among the finest of domestic fowl. Poultry fed on cornmeal have yellow fat. The so-called milk-fed chickens are presumed to be fed, or at least fattened, in large parts, upon meal, or other ground grain mixed with milk instead of water.

The age of poultry at the time of killing may usually be detected by the legs and feet, which in young birds are smooth, moist, and supple, and in older fowl hard and scaly. One test is to try the skin under the leg or wing, or to seize a pinch of the breast meat and twist it. If the skin and flesh is tender and breaks easily, the bird is young and fresh. Otherwise, it is probably old, and certainly is tough. Also turn the wing backward. If the joint yields readily it is tender. The eyes of fresh young fowls are full and bright. A growth of hair over the carcass is an indication of age in both chicken or turkey. Plentiful pin feathers denote a young bird. The flesh of the old turkey, where it shows under the skin upon the back and legs, is purplish. Observe in this connection that about March turkeys begin to deteriorate in quality.

As to the method of dressing, great care should be taken to avoid poultry the flesh of which has become tainted and unwholesome. All poultry should be promptly and properly drawn, but the laws of some states permit of fowls being kept for sale undrawn, a condition which is not only a serious menace to health, but is ruinous of their proper flavor. The partly, or otherwise improperly, drawn chicken is often as bad (and sometimes even worse) than the undrawn one. The higher price charged in most markets for the so-called Philadelphia chicken is a premium paid for proper methods of killing and preparing them for market.

The flavor of poultry is also impaired by scalding, as an aid in re-

moving the feathers, hence the dry picked fowl sells at a higher price, and is to be preferred, although its appearance may be somewhat less attractive.

As to the length of time that poultry has been upon the market, the law in most states gives the buyer little or no protection, and in these days of cold storage it behooves him to be upon his guard and to place little or no reliance upon the representations of dealers, except when buying in the most reliable local markets. One of the best tests of the fresh chicken is the color and condition of the eyes. If they are bright and clear, as in life, the chicken is fresh, but if dull and lusterless, or even further deteriorated, the carcass has been for some time in cold storage. Another test is to open the beak of the chicken and note whether the blood is still red, in which case the chicken is fresh; whereas, if it is white, the opposite is true.

A domestic duck or goose should never be more than a year old. Young ducks and geese have white, soft feet and tender wings. The body should be plump and thick, the fat light and semi-transparent, the breastbone soft, the flesh tender. The leg joints should break under the weight of the bird. The beak should be flesh-colored and brittle. The wind-pipe should break when pressed between the thumb and fore-finger.

Domestic ducks—commonly called in Eastern markets, Long Island duckling—and the domestic geese, are, at ordinary prices, as economical as chicken, and may well be used for family dinners on Sundays, holidays, and other special occasions, for the sake of variety, somewhat more commonly than they now are. The season is the same as for poultry.

SELECTION OF GAME BIRDS

The principal game birds in the American market are wild duck—such as the Canvas, Mallard, Redhead, Blackhead, Teal, and many others—the wild goose, partridge, pheasant, quail, woodcock, snipe, etc. The best test for selecting game birds is to

weigh each one in the hand. The finest birds are always heaviest for their size. The flesh of the breast should be firm, fat, and plump, and the skin clear. Pluck a few feathers so as to expose the flesh inside the leg and about the vent. The flesh of the newly killed bird will be fresh in color and fat; that of the bird which has been hung a long time will be dark and discolored. The wings of the larger game birds should be tender to the touch. The small ones should have full and tender breasts. Note that in the partridge the tips of the wing are pointed in young birds, and round in old ones. The partridge should have full, heavy breasts, dark bill, and yellowish legs.

A good substitute for the smaller game birds is the squab, or the young of the domestic pigeon, which are available in most city markets, at prices within the means of persons who have occasion to entertain in a formal way. The flesh of young pigeons is light red upon the breast, the legs are full and fresh colored. If the breast meat is dark and the legs thin, the birds are old.

Wild duck and most other game birds are in season from November until March.

DRESSING POULTRY AND GAME

As a general thing, fresh killed poultry should not be cooked for twenty-four hours, although in hot climates, as, for example, in the Southern United States, broiling and roasting chickens are commonly sold alive, and killed by the cook and immediately prepared for the oven. But at all events, poultry should be picked and drawn as soon as possible after killing. The flavor of poultry is better if the birds are picked dry, but the feathers will come off more easily if the fowl is plunged into a pot of scalding water. After the carcass is picked clean it should be held over the coals or over a roll of burning white paper or an alcohol flame, to singe off all hairs.

To draw poultry and game, make cut around the vent and make an in-

cision up toward the breast bone. Insert two fingers, loosen the fat from the skin and separate the membranes lying close to the body. Keep the fingers up close to the breastbone until you can reach in beyond the liver and heart and loosen them upon either side, gradually working the fingers around toward the back. Always remember that the gall bladder lies under the liver at the left side, and that, if it is broken, the contents will make every part of the meat that it touches bitter and unfit for use. If the fingers are kept up and everything is carefully loosened before being drawn out, there will be less danger of its breaking. The kidneys and lungs are not infrequently left in by careless cooks, but everything should be taken out that is movable. After the bird has been drawn, it should be wiped dry, inside and out, with a clean towel. The head and neck should then be cut off, and the bird trussed for the oven.

To Truss a Chicken or Turkey draw the thighs up close to the body, cross the legs over the vent, and tie firmly with twine. Thrust a skewer through one thigh, into the body, and out through the opposite thigh, and another in like manner through the wings. Draw the wings and thigh closely together, and tie firmly with twine. Since poultry and game birds have little or no fat in the meat under the skin they should be larded by laying a thin strip of salt pork or bacon over the breast after the carcass has been placed on its back in the dripping-pan, as shown in the accompanying illustrations. When roasting a chicken or small fowl there is danger that the legs may burn or become too hard to be eaten. To avoid this, a strip of cloth dipped in a little melted lard, or rubbed with lard, may be wound about the legs while the heat in the oven is highest, and afterward removed in time to allow the legs to brown sufficiently. This difficulty will be overcome, however, if the deep roasting pan with a close cover is used, as shown in the illustrations. These pans are made double, with only a small opening in

the top as a vent for the accumulation of steam and gases, but retain most of the moisture and flavor of the juices, that would otherwise be lost in large measure by evaporation.

To dress a chicken or other bird for broiling, pick, singe, cut off the head and neck close to the breast, and the legs at the knee joints. Singe, wipe dry, and split down the middle of the back, instead of along the belly. Lay the carcass open, and remove the contents. Cut the tendons in the thighs or break the joints, and remove the breast bone to facilitate carving. Lay the carcass flat between the double broiler, as illustrated, or upon the bars of the grill, and broil, for the squab chicken, ten minutes, and for the spring chicken, fifteen minutes.

To cut up a raw chicken for fricasseeing, pick and wipe dry as for a roasting chicken. First take off the legs from the carcass, then the wings. Then separate the breast from the remainder of the carcass. Split it into two and cut each half of the breast into either two or three parts, according to the size of the chicken. Cut the rest of the carcass crosswise, in three pieces or, if the chicken is very big, split the carcass in two before cutting crosswise.

CARVING AND SERVING POULTRY AND GAME

Carving Poultry.—To carve a turkey or other large bird, such as goose, duck, or roasting chicken, place the carcass on a platter or wooden carving board, upon its back, with the head to the left, the carcass resting diagonally rather than at right angles to the carver's body. Insert a fork firmly across the breast bone, grasp the fork with the left hand, firmly enough to steady the carcass, and with the knife divide the skin between the leg and the carcass on the side nearest the carver, cutting clear down to the leg joint. Force the leg over sharply from the carcass, so as to expose the joint, and completely sever the drumstick and second joint in one piece from the car-

car. Separate the drumstick from the second joint by cutting from the point of the angle between them upon the inside, straight in and directly across the joint, the exact location of which can be easily ascertained by the sense of touch by manipulating with the fingers and feeling the joint in the carcass of the uncooked bird. If this cut is made at the right point, no further difficulty need be anticipated. For if the knife is drawn squarely across the joint, it will separate without resistance, whereas at any other point the knife will encounter solid bone.

Now make an incision along either side of the bone, in the second joint, cut under the bone at the end, lift it up, and cut underneath and between the bone and the meat, so as to remove the bone from this joint entirely.

Now carve thin slices of the white meat from the breast, parallel with the breastbone, and similar slices of the dark meat from the face of the second joint, also parallel with the bone, and serve to each person a slice of the white and a slice of the dark meat, with a few sprigs of cress or parsley, a portion of the dressing, and a spoonful of gravy upon the side of the plate.

If the slices from the breast and second joint are sufficient to serve the entire company, the carver need proceed no further; but if not, the wing should next be cut off, in the same manner as the leg, and similarly divided at the joint, the second joint of the wing being served as one portion. The tip of the wing and the drumstick are neither carved nor served except when necessary at the family dinner but are usually reserved and consumed in the form of hash, or other palatable réchauffé.

Should the whole turkey be required, the platter should be turned and the opposite side carved in precisely the same fashion, but the carver should proceed no further than is necessary, leaving the remainder of the carcass intact, for another meal.

Roasting Duck.—The wild duck, notably the Canvasback, Mallard,

and Redhead, are deservedly among the most popular game birds of the world. They are roasted, without trussing, in their own juices, but when roasting Mallard it is customary to put inside the carcass a few sticks of celery. Wild duck are so expensive as rarely to be served in the ordinary household, and are still more rarely properly cooked. Duck should be roasted very rare, the test of duck done to a turn being that "the blood will follow the knife." To find out whether the duck is done, lift the bird and let a few drops of blood run out from the carcass. If the blood comes out red, the duck is under-done; if it comes out bluish, it is ready to be served.

To carve wild duck.—One duck is usually served for two persons, although occasionally a large duck, like the Mallard, might be big enough for three. To carve wild duck, insert a fork in the carcass with the left hand, just behind the breastbone, make an incision with the knife from the point of the breastbone down the middle of the breast, and cut along this line between the breastbone and the meat, beginning at the head of the bird, and forcing the knife between the bone and the meat until the whole breast has been removed in one piece. Where a duck is served for two persons, half of the breast is served to each, the remainder of the carcass being reserved for salmi or similar *réchauffé*.

To carve a partridge.—Place the bird with the head toward the carver, insert a fork near the breastbone, and cut through the center of the breast and back, lengthwise, cutting the bird right through. Serve a half of the partridge to each person, with currant jelly, and bread sauce, or fried bread crumbs. Sometimes a large partridge may be served to the three persons by separating the breast from the breastbone, and dividing the breast into three parts.

To carve a broiler.—Place the chicken with the head toward the carver, disjoint the leg by inserting a fork in the second joint and making an incision with the knife

around the leg joint, bend the joint over sharply, separate it from the breast, and divide the leg at the joint. Split the breast in two. Serve half the breast and the second joint to each person, with a spoonful of drawn butter and a few sprigs of cress or parsley. Or each half of the breast and each second joint may be served on toast, as separate portions. Broiled chicken is an excellent dish to serve for a breakfast or luncheon.

To carve a broiled young, or spring, turkey, proceed precisely as for the broiled chicken, but cut the second joint and each half of the breast into two parts. To carve broiled Guinea hen, proceed precisely as for a broiled chicken.

Quail, woodcock, snipe, and other small birds are served whole, a single bird to each person. The diner, in separating for himself the meat of small birds from the carcass, should bear in mind that, however toothsome may seem these tempting morsels, it is not customary to dissect the small carcass in order to secure every edible morsel, but that, as a rule, only the thick meat upon the breast, and perhaps a portion of the second joint, is eaten. No blunder is commoner or more egregious than to cut off the drumstick and pick it up with the fingers, in order to gnaw the meat from the bone. The trite old saying, that fingers were made before forks, so commonly quoted as an apology, only serves to make the offense greater, and the offender more ridiculous. A person who handles small game birds after this fashion, at a formal dinner—which is the only occasion when they are likely to be served—lays himself open to the suspicion that he is doubtful of ever having such another opportunity and is resolved to make the most of the present one.

UTENSILS FOR CARVING

When joints, poultry, or game are carved in the pantry or on the side board, as is customary for formal table service à la Russe, the joint or bird is removed from the platter

upon which it is brought in, to a carving board, a flat piece of hard wood, which may or may not be mounted upon short legs, and surrounded by a strip of silver or other metal. The carving board should preferably be about one and one-half or two inches in thickness, and should be scored with a number of grooves, converging into a well or depression at one end of the board to catch and retain the meat juices or gravy.

The use of the carving board for carving at table in private houses is a new custom, and by no means a generally established one. Indeed, a fancy carving board is not obtainable in many localities, although the style of board used for planking steak or fish affords a good substitute, and if bought and reserved exclusively for this purpose, may be regarded as entirely satisfactory. Where the roast is brought in upon a silver trencher, the carving board is really necessary, to avoid scratching the metal. And even where the roast is brought in upon an ordinary porcelain platter, it can be handled much more satisfactorily if transferred to the carving board. For the coarser texture of the board prevents the roast from slipping away from the carver, and by giving the carver more room, it does away with the liability of gravy stains and similar accidents. After the roast has been placed upon the carving board and carved, the portions are replaced upon the platter before serving. Whether or not the carving board is used, the instructions given for carving the various joints and birds, respectively, are in no wise altered.

A complete set of carving tools of the best quality, such as that employed professionally by the writer, consists of twelve knives of assorted sizes, a fork, and a steel, which, packed in a suitable case, cost approximately fifty dollars. Two, or at most, three knives, besides the fork and steel, are sufficient for the ordinary householder. A large, thin, broad-bladed, round-pointed knife,

about twelve inches long, is desirable, but is used for carving beefsteaks only. A sharp-pointed knife of the French pattern, shown in the accompanying illustrations, about nine inches long, is the best utensil for general use in carving roasts, as joints of meat and poultry. And a similar knife about seven inches long is desirable for carving duck, partridge, and other game birds. A suitable fork is, of course, necessary, and while the expert carver does not require the protection of the steel guard upon the fork, such a device is advisable for the inexperienced person, for in carving, the edge of the knife is often drawn toward the hand holding the fork, and the resistance of the knife blade varies greatly, and there is always danger that its edge may be deflected by a skewer or piece of bone or tendon, so that serious accidents are liable to occur.

No one can do satisfactory carving without a sharp knife, and to this end it is thoroughly sound economy to buy a carving set of the best steel, to cause the knives to be ground as often as may be necessary to keep them sharp, and to furnish oneself with a good steel. The edge of the carving knife, like that of the razor, deteriorates more or less while standing, and hence the carver should always sharpen the knife upon the steel immediately before using. To use the steel, it should be held in the left hand, the point raised and inclining slightly toward the carver's body. The knife should be held in the right hand, at an angle of about thirty-five degrees from the steel, and drawn along the side of the steel, from the point of the steel downward toward the hand and from the heel to the point of the knife, the strokes being reversed from side to side of the steel. The touch should be very light, as a good steel—especially if it has been thoroughly magnetized as it should be—will not fail to do its work if contact with the edge of the knife is really established. About a half-dozen strokes will be sufficient, unless the knife is very much out of condition.

CHAPTER VI

ECONOMICAL USE OF MEAT IN THE HOME ¹

GENERAL METHODS OF PREPARING MEAT FOR THE TABLE—
REDUCING EXPENSE OF MEAT IN THE DIET—UTILIZING
FAT, BONE, AND TRIMMINGS IN MEATS—LEFT-OVER COLD
MEATS—MEAT PIES AND SIMILAR DISHES—MEAT WITH
MACARONI AND OTHER STARCHY MATERIALS—UTILIZING
THE CHEAPER CUTS OF MEAT—MEAT COOKED WITH VIN-
EGAR—POUNDED MEAT—FLAVORING MEAT

GENERAL METHODS OF PREPAR- ING MEAT FOR THE TABLE

The advantages of variety in the methods of preparing and serving are to be considered even more seriously in the cooking of the cheaper cuts than in the cooking of the more expensive ones, and yet even in this connection it is a mistake to lose sight of the fact that, though there is a great variety of dishes, the processes involved are few in number.

An experienced teacher of cooking, a woman who has made very valuable contributions to the art of cookery by showing that most of the numerous processes outlined and elaborately described in the cook books can be classified under a very few heads, says that she tries "to reduce the cooking of meat to its lowest terms and teach only three ways of cooking. The first is the application of intense heat to keep in the juices. This is suitable only for portions of clear meat where the fibers are tender. By the second method the meats are put in cold water and cooked at a low temperature. This is suitable for bone, gristle, and the toughest portions of the meat, which for this pur-

pose should be divided into small bits. The third is a combination of these two processes and consists of searing and then stewing the meat. This is suitable for halfway cuts, i. e., those that are neither tender nor very tough." The many varieties of meat dishes are usually only a matter of flavor and garnish.

In other words, of the three processes the first is the short method; it aims to keep all the juices within the meat. The second is a very long method employed for the purpose of getting all or most of the juices out. The third is a combination of the two not so long as the second and yet requiring so much time that there is danger of the meat being rendered tasteless unless certain precautions are taken such as searing in hot fat or plunging into boiling water.

It is commonly said that the cooked meat fibers are harder or less tender than the raw, which seems a natural assumption since the meat protein, like egg albumen, is coagulated by heat, and furthermore, the water is forced out from the individual muscle fibers and they are shortened and thickened by the application of heat. . . .

A good idea of the changes which take place while meat is being cooked

¹ U. S. Department of Agriculture Farmers' Bulletin No. 391.

can be obtained by examining a piece of flesh which has been "cooked to pieces," as the saying goes. In this the muscular fibers may be seen completely separated one from another, showing that the connective tissue has been destroyed. It is also evident that the fibers themselves are of different texture from those in the raw meat. In preparing meat for the table it is usual to stop short of the point of disintegration, but while the long process of cooking is going on the connective tissue is gradually softening and the fibers are gradually changing in texture. The former is the thing to be especially desired, but the latter is not. For this reason it is necessary to keep the temperature below the boiling point and as low as is consistent with thorough cooking, for cooks seem agreed, as the result of experience shows, that slow gentle cooking results in better texture than is the case when meat is boiled rapidly. This is the philosophy that lies back of the simmering process.

When meat is cooked by roasting, broiling, or any other similar process the meat juices brown with the fat, producing substances which to most of us are agreeable to the senses of smell and taste alike. When meats are cooked in hot water such highly flavored substances are not so evident to the sense of smell, but nevertheless bodies of agreeable flavor which are perceptible to the palate are developed in the meat during the cooking process and are of similar value in promoting digestion.

The chief loss in weight when meat is cooked is due to the driving off of water. When beef is cooked by pan broiling—that is, searing in a hot, greased pan, a common cooking process—no great loss of nutrition results, particularly if the fat and other substances adhering to the pan are utilized in the preparation of gravy. When beef is cooked by boiling, there is a loss of 3 to 20 per cent. of material present, though this is not an actual loss if the broth is utilized for soup or in some similar way. Even in the case of meat which is used for the preparation of beef tea or broth, the losses of nutritive material are ap-

parently small though much of the flavoring matter has been removed. The amount of fat found in broth varies directly with the amount originally present in the meat; the fatter the meat the greater the quantity of fat in the broth. The loss of water in cooking varies inversely with the fatness of the meat; that is, the fatter the meat the smaller the shrinkage due to loss of water. In cooked meat the loss of various constituents is inversely proportional to the size of the cut. In other words, the smaller the piece of meat the greater the percentage of loss. Loss also appears to be dependent somewhat upon the length of time the cooking is continued. When pieces of meat weighing $1\frac{1}{2}$ to 5 pounds are cooked in water somewhat under the boiling point there appears to be little difference in the amount of material found in broth whether the meat is placed in cold water or hot water at the beginning of the cooking period. When meat is roasted in the oven the amount of material removed is somewhat affected by the character of the roasting pan and similar factors, thus the total loss in weight is naturally greater in an open than in a closed pan as the open pan offers more opportunity for the evaporation of water. Judging from the average results of a considerable number of tests it appears that a roast weighing 6 pounds raw should weigh 5 pounds after cooking, or in other words the loss is about one-sixth of the original weight. This means that if the raw meat cost 20 cents per pound the cooked would represent an increase of 4 cents a pound on the original cost; but this increase would of course be lessened if all the drippings and gravy are utilized. With the quantities used in the ordinary home the relative losses sustained in different methods of cooking meat are not great enough to be of particular importance with reference to economical management. However, in public institutions where a small saving per day for each inmate represents a large item in the course of a year, it may be desirable to select methods involving the least

loss, which would mean that the advantage would lie with stewing and boiling rather than with broiling or roasting, so far as the relative losses of material are concerned. The relative economy of different methods of cookery depends very greatly upon the kind of fuel, the form of stove and oven, and other similar factors. These vary so much under different home conditions that it is difficult to draw general deductions though the subject has often been investigated. However, it may be said that it is often possible to effect a saving if the housewife can so plan the cooking of meat and other foods as to take full advantage of the heat supplied by the fuel used.

REDUCING THE EXPENSE FOR MEAT IN THE DIET

The expense for meat in the home may be reduced . . . by careful attention to the use of meat, bone, fat, and small portions commonly trimmed off and thrown away and the utilization of left-over portions of cooked meat; and the use of the less expensive kinds.

UTILIZING THE FAT, BONE, AND TRIMMINGS IN MEATS, AND THE LEFT-OVER COLD MEATS

In the percentage of fat present in different kinds and cuts of meat, a greater difference exists than in the percentage of proteids. The lowest percentage of fat ordinarily found in meat is 8.1 per cent. as in the shank of beef; the highest is 32 per cent. in pork chops. The highest priced cuts, loin and ribs of beef, contain 20 to 25 per cent. If the fat of the meat is not eaten at the table, and is not utilized otherwise, a pecuniary loss results. If butter is the fat used in making crusts for meat pies, and in preparing the cheaper cuts, there is little economy involved; the fats from other meat should therefore be saved, as they may be used in place of butter in such cases, as well as in preparing many other foods. The fat from sausage or from the soup kettle, or from a pot roast, which is savory

because it has been cooked with vegetables, is particularly acceptable. Sometimes savory vegetables, onion, or sweet herbs are added to fat when it is tried out to give it flavor.

Some illustrations of methods of preparing such cooking fats follow:

Trying Out Fat.—A double boiler is the best utensil to use in trying out small portions of fat. There is no danger of burning the fat and the odor is much less noticeable than if it is heated in a dish set directly over the fire.

Clarifying Fat.—Excepting where the purpose of clarifying fat is to remove flavors, a good method to follow is to pour boiling water over the fat, to boil thoroughly, and then to set it away to cool. The cold fat may be removed in a solid cake and any impurities clinging to it may be scraped off, as they will be found at the bottom of the layer. By repeating this process two or three times a cake of clean, white fat may be obtained.

A slight burned taste or similar objectionable flavors often can be removed from fat by means of potatoes. After melting the fat, put into it thick slices of raw potato; heat gradually. When the fat ceases to bubble and the potatoes are brown, strain through a cloth placed in a wire strainer.

Savory Drippings.—When rendering the drippings of fat meat, add a small onion (do not cut it), a few leaves of summer savory and thyme, a teaspoonful of salt, and a little pepper. This is enough for a pint of fat. Keep the drippings covered and in a cool place.

Uses for Bones.—Almost any meat bones can be used in soup making, and if the meat is not all removed from them the soup is better. But some bones, especially the rib bones, if they have a little meat left on them, can be grilled or roasted into very palatable dishes. The "spare-rib" of southern cooks is made of the rib bones from a roast of pork, and makes a favorite dish when well browned. The braised ribs of beef often served in high-class restaurants are made from the bones cut from

rib roasts. In this connection it may be noted that many of the dishes popular in good hotels are made of portions of meat such as are frequently thrown away in private houses, but which with proper cooking and seasoning make attractive dishes and give most acceptable variety to the menu. An old recipe for "broiled bones" directs that the bones (beef ribs or sirloin bones on which the meat is not left too thick in any part) be sprinkled with salt and pepper (Cayenne), and broiled over a clear fire until browned. Another example of the use of bones is boiled marrow bone. The bones are cut in convenient lengths, the ends covered with a little piece of dough over which a floured cloth is tied, and cooked in boiling water for two hours. After removing the cloth and dough, the bones are placed upright on toast and served. Prepared as above, the bones may also be baked in a deep dish. Marrow is sometimes removed from bones after cooking, seasoned, and served on toast.

Trimmings from meat may be utilized in various "made dishes," of which examples will be given further on, or they can always be put to good use in the soup kettle. It is surprising how many economies may be practiced in such ways and also in the table use of left-over portions of cooked meat if attention is given to the matter. Many of the recipes given in this bulletin involve the use of left-overs. Others will suggest themselves or may be found in all the usual cookery books.

Extending the Flavor of Meat.—Common household methods of extending the meat flavor through a considerable quantity of material which would otherwise be lacking in distinctive taste are to serve the meat with dumplings, generally in the dish with it, to combine the meat with crusts, as in meat pies or meat rolls, or to serve the meat on toast and biscuits. Borders of rice, hominy, or mashed potatoes are examples of the same principles applied in different ways. By serving some preparation of flour, rice, hominy, or other food rich in starch with the meat we get

a dish which in itself approaches nearer to the balanced ration than meat alone and one in which the meat flavor is extended through a large amount of material.

Throughout the measurements given in the recipe call for a level spoonful or a level cupful, as the case may be.

A number of recipes for meat dishes made with dumplings and similar preparations follow:

Meat Stew with Dumplings.

Stew.

- 5 pounds of a cheaper cut of beef.
- 4 cups of potatoes cut into small pieces.
- $\frac{3}{4}$ cup each of turnips and carrots cut into $\frac{1}{2}$ -inch cubes.
- $\frac{1}{2}$ onion, chopped,
- $\frac{1}{4}$ cup of flour.
- Salt and pepper.

Cut the meat into small pieces, removing the fat; try out the fat and brown the meat in it. When well browned, cover with boiling water, boil for five minutes and then cook in a lower temperature until the meat is done. If tender, this will require about three hours on the stove or five hours in the fireless cooker. Add carrots, turnips, onions, pepper and salt during the last hour of cooking, and the potatoes fifteen minutes before serving. Thicken with the flour diluted with cold water. Serve with dumplings (see below). If this dish is made in the fireless cooker, the mixture must be reheated when the vegetables are put in. Such a stew may also be made of mutton. If veal or pork is used the vegetables may be omitted or simply a little onion used. Sometimes for variety the browning of the meat is dispensed with. When white meat, such as chicken, veal, or fresh pork, is used, the gravy is often made rich with cream or milk thickened with flour. The numerous minor additions which may be introduced give the great variety of such stews found in cookbooks.

Dumplings.

- 2 cups flour.
- 4 teaspoonfuls baking powder.

- $\frac{3}{4}$ cup milk or a little more if needed.
 $\frac{1}{2}$ teaspoonful salt.
 $\frac{2}{2}$ teaspoonfuls butter.

Mix and sift the dry ingredients. Work in the butter with the tips of fingers, add milk gradually, roll out to a thickness of one-half inch and cut with biscuit cutter. In some countries it is customary to season the dumplings themselves with herbs, etc., or to stuff them with bread crumbs fried in butter instead of depending upon the gravy to season them.

A good way to cook dumplings is to put them in a buttered steamer over a kettle of hot water. They should cook from twelve to fifteen minutes. If it is necessary to cook them with the stew, enough liquid should be removed so that they may be placed upon the meat and vegetables.

Sometimes the dough is baked and served as biscuits over which the stew is poured. If the stew is made with chicken or veal it is generally termed a fricassee.

Ragout of Mutton with Farina Balls.

- $\frac{1}{2}$ pounds neck of mutton cut into small pieces.
 1 tablespoonful butter.
 1 tablespoonful flour.
 1 onion.
 1 carrot.
 $\frac{1}{2}$ can peas.
 2 cups hot water.
 1 teaspoonful salt.
 $\frac{1}{2}$ teaspoonful pepper.
 1 bay leaf.
 Sprig parsley.
 1 clove.

Farina Balls

- $\frac{1}{2}$ cup farina.
 1 cup milk.
 $\frac{1}{2}$ teaspoonful salt.
 $\frac{1}{2}$ teaspoonful pepper.
 Onion juice.
 -Yolk 1 egg.

Put butter in frying pan. When melted add flour and brown. Add carrot and onion, cut in dice. Remove vegetables and add meat, sear-

ing well. To meat and vegetables add hot water and seasonings. Put in a suitable kettle, cover and simmer two hours. Add peas ten minutes before serving in a dish with farina balls made as follows:

Cook farina and milk in double boiler one hour. Add seasoning and well-beaten yolk. Stir well and cool. When cold roll into balls. Dip in egg and crumbs and fry in deep fat. Rice may be used in a similar way.

MEAT PIES AND SIMILAR DISHES

Meat pies represent another method of combining flour with meat. They are ordinarily baked in a fairly deep dish the sides of which may or may not be lined with dough. The cooked meat, cut into small pieces, is put into the dish, sometimes with small pieces of vegetables, a gravy is poured over the meat, the dish is covered with a layer of dough, and then baked. Most commonly the dough is like that used for soda or cream-of-tartar biscuit, but sometimes shortened pastry dough, such as is made for pies, is used. This is especially the case in the fancy individual dishes usually called patties. Occasionally the pie is covered with a potato crust in which case the meat is put directly into the dish without lining the latter. Stewed beef, veal, and chicken are probably most used in pies, but any kind of meat may be used, or several kinds in combination. Pork pies are favorite dishes in many rural regions, especially at hog-killing time, and when well made are excellent.

If pies are made from raw meat and vegetables longer cooking is needed than otherwise, and in such cases it is well to cover the dish with a plate, cook until the pie is nearly done, then remove the plate, add the crust, and return to the oven until the crust is lightly browned. Many cooks insist on piercing holes in the top crust of a meat-pie directly it is taken from the oven.

Twelve o'Clock Pie.

This is made with shoulder of mutton, boiled with carrot and onion, then

cut up, mixed with potatoes separately boiled and cut up, and put into a baking dish. The crust is made by mixing smoothly mashed potatoes to which a tablespoonful of shortening has been added, with enough flour and water to make them roll out easily. A pie made of a pound of meat will require 5 or 6 small boiled potatoes, a cupful of mashed potatoes, and 8 or 10 tablespoonfuls of flour, and should be baked about twenty minutes in a hot oven. Salt, pepper, and other seasoning, as onion and carrot, may be added to taste. A teaspoonful of baking powder makes the crust lighter.

Meat and Tomato Pie.

This dish presents an excellent way of using up small quantities of either cold beef, or cold mutton. If fresh tomatoes are used, peel and slice them; if canned, drain off the liquid. Place a layer of tomato in a baking dish, then a layer of sliced meat, and over the two dredge flour, pepper and salt; repeat until the dish is nearly full, then put in an extra layer of tomato and cover the whole with a layer of pastry or of bread or cracker crumbs. When the quantity of meat is small, it may be "helped out" by boiled potatoes or other suitable vegetables. A few oysters or mushrooms improve the flavor especially when beef is used. The pie will need to be baked from half an hour to an hour according to its size and the heat of the oven.

Meat and Pastry Rolls.

Small quantities of cold ham, chicken, or other meat may be utilized for these. The meat should be chopped fine, well seasoned, mixed with enough savory fat or butter to make it "shape," and formed into rolls about the size of a finger. A short dough (made, say, of a pint of flour, 2 tablespoonfuls of lard, 1 teaspoonful of baking powder, salt, and milk enough to mix) should be rolled thin, cut into strips, and folded about the meat rolls, care being taken to keep the shape regular. The rolls should be baked in a quick oven

until they are a delicate brown color and served hot.

Meat Turnovers.

Almost any kind of chopped meat may be used in these, and if the quantity on hand is small may be mixed with potato or cooked rice. This filling should be seasoned to taste with salt and pepper, onion, or whatever is relished, and laid on pieces of short biscuit dough rolled thin and cut into circles about the size of an ordinary saucer. The edges of the dough should be moistened with white of an egg, the dough then folded over the meat, and its edges pinched closely together. If desired, the tops of the turnovers may be brushed over with the yolk of egg before they are placed in the oven. About half an hour's baking in a hot oven is required. Serving with a brown sauce increases the flavor and moistens the crust.

MEAT WITH MACARONI AND OTHER STARCHY MATERIALS

Macaroni cooked with chopped ham, hash made of meat and potatoes, or meat and rice, meat croquettes—made of meat and some starchy materials like bread crumbs, cracker dust, or rice—are other familiar examples of meat combined with starchy materials. Pilaf, a dish very common in the Orient and well known in the United States, is of this character and easily made. When there is soup or soup stock on hand if it can be well used in the pilaf.

Meat Cakes.

- 1 pound chopped veal.
- $\frac{1}{2}$ pound soaked bread crumbs.
- 2 tablespoonfuls savory fat or butter.
- 1 teaspoonful chopped onion.
- $1\frac{1}{2}$ teaspoonful salt.
- Dash of pepper.

Mix all the ingredients except the butter or fat and shape into small round cakes. Melt the fat in a baking pan and brown the cakes in it, first one side and then the other.

Either cooked or raw veal may be used. In the case of raw meat the pan should be covered so that the heat may be retained to soften the meat.

Stew from Cold Roast.

This dish provides a good way of using up the remnants of a roast, either of beef or mutton. The meat should be freed from fat, gristle, and bones, cut into small pieces, slightly salted, and put into a kettle with water enough to nearly cover it. It should simmer until almost ready to break in pieces, when onions and raw potatoes, peeled and quartered, should be added. A little soup stock may also be added if available. Cook until the potatoes are done, then thicken the liquor or gravy with flour. The stew may be attractively served on slices of crisp toast.

Meat with Beans.

Dry beans are very rich in protein, the percentage being fully as large as that in meat. Dry beans and other similar legumes are usually cooked in water, which they absorb, and so are diluted before serving; on the other hand, meats by the ordinary methods of cooking are usually deprived of some of the water originally present—facts which are often overlooked in discussing the matter. Nevertheless, when beans are served with meat the dish is almost as rich in protein as if it consisted entirely of meat.

Pork and beans is such a well-known dish that recipes are not needed. Some cooks use a piece of corned mutton or a piece of corned beef in place of salt or corned pork or bacon or use butter or olive oil in preparing this dish.

In the Southern States, where cowpeas are a common crop, they are cooked in the same way as dried beans. Cowpeas baked with salt pork or bacon make an excellent dish resembling pork and beans, but of distinctive flavor. Cowpeas boiled with ham or with bacon are also well-known and palatable dishes.

Recipes are here given for some less common meat and bean dishes:

Mexican Beef.

The Mexicans have a dish known as "Chili con carne" (meat with Chili pepper), the ingredients for which one would doubtless have difficulty in obtaining except in the southwestern United States. However, a good substitute for it may be made with the foods available in all parts of the country. The Mexican recipe is as follows:

Remove the seeds from two Chili peppers, soak the pods in a pint of warm water until they are soft, scrape the pulp from the skin and add to the water. Cut two pounds of beef into small pieces and brown in butter or drippings. Add a clove of garlic and the Chili water. Cook until the meat is tender, renewing the water if necessary. Thicken the sauce with flour. Serve with Mexican beans either mixed with the meat or used as a border.

In the absence of the Chili peppers, water and Cayenne pepper may be used, and onions may be substituted for garlic. For the Mexican beans, red kidney beans either fresh or canned make a good substitute. If the canned beans are used they should be drained and heated in a little savory fat or butter. The liquid may be added to the meat while it is cooking. If the dried beans are used they should be soaked until soft, then cooked in water until tender and rather dry, a little butter or dripping and salt being used for seasoning or gravy. White or dried Lima beans may be used in a similar way.

Haricot of Mutton.

- 2 tablespoonfuls of chopped onions.
- 2 tablespoonfuls of butter or drippings.
- 2 cups of water, and salt and pepper.
- 1½ pounds of lean mutton or lamb cut into 2-inch pieces.

Fry the onions in the butter, add the meat, and brown; cover with water and cook until the meat is tender. Serve with a border of Lima beans, seasoned with salt, pepper,

butter, and a little chopped parsley. Fresh, canned, dried, or evaporated Lima beans may be used in making this dish.

Roast Pork with Cowpeas.

For this dish a leg of young pork should be selected. With a sharp knife make a deep cut in the knuckle and fill the opening with sage, pepper, salt, and chopped onion. When the roast is half done scar the skin but do not cut deeper than the outer rind. When the meat is nearly cooked pour off the excess of fat and add a quart of *white* cowpeas which have been previously parboiled or "hulled" and cook slowly until quite done and the meat is brown. Apple sauce may be served with this dish.

Meat Salads.

Whether meat salads are economical or not depends upon the way in which the materials are utilized. If in chicken salad, for example, only the white meat of chickens especially bought for the purpose and only the inside stems of expensive celery are used, it can hardly be cheaper than plain chicken. But, if portions of meat left over from a previous serving are mixed with celery grown at home, they certainly make an economical dish, and one very acceptable to most persons. Cold roast pork or tender veal—in fact, any white meat can be utilized in the same way. Apples cut into cubes may be substituted for part of the celery; many cooks consider that with the apple the salad takes the dressing better than with the celery alone. Many also prefer to marinate (i. e., mix with a little oil and vinegar) the meat and celery or celery and apples before putting in the final dressing, which may be either mayonnaise or a good boiled dressing.

Meat with Eggs.

Occasionally eggs are combined with meat, making very nutritious dishes. Whether this is an economy or not of course depends on the comparative cost of eggs and meat.

In general, it may be said that

eggs are cheaper food than meat when a dozen cost less than 1½ pounds of meat, for a dozen eggs weigh about 1½ pounds and the proportions of protein and fat which they contain are not far different from the proportions of these nutrients in the average cut of meat. When eggs are 30 cents a dozen they compare favorably with a round of beef at 20 cents a pound.

Such common dishes as ham and eggs, bacon or salt pork and eggs, and omelette with minced ham or other meat are familiar to all cooks.

Roast Beef with Yorkshire Pudding.

The beef is roasted as usual and the pudding made as follows:

Yorkshire Pudding.

- 3 eggs.
- 1 pint milk.
- 1 cupful flour.
- 1 teaspoonful salt.

Beat the eggs until very light, then add the milk. Pour the mixture over the flour, add the salt, and beat well. Bake in hissing hot gem pans or in an ordinary baking pan for forty-five minutes, and baste with drippings from the beef. If gem pans are used, they should be placed on a dripping pan to protect the floor of the oven from the fat. Many cooks prefer to bake Yorkshire pudding in the pan with the meat; in this case the roast should be placed on a rack and the pudding batter poured on the pan under it.

Corned Beef Hash with Poached Eggs.

A dish popular with many persons is corned beef hash with poached eggs on top of the hash. A slice of toast is sometimes used under the hash. This suggests a way of utilizing the small amount of corned-beef hash which would otherwise be insufficient for a meal.

Housekeepers occasionally use up odd bits of other meat in a similar way, chopping and seasoning them and then warming and serving in individual baking cups with a poached or shirred egg on each.

Ham and Poached Eggs with Cream Sauce.

A more elaborate dish of meat and eggs is made by placing a piece of thinly sliced boiled ham on a round of buttered toast, a poached egg on the ham, and covering with a highly seasoned cream or a Hollandaise sauce. A slice of tongue may be used instead of the ham. If preferred, a well-seasoned and rather thick tomato sauce or curry sauce may be used.

Stuffing or Force meat.

Another popular way to extend the flavor of meat over a large amount of food is by the use of stuffing or force meat (a synonym more common in England than in the United States). As it is impossible to introduce much stuffing into some pieces of meat even if the meat is cut to make a pocket for it, it is often well to prepare more than can be put into the meat and to cook the remainder in the pan beside the meat. Some cooks cover the extra stuffing with buttered paper while it is cooking and baste it at intervals.

Some recipes for meat dishes of this character follow, and others will be found in cook books.

Mock Wild Duck.

- 1 flank steak, or
- 1½ pounds round steak cut ½-inch thick.
- 2 lamb kidneys.
- ¼ cup butter or drippings.
- ½ cup cracker crumbs.
- 1 tablespoonful minced onion.
- Salt, pepper, and powdered thyme, sage or savory.
- 2 tablespoonfuls flour.
- 1 tablespoonful sugar.
- 3 cupfuls water or stock.

Trim the kidneys of all fat, cords, and veins. Cut into small pieces and spread evenly over one side of the steak together with the crumbs, onion, and seasonings. Roll and tie with a cord. Brown the roll in fat, then remove and make a gravy by heating the flour in the fat and adding three cupfuls of stock or water and the sugar. Put the meat into the gravy

and cook slowly until tender in a cover baking dish, a steamer, or a fireless cooker. If steamed or cooked in a fireless cooker, the roll should be browned in the oven before serving.

Mock Duck.

Mock duck is made by placing on a round steak a stuffing of bread crumbs well seasoned with chopped onions, butter, chopped suet or dripping, salt, pepper, and a little sage, if the flavor is relished. The steak is then rolled around the stuffing and tied with a string in several places. If the steak seems tough, the roll is steamed or stewed until tender before roasting in the oven until brown. Or it may be cooked in a casserole or other covered dish, in which case a cupful or more of water or soup-stock should be poured around the meat. Mock duck is excellent served with currant or other acid jelly.

Veal or Beef Birds.

A popular dish known as veal or beef birds or by a variety of special names is made by taking small pieces of meat, each just large enough for an individual serving, and preparing them in the same way as the mock duck is prepared.

Sometimes variety is introduced by seasoning the stuffing with chopped olives or tomato. Many cooks prepare their "birds" by browning in a little fat, then adding a little water, covering closely and simmering until tender.

UTILIZING THE CHEAPER CUTS OF MEAT IN PALATABLE DISHES

When the housekeeper attempts to reduce her meat bill by using the less expensive cuts, she commonly has two difficulties to contend with—toughness and lack of flavor. It has been shown how prolonged cooking softens the connective tissues of the meat. Pounding the meat and chopping it are also employed with tough cuts, as they help to break the muscle fibers. As for flavor, the natural flavor of meat even in the least desirable cuts may be developed by careful cooking, notably by browning the

surface, and other flavors may be given by the addition of vegetables and seasoning with condiments of various kinds.

Methods of preparing inexpensive meat dishes will be discussed and practical directions for them will be given in the following sections. As often happens, two or three methods may be illustrated by the same dish, but the attempt has been made to group the recipes according to their most salient feature.

Prolonged Cooking at Low Heat.

Meat may be cooked in water in a number of ways without being allowed to reach the boiling point. With the ordinary kitchen range this is accomplished by cooking on the cooler part of the stove rather than on the hottest part, directly over the fire. Experience with a gas stove, particularly if it has a small burner known as a "simmerer," usually enables the cook to maintain temperatures which are high enough to sterilize the meat if it has become accidentally contaminated in any way and to make it tender without hardening the fibers. The double boiler would seem to be a neglected utensil for this purpose. Its contents can easily be kept up to a temperature of 200° F., and nothing will burn. Another method is by means of the fireless cooker. In this a high temperature can be maintained for a long time without the application of fresh heat. Still another method is by means of a closely covered baking dish. Earthenware dishes of this kind suitable for serving foods as well as for cooking are known as casseroles. For cooking purposes a baking dish covered with a plate or a bean jar covered with a saucer may be substituted. The Aladdin oven has long been popular for the purpose of preserving temperatures which are near the boiling point and yet do not reach it. It is a thoroughly insulated oven which may be heated by a kerosene lamp or a gas jet.

In this connection directions are given for using some of the toughest and least promising pieces of meat.

Stewed Shin of Beef.

- 4 pounds of shin of beef.
- 1 medium sized onion.
- 1 whole clove and a small bay leaf.
- 1 sprig of parsley.
- 1½ tablespoonfuls of flour.
- 1 small slice of carrot.
- ½ tablespoonful of salt.
- ½ teaspoonful of pepper.
- 2 quarts of boiling water.
- 1½ tablespoonfuls of butter or savory drippings.

Have the butcher cut the bone in several pieces. Put all the ingredients but the flour and butter into a stew-pan and bring to a boil. Set the pan where the liquid will just simmer for six hours, or after boiling for five or ten minutes, put all into the fireless cooker for eight or nine hours. With the butter, flour, and one-half cupful of the clear soup from which the fat has been removed, make a brown sauce; to this add the meat, the marrow removed from the bone. Heat and serve. The remainder of the liquid in which the meat has been cooked may be used for soup.

Sour Beef.

Take a piece of beef from the rump or the lower round, cover with vinegar or with a half-and-half mixture of vinegar and water, add sliced onion, bay leaves, and a few mixed whole spices and salt. Allow to stand a week in winter or three or four days in summer; turn over once a day and keep covered. When ready to cook, brown the meat in fat, using an enameled iron pan, strain the liquid over it and cook until tender; thicken the gravy with flour or ginger snaps (which may be broken up first), strain it, and pour over the sliced meat. Some cooks add cream.

Boiled Beef with Horse-radish Sauce.

Plain boiled beef may also be served with horse-radish sauce, and makes a palatable dish. A little chopped parsley sprinkled over the meat when served is considered an improvement by many persons. For the sake of variety the meat may be browned like pot roast before serving.

Farmer Stew.

Pound flour into both sides of a round steak, using as much as the meat will take up. This may be done with a meat pounder or with the edge of a heavy plate. Fry in drippings, butter, or other fat in a Scotch bowl, or if more convenient in an ordinary iron kettle or a frying pan; then add water enough to cover it. Cover the dish very tightly so that the steam can not escape and allow the meat to simmer for two hours or until it is tender. One advantage of this dish is that ordinarily it is ready to serve when the meat is done as the gravy is already thickened. However, if a large amount of fat is used in the frying, the gravy may not be thick enough and must be blended with flour.

Stuffed Heart.

Wash the heart thoroughly inside and out, stuff with the following mixture, and sew up the opening: One cup broken bread dipped in fat and browned in the oven, 1 chopped onion, and salt and pepper to taste.

Cover the heart with water and simmer until tender or boil ten minutes and set in the fireless cooker for six or eight hours. Remove from the water about one-half hour before serving. Dredge with flour, pepper, and salt, or sprinkle with crumbs and bake until brown.

Braised Beef, Pot Roast, and Beef à la Mode.

The above names are given to dishes made from the less tender cuts of meat. They vary little either in composition or method of preparation. In all cases the meat is browned on the outside to increase the flavor and then cooked in a small amount of water in a closely covered kettle or other receptacle until tender. The flavor of the dish is secured by browning the meat and by the addition of the seasoning vegetables. Many recipes suggest that the vegetables be removed before serving and the liquid be thickened. As the vegetables are usually extremely well seasoned by means of the browned fat and the ex-

tracts of the meat, it seems unfortunate not to serve them.

Of course, the kind, quality, and shape of the meat all play their part in the matter. Extra time is needed for meats with a good deal of sinew and tough fibers such as the tough steaks, shank cuts, etc.; and naturally a fillet of beef, or a steak from a prime cut will take less time than a thick piece from the shin. Such dishes require more time and perhaps more skill in their preparation and may involve more expense for fuel than the more costly cuts, which like chops or tender steaks may be quickly cooked, but to the epicure, as well as to the average man, they are palatable when rightly prepared.

Bean-pot Roast.

- 3 pounds mutton (shoulder), or
- 3 pounds round, or chuck steak.
- 1 cup carrots cut into small pieces.
- 1 cup potatoes cut into small pieces.
- $\frac{1}{2}$ cup sliced onion.

Cover the meat with boiling water. Place the cover on the bean pot and let the meat cook in a moderate oven for two hours; then add the vegetables cut in half-inch cubes, with 2 teaspoonfuls salt; cook until the vegetables are tender, which will require about one hour; then serve, pouring a sauce over the meat, made from 1 cup of the liquid in which the meat was cooked, thickened with 2 table-spoonfuls of flour.

Hungarian Goulash.

- 2 pounds top round of beef.
- A little flour.
- 2 ounces salt pork.
- 2 cups tomatoes.
- 1 stalk celery.
- 1 onion.
- 2 bay leaves.
- 6 whole cloves.
- 6 peppercorns.
- 1 blade mace.

Cut the beef into 2-inch pieces and sprinkle with flour; fry the salt pork until light brown; add the beef and cook slowly for about thirty-five min-

utes, stirring occasionally. Cover with water and simmer about two hours; season with salt and pepper or paprika.

From the vegetables and spices a sauce is made as follows: Cook in sufficient water to cover for twenty minutes; then rub through a sieve, and add to some of the stock in which the meat was cooked. Thicken with flour, using 2 tablespoonfuls (moistened with cold water) to each cup of liquid, and season with salt and paprika.

Serve the meat on a platter with the sauce poured over it. Potatoes, carrots, and green peppers cooked until tender, and cut into small pieces or narrow strips, are usually sprinkled over the dish when served, and noodles may be arranged in a border upon the platter.

Goulash is a Hungarian dish which has come to be a favorite in the United States.

Casserole Cookery.

A casserole is a heavy earthenware dish with a cover. A substitute for it can easily be improvised by using any heavy earthenware dish with a heavy plate for the cover. A casserole presentable enough in appearance to be put on the table serves the double purpose of baking and serving dish.

A suitable cut of beef or veal, and it may well be one of the cheaper cuts, as the long, slow cooking insures tenderness, may be cooked in a casserole.

Poultry and other meats besides beef or veal can be cooked in this manner. Chicken cooked in a casserole, which is a favorite and expensive dish in good hotels and restaurants, may be easily prepared in the home, and casserole cookery is to be recommended for tough chicken.

The heat must be moderate and the cooking must occupy a long time. Hurried cooking in a casserole is out of the question. If care is taken in this particular, and suitable seasonings are used, few who know anything of cooking should go astray.

Chopped meat also may be cooked in a casserole and this utensil is par-

ticularly useful for the purpose, because the food is served in the same dish in which it is cooked and may easily be kept hot, a point which is important with chopped meats, which usually cool rapidly.

Casserole Roast.

3 or 4 pounds or round or rump of beef.

A slice of salt pork.

A few peppercorns.

One-fourth each of a carrot, a turnip, an onion, and a head of celery cut into small pieces.

Try out the pork. Brown the meat on both sides in the fat. Put in a casserole with the vegetables around it, add 2 cupfuls of water or stock. Cover and cook in a hot oven three hours, basting occasionally. A sauce or gravy can be made with water, flour, and some of the juice left in the casserole.

Casserole or Italian Hash.

Boil one-fourth pound of macaroni, drain and put into a buttered casserole, add a little butter and grated cheese. Push the macaroni to the sides of the dish and fill the center with chopped cooked meat seasoned to suit the taste of the family. A little sausage gives a good flavor to this dish. Place in the oven until hot throughout and serve.

A very good modification of this is made by using raw instead of cooked meat. For this one-half pound of round steak is sufficient for a family of six. This should be cut into small pieces, browned, and cooked until tender in water with the onions and other seasonings. An hour before the cooking is complete, add one-half can of tomatoes. Before serving, the meat may be mixed with the sauce, and the whole is poured over the macaroni.

MEAT COOKED WITH VINEGAR

Dishes of similar sort as regards cooking, but in which vinegar is used to give flavor as well as to soften the meat and make it tender, are the following:

Spanish Beefsteak.

Take a piece of round steak weighing 2 pounds and about an inch thick; pound until thin, season with salt and Cayenne pepper, cover with a layer of bacon or salt pork, cut into thin slices, roll and tie with a cord. Pour around it half a cupful of milk and half a cupful of water. Place in a covered baking dish and cook two hours, basting occasionally.

Sour Beefsteak.

Round steak may be cooked in water in which there is a little vinegar, or if the time is sufficient, it may be soaked for a few hours in vinegar and water and then cooked in a casserole or in some similar way.

POUNDED MEAT

Pounding meat before cooking is an old-fashioned method of making it tender, but while it has the advantage of breaking down the tough tissues it has the disadvantage of being likely to drive out the juices and with them the flavor. A very good way of escaping this difficulty is pounding flour into the meat; this catches and retains the juices. Below are given the recipes for two palatable dishes in which this is done:

CHOPPED MEAT

Chopping meat is one of the principal methods of making tough and inexpensive meat tender, i. e., dividing it finely and thus cutting the connective tissue into small bits. Such meats have another advantage in that they may be cooked quickly and economically.

In broiling chopped meat the fact should be kept in mind that there is no reason why it should not be cooked like the best and most expensive tenderloin. The only reason that ever existed for difference in treatment was the toughness of the connective tissue, and this feature has been overcome by the chopping. The ideal to be reached in broiling steak is to sear the surface very quickly, so that the juices which contain the greater part of the flavoring of the meat shall be

kept in, and then to allow the heat to penetrate to the inside until the whole mass is cooked to the taste of the family. To pass the point where the meat ceases to be puffy and juicy and becomes flat and hard is very undesirable, as the palatability is then lost. Exactly the same ideal should be kept in mind in broiling chopped meat. If this were always done, hard, compact, tasteless balls or cakes of meat would be served less often. To begin with, the broiler should be even more carefully greased than for a whole steak. This makes it possible to form the balls or cakes of chopped meat with very little pressure without running the risk of having them pulled to pieces by adhering to the wires of the broiler. They should be heated on both sides even more quickly than the steak, because the chopping has provided more ways of escape for the juice, and these openings should be sealed as soon as possible. The interior should be cooked to the taste of the family just as the steak is.

In regard to broiling it may incidentally be noted that housekeepers often make themselves unnecessary work when broiling under gas by allowing the juice from steaks or meat balls to drop into the large pan under the rack. A smaller pan set in the larger one may be made to catch all the juice and fat and is much easier to wash. It serves also to economize the gravy.

Chopped raw meat of almost any kind can be very quickly made into a savory dish by cooking it with water or with water and milk for a short time, then thickening with butter and flour, and adding different seasonings as relished, either pepper and salt alone, or onion juice, celery, or tomato. Such a dish may be made to "go further" by serving it on toast or with a border of rice or in some similar combination.

Tough Portions of Porterhouse Steak.

Before speaking of the cooking of the cuts that lack tenderness throughout, it may be well to refer to the fact that the flank end of the porterhouse is to be classed with the tough-

est of cuts and with those which, when cooked alone, are with difficulty made tender even by long heating. Mock duck, which is commonly made out of flank steak, can be rendered tender enough to be palatable only by long steaming or cooking in water and yet people quite generally broil this part of the steak with the tenderloin and expect it to be eaten. The fact is that to broil this part of the porterhouse steak is not good management. It is much more profitable to put it into the soup kettle or to make it into a stew. In families where most of the members are away during the day the latter is a good plan, for the end of a steak makes a good stew for two or three people. This may be seasoned with vegetables left from dinner, or two or three olives cut up in gravy will give a very good flavor; or a few drops of some one of the bottled meat sauces, if the flavor is relished, or a little Chili sauce may be added to the stew. But if the tough end of a porterhouse is needed with the rest, a good plan is to put it through a meat grinder, make it into balls, and broil it with the tender portions. Each member of the family can then be served with a piece of the tenderloin and a meat ball. If the chopped meat is seasoned with a little onion juice, grated lemon rind, or chopped parsley, a good flavor is imparted to the gravy.

Hamburg Steak.

This name is commonly given to inexpensive cuts of beef chopped, seasoned a little, shaped into small balls or into one large thin cake, and quickly broiled in the way that a tender steak would be. Owing to the quick cooking much of the natural flavor of the meat is developed and retained. The fact should be kept in mind that Hamburg steak must be made from fresh, well-ground meat. It is much safer to chop the meat at home, as chopped meat spoils very quickly. Much depends, too, upon browning it sufficiently to bring out the flavors. Many cooks think that Hamburg steak is improved if the meat is mixed with milk before it is cooked.

In some parts of the country, and particularly in some of the Southern States, two kinds of beef are on sale. One is imported from other parts of the country and is of higher price. The other, known locally as "native beef," is sometimes lacking in flavor and in fat and is usually tougher. Southern native beef such as is raised in Florida is almost invariably, however, of extremely good flavor, due presumably to the feed or other conditions under which it is raised. By chopping such meat and cooking it as Hamburg steak, a dish almost as palatable as the best cuts of the more expensive beef may be obtained. In such cases, however, it is desirable because of the low percentage of fat to add suet or butter to the meat. The reason for this is that in the cooking the water of the juice when unprotected by fat evaporates too quickly and leaves the meat dry. This may be prevented by adding egg as well as fat, for the albumen of the egg hardens quickly and tends to keep in the juices. The proportion should be 1 egg to 1½ pounds of meat.

Savory Rolls.

Savory rolls in great variety are made out of chopped meat either with or without egg. The variety is secured by the flavoring materials used and by the sauces with which the baked rolls are served. A few recipes will be given below. While these definite directions are given it should be remembered that a few general principles borne in mind make recipes unnecessary and make it possible to utilize whatever may happen to be on hand. Appetizing rolls are made with beef and pork mixed. The proportion varies from two parts of beef and one of pork to two of pork and one of beef. The rolls are always improved by laying thin slices of salt pork or bacon over them, which keep the surface moistened with fat during the roasting. These slices should be scored on the edge, so that they will not curl up in cooking. The necessity for the salt pork is greater when the chopped meat is chiefly beef than when it is largely pork or veal. Bread crumbs or bread moistened in

water can always be added, as it helps to make the dish go farther. When onions, green peppers, or other vegetables are used, they should always be thoroughly cooked in fat before being put in the roll, for usually they do not cook sufficiently in the length of time it takes to cook the meat. Sausage makes a good addition to the roll, but it is usually cheaper to use unseasoned pork meat with the addition of a little sage.

Cannelon of Beef.

This dish is prepared by making chopped beef into a roll and baking it wrapped in a buttered paper, a method designed to keep in the steam and so insure a moist, tender dish. The paper must be removed before serving. The roll should be basted occasionally with butter and water or drippings and water. In preparing the roll an egg may be added, for each pound and a half of meat, and chopped parsley, onion juice, lemon peel, or finely chopped green peppers make good seasoning. A thickened gravy may be made from the drippings, the liquid used being either water or tomato juice.

Strips of pork laid on the roll may be substituted for the buttered paper and basting.

Filipino Beef.

- 1 pound round beef.
- $\frac{1}{2}$ pound lean fresh pork.
- 1 small onion.
- 1 one green pepper.
- 1 teaspoonful of salt.
- 1 cup of soft stale bread crumbs.
- 1 egg.
- 2 cups of stewed tomatoes.
- 2 slices of bacon.
- 2 tablespoonfuls of butter.
- 4 tablespoonfuls of flour.

Remove the seeds from the pepper and put it through the meat grinder with the meats and the onion. Add crumbs, egg, and salt. Make into a roll, place in a shallow baking dish, pour the strained tomatoes around it, put the bacon on top, and bake forty minutes, basting with the tomatoes. Thicken the gravy with the flour cooked in the butter. A little season-

ing such as a bit of bay leaf, a clove, and a small piece of onion improves the tomato sauce. As the pepper and onion are not likely to be cooked as soon as the meat, it is well to fry them in a little fat before adding to the other ingredients.

This dish will serve 6 to 8 people. When the meat is 20 cents a pound and every other item is valued at usual town market prices, the dish costs about 50 cents. If the meat costs only 10 cents per pound and vegetables from the garden are used the initial cost of the dish will be small. Since no vegetable except potatoes or rice need be served with this dish, it may be said to answer the purpose of both meat and vegetable.

Mock Rabbit.

- $\frac{1}{2}$ pound round steak, and
- 1 pound sausage;
- or
- 1 pound round steak, and
- $\frac{1}{2}$ pound sausage meat.
- 3 slices of bread moistened with water.
- 1 egg.
- 1 onion.
- $\frac{1}{2}$ pound salt pork.
- Pepper and salt.

Chop the meat. Chop the onion and cook (but do not brown) it in the fat tried out of a small portion of the pork. Add the bread and cook a few minutes. When this is cool, mix all the ingredients and form into a long round roll. The surface can easily be made smooth if the hand is wet with cold water. Lay the remaining pork cut in thin slices on top and bake forty minutes in a hot oven. The sausage may be omitted if desired and other seasoning used.

Veal Loaf.

- 3 pounds veal.
- 1 pound salt pork.
- 6 soda crackers rolled fine.
- 3 eggs well beaten.
- $\frac{1}{4}$ teaspoonful pepper.
- $\frac{1}{2}$ teaspoonful salt.

Chop the meat mixed with the other ingredients, shape, and bake three hours, basting occasionally with pork

fat. Use one-fourth cut of fat for this purpose. If the roll is pierced occasionally the fat will penetrate more effectually. Veal loaf may also be cooked in bread pans. Some persons cook the veal before chopping.

DEVELOPING AND IMPROVING FLAVOR OF MEAT

The typical meat flavors are very palatable to most persons, even when they are constantly tasted, and consequently the better cuts of meat in which they are well developed can be cooked and served without attention being paid especially to flavor. Careful cooking aids in developing the natural flavor of some of the cheaper cuts, and such a result is to be sought wherever it is possible. Browning also brings out flavors agreeable to most palates. Aside from these two ways of increasing the flavor of the meat itself there are countless ways of adding flavor to otherwise rather tasteless meats. The flavors may be added in preparing the meat for cooking, as in various seasoned dishes already described, or they may be supplied to cooked meat in the form of sauces.

Retaining Natural Flavor.

As has already been pointed out, it is extremely difficult to retain the flavor-giving extractives in a piece of meat so tough as to require prolonged cooking. It is sometimes partially accomplished by first searing the exterior of the meat and thus preventing the escape of the juices. Another device, illustrated by the following recipe, is to let them escape into the gravy which is served with the meat itself. A similar principle is applied when roasts are basted with their own juice.

Round Steak on Biscuits.

Cut round steak into pieces about one-half inch square, cover with water and cook it at a temperature just below the boiling point until it is tender, or boil for five minutes, and while still hot put into the fireless cooker and leave it for five hours. Thicken the gravy with flour mixed with water,

allowing 2 level tablespoonfuls to a cup of water. Pour the meat and gravy over split baking powder biscuits so baked that they have a large amount of crust.

Flavor of Browned Meat or Fat.

Next to the unchanged flavor of the meat itself comes the flavor which is secured by browning the meat with fat. The outside slices of roast meat have this browned flavor in marked degree. Except in the case of roasts, browning for flavor is usually accomplished by heating the meat in a frying pan in fat which has been tried out of pork or in suet or butter. Care should be taken that the fat is not scorched. Fat in itself is a very valuable food, and the objection to fried foods because they may be fat seems illogical. Many housekeepers cook bacon in the oven on a wire broiler over a pan and believe it more wholesome than fried bacon. The reason, of course, is that thus cooked in the oven there is less chance for the bacon becoming impregnated with burned fat. Where fried salt pork is much used good cooks know that it must not be cooked over a very hot fire, even if they have never heard of the chemistry of burned fat. The recipe for bean-pot roast and other similar recipes may be varied by browning the meat or part of it before covering with water. This results in keeping some of the natural flavoring within the meat itself and allowing less to go into the gravy. The flavor of veal can be very greatly improved in this way.

The following old-fashioned dishes made with pork owe their savoriness chiefly to the flavor of browned fat or meat:

Salt Pork with Milk Gravy.

Cut salt or cured pork into thin slices. If very salt, cover with hot water and allow it to stand for ten minutes. Score the rind of the slices and fry slowly until they are a golden brown. Make a milk gravy by heating flour in the fat that has been tried out, allowing 2 tablespoonfuls of fat and 2 tablespoonfuls of flour to each cup of milk. This is a good way to

use skim milk, which is as rich in protein as whole milk. The pork and milk gravy served with boiled or baked potatoes makes a cheap and simple meal, but one that most people like very much. Bacon is often used in place of salt pork in making this dish.

Fried Salt Pork with Salt Codfish or "Salt-Fish Dinner."

- $\frac{1}{2}$ pound salt pork.
- 1 pound codfish.
- 2 cups of milk (skim milk will do).
- 4 tablespoonfuls flour.
- A speck of salt.

Cut the codfish into strips, soak in lukewarm water and then cook in water until tender but do not allow the water to come to the boiling point except for a very short time as prolonged boiling may make it tough. Cut the pork into one-fourth inch slices and cut several gashes in each piece. Fry very slowly until golden brown, and remove, pouring off the fat. Out of 4 tablespoonfuls of the fat, the flour, and the milk make a white sauce. Dish up the codfish with pieces of pork around it and serve with boiled potatoes and beets. Some persons serve the pork, and the fat from it, in a gravy boat so it can be added as relish.

India Curry.

- $1\frac{1}{2}$ pounds veal.
- $\frac{1}{2}$ cup of butter or drippings.
- 2 onions or less.
- $\frac{1}{2}$ tablespoonful curry or less.

Brown meat either without fat or with very little and cut into small pieces.

Fry the onions in the butter, remove them, add the meat and curry powder. Cover the meat with boiling water and cook until tender. Serve with a border of rice. This dish is so savory that it can be made to go

a long way by serving with a large amount of rice. The two onions and one-half tablespoonful of curry powder are the largest amount to be used. Many persons prefer less of each.

In preparing the rice for this dish perhaps no better method can be given than the following:

"Wash 1 cupful of rice in several waters, rubbing the grains between the hands to remove all the dirt. Put the washed rice in a stewpan with $2\frac{1}{2}$ cupfuls of water and 1 teaspoonful of salt. Cover and place where the water will boil. Cook for twenty minutes, being careful not to let it burn. At the end of this time put the stewpan on a tripod or ring and cover the rice with a fold of cheese cloth. Let it continue to cook in this manner an hour, then turn into a hot vegetable dish. The rice will be tender, dry and sweet, and each grain will separate. During the whole process of cooking, the rice must not be stirred. If a tablespoonful of butter is cut up and scattered over the rice when it has cooked twenty minutes the dish will be very much improved."

The butter is not necessary when the rice is served with India curry but may be included in dishes where less fat is used.

Mock Venison.

Cut cold mutton into thin slices and heat in a brown sauce made according to the following proportions:

- 2 tablespoonfuls butter.
- 2 tablespoonfuls flour.
- 1 tablespoonful of bottled meat sauce (whichever is preferred).
- 1 tablespoonful red currant jelly.
- 1 cupful water or stock.

Brown the flour in the butter, add the water or stock slowly, and keep stirring. Then add the jelly and meat sauce and let the mixture boil up well.

CHAPTER VII

BEEF AND LEFT-OVER BEEF DISHES

MARKETING FOR MEATS—ROASTS OF BEEF—BRAISING BEEF—BEEF STEWS AND RAGOUTS—MEAT PIES—BEEF TRIPE, HEART AND KIDNEY—SPECIAL BEEF DISHES AND LEFT-OVERS

MARKETING FOR MEATS

In regard to meat more than any other food, it pays the housewife to do her own marketing. A study of the cuts laid out on a butcher's stall often reveals something good and cheap, which would not have been thought of if one were giving her orders to a clerk or over the telephone. During the past few years meat has risen so steadily in price that roasts, chops, and steaks, on which the average housekeeper was wont to rely, make a food bill appallingly high. But there are other pieces which by careful cooking produce very savory dishes.

The good marketer ought, first of all, to know at a glance not only the various cuts but the appearance of good, wholesome meat. When first killed, a side of beef is reddish purple, but it changes fast to a bright-red tint. The fat is a creamy-white color, not in chunks by itself but threaded, as it were, through the red. The whole ought to have a fresh, juicy appearance that tells it has hung long enough to become well ripened and fit for human food.

Before beginning to consider cuts of meat, their price, their tenderness or toughness, try to imagine the animal on its feet wandering about a grassy field in search of food. Like every other creature, it has a wonderful network of muscles. Some of these muscles work overtime, others get little usage. Therefore we find

the tenderest portions where the body has had little exercise—the flesh on top of the back, that long strip we call the tenderloin lying alongside of the spine, the porterhouse, the seven prime ribs, as a butcher calls the thick sirloin, all cuts which are best adapted for broiling or roasting. Near the neck are the chuck ribs and shoulder, besides the tail and rump; then we come down to the round and the leg, portions of all creatures that abound in muscle. Where sinews are abundant and the flesh has a coarse-grained appearance, different methods of cooking must be resorted to for such meat, if broiled or roasted, would be almost impossible to chew. It should be subjected to slow cooking, such as braising, pot roasting, or simmering just below the boiling point or to the moderate heat of a casserole. The nearer one approaches the hoof of the animal, the better is the meat adapted for soup making. The tendons of the shin are rich in gelatin, and when dissolved by long, slow cooking, give flavor and consistency to a soup.

Beginning at the hoof of a creature, there is a piece which makes excellent soup. As we go farther up the loin, the meat begins to be of better flavor and the bone contains finer marrow. Then comes the round; from the top of it can be cut a really good steak. With a slight amount of pounding and marinating, this can be made almost as tender as a more expensive cut. By marinating is meant

laying it in a mixture of oil and vinegar in the coldest corner of the refrigerator. Next comes the rump, from which stews and roasts are cut. Then the sirloin, which contains the best steaks and roasts. From this portion is cut the tenderloin, a fine strip of tender meat that lies inside the bone. This bit of the creature does not receive the slightest exercise. It is therefore a delicate morsel, which sells from fifty to eighty cents a pound, according to the demand for it. I have bought it in country places as cheap as twenty-five cents a pound, while in New York it often brings ninety cents. Although deliciously tender, it does not possess the flavor and nourishment of a cheaper piece of steak.

Now we come to the forequarter, which begins at the five prime ribs for roasting. Close to them lie the five chuck ribs, excellent cuts for stews and small steaks. The neck is generally converted into Hamburg steak, while the under part of the animal, which includes the flank, plate, navel, and brisket, are corned. Here also is the shoulder clod; no cut can excel it in juiciness and flavor when a pot roast or beef à la mode is desired.

For the housewife anxious to have a small income provide the best food possible, there are any number of pieces that make a savory dish, provided they are cooked in the way which best fits them. A cut from the top of the round marinated as above suggested, and broiled gives an excellent steak. A cheaper piece of round, from farther down the leg, may be put through the chopper; broiled, it is good as Hamburg steak; baked, it makes a savory cannelon. A cut from the rump may be braised and is as appetizing hot as cold. A pound or two of rump is the base for a nourishing stew, while a braised or boiled tongue affords one hot meal and several lunch dishes. An ox tail is delicious fricasseed or in soup.

Pot roasting converts a number of cheap cuts into excellent dishes. Among these are the juicy, lean cross ribs, or a solid piece from the lower part of the round or face of the

rump. Two pounds of flank, which costs ten or twelve cents a pound, is very good when cooked à la *Milanaise*. Roll the meat, sauté it brown, season well, and braise slowly for two hours with enough water to make a good gravy.

A sheep's liver is as highly esteemed in England as calf's liver is here. In American markets it is almost given away. If liver looks cloudy, or a heart and kidney have a streaky, spotted appearance, you may be sure they are diseased and will make dangerous food. When cut from a well-nourished, healthy animal, they are smooth, red, and juicy. A calf's heart is a most appetizing dish larded, stuffed with a well-seasoned dressing, roasted, and served with rich brown gravy.

There is a knack in picking out a soup bone as well as in knowing how to cook it. It ought to be two thirds meat, one third bone and fat. If one has a large family, the best method to follow in winter when making soup, is to purchase two pieces of shin, one heavy with meat, the other bone and gristle. These must be cooked very slowly. When tender, take out the meat, separating it from the bone and gristle, which may be left to cook until all the good is out of it. The meat makes a good hash or stew and is not to be depised for croquettes. Fifty cents' worth of shin (when there is no waste) yields several nourishing meals in the shape of stew, hash, gelatine, and soup.

It will pay a housewife who caters to a large family to purchase a set of butcher's tools. They cost several dollars, but within a year she can save the price of them by getting pieces of meat, during the winter at least, big enough to make a number of meals. Of course cold-storage room is a necessity. For instance, in the course of two weeks, a quarter of mutton can be utilized in a good-sized household. The first part to be used is the flank, because its keeping qualities are not so good as other parts of the quarter. Cut off the small end of the ribs, leaving the loin chops and the rib quite short. The loin can then be hung in a cold pantry. The

flank will make several quarts of fine mutton stock as well as a stew. In this way, one may have at a moderate cost the chops for which a butcher charges fancy prices, besides a number of other cuts, which, although not quite as choice, make excellent dishes when properly cooked. Beef, pork, and veal in large cuts may also be purchased during the winter and cut by the housewife to suit her needs. An accommodating butcher will generally be willing to give his customer a lesson on how to divide meat, and with sharp tools any woman can accomplish it.

Roast Beef.

Use, if possible, a covered roaster for cooking any sort of meat. The result is a much more savory roast and less shrinkage. Wipe the meat, set it in a dripping pan, skin side down, rub with salt and pepper, then dredge with flour. Have the oven as hot as possible when it is put in, so the outside will sear quickly and prevent the escape of the meat juice. As soon as the flour in the pan is brown, reduce the heat and baste with the fat, which has flowed from the roast. When the meat is half done, turn it on the other side and dredge with flour. Should there be the slightest appearance of flour in the pan turning black, add a little water and baste every fifteen minutes until done, allowing one hour for each five pounds if the meat is desired rare or an hour and twenty minutes, if you wish it well done.

Roast-Beef Gravy.

Pour off fat, leaving four tablespoonfuls in pan; add four table-spoons flour and brown, stirring all the time. Add two cupfuls boiling water; salt and pepper to taste, and cook until smooth. Boil two minutes, strain and serve.

Casserole of Beefsteak.

Sauté 3 sliced onions in a tablespoonful butter; put them into the casserole. Cut a steak, from the upper side of the round, into pieces suitable for one portion. Put them in the sauté pan and sear on all sides,

then in the casserole. Add a tablespoonful flour to the sauté pan, let it brown, add $1\frac{1}{2}$ cupfuls water, and stir until thickened, season with salt, pepper, and a tablespoonful chopped parsley. Add a little Worcestershire sauce and mushroom catsup. The sauce will be richer if stock is used instead of water. Pour the sauce over the meat, cover the casserole, set in the oven, and cook slowly until the meat is tender, then cover the top with parboiled, sliced potatoes, and return to the oven to finish cooking the potatoes. Serve in the casserole.

To Broil a Steak.

Have the coals glowing hot, without flame or smoke. Grease a broiler with beef fat, place the steak in it, and hold it over the fire while counting ten slowly. Turn the broiler and hold the other side down for the same length of time. Turn the meat once in ten seconds for about one minute, or until it is well seared; then hold it farther from the fire, turning occasionally until the surface is brown. Just before taking it from the fire, sprinkle with salt and pepper, turning each side once more to the heat to cook the seasoning. When the steak is cooked, lay it on the platter, and spread both sides with butter.

Braised Beef.

- 3 pounds beef,
- 2 ounces fat salt pork,
- 2 tablespoonfuls flour,
- 3 teaspoonfuls salt,
- $\frac{1}{2}$ teaspoonful pepper,
- $1\frac{1}{2}$ pints water,
- 2 tablespoonfuls minced onion
- 2 tablespoonfuls minced carrot,
- 2 whole cloves,
- 1 sprig parsley.

Cut the pork into thin slices and fry until brown and crisp. Take out the pork, putting the vegetables in the fat remaining in the pan, and cook slowly fifteen minutes. Rub half the pepper and 2 tablespoonfuls salt into the piece of meat, and place it in a deep graniteware pan. When the vegetables are cooked, put them with the meat, first pressing from them as much fat as possible. Into

the fat remaining in the pan put the flour, and stir until it becomes brown. Add the water gradually, stirring all the while. Season this gravy with the remainder of the salt and pepper, and boil for five minutes; then pour over the meat in the pan. Add the cloves and parsley. Cover the pan and set in a very moderate oven. Cook for five hours, basting every half hour with the gravy in the pan. The oven must never be so hot that the gravy will bubble.—Maria Parloa.

Beef Stew with Dumplings.

- 2 pounds upper part of round steak with the bone,
- 3 pints boiling water,
- 1 turnip,
- 1 carrot,
- 1 onion,
- $\frac{1}{2}$ tablespoonful salt,
- $\frac{1}{2}$ tablespoonful pepper,
- $\frac{1}{2}$ bay leaf,
- $\frac{1}{2}$ cupful flour for thickening.

Cut meat in one-and-a-half inch pieces, wipe with a damp cloth, and sprinkle with a little salt and flour. Put some of the fat in a hot frying pan, and when tried out, add meat, turning often, till well browned. Then put in a kettle with the bones, add boiling water, rinsing out frying pan with some of it, that none of the goodness of the meat be wasted. Let meat boil for five minutes; then set back on the stove where water will just bubbles, and cook slowly for two hours. Then add onion, carrot, and turnip which have been cut in half-inch cubes, and cook for another hour. Twelve minutes before the stew is done, put dumplings on a perforated tin pie plate, or in a steamer, cover closely, and do not lift the cover until stew is cooked.

Or to have dumplings light in stew, drop the dumplings on top of the gently boiling stew, and leave the cover off until they have puffed up to twice their size. Then replace the cover and cook for fifteen minutes longer. If this is followed the dumplings will never be soggy.

For additional suggestions and recipes for dumplings consult the index.

Corned Beef and Cabbage.

Wash and, if very salt, soak in cold water for an hour a piece of corned beef weighing 5 or 6 pounds. Put in a kettle with cold water to cover, place on stove, heat slowly, taking off scum as it rises to the top of the water. Cook slowly for three or four hours, or till very tender. Take out the meat, and in the liquor cook a cabbage which has been prepared according to directions given in chapter on vegetables; also some potatoes that have been washed and pared. If beets are to be used, cook them in boiling water in a kettle by themselves. When cabbage and potatoes are tender, take out with skimmer and serve with the meat. Save the fat that rises to the top.

Fillet of Beef.

Trim into shape, lard the upper side, dredge with salt, pepper, and flour. Put several pieces of pork in the pan under the meat, bake in a hot oven twenty or thirty minutes. Serve with mushroom sauce. Or brush the fillet with beaten egg, sprinkle seasoned and buttered crumbs all over it, and bake thirty minutes. Or stuff the incisions left by the removal of the veins and tendons with any stuffing or forcemeat. Dredge with salt and flour, and bake.—Mary J. Lincoln.

Hamburg Steak.

Two pounds round beef chopped fine; press it into a flat steak, sprinkle with salt and pepper and a little onion juice; flour lightly, and broil as beefsteak. Make a brown gravy with a little soup stock, thicken with flour, and pour around the steak.

Steak à la Bordelaise (French recipe).

- 1 sirloin steak,
- 2 tablespoonfuls butter,
- 2 tablespoonfuls flour,
- 2 cupfuls beef stock,
- 2 tablespoonfuls chopped raw ham,
- $\frac{1}{2}$ bay leaf,
- 1 tablespoonful chopped onion,
- Salt and pepper to taste,

1 tablespoonful tomato catsup,
 $\frac{1}{2}$ cupful finely chopped mushrooms.

Brown the butter and flour, stir in the stock; when thick and smooth, add the ham, bay leaf, and onion. Cover and simmer gently for an hour, then strain. Add salt, pepper, catsup, and mushrooms, and keep hot at the side of the fire. Broil a sirloin steak, arrange on a hot platter, and pour this sauce around it.

Beefsteak and Onions.

Broil the steak over the fire, being careful to turn it often; after it is cooked, place on a hot platter and set in the oven with dabs of butter on it. Put a little finely chopped suet in a frying pan and fry light brown; into that place 3 onions sliced fine. Cover the pan and cook until tender, remove the cover and continue cooking until the onions are light brown. In serving, pour the onions and gravy over the steak.

Beefsteak Pie.

3 pounds lean steak,
 Sweet thyme and parsley
 chopped fine,
 Peppers,
 2 onions,
 1 teaspoonful Worcestershire
 Sauce,
 6 hard-boiled eggs,
 Salt.

Cut the steak in strips four inches thick; put it to stew in sufficient boiling water so it does not cover the meat. After cooking slowly half an hour, add the thyme, parsley, pepper, and onions, cut in thin slices. When seasoning is added, continue stewing until the meat is tender. Add corn-starch to make the gravy as thick as cream, also season with salt and sauce. Have ready the hard-boiled eggs, and place them in alternate layers with the meat in a pie dish; pour the gravy over all, cover with pastry, and bake.

Beef Omelet.

$\frac{1}{2}$ pound raw beef,
 3 crackers,

$\frac{1}{2}$ teaspoonful baking powder,
 2 well-beaten eggs,
 $\frac{1}{2}$ teaspoonful herbs.

Chop the beef fine; roll in the cracker dust, with which has been mixed the baking powder. Add the eggs and mix with salt, pepper, and powdered herbs; put a lump of butter in a baking dish, let it melt, then put it in the mixture. Bake half an hour. Turn out on a hot platter, fold over as you would an omelet, and pour a meat sauce around it.

Steak à la Victor Hugo (French recipe).

1 porterhouse steak,
 $\frac{1}{2}$ teaspoonful finely chopped shallot,
 1 tablespoonful tarragon vinegar,
 $\frac{3}{4}$ cupful butter,
 Yolks 2 eggs,
 1 teaspoonful lemon juice,
 1 teaspoonful meat extract,
 $\frac{1}{2}$ teaspoonful horse-radish.

Wipe a porterhouse steak, broil, and serve with Victor Hugo sauce made as follows: Cook shallot in vinegar five minutes. Wash $\frac{1}{2}$ cupful butter and divide in thirds. Add 1 piece butter to mixture with yolks of eggs, lemon juice, and meat extract. Cook over hot water, stirring constantly; as soon as the butter is melted, add second piece, then a third piece. When the mixture thickens, add horse-radish. The time for broiling the steak depends, of course, on how you like it; if it is wished rare, five minutes over a hot fire or under the flame of a gas stove will cook it sufficiently. When you wish the steak well done, give it from six to eight minutes.—Stella A. Downing.

Steak Savory (Hungarian recipe).

1 pound round steak,
 1 teaspoonful butter,
 $\frac{1}{2}$ teaspoonful salt,
 $\frac{1}{2}$ teaspoonful pepper,
 $\frac{1}{2}$ cupful chopped beef fat,
 2 onions.

Cut the steak into four parts. Place a frying pan over the fire with enough suet to grease the pan. When

very hot, put in the meat and fry over a quick fire until light brown on both sides. Remove to a hot dish. Mix butter, salt, and pepper. Spread this over both sides of the steak and set in a warm place. Put chopped beef fat in the pan and fry to straw color; remove the bits of fat, leaving the liquid fat in the pan. Add to this the onions cut in slices, season with salt, cover, and cook five minutes, stirring them occasionally. Lay them over the steak, and serve.

London Meat Pie (English recipe).

1 pound steak,
 $\frac{1}{2}$ pound kidney,
 2 cupfuls flour,
 6 tablespoonfuls butter,
 2 teaspoonfuls baking powder,
 Pinch salt,
 1 cupful milk.

Cut the steak and kidney in thin slices, and sprinkle over it flour, pepper, and salt. Put in a pie dish with a little hot water. Put the flour in a basin with the baking powder and salt, rub in the butter, and add milk. Turn on a floured board, and roll a quarter of an inch in thickness. Wet the edges of the pie dish, and line it with strips of pastry, then cover, brush over with egg, make a hole in the center, and bake for an hour and a half in a moderately hot oven.

Steak Pudding (English recipe).

2 cupfuls flour,
 3 ounces suet,
 1 teaspoonful baking powder,
 1 cupful milk,
 Salt and pepper,
 1 pound steak,
 $\frac{1}{2}$ cupful hot water,
 Seasoning.

Cut the meat in slices, and dip each piece in seasoning. Cover with hot water, and let stand while making the pastry. Mix the flour with the suet finely chopped, the baking powder and salt, and make into a stiff paste with milk. Drop on a floured board, and roll. Line a greased pudding basin with the pas-

try, reserving a piece for the top. Put in the meat and water, wet the edges, and cover with the remainder of the pastry. Tie over the top a floured pudding cloth. Put into a saucepan of boiling water to boil two hours.

Beef Bouilli (French recipe).

Short ribs beef,
 1 turnip,
 1 carrot,
 1 onion,
 3 stalks celery,
 1 clove garlic,
 Pepper and salt,
 1 tablespoonful vinegar,
 1 teaspoonful mushroom catsup.

Put the beef on to stew with turnip, carrot, onion, celery, garlic, salt and pepper. Cover with boiling water, and simmer till the meat is tender as possible. For sauce, add vinegar, mushroom catsup, salt, and pepper. Simmer a few minutes. Serve the sauce about the meat.

Beef à la Mode.

4 pounds beef,
 2 tablespoonfuls butter,
 2 tablespoonfuls flour,
 3 pints boiling water,
 1 bay leaf,
 1 sprig celery,
 1 sprig parsley,
 1 onion,
 2 carrots,
 1 turnip,
 1 tablespoonful salt,
 Dash pepper.

Put the butter in a stewpan over a hot fire; when it melts, brown the meat on both sides. Remove the meat temporarily and add flour to butter; let it brown and thicken, then add water, bay leaf, celery, parsley, and onion with clove stuck in it, carrots, turnip, salt, and pepper. Replace the meat in this liquid and simmer six hours. Turn the meat over and stir occasionally. Place the meat on a platter, strain the gravy over it, and garnish with sliced boiled carrots and parsley.

Beef Goulash (Hungarian recipe).

- 3 pounds round steak cut in inch cubes,
- 3 onions sliced,
- 3 potatoes diced,
- $\frac{1}{2}$ cupful butter,
- $\frac{1}{2}$ cupful water,
- 1 cupful cream,
- 1 teaspoonful beef extract,
- 1 teaspoonful salt,
- $\frac{1}{2}$ teaspoonful black pepper,
- $\frac{1}{2}$ teaspoonful paprika.

Put the butter in a kettle, set it on the range, and fry the onions, add the meat, cook until brown. Dissolve the beef extract in water, and add it to the contents of the kettle. Cover closely, and cook slowly until the meat is tender, then add the seasonings, and place the potatoes in the kettle on top of the meat. Cover and cook until the potatoes are tender, add the cream, and simmer five minutes.

Flank à la Milanaise (French recipe).

- 2 pounds flank,
- 1 tablespoonful salt,
- $\frac{1}{2}$ teaspoonful pepper,
- $\frac{1}{2}$ cupful chopped onion,
- 1 tablespoonful butter,
- 2 ounces suet,
- 1 cupful water,
- 2 slices carrot,
- 1 tablespoonful cornstarch.

Season flank with salt and pepper. Place a saucepan with onion and butter over the fire, add a small piece of bruised garlic, cook five minutes. When cold, spread this over the meat, roll, tie at each end and in the center with a string. Set a saucepan with suet over the fire, fry until the suet is fried out; then put in the meat; cook and turn till the meat becomes a light brown, add water, carrot, and onion; cover and cook till done, which will take about two hours, adding more water if necessary, but only $\frac{1}{2}$ cupful at a time. Shortly before serving, lay the meat on a hot dish, take off the strings, skim the fat from the gravy, mix cornstarch with cold water, add it to the gravy, stir, and cook two minutes; add sufficient boil-

ing water to make a creamy sauce, cook five minutes, strain, and serve.

Beef Ragout (French recipe).

- 2 pounds lean beef,
- 1 teaspoonful salt,
- $\frac{1}{2}$ teaspoonful pepper,
- 1 tablespoonful butter,
- 2 onions.

Cut the beef into one-and-a-half-inch pieces, season with salt and pepper. Place a saucepan with butter and onions over the fire, cook a few minutes, add the meat and seasoning, cover, and cook over a slow fire two and a half hours, adding a little boiling water if the gravy gets too brown. When the meat is tender, dust with 1 tablespoonful flour, add cupful boiling water, and cook slowly ten minutes.

Hot Collops (Scotch recipe).

Mince $1\frac{1}{2}$ pounds round steak fine and season highly. An onion can be added if liked, chopped very fine. Melt a tablespoonful butter in a stewpan, put in the mince, and stir frequently to keep from getting into lumps. Dredge flour over it, and pour on a little stock. Let simmer a few minutes, serve very hot on slices of toast.

Boiled Fresh Tongue.

Bend the tip of the tongue around and tie it to the root. Put it in cold water and place over the fire. When it boils, pour off the water, and put it on again in cold water. Boil until tender. Remove the skin, roots, and fat, and serve cold. Tongues may also be braised and served cold.—Mary J. Lincoln.

Sweetbreads and Macaroni Sauce.

- 2 beef sweetbreads,
- 12 sticks macaroni,
- 2 tablespoonfuls butter,
- 2 tablespoonfuls flour,
- 1 cupful cream,
- Salt and pepper.

Parboil the sweetbreads; cut into small pieces. Boil the macaroni; when tender, cut it in tiny pieces,

making little rings. Into a saucepan put butter and flour; stir, add the cream; when smooth, add the macaroni and sweetbreads. Season with salt and pepper. Boil up and serve.

Tripe à la Creole (Southern recipe).

2 tablespoonfuls butter,
12 peppercorns,
2 cloves,
1 blade mace,
1 onion chopped fine,
2 tablespoonfuls flour,
1½ cupfuls strained tomato,
½ pound boiled tripe.

Put into a saucepan the butter, peppercorns, cloves, mace, and onion chopped fine. Cook slowly until the butter is light brown; add the flour, and brown again. Strain, and return to the fire. Season to taste; add the boiled tripe, cut into inch strips; cover, and simmer gently for twenty minutes.

Curried Tripe (Southern recipe).

1 tablespoonful butter,
1 finely chopped onion,
1 tablespoonful flour,
1 cupful stewed tomato,
1½ pounds boiled tripe,
Curry powder, pepper, and salt,
1 cupful beef stock.

Melt the butter in a spider; add the onion; cook until colored; add the flour and brown it; stir in the beef stock and tomatoes. Add the boiled tripe, cut into strips, season with salt, pepper, and a little curry powder. Simmer gently for ten minutes, and serve.

Tripe Lyonnaise (French recipe).

2 pounds tripe,
1 tablespoonful butter,
Slice onion,
Salt and pepper.

Cut the tripe in thin strips. Put the butter in a frying pan; when hot, add the onion, and fry light brown. Turn in the tripe, add a little salt and pepper. Cook gently until tender. Thicken the gravy with flour.

Tripe à l'Espagnole (French recipe).

3 tablespoonfuls oil,
½ cupful finely chopped onion,
½ finely chopped green pepper,
1 bruised clove garlic,
½ cupful finely chopped mushrooms,
1½ pounds tripe,
1 teaspoonful salt,
½ teaspoonful pepper,
2 finely cut tomatoes,
1 teaspoonful flour,
1 cupful boiling water,
1 teaspoonful beef extract,
1 teaspoonful finely chopped parsley.

Place the oil in a saucepan over the fire, add the onion, pepper, and garlic; cook five minutes without browning. Wash and cut the tripe into inch-sized pieces, season with salt and pepper; mix the tripe with the seasoning; add it to vegetables in the saucepan, cover, and cook ten minutes; add the tomatoes, seasoning and mushrooms; cook five minutes; dust with flour, add boiling water and beef extract, cook a few minutes longer. Serve, sprinkled with parsley.

Stewed Tripe and Tomato Sauce.

1 pound tripe,
1 onion cut in slices,
2 cupfuls tomatoes,
2 tablespoonfuls flour,
¼ cupful cold water,
Salt and pepper.

Wash the tripe, cover with hot water; add the onion, cover the saucepan, and cook slowly half an hour. In another saucepan put the tomatoes, cook ten minutes; strain through a sieve and return to the pan. Wet the flour with the water; add it to the strained tomatoes, stirring all the time. Add salt and pepper to taste. Place the tripe on a hot platter and pour the sauce over.

Tripe with Oysters.

Simmer ½ pound tripe for three quarters of an hour in slightly salted water; take out the tripe; add to the water in which the tripe was

cooked a little butter, flour, salt, and pepper. Return the tripe and a dozen oysters, simmer until the oysters are cooked, and serve.

Tripe and Onions (English recipe).

1 pound tripe,
2 onions,
1 cupful milk,
 $\frac{1}{2}$ tablespoonful flour,
Pepper and salt.

Parboil the tripe, and cut into small pieces. Parboil the onions, and cut in rings. Put them both in a saucepan with boiling water and a little salt. Simmer gently from an hour and a half to two hours. Mix the flour and milk smoothly; when the tripe is tender, pour it in. Let it come to the boil, and serve very hot.

Beef Heart Sauté.

Soak a beef heart in cold water an hour, changing the water several times to draw out all the blood. Cover with boiling water, add 1 teaspoonful salt, and simmer gently two hours. Set aside until cold. Cut into half-inch slices and take out the tough muscle in the center. Dip each slice in slightly beaten egg, with which has been mixed salt and pepper, $\frac{1}{2}$ teaspoonful onion juice, and 2 teaspoonfuls warm water; roll in dry bread crumbs, and stand ten minutes. Fry golden brown in deep fat. In a frying pan melt 1 tablespoonful butter; when brown, add 1 tablespoonful flour, and brown again. Add gradually $\frac{3}{4}$ cupful water in which the heart was cooked, $\frac{1}{4}$ cupful vinegar from piccalilli, and 1 tablespoonful pickle chopped fine; salt and pepper to taste. Simmer two or three minutes.

Stewed Beef's Heart (English recipe).

1 beef heart,
1 cupful bread crumbs,
8 slices salt pork minced,
Salt and pepper,
1 teaspoonful chopped parsley,
 $\frac{1}{2}$ teaspoonful sweet marjoram,

$\frac{1}{2}$ teaspoonful chopped onion,
2 teaspoonfuls melted butter,
1 tablespoonful browned flour,
 $\frac{1}{2}$ lemon.

Wash the heart thoroughly and soak two hours in cold water slightly salted. Stuff with forcemeat made of bread crumbs, salt pork, salt, pepper, parsley, sweet marjoram, and onion. Moisten with melted butter. Fill the heart with this, sew up the opening, and tie firmly in a piece of cloth. Put in a saucepan, nearly cover with boiling water, and stew gently for three hours. The water should by this time be reduced to a pint. Take out the heart, remove cloth and dish. Set aside a cup of gravy and thicken what is left in the saucepan with butter rubbed smooth in browned flour. Salt and pepper to taste. After taking from the fire, add the lemon juice, and pour over the meat. Carve in slices across the top.

Beef Kidney à la Baden-Baden (German recipe).

1 beef kidney,
2 tablespoonfuls butter,
1 tablespoonful salt,
1 teaspoonful pepper,
2 tablespoonfuls finely cut mushrooms,
Yolks 2 eggs,
1 cupful sweet cream.

Split the kidney in half; remove the white fat and all stringy parts; cut the kidney in four-inch squares. Place a saucepan over the fire, add the butter, and as soon as hot, put in the kidney; season with salt and pepper, stir, and cook five minutes; add the mushrooms, cook six minutes. Mix the yolks of the eggs with the cream; add to the kidneys; stir and beat till nearly boiling; add a little cayenne pepper, and serve.

Hungarian Kidney.

1 beef kidney,
1 $\frac{1}{2}$ tablespoonfuls butter,
 $\frac{1}{2}$ teaspoonful salt,
 $\frac{3}{4}$ teaspoonful white pepper,
4 tablespoonfuls beef stock,

1 tablespoonful chopped mushrooms,
Yolks 2 eggs,
 $\frac{3}{4}$ cupful milk.

Wash the kidney, and with a sharp knife cut off the outer part of each lobe, rejecting the purplish portion and tubes. In a saucepan put the butter, salt, and pepper. When hot, add the kidney; shake, and cook for five minutes; add the beef stock and mushrooms; simmer for ten minutes; mix the eggs and milk, add to the contents of the saucepan, stir until the sauce begins to thicken; then take from the fire, and serve in a hot dish.

Broiled Kidneys (Scotch recipe).

Cut the kidneys in slices, soak an hour in salted water, wipe them dry, dip in beaten egg, then in crumbs, and broil over a hot fire.

Frizzled Dried Beef.

Cover dried beef with hot water to take out the salt; throw this water away, and put the beef into a saucepan with a few tablespoonfuls boiling water; let it simmer; add a little butter, put the beef on slices of toast and pour a thin tomato sauce over them.

Fricassee of Oxtails.

Wash and clean 2 small oxtails, cut them in pieces two inches long, put them into stock, and simmer until tender. Do this the day before they are to be used. Dip them in beaten eggs and crumbs, season with salt and pepper, and fry light brown. For the sauce, thicken the stock the oxtails were cooked in with flour, pour over the meat, and serve.

Savory Oxtail (Mexican recipe).

2 oxtails,
8 onions,
Clove bruised garlic,
1 tablespoonful salt,
1 teaspoonful pepper,
1 carrot,
2 turnips,
2 sweet potatoes,
4 potatoes,
1 cupful Lima beans,
5 tablespoonfuls butter,

Cut oxtails into pieces, scald in boiling water and cool in cold water; place a saucepan with butter over the fire, add onions and garlic; cook three minutes; drain the meat and season with salt and pepper; stir, and cook six minutes; then cover with boiling water and cook two hours. Add carrot, turnips, sweet potatoes, onions, and potatoes; cover, and cook till nearly done; then add the Lima beans described below: Soak 1 cupful Lima beans in cold water over night, place them over the fire with cold water, add a little salt, and boil till tender; melt 1 tablespoonful butter in a small saucepan, stir, and cook two minutes; add 1 pint broth, cook a few minutes; then add to the stew; cook a few minutes, and serve. In place of butter, the Spanish people use oil.

Creamed Frankforts (German recipe).

$1\frac{1}{2}$ tablespoonfuls butter,
 $1\frac{1}{2}$ tablespoonfuls flour,
1 cupful milk,
Pepper and salt,
4 Frankfort sausages.

Make a cream sauce of butter, flour, and milk. Season with salt and pepper. Skin Frankfort sausages, cut into pieces an inch long, and bring to a boiling point in the sauce.—Stella A. Downing.

LEFT-OVERS OF BEEF

A roast of meat goes on the table in some households day after day in the same style, with the carver doing his best at each meal to leave it as slightly as possible. Its last appearance is calculated to take away the appetite of the entire family. The careful housewife, who aims, besides economy, to have a healthful, and attractive table, studies the cold roast on the second day with a keen eye. As a result of her planning, it comes from the refrigerator on a clean plate, and with it a bowl of brown gravy to which has been added every drop of the meat juices left in the platter on which the roast was served.

Then for luncheon she plans cold

meat, cut in neat slices from the choicest bits of the roast, both rare slices and well done, to appeal to various tastes. The meat is not cut until almost ready to put on the table. It is nicely arranged on a small platter with a garnish of parsley, cress, or cubes of aspic. She does not reheat the gravy to serve on cold plates. Worcestershire, tomato, or some cold homemade sauce makes a more fitting accompaniment.

Finally she carves the roast and plans for future meals. The tough outside pieces are laid away to be chopped, the fat to be rendered down for drippings, the tender bits of meat to be deviled, used for pic, ragout, or warmed up in the gravy, while the bones and gristle go to the soup kettle. Not a morsel of the meat is wasted in such a kitchen, and the daintily served, appetizing meals that follow the roast at intervals do not hint to the uninitiated of *réchauffés*.

To make warmed-up meats appetizing, there are various commodities which ought always to occupy a place in the pantry. Among these are a small jar of onion butter, a bottle of caramel, a glass can filled with browned flour, a jar of finely rolled bread crumbs, Worcestershire sauce, celery salt, mace, bay leaves, tabasco sauce, cayenne, curry, catsup, canned mushrooms, paprika, kitchen bouquet, and horse-radish. The secret of appetizing food is good flavoring, and the frequent varying of flavor has more to do with a tempting table than a large butcher bill.

Meat Minced with Poached Eggs.

- 2 cupfuls cold meat,
- 1 cupful gravy or stock,
- Pepper,
- Salt,
- 1 teaspoonful butter.

Chop a pint of meat coarsely, season well, heat in a cupful of left-over gravy or stock. Do not allow it to boil, merely to come to a simmer. Serve on diamonds of toast with a poached egg on top of each slice.

Bubble and Squeak.

- 4 cupfuls cold corned beef or beef left from a pot roast,
- 3 tablespoonfuls butter,
- 2 cupfuls cold boiled cabbage,
- Salt and pepper.

Cut the cold meat into small strips and sauté them in a tablespoonful butter. Chop the cabbage and 2 tablespoonfuls butter in an omelet pan. Pepper and salt it, then stir over the fire till it begins to brown. Arrange on a hot platter as a border and into the middle put the hot meat. Serve with boiled potatoes.

Grilled Slices with Creole Sauce.

Cut from roast beef 6 slices of rarest meat, broil for five minutes over a clear fire, put on a hot plate, and serve with a sauce made as follows: In a saucepan put 2 tablespoonfuls butter, 2 tablespoonfuls chopped onion, and 1 tablespoonful chopped green pepper. Fry light brown, stirring constantly. Add 2 tablespoonfuls flour and stir to a paste; then put in a pint brown stock, 2 teaspoonfuls Worcestershire sauce, a teaspoonful dry mustard, and 2 teaspoonfuls vinegar. Salt and pepper to taste. Cook over a slow fire, beating the sauce smooth. Add a teaspoonful chopped parsley and $\frac{1}{4}$ can mushrooms cut in halves. Let the sauce come to a boil, then pour over the grilled meat.

Deviled Beef.

Take slices of rare roast beef and spread with butter on each side, as if you were buttering bread. Over this scrape a mustard made by mixing a tablespoonful vinegar with 3 tablespoonfuls mustard and a dash salt and pepper. Lay on a smoking-hot iron spider and fry till the slices begin to curl over.

Mock Terrapin.

- 6 hard-boiled eggs,
- 2 cupfuls brown stock,
- 4 cupfuls cold beef,
- 2 tablespoonfuls flour,
- 2 tablespoonfuls butter,
- $\frac{1}{2}$ cupful cider.

Put the butter and flour in a saucepan, and when blended, pour in the soup, and beat till smooth. Let it come to the boil, then add the meat cut in inch pieces, and draw to a cooler place on the stove where it can simmer half an hour. If you cannot watch it, pour it in a double boiler, for the success of this dish depends on the steeping of the meat at just below boiling point. Season with salt, pepper, and the cider when the dish is ready to take from the fire. Boil 6 eggs hard and lay in cold water to make the shells come off easily. Pour the mock terrapin on a large platter, garnish with eggs sliced, split gherkins, and points of lemon.

Roast-Beef Pillau.

Cook for five minutes 1 tablespoonful butter and a small onion chopped fine. Before it begins to brown, add 2 cupfuls cold beef cut in fine dice, seasoned with $\frac{1}{2}$ teaspoonful salt and $\frac{1}{4}$ teaspoonful pepper. Simmer slowly for ten minutes. While it is cooking, cover $\frac{1}{2}$ cupful rice with cold water and set it over the fire to boil. When it has cooked for five minutes drain and let cold water run through it till every grain separates. Add the rice to the beef, pour over it $1\frac{1}{2}$ cupfuls canned tomatoes. Pour in a cupful boiling water, and cook slowly till the rice is perfectly soft.

Beef Fricassee.

3 cupfuls cold beef cut in thin slices,
 2 cupfuls brown stock,
 3 tablespoonfuls butter,
 2 tablespoonfuls flour,
 $\frac{1}{2}$ teaspoonful pepper,
 1 teaspoonful onion butter,
 1 teaspoonful salt.

Season the meat with salt and pepper. Melt the butter in a spider, add the flour, and stir to a brown paste. Pour in the stock and beat smooth with a wire whisk. Season with pepper, salt, and onion butter, and cook ten minutes. Add the cold meat, simmer a few minutes, and serve on a deep platter with a border of rice,

mashed potatoes, or points of toast.

Beef Ragout with Tomato.

3 cupfuls cold roast beef,
 $1\frac{1}{2}$ cupfuls tomato pulp,
 1 tablespoonful butter,
 1 teaspoonful onion juice,
 Salt and pepper.

Cut the beef into half-inch cubes, cook the tomatoes half an hour, and push through a potato ricer. Reheat the tomatoes, adding butter and seasonings, at the last the beef. Let it simply heat, not boil, then serve.

Creamed Corned Beef au Gratin.

2 tablespoonfuls flour,
 2 tablespoonfuls butter,
 1 cupful milk,
 1 sliced onion,
 1 stalk chopped celery,
 Pepper,
 2 cupfuls cold corned beef,
 $\frac{1}{2}$ cupful buttered cracker crumbs.

Put the celery, cut in inch lengths, and the onion in the milk; scald in a double boiler. Strain when boiling and convert the milk into a white sauce with the butter and flour. When thick, add the corned beef, cut into small neat cubes, and a dash of pepper. Pour into a shallow dish, cover with buttered cracker crumbs, and brown. Garnish with blanched leaves of celery.

Beef Hash.

Use for beef hash the tough part of the roast thoroughly freed from fat and gristle. Chop and mix 1 cupful meat with 2 cupfuls chopped potatoes. In an iron spider put 2 tablespoonfuls butter and $\frac{1}{2}$ cupful stock, or a spoon of gravy added to enough hot water to half fill a cup. Boil up, then add the meat and potatoes seasoned with pepper and salt. Stir occasionally with a fork. Let the water evaporate from the hash, leaving it dry but not pasty.

Fatherland Farm Meat Loaf.

Butter a long, narrow cake tin and line with cold mashed potatoes, smoothing with a spatula into a layer

an inch thick. Inside this put a filling of roast beef, chopped coarsely, seasoned with pepper, salt, and a few drops of onion juice, and moistened with gravy. Smooth this filling till within one inch of the top of the tin, and cover with mashed potatoes. Bake in a hot oven for half an hour and turn out on a long platter. It will look like a finely crusted loaf, and may be cut in neat slices. This makes a delicious luncheon or tea dish.—Mrs. S. B. Forbes.

Papas Rellenas (Cuban recipe).

- 3 large potatoes,
- 1 cupful cold roast beef,
- 1 tablespoonful butter,
- 2 tablespoonfuls cooked tomato,
- 2 eggs,
- 1 tablespoonful flour,
- 3 olives,
- Pepper, salt, cayenne.

Boil the potatoes, and cut in halves lengthwise. Scoop out the inside with a spoon, leaving the potato shell half an inch thick. Make a "piccadillo" to stuff them with. Chop the beef, put it in a spider with the butter and tomato. Cook till the mixture begins to look dry, add 1 well-beaten egg, a dust cayenne, salt, and pepper and 3 olives chopped. Stuff the potato halves with this mixture. Beat 1 egg light, add 1 teaspoonful flour, and in this batter dip the half potatoes. Fry in boiling lard as you would croquettes.

The Remains of a Boiled Dinner.

Winter squash can be served in a pie, sifting and seasoning it as if boiled for the purpose. Cold cabbage may be put into hot spiced vinegar, served cold with vinegar, or heated with a little butter and pepper, salt, if needed, and just a suspicion of vinegar. Cut it fine, and heat thoroughly. Beets make good pickles. Turnips, carrots, and parsnips can be warmed up. A favorite dish with many people is "red-flannel hash," plain hash containing a little chopped beet. Look over the meat, cutting out all the gristle and soft fat. Chop it fine with some of the

hard fat. Mince potatoes which have been boiled in pot liquor. Use three times as much potatoes as meat. Chop with the potatoes a small quantity of the cabbage and some of the beets. For 2 quarts potatoes use $\frac{1}{2}$ pint cabbage and 1 large beet. Mix thoroughly with the meat. Pour some milk into a frying pan and turn in the hash, using enough to moisten thoroughly. Add 2 tablespoonfuls butter and season with pepper and salt if necessary. Be sure it is heated through. Serve with brown bread and pickles.—H. Annette Poole.

Tongue Sandwiches.

- 1 cupful finely chopped tongue,
- 1 teaspoonful made mustard,
- 1 tablespoonful soft butter,
- $\frac{1}{2}$ teaspoonful paprika,
- Yolk 1 hard-boiled egg,
- Juice $\frac{1}{2}$ lemon,
- Dash nutmeg.

Chop the tongue fine, and mix thoroughly with the other ingredients. Spread between thin slices of bread.

Beef Rissoles.

Roll pie crust as thin as possible and cut into rounds with a large biscuit cutter. Mince cold beef or steak, season with salt and paprika, and moisten with stock or gravy to make the meat stick together. Put a spoonful of this mixture into each round of paste, pinching the edges together carefully so that not a particle of the meat may escape. Brush egg over the outside, and fry like doughnuts in deep lard. They will take eight minutes to brown. Drain on thick paper, and serve hot in a folded napkin.

Meat Loaf with Tomato Sauce.

- Meat left over from roast or stew—about 2 cupfuls,
- 1 cupful rice,
- 1 cupful gravy or cream sauce,
- 1 tablespoonful grated onion,
- 1 tablespoonful chopped parsley,
- $\frac{1}{2}$ teaspoonful pepper,
- $\frac{1}{2}$ teaspoonful salt,

Put meat through chopper, then add rice, which has been washed,

boiled, drained and put through chopper, add onion, parsley, salt, pepper, nutmeg and cream sauce, mix well. Brush mold with drippings, put in mixture and bake in hot oven for thirty minutes. Serve with tomato sauce.—Mrs. W. W. Klingensmith.

Meat Turbot.

The tough ends of a steak or any cold meat may be ground through meat grinder. In a porcelain dish put 1 layer ground meat, 1 layer white sauce made either by thickening milk or drawn butter sauce, salt, again 1 layer of the meat, salt, sauce, etc., until dish is nearly full. Sprinkle over top with bread crumbs and pieces of butter. Bake in moderate oven twenty or thirty minutes. If sauce is seasoned, do not put sea-

soning in baking pan.—Mrs. A. J. Mielke.

Meat Hash.

- 1 cupful tender meat chopped fine,
- 2 cupfuls hot mashed potatoes,
- $\frac{1}{2}$ teaspoonful salt,
- $\frac{1}{2}$ saltspoonful pepper,
- 5 tablespoonfuls hot water or stock,
- 1 tablespoonful butter or dripping.

Mix meat and potatoes until there are no lumps. Melt the fat in the water and add the seasoning and potatoes and meat. Cook slowly until the water is absorbed and the crust is brown. Do not stir after setting back to brown. Fold over and turn out on a hot plate.

CHAPTER VIII

LAMB AND MUTTON DISHES AND LEFT-OVERS

ROAST LAMB—BOILED, STUFFED AND BROILED LAMB AND MUTTON—LAMB AND MUTTON HASH AND STEW—LAMB AND MUTTON CHOPS—SPECIAL DISHES AND LEFT-OVERS

Roast Lamb.

Wipe the meat with a damp towel, place in a baking pan, dredge with pepper, salt, and flour. Add a cupful boiling water and a teaspoonful salt to the pan. Baste every ten minutes, and bake fifteen minutes to the pound in a hot oven. When done set the meat on a platter, and serve with mint sauce and green peas.

Leg of Lamb.

Remove the outer skin, then sear cut surfaces, dredge with salt, pepper, and flour. Place strips of fat pork over the top, roast in a hot oven, basting frequently. Time required for leg of lamb $1\frac{1}{2}$ hours, mutton $1\frac{1}{4}$ hours.—Mrs. A. J. Mielke.

Boiled Leg of Lamb.

Choose a hind leg, put into a kettle, and cover with boiling water. Set over the fire, let come to a boil, pour in a pint cold water and simmer gently until done. Take the meat up on a hot dish, and serve with caper sauce.

Stuffed Shoulder of Lamb.

Bone a shoulder of lamb, leave the knuckle, and fill the cavity with rich bread stuffing; tie neatly in shape and wrap in a buttered paper. Lay in a deep pan with 4 tablespoonfuls butter, a sliced carrot and turnip, an onion stuck with cloves, and a bunch

of sweet herbs. Pour on sufficient stock to cover the bottom of the pan. Set over a slow fire and simmer gently; baste every ten minutes. When nearly done, lift from the pan, remove the paper; brush the meat with melted glaze and set in the oven to brown. Take up the shoulder on a heated dish. Strain the gravy, and pour around it. Garnish with purée of green peas, and serve with maitre d'hôtel sauce.—Eliza Parker.

Pressed Lamb.

Put a shoulder of lamb on to boil, with water to cover; when tender, season with salt and pepper. Boil until tender, when the juice will be nearly boiled out. Chop the meat, and season. Put it in a bowl with a plate on top and press out all the juice; set in a cool place to harden. Slice thin when serving. Soup can be made of the broth.

Broiled Breast of Lamb.

Trim a breast of lamb and put it in a saucepan, cover with stock, add a bunch sweet herbs, a slice onion, a piece mace, and 2 or 3 cloves; simmer gently until tender. Take up, dredge with salt and pepper, brush over with beaten egg and grated cracker, and broil over a clear fire until brown on both sides. Take up on a heated dish, pour over a little melted butter and garnish with asparagus tips.

Imitation Barbecue of Mutton.

Remove the skin from a leg of mutton, sprinkle with salt, and dredge with flour. Place in the pan and roast. Allow the meat twenty minutes to the pound. One hour before serving, prepare the following mixture:

- $\frac{1}{2}$ cupful Worcestershire sauce,
- $\frac{1}{2}$ cupful tomato catsup,
- $\frac{1}{2}$ cupful vinegar,
- $\frac{1}{2}$ teaspoonful pepper,
- 2 teaspoonfuls mustard.

Stick the meat all over with a sharp-pointed knife, pull the cuts open and fill with this hot mixture. Baste with the liquor which gathers in the pan, and pour it over the meat before sending it to the table.

Mutton Stew (Irish recipe).

- 1 $\frac{1}{2}$ pounds neck mutton,
- 2 quarts potatoes,
- 4 onions,
- 2 cupfuls boiling water,
- Pepper and salt.

Cut the mutton in pieces, and put in saucepan with the onions cut in rings, also the hot water and salt. Let it boil, then simmer gently for two hours. Parboil the potatoes, cut them in halves, put in the saucepan with the meat, about half an hour before it is done. In serving, put the potatoes round the dish, with the meat and onions in the center, and pour the gravy over.

Army Stew.

- 1 tablespoonful chopped parsley,
- 2 pounds forequarter lamb,
- 1 teaspoonful pepper,
- 1 tablespoonful salt,
- 4 onions,
- 2 turnips,
- 2 carrots,
- 4 potatoes,
- $\frac{1}{2}$ cupful milk,
- 2 teaspoonfuls baking powder,
- 1 egg,
- 2 cupfuls flour.

Cut lamb in pieces, place in a saucepan, cover with boiling water, cook two minutes, remove, drain and

plunge into cold water, drain and return the meat to the saucepan. Cover again with boiling water, add salt, pepper, and onions, boil an hour and a half, add turnips, peeled and cut into quarters, carrots and potatoes, cut into quarters; boil till done. Ten minutes before serving, mix flour with baking powder, egg and milk, cut with teaspoonful small portions from the mixture and drop them in the stew; cover, and cook five minutes; then remove the saucepan to side of stove, where it stops boiling, otherwise the dumplings will become heavy; add parsley, and serve.

Curry of Lamb (Southern recipe).

- Breast lamb,
- 2 onions,
- 1 carrot,
- Bunch parsley,
- 1 bay leaf,
- 4 tablespoonfuls butter,
- 3 tablespoonfuls curry powder,
- 2 dozen sweet potatoes,
- 2 tablespoonfuls flour,
- 3 tablespoonfuls grated coconut,
- 3 dashes tabasco sauce.

Cut lamb in inch squares, trim, and put on fire with enough water to cover; add onion, carrot, parsley, and bay leaf; cook half an hour. Prepare butter in saucepan with curry powder, simmer five minutes, add flour, moisten with stock of lamb strained; add pieces of lamb, also sweet potatoes, coconut, salt, and tabasco. Cook fifteen minutes, and serve with garnishing of boiled rice. Chicken, veal, or mutton may be prepared in the same way.

Haricot Mutton (English recipe).

- 1 $\frac{1}{2}$ pounds neck mutton,
- 1 onion,
- 1 carrot,
- 1 turnip,
- 4 tablespoonfuls butter,
- 2 tablespoonfuls flour,
- Pepper and salt to taste,
- 2 cupfuls hot water.

Divide the meat into small joints, and cut the vegetables in small square

pieces. Put the butter in a saucepan, add the meat, and fry brown with the onions. Pour off the fat, add the vegetables, flour, water, and a little salt. Let it boil; then simmer gently from one and a half to two hours. In serving, put the meat on a hot dish, pile the vegetables on top, and pour the gravy round about.

Breaded Chops.

4 loin chops,
1 egg,
1 cupful bread crumbs,
1 teaspoonful salt,
Dash pepper,
1 tablespoonful chopped parsley.

Cut chops three quarters of an inch thick. Dip each in beaten egg and lay on a meat board. Mix bread crumbs with salt and pepper, minced parsley, and a little grated nutmeg. Roll the chops in the bread crumbs and fry in boiling fat until light brown. Garnish with slices of lemon and sprigs of parsley.

Broiling Lamb or Mutton Chops.

Have the chops cut thick, wipe them and remove extra skin and fat. Dust them with salt and pepper. Place on very hot gridiron or iron wire broiler. Sear on both sides with intense heat and broil over very quick fire, turning frequently. Broil seven minutes for lamb and ten to fifteen minutes for mutton chops. Pile neatly on a hot platter and put a small piece of butter on each. Garnish with water cress or parsley.

Lamb Chops à la Boulangère (French recipe).

10 or 12 cutlets,
2 tablespoonfuls butter,
 $\frac{1}{2}$ cupful cream,
Salt, pepper, and cayenne,
1 tablespoonful chopped chervil,
1 lemon.

Trim the cutlets, season with salt, pepper, and a little cayenne, dip in olive oil, then in flour. Broil over a slow fire. While they are cooking, put cream in a stewpan, and when

boiling add butter, chervil, the juice of $\frac{1}{2}$ lemon, and a little pepper and salt; stir quickly till it forms a smooth sauce; pour it over the cutlets when done, and serve quickly. Fillets of veal or rabbit are good cooked in this way.

Mutton Chops à la Cleveland.

8 mutton chops,
3 tablespoonfuls sweet oil,
3 tablespoonfuls butter,
1 onion,
1 pint mushrooms,
 $\frac{1}{2}$ pint strained tomatoes,
Dash tabasco sauce,
Salt,
Chopped parsley.

Fry the chops in the oil and butter. Put them on a hot platter while you make the sauce. Chop the onion and mushrooms fine; put them in a saucepan with a little butter and fry until brown. Add the tomatoes, and boil five minutes; add the tabasco, salt, pepper, and parsley. Lay the chops in a circle; pour the sauce in the center, and garnish with points of toast.

Stuffed Mutton Chops.

10 mutton chops,
1 tablespoonful butter,
1 tablespoonful chopped onion,
 $\frac{1}{2}$ cupful chopped mushrooms,
1 teaspoonful salt,
Pinch pepper,
1 tablespoonful flour,
2 tablespoonfuls stock.

Trim the chops, which have been cut very thick. With a sharp knife split each chop in two, without separating the meat from the bone. Put the butter in a pan, add the onion, and cook five minutes; add to this the chopped mushrooms, salt, and pepper, and cook five minutes longer. Add the flour and stock. Cook for a few minutes; stuff each chop with this mixture after it has cooled; press them tightly together, and broil.

Mutton Cutlets with Mushrooms.

Take the bones from mutton chops, and use the round, lean portions.

Brush with melted butter and broil. Serve them on rounds of toasted bread, with mushroom sauce poured over. Sauce.—Peel 1 pint mushrooms, cut in pieces, season, and cook in cream sauce for ten minutes.

Lamb Fricassee (German recipe).

- 2 breasts lamb,
- 2 ounces butter,
- 2 tablespoonfuls chopped onion,
- 2 teaspoonfuls salt,
- $\frac{1}{2}$ tablespoonful butter,
- 2 tablespoonfuls flour,

Dip the lamb breasts into boiling water, then instantly into cold water; cut the meat into two-inch pieces. Melt the butter in a saucepan, add the onions, and cook five minutes without browning; season the meat with the salt; add it to the saucepan; cook ten minutes, cover with boiling water, put on the lid, and cook until done. Shortly before serving, melt $\frac{1}{2}$ tablespoonful butter, add the flour, stir, and cook a few minutes; add it to the fricassee, and boil a few minutes longer.—Gesine Lemcke.

Deviled Kidneys (German recipe).

- 6 lamb kidneys,
- 1 ounce butter,
- 2 tablespoonfuls chopped onions,
- $\frac{1}{2}$ bruised clove garlic,
- 1 teaspoonful salt,
- 1 cupful stock,
- Yolks 3 eggs,
- 1 teaspoonful chopped parsley,
- Cayenne pepper.

Split the kidneys, remove the white part in center and chop fine. Place the butter in a saucepan, add the onions, and cook three minutes; add the kidneys and salt; stir, and cook three minutes; then add the stock, and cook three minutes longer. Remove from the fire, add the eggs, parsley, and a little pepper. Fill this mixture into 6 ramequins, sprinkle over each $\frac{1}{2}$ tablespoonful fresh grated bread crumbs and a little melted butter. Place the ramequins in a tin pan, set it in a hot oven, and bake brown.—Gesine Lemcke.

Kidneys à la Maître d'hôtel (French recipe).

Split and cut in two, lengthwise, lamb's kidneys. Run a skewer through to keep them flat. Dip in melted butter and fine bread crumbs; season with salt and pepper. Broil five minutes. Serve with maître d'hôtel butter.

Lamb-Heart Stew (French recipe).

- 3 lambs' hearts,
- 1 tablespoonful butter,
- $\frac{1}{2}$ peeled lemon,
- $\frac{1}{2}$ bay leaf,
- Salt,
- Pepper.

Wash the hearts and slice, cutting across the grain of the meat. Dry slightly and dust with flour. Put the butter in a stewpan and when hot add the meat; stir and cook about ten minutes. Add enough water to nearly cover the meat, the lemon cut in slices, and bay leaf. Cover the kettle, and cook gently half an hour, stirring often and adding more water, if needed; add salt and pepper; remove the bay leaf and lemon, thicken, and serve.

Lamb's Liver Curried.

- 1 lamb's liver,
- 1 onion,
- Few slices pork,
- $\frac{1}{2}$ teaspoonful curry powder,

Cut the lamb's liver in slices, soak in salted water for five minutes, take from the water, and dry in a cloth. Slice the onion and fry with pork. Take out the pork and fry the liver. Brown well, add the curry powder to the sauce, stir smooth, and serve.

Boiled Mutton.

Wipe, remove fat, and put the meat into well-salted, boiling water. Boil ten minutes. Skim and keep at 180 degrees Fahrenheit, until tender. Serve with sauce.

Sauce.

- $\frac{1}{2}$ tablespoonful butter,
- 1 tablespoonful flour,
- 1 saltspoonful salt,

1 saltspoonful pepper,
1 cupful mutton stock.
Made same as white sauce.

LAMB LEFT-OVERS

Lamb can be used in nearly every recipe given for beef. It is especially good for croquettes and makes a savory stew. Save every drop of gravy or liquid from the platter when setting a roast of lamb away. It requires all the enriching it can have and always plenty of seasoning.

Potatoes with Lamb Stuffing.

8 large baked potatoes,
1 cupful cold chopped lamb,
4 tablespoonfuls chopped ham,
 $\frac{1}{2}$ cupful thin white sauce,
2 tablespoonfuls cream,

White 1 egg,
Salt and pepper.

Bake 8 large, perfect potatoes. While they are cooking, chop the lamb and ham, mix lightly together, add the seasonings, and moisten with white sauce. When the potatoes are soft, cut a thin slice from the end of each and scoop out the inside. Put it at once through a potato ricer and set away to keep warm. Fill the potato skins almost to the top with the meat mixture. Add to a cup of the mashed potato the cream and beaten white of the egg. Pepper and salt, and on the top of each potato put a spoonful, leaving it in a small, rocky mound. Bake till the top is a delicate brown. Serve the potatoes piled on their ends in a shallow dish, with a plentiful garnish of parsley.

Mound of Lamb with Peas.

2 cupfuls cold chopped lamb,
1 small onion,
1 cupful cold potatoes,

Pepper and salt,
3 tablespoonfuls stock,
 $\frac{3}{4}$ cupful buttered crumbs,
1 cupful green peas.

Mix lightly with a fork the chopped meat, potato, onion, and seasonings. Heap it in a mound in the middle of a shallow baking dish. Cover with buttered crumbs and bake till brown. When ready to serve, pour around it a cup of green peas drained and seasoned.

Lamb-and-Rice Croquettes.

2 cupfuls chopped lamb,
1 cupful cold rice,
1 tablespoonful lemon juice,
1 tablespoonful chopped parsley,
Pepper and salt,
1 cupful white sauce.

Mix the lamb and rice with the seasonings and stir into a hot, thick, white sauce. Cool. Roll into cone-shaped croquettes. Flour, egg, and crumb. Fry in deep fat. Garnish with parsley.

Lamb in Savory Stew.

1 $\frac{1}{2}$ cupfuls cold lamb,
4 tablespoonfuls butter,
1 tablespoonful flour,
 $\frac{1}{2}$ onion,
1 cupful gravy or brown stock,
2 cucumber pickles,
Pepper, salt, cayenne.

Into a granite saucepan put the butter, onion, and flour, and rub to a paste. When it grows light brown, add the gravy or stock, salt and pepper, and allow to simmer for two minutes. Cut the pickles in small pieces, add to the sauce and the lamb cut in neat slices. Let it heat through, then serve in a deep platter surrounded by a ring of hot boiled rice or mashed potatoes.

CHAPTER IX

VEAL DISHES AND LEFT-OVERS

ROAST VEAL—VEAL CUTLETS, CHOPS AND COLLOPS—VEAL STEW—CALF'S LIVER, KIDNEY AND SWEETBREADS—SPECIAL VEAL DISHES AND LEFT-OVERS

Roast Breast of Veal.

- 1 cupful stale bread,
- 3 tablespoonfuls butter,
- 2 tablespoonfuls minced onion,
- $\frac{1}{2}$ teaspoonful salt,
- $\frac{1}{2}$ teaspoonful thyme,
- 1 egg,
- Small breast veal (about 3 pounds),
- $\frac{1}{2}$ tablespoonful cornstarch.

Soak stale bread in cold water; when soft, put it in a towel, press out the water, place butter with minced onion over the fire, stir and cook five minutes without browning, then add the bread, stir five minutes longer, season with salt, pepper, thyme, and 1 egg, and mix. Have the butcher prepare the veal for filling, wash and wipe the meat dry, season inside and out with 1 tablespoonful salt and $\frac{1}{2}$ teaspoonful pepper, then stuff the breast, sew it up, lay the meat in a roasting pan, with slices of pork under it, spread over with butter, and lay a few slices of pork on top. Place the pan in hot oven, roast until the meat becomes light brown, basting frequently with its own gravy, add 1 cupful boiling water, roast about two hours longer, basting frequently until done; add more water should the gravy brown too much. Ten minutes before serving, lay the meat on a platter, remove the fat from the gravy, mix cornstarch with $\frac{1}{2}$ cupful cold water, add to it the sauce, stir, and cook three minutes, then strain, pour a

little of the sauce over the meat, and serve the remainder in a gravy boat.

Veal Roasted with Mushrooms.

Bone a loin of veal. Remove the kidneys and fat, and lay them, after splitting in two, inside the loin. Season inside with pepper and salt, and fold over the flap to inclose the kidneys. Roll and tie securely with string, making the roast oblong shape. Cover the bottom of the roasting pan with thin slices of fat pork, a sliced onion, and chopped parsley. Lay the meat on top, and moisten with a little cream. Have the oven rather slow at first, basting the veal frequently with a little cream. When nearly done, sprinkle with fine bread crumbs, moisten with melted butter, and let it brown. Take out the veal, untie, sprinkle Parmesan cheese over it, set in a very hot oven, surround with broiled mushrooms, and pour over the strained liquid left in the roasting pan.

Veal Savory (French recipe).

- 1 $\frac{1}{2}$ pounds ham,
- 3 pounds raw veal,
- 6 hard-boiled eggs,
- 1 tablespoonful butter,
- 1 tablespoonful flour.

Cut the veal and ham into small pieces. Cut the eggs in slices, lay part of them in the bottom of a well-buttered earthenware dish, sprinkle with minced parsley, then put in a layer of veal and ham, with salt and

pepper to season. Proceed with these alternate layers until all is used, then add just enough water to cover it, with butter rolled in flour and divided into tiny portions dotted over the top. Tie a buttered paper over the dish, and bake one hour in a hot oven. Remove the paper, lay a plate over the meat with a weight to keep it in place, and let it remain another hour in a slow oven. When cold, turn out and garnish with small lettuce leaves filled with cold peas dressed with a little mayonnaise.

Veal Loaf.

4 pounds raw lean veal,
 ½ pound ham,
 ½ pound salt pork,
 1 cupful stale bread crumbs,
 ¼ cupful melted butter,
 1 teaspoonful salt,
 1 teaspoonful paprika,
 1 teaspoonful onion juice,
 ½ teaspoonful allspice,
 ¼ teaspoonful nutmeg,
 ½ teaspoonful cloves,
 1 lemon, juice and rind,
 2 eggs.

Chop very fine the veal, ham, and salt pork. Mix with meat the bread crumbs soaked in milk, butter, seasonings, and well-beaten eggs. Press into a buttered bread pan, cover the top with lardoons of salt pork; bake one hour. Cut when cold into thin slices.

Curried Veal Cutlets.

Trim cutlets into uniform shape and size; dip in the beaten yolks of eggs, and cover with grated bread crumbs that have been mixed with 2 tablespoonfuls curry powder and a tablespoonful salt. Fry in butter till brown. Take out of the spider, and in it melt and brown a little butter and flour, add a cupful water, and pour over the cutlets.

Veal Hearts (Spanish recipe).

4 slices bacon,
 1 sliced onion,
 4 veal hearts,
 1 cupful stock,
 ½ minced pimento,

1 teaspoonful salt,
 ½ bay leaf.

Fry bacon to a crisp, remove from the spider, and crisp the sliced onion in the hot fat. Trim and wash hearts, slice them, roll in flour, and fry in hot fat. Add to the fat in the pan the stock, pimento, salt, and bay leaf. Pour the mixture over the hearts, and cook two hours. Five minutes before serving, add the bacon.

Brown Stew.

2 pounds veal,
 2 tablespoonfuls butter,
 2 tablespoonfuls flour,
 1 pint water,
 1 teaspoonful salt,
 Dash pepper,
 Slice onion,
 1 teaspoonful kitchen bouquet,
 1 bay leaf.

Cut the veal into cubes and roll in flour. Put 2 tablespoonfuls butter into a pan; when hot, add the meat, and stir constantly until browned. Dust with the flour, mix, add the water; stir, add the salt and pepper, onion, kitchen bouquet, and bay leaf. Cover, and simmer gently for an hour.

Veal Cutlets.

Divide the cutlet into pieces about four inches square; dip in egg, then in crumbs; fry for five minutes. Add ½ cupful boiling water, and let simmer for an hour. Dish, and serve with bits of lemon.

Ragout of Veal.

Cut the meat into thin slices, put 2 tablespoonfuls butter in a pan, dredge with flour, and fry light brown. Take out the meat and put into the pan a cupful cold stock or gravy, season with salt and pepper and a tablespoonful tomato catsup. Lay a few slices of cold ham in the gravy, also the veal. Serve very hot.

Veal Oysters.

Cut 1½ pounds veal cutlets into pieces the size of large oysters; season with 1 tablespoonful salt, dust

with flour, dip into beaten egg, roll in bread crumbs, and fry light brown on both sides. Serve on a hot dish; garnish with lemon quarters.

Veal Birds (English recipe).

Cut thin slices of veal into pieces two and a half by four inches. Chop the trimmings of the meat fine with one small slice of fat salt pork and half as much cracker crumbs as there is meat. Season highly with salt, cayenne, and onion juice, moisten with beaten egg and a little hot water. Spread each slice of veal with this mixture and roll tightly; fasten with a toothpick. Dredge with flour, pepper, and salt, and fry slowly in hot butter. Add $\frac{1}{2}$ cupful cream, and simmer twenty minutes. Remove the fastenings, put the birds on toast, pour the cream over them, garnish with points of lemon, and serve.

Wiener Schnitzel (German recipe).

2 pounds veal steak,
1 egg,
2 tablespoonfuls butter,
1 tablespoonful lard,
 $\frac{1}{2}$ teaspoonful capers,
6 anchovies,
Lemon.

Cut the veal in slices half an inch thick and three inches square; pare the corners round; beat lightly to flatten; season with salt and dust with flour; dip each cutlet in egg, cover with fine crumbs, and pat smooth with a knife. Fifteen minutes before serving, place a pan with the butter and lard over the fire; as soon as hot, put in the cutlets, fry light brown. Arrange on a warm dish; lay in the center of each schnitzel $\frac{1}{2}$ teaspoonful capers. Soak the anchovies in cold water; remove the skin and bones; divide in halves, roll them up; place 2 of these rolls on each schnitzel with $\frac{1}{4}$ lemon cut in two. Garnish with water cress or parsley, and serve.

Smothered Veal.

Place in the bottom of a baking pan 2 slices salt pork cut fine, a layer sliced potatoes, a little chopped

onion, a layer of finely chopped uncooked veal, pepper, and salt. Continue until the dish is full. Spread over the top bits of butter. Bake forty-five minutes.

Veal Stew.

3 pounds breast veal,
3 tablespoonfuls butter,
2 tablespoonfuls flour,
Bunch parsley,
2 carrots,
2 cupfuls cooked green peas.

Cut up the veal and fry light brown in a pan with the butter; drain off most of the butter; sprinkle the flour over the meat; mix well and fry a little longer, add 1 pint water and let boil; take out the meat, put it in another pan, strain the sauce over it. Add the parsley chopped fine, carrots cut fine, and peas. Boil up again, and serve.

Braised Veal.

Slice veal steak into strips from one to one and one-half inches thick. Season well to taste, and roll up and skewer with toothpicks. Fry them in hot butter till brown on both sides — be sure not to scorch. Place them in a roaster and sprinkle with butter, add enough water — cream and water is better, but in that case do not use butter. Bake from two to four hours in a moderate oven. Be careful not to burn.

This recipe was originated by a friend of mine, Mrs. Thomas H. Dunn of Oklahoma, and from experience I know just how delicious it is.— Mrs. Thomas P. Gore.

Veal Collops (Scotch recipe).

1 $\frac{1}{2}$ pounds veal,
2 tablespoonfuls butter,
1 tablespoonful chopped onion,
2 cupfuls stock,
1 can green peas,
Salt and pepper.

Trim off skin and fat from the veal and put through a meat chopper. Melt the butter and brown the onion, then add the stock; season to taste and simmer five minutes. Fry the

chopped raw meat in a spider. Stir until the butter is absorbed; strain over it the stock in the saucepan; cover, simmer for twenty minutes, stirring occasionally. Place the peas in a saucepan with butter, salt, and pepper, and heat. When the meat has absorbed the liquor, turn it into the center of a hot platter; sprinkle with finely chopped parsley and surround with the peas.

Calves' Tongue with Tomato Sauce.

2 calves' tongues,
1 tablespoonful flour,
1 cupful water,
4 tablespoonfuls vinegar,
1 bunch parsley,
1 onion,
3 cloves.

Soak the tongues in warm water an hour; drain and parboil, cool, pare, and scrape off the white skin. Put the flour in a saucepan, stir into it gradually the water. When it boils, add the tongues with vinegar, parsley, onion, and cloves. Cover and cook slowly an hour. Serve with tomato sauce.

Stewed Calf's Liver.

1 calf's liver,
1 turnip,
1 carrot,
1 stalk celery,
1 onion,
1 tablespoonful butter,
1 tablespoonful browned flour.

Wash and cut the liver in slices. In a saucepan put the turnip, carrot, celery, and onion (all sliced); lay the liver on top of the vegetables; sprinkle salt and pepper over it, and pour on a pint boiling water; cover, and let stew until the liver is tender. When done, take out the liver and put on a hot platter; thicken the gravy with butter and flour; strain, and pour over the meat.

Broiled Liver.

Cut calf's liver into half inch slices, cover with boiling water, let stand five or six minutes, drain, and wipe dry. Sprinkle with salt and pepper

and broil in a greased broiler five minutes. Put on a hot platter and spread with bits of butter. Serve very hot.

Braised Calf's Liver.

1 calf's liver,
1 onion,
2 ounces bacon,
3 tablespoonfuls flour,
1 sliced carrot,
 $\frac{1}{2}$ bay leaf,
1 teaspoonful salt,
1 cupful stock,
 $\frac{1}{2}$ cupful strained tomatoes.

In the liver make many small slits with a paring knife and insert slices of onion and bits of sliced bacon. Heat in a spider 3 tablespoonfuls bacon drippings and add flour to the fat. Brown the flour in the fat, then add the liver, and roll it on all sides until it is seared in the fat and covered with fat and flour. Place the liver in the heated casserole, add carrot, bay leaf, salt, stock, and tomatoes. Bake two hours and a half.

Calf's Liver and Bacon.

Sauté calf's liver in bacon fat, and when done, make a gravy from it with flour and hot water. Heat a pan, and drop in slices of bacon. If the pan is very hot, they will curl into rolls and brown in a few minutes. Arrange the liver, and garnish with parsley.

Veal Kidney Omelet.

1 veal kidney,
1 tablespoonful butter,
 $\frac{1}{2}$ teaspoonful salt,
Dash pepper,
4 eggs,
1 tablespoonful warm water.

Remove the fat and tubes from a kidney and chop fine. Place in a frying pan with butter, salt, and pepper, and shake over a hot fire until the meat is golden brown. Beat the eggs without separating; add the warm water. Heat the butter in a spider, pour in the eggs, and shake over the fire till the mixture begins to set. Draw back—so the omelet may set

without burning; turn the cooked kidney over the center, fold up, and serve on a hot platter.

Veal Kidneys Deviled.

Split in half 3 veal kidneys and take out the fibrous parts. Spread both sides with a mayonnaise, season highly, roll in bread crumbs, dip in melted butter, and broil over a hot fire. Serve at once.

Fried Sweetbreads.

- 1 pair sweetbreads,
- 1 tablespoonful butter,
- 1 tablespoonful flour,
- 1 cupful milk,
- Salt and pepper.

Parboil the sweetbreads; when cold, dip them in beaten egg and cracker crumbs, sprinkle salt over them, and fry in hot fat. Stir together the butter and flour, then set the pan back a little and add gradually the milk; stir until smooth. Season with salt and pepper, finely chopped celery, and cook about two minutes. Strain the sauce over the sweetbreads.

Sweetbread Croquettes.

- 2 sweetbreads,
- 1 can mushrooms,
- 1 tablespoonful flour,
- 1 tablespoonful butter,
- $\frac{1}{2}$ cupful cream,
- 2 yolks eggs.

Parboil the sweetbreads and cut them in small pieces; also cut the mushrooms. Put into a saucepan the flour and butter, and when made smooth, add the cream; heat, then add the sweetbreads and mushrooms.

Sweetbreads à la Newburg.

- 1 cupful cream,
- $1\frac{1}{2}$ cupfuls sweetbreads,
- Yolks 3 eggs,
- $\frac{1}{2}$ teaspoonful salt,
- Few grains cayenne.

Heat the cream; add the sweetbreads parboiled and cut in cubes. Beat the yolks of the eggs; add the salt and cayenne, and stir into the cream. Stir until thickened slightly; serve at once.

Sweetbread Fritters.

Parboil sweetbreads, cut in small pieces, season with salt, pepper, and chopped parsley; dip in fritter batter and fry in deep fat.

Veal Chops.

Dip the chops in beaten egg yolks, then in finely ground cracker crumbs. Fry a good brown on both sides. Remove from skillet, place in a deep pan or kettle which has cover to fit. Half cover with cream or very rich milk and place in a very slow oven for three-quarters of an hour.

Equally good for pork chops. The meat will be much more tender when prepared in this way.—Mrs. J. Clifford Theo.

Corned Fillet of Veal.

Take a large fillet of veal and make deep incisions or cuts all over it with sharp knife and insert a slip of the fat into each, pressing it down well to keep it in. Mix a tablespoonful of powdered saltpeter with half a pound of fine salt, and rub the meat all over with it. Make a brine of salt and water strong enough to swim an egg on its surface, adding a lump of saltpeter about the size of a walnut. Put the veal into the brine (of which there must be enough to more than cover it) and let it remain ten days, turning it every day, then take it out, wash off the brine and boil the veal till thoroughly done and tender all through. It is best to eat it cold and sliced thin.

VEAL LEFT-OVERS

Veal is the flesh of an immature creature, and will not keep fresh as long as that of an older animal. A left-over of beef may be kept a day or two before serving again; it is better to see to the condition of veal twenty-four hours after cooking, especially in hot weather, and serve it as soon as convenient. Veal has little flavor, and requires considerable seasoning. Brown sauce is the general accompaniment to veal at the first cooking. Save every spoonful of sauce to use with it when warming

over. If there is no brown gravy, white sauce may take its place. Veal makes an excellent ragout, seasoned with onion juice and cayenne, minced and poured on toast for breakfast; in a salad or croquettes, it tastes very much like chicken. Add to it a few mushrooms or two or three spoonfuls left-over sweetbreads, and you have delicious rissoles. It is excellent combined with oysters in a scallop. When preparing it for a salad, be careful to reject all morsels of gristle as well as brown or hard meat. One-half measure each of cold veal and finely chopped white cabbage is delicious with a horse-radish dressing. Marinate for two hours, else you will find the salad a tasteless one.

Nut Balls.

1 cupful cold chopped veal,
12 chopped blanched almonds,
 $\frac{1}{2}$ teaspoonful salt,
1 egg,
Pepper,
Paprika,
1 cupful tomato sauce.

Mix the meat, almonds, and seasoning, and moisten with well-beaten egg. Roll into balls the size of a walnut and set in a baking pan. Pour over them the hot tomato sauce. Cook in a hot oven for twenty minutes. Serve on a platter garnished with water cress.

Windermere Croquettes (English recipe).

$1\frac{1}{2}$ cupfuls milk,
 $1\frac{1}{2}$ tablespoonfuls butter,
3 tablespoonfuls flour,
1 teaspoonful salt,
Dash cayenne,
2 cupfuls cold chopped veal,
1 tablespoonful chopped parsley,
 $\frac{1}{2}$ cupful cold rice,
Yolks 3 hard-boiled eggs.

Make a white sauce from the milk, flour, butter, and seasonings. To 1 cupful sauce add the chopped meat and parsley. Spread on a plate to cool. Into the $\frac{1}{2}$ cupful sauce beat the rice and the yolks of the eggs pushed through a potato ricer. Spread on a

plate to cool. Take a tablespoonful meat mixture and flatten into a cake. Inside this put a teaspoonful rice mixture rolled in a tiny ball. Wrap the meat around it till covered. Roll in flour, egg, crumbs, and fry in deep fat. Pile cannon-ball fashion on a platter. Garnish with parsley.—Mary Kendall.

Calf's Liver Terrapin with Mushrooms.

2 cupfuls cold liver,
1 cupful stock,
2 tablespoonfuls butter,
3 eggs,
 $\frac{1}{4}$ teaspoonful salt,
 $\frac{1}{4}$ teaspoonful paprika,
 $\frac{1}{4}$ teaspoonful kitchen bouquet,
 $\frac{1}{2}$ teaspoonful mustard,
2 drops tabasco sauce,
1 cupful mushrooms,
2 truffles.

Boil the eggs hard. Rub the yolks smooth with the butter, salt, paprika, kitchen bouquet, mustard, and tabasco. Add the liver cut in small pieces and the stock. Cook five minutes, add the mushrooms and truffles, and serve garnished with whites of eggs cut in rings.

Veal Omelet.

If you have a cupful of cold roast veal left over, chop it fine, season with pepper, salt, and a dash of paprika; then tuck it between the folds of an omelet. Pour over it before sending to the table a cup of hot, well-seasoned tomato sauce.

Veal Roll.

The remainder of a cold veal roast may be cut into $\frac{1}{2}$ inch cubes and rolled in a crust prepared like baking powder biscuit. Roll out dough on baking board, sprinkle chopped meat over, roll up like jelly roll and bake 20 or 25 minutes. When baked cut crosswise like roll cake and serve hot.—Mrs. A. J. Mielke.

Veal Pie.

Cut the veal very fine and simmer until tender. Then cover the bottom of the baking-dish with a layer of

the veal, lay on this minced ham or bacon, and turn over all a little tomato from a can. Pepper, salt, and dabs of butter top each such layer until the meat is all used. Gravy left from the first meal and hot water are turned in and the crust is put on. Whether this crust is a regulation biscuit-crust or pie-crust depends largely upon choice. But unless a cook is past-mistress of her art, she would better omit a bottom crust, since it is pretty sure to soak up the liquor and become soggy.—Carrie D. McComber.

Brunswick Stew.

Put a layer of minced salt pork into the pot, then a layer of cold roast veal cut into small pieces, and next a layer of chopped onions. Over the top turn sliced, parboiled potatoes and some corn from a can or a cob. Season with salt and cayenne pepper; add boiling water, cover, and simmer very slowly for about an hour. At the end of that time, turn in the contents of a small can of tomatoes, and cook for half an hour longer. Before serving, thicken with butter rolled in flour.—Carrie D. McComber.

CHAPTER X

PORK DISHES AND LEFT-OVERS

ROAST PORK—PORK TENDERLOIN, CHOPS AND HAM—SAUSAGE—SPECIAL PORK DISHES AND LEFT-OVERS

Roast Pork.

Select a piece of loin from a young pig, 3 pounds in weight; score the rind across one-eighth of an inch apart, season with $\frac{1}{2}$ tablespoonful salt and $\frac{1}{4}$ teaspoonful pepper; lay the pork in a roasting pan, place it in a medium hot oven, roast till light brown, basting with its own gravy; then add $\frac{1}{2}$ cupful boiling water; continue to roast and baste till nearly done, turn the meat over, so the rind lies in the gravy, roast ten minutes, turn it again, so the rind is on the top; let it remain five minutes longer in the oven, transfer to a hot dish, free the gravy from fat, mix 1 teaspoonful cornstarch with $\frac{1}{4}$ cupful cold water, add it to the gravy, stir two minutes, add sufficient boiling water to make creamy sauce, strain, and serve with the meat.

Pork Tenderloins with Sweet Potatoes.

Wipe tenderloins, put in a dripping pan and brown quickly in a hot oven; then sprinkle with salt and pepper, and bake forty-five minutes, basting every fifteen minutes.

Pare six potatoes and parboil ten minutes, drain, put in pan with meat, and cook until soft, basting when basting meat.—Fannie M. Farmer.

Pork Chops, Sauce Robert.

Take 8 rib chops, trim them neatly; have ready some finely chopped onion and parsley; sprinkle each chop on both sides with this, also salt and pepper, and beat lightly with a broad knife, to make all adhere. Dip

each one into slightly beaten egg, then roll into fine bread crumbs; let stand five minutes; dip into melted butter, and roll again in the crumbs, Arrange in a wire broiler and broil seven minutes over a clear fire. Chop fine 2 large onions, place in a stewpan with 1 tablespoonful butter, and cook slowly until well colored; add 1 tablespoonful flour, stir, and brown again, add slowly $1\frac{1}{2}$ cupfuls beef stock and 2 tablespoonfuls vinegar. When smooth and thick, simmer until reduced to 1 cupful, add 1 teaspoonful mixed mustard, salt, and pepper to taste. Pour this around the chops as they are dished.

Bobble Gash (German recipe).

1 pound lean pork,
1 pound veal,
1 tablespoonful lard,
3 onions,
5 potatoes,
1 cupful cream,
1 tablespoonful flour.

Cut the pork and veal in small pieces. Put the lard in a kettle; when hot, add the onions sliced. As they commence to brown, drop in the meat and stir constantly until brown; then cover with water and boil three-fourths of an hour. Season with salt and pepper. Pare and cut in small dice the potatoes; when boiled, add them to the meat with the cream. Thicken with flour.

Boston Pork and Beans.

Pick over and wash a quart of dried beans the night before you bake them. Put them to soak in cold wa-

ter. In the morning, pour off the water, put them in a kettle, then cover with plenty of cold water, and set to boil. Cook till skin breaks on the beans when air blows over them, turn off the bean water; put them into a pot; score in lines the rind of a piece of pork and bury it, all but the surface of the rind, in the middle of the beans. Add enough boiling water to the beans to cover. Stir in two tablespoonfuls molasses and a teaspoonful each fresh mustard and salt. Cover the pot and put in the oven. Bake moderately, but steadily, five hours. If the water wastes away so as to be below the surface of the beans, supply enough just to cover them. Toward the end of the time, it may be allowed to dry down enough to permit the pork to brown. Uncover the pot for a little while for this purpose.

Roast Pig.

A pig for roasting should not weigh over 6 or 7 pounds after being cleaned. When it has been prepared by the butcher, lay it in cold water for fifteen minutes, then wipe dry, inside and out. Make a stuffing as for a turkey, adding two beaten eggs. Stuff the pig to his original size and shape. Sew him up, bend his fore legs backward, his back legs forward under him, and skewer into shape. Dredge with flour and set, with a little salt water, into a covered roaster. At the end of twenty minutes remove the cover again, rub the pig with butter, and brown for ten minutes. Serve very hot with apple sauce.

Homemade Sausage.

Take of lean young pork $1\frac{1}{2}$ pounds tenderloin, the rest any lean cut, 4 pounds, and fat, 2 pounds; put it through a sausage grinder—twice, perhaps three times, until of the desired fineness. Use for each pound of meat, 1 teaspoonful powdered dried leaf sage, 1 teaspoonful salt, $\frac{1}{2}$ teaspoonful pepper, and $\frac{1}{2}$ nutmeg; nutmeg may be omitted if preferred. A quantity of sausage may be made at a time and preserved for regular

use if one has a cold storeroom in which to keep it. It should be packed in jars and covered an inch thick with melted lard, which will preserve it.

Sauerkraut with Spareribs.

Cover the kraut with cold water, add a little salt if necessary, and place to boil three hours before using it. About an hour before it is done, put spareribs in and let them boil until the meat falls from the bones. Remove the spareribs, and stir in the kraut a grated raw potato from which the water has been drained. Let it come to a boil after this, being careful it does not burn; remove from the stove, and serve.

To Boil a Ham.

Twenty-four hours before a ham is to be used, scrub it thoroughly with a vegetable brush and cold, weak borax water. Put in cold water and soak twenty-four hours. If it is to be baked, it requires four hours' boiling. Use a big kettle, as the ham must be covered all over with water. Let it come to the boil very slowly. Remove the scum. When it begins to boil, add 12 whole cloves, 1 bay leaf, 12 peppercorns, the outside stalks of 1 bunch celery, 2 chopped onions, 2 cloves garlic, 1 chopped carrot and turnip, 2 blades mace, 12 allspice berries, and 1 quart cider or a cupful of vinegar. Never allow the ham to boil, merely simmer slowly; that is one secret of making it perfectly tender. Allow twenty-five minutes or half an hour to the pound. If the ham is to be used cold, you can add to its tender juiciness by allowing it to stand in the pot liquor till nearly cold. Then lift it out, peel off the skin and roll in dried bread crumbs with which 3 tablespoonfuls brown sugar have been sifted. Set it in the oven till the crumbs form a crisp brown crust. If the ham is to be baked, take it from the water, drain thoroughly, then take off the skin except around the shank, where it may be cut in vandykes with a sharp-pointed knife. Cover with crumbs and stick it full of cloves, set in a moderate oven, and bake two

hours. If you prefer the ham glazed, allow it to cool as for boiled ham, then skin, wipe dry, and brush all over with beaten egg. Mix 1 cupful sifted cracker crumbs, a dash salt and pepper, 2 tablespoonfuls melted butter, and cream enough to make crumbs into a paste. Spread it evenly over the ham, set in a moderate oven, and bake till brown; serve hot with brown sauce. When a baked or boiled ham goes to the table, wrap about the unsightly bone a ruffle of white tissue paper, and garnish with hard-boiled eggs cut in quarters.

After boiling salt ham or tongue remove it from the fire and plunge at once in cold water. This instantly loosens the skin, which then pulls off without any trouble.

Ham Steak.

Put slices of raw ham in a frying pan with $\frac{1}{2}$ cupful water to make them tender. When the water has boiled out and the ham is light brown on both sides, dust with flour and pour on the following dressing, previously made: A cupful milk and cream mixed, a little butter, a teaspoonful mustard, and a dash tabasco sauce. As soon as it boils, serve.

Ham may be kept from getting hard and dry on the outside thus: take some of the fat part of the ham and fry it out. Let it get hard, then spread on the cut end of the ham; half an inch thick is not too much. This excludes air. Hang in a cool place. When I want to slice ham I scrape off this fat, and afterwards put it on again as before.

Broiled Ham and Eggs.

Slice the ham thin, take off the rind, and soak the slices in hot water. Broil carefully and place on a hot platter. Break as many eggs as you require into a pan of boiling water; when the white is done, dip out carefully and lay the egg on ham. Sprinkle pepper and salt over each egg and serve.

Sausage Rolls.

Make a dough as for baking powder biscuit; roll out and cut in large

rounds with a biscuit cutter; lay sausage meat on half of each piece; turn the other half over and pinch together; bake half an hour. Serve with brown sauce poured around it.

Toad in the Hole (English recipe).

1 cupful flour,
1 egg,
1 cupful milk,
Salt and pepper,
1 teaspoonful baking powder,
2 tablespoonfuls butter,
Sausages.

Put the flour in a basin with the salt and make a well in the center. Break the egg and put it in with a quarter of the milk. Beat well, then add the remainder of the milk by degrees, beating all the time. Melt the butter in a pudding tin. Parboil the sausages, cut them in halves, and put them in the tin. Add the baking powder to the batter, and pour it over the sausages. Bake in a hot oven half an hour.

Sausage and Apple.

Prick the skins of the sausages, simmer in a frying pan fifteen minutes, drain, and brown in the oven; make a sirup of 1 cupful each sugar and water, and in it cook pared apples, cut lattice fashion, a few at a time, to preserve the shape. Serve the sausage on the apple.

Broiled Pigs' Feet.

Scrape the feet and wash them thoroughly, soak in cold water two hours, then wash and scrape again. Split each in half lengthwise, and tie the pieces separately in pieces of cheese cloth. Place in a deep saucepan, cover with boiling water, add 1 tablespoonful salt, and simmer slowly until the feet are tender, usually about four hours. Take them from the liquor and set aside until cold; remove the cloths; they are ready then to be broiled in the following:

2 tablespoonfuls butter,
1 tablespoonful lemon juice,
 $\frac{1}{2}$ teaspoonful salt,

Dash tabasco sauce,
 $\frac{1}{2}$ tablespoonful finely chopped
 parsley.

Cream the butter. Work gradually into it lemon juice, salt, tabasco, and parsley. After removing the cloth from each piece, brush with melted butter and dust with salt and pepper. Broil over a clear fire for six minutes. Transfer to a hot platter, and spread with prepared butter. The pigs' feet may be prepared the day before needed.

Fried Salt Pork, Cream Gravy.

$\frac{1}{2}$ pound salt pork,
 1 cupful cream,
 1 teaspoonful flour,
 Pinch pepper.

Wash the pork, trim off the rind, and with a sharp knife cut in thin slices. Spread in a large spider and place at the side of the fire until the fat is well fried out, then draw gradually forward until the slices begin to color. Transfer them to a heated platter and keep hot. Pour off most of the fat, leaving about 2 tablespoonfuls in the pan; stir into this the flour, and when it is smooth add cream and let cook until thickened. Season with pepper; boil up once, and pour over the pork.

Delicious Pork Roast.

Take a piece of tenderloin, about two pounds. Sear this on all sides. Put salt and pepper on and enough hot water to avoid burning. When half finished, add about $\frac{1}{2}$ cupful vinegar. In the meantime always continue adding water, so that the meat will not become dry. Slice two large onions, and crumble up four gingersnaps, or any strongly spiced cookies; add to the roast when almost tender. The whole time of baking is three or four hours, according to the size of the roast.—Mrs. K. A. Krotke.

PORK AND HAM LEFT-OVERS

Roast pork, in the estimation of some persons, is better cold than hot. Serve it thus in neatly cut slices for tea or luncheon at the second

meal, then take stock of the remains and look to the future. Roast pork bones make an excellent brown stock, almost as rich as that of roast beef. Trim the scraps from the bones and consign them to the soup kettle. Cut with a keen knife all the fat from the meat that is not to be served cold. This fat rendered down makes an excellent dripping to sauté potatoes. Chop, and allow it to melt, strain and set away in the refrigerator.

The tender white meat of pork makes a salad which tastes very much like chicken. Sometimes if one has a few bits of chicken left over, they may be combined with the pork, cut in neat cubes, and the substitution can scarcely be detected. Pork also makes excellent croquettes and is good sliced and reheated in a cup of its brown gravy. It may be minced, enriched by a few spoonfuls of gravy, and poured on toast for a breakfast dish. Cold ham has a multitude of uses. A few scraps may be converted into a delicious sandwich or it may be used to give an excellent flavor to a salad omelet or egg dish. Even cold sausage has its uses, while a slice or two of cold broiled bacon put through a meat chopper and added to croquette mixtures provides an agreeable seasoning.

Ham Soufflé.

Take 2 cupfuls cold minced ham, add the white of 1 egg and beat till smooth. Then put in a dash of paprika, 1 cupful whipped cream, and 2 whites of eggs beaten stiff. Pour into an oiled melon mold, bake and serve with tomato sauce poured around it.

Ham Griddlecakes.

1 cupful minced ham,
 2 cupfuls stale bread crumbs,
 2 eggs,
 Pepper,
 1 cupful scalded milk.

Mix the ham and crumbs with the milk and well-beaten eggs. Drop by spoonfuls on a hot buttered griddle.

Ham Balls.

Mince remains of lean ham, and mix with an equal quantity of mashed

potatoes. Mold into small, flat cakes, roll in flour, and brown in a spider with slices of salt pork fried out.

Ham Toast.

- 2 cupfuls cold ham,
- 2 eggs,
- $\frac{1}{2}$ cupful cream,
- $\frac{1}{2}$ teaspoonful mustard,
- Pepper.

Chop very fine the cold ham, add the well-beaten eggs, cream, a little pepper and mustard. Heat this mixture till almost at the boiling point, and spread on slices of buttered toast.

Shredded Ham.

- $\frac{1}{2}$ tablespoonful butter,
- 5 tablespoonfuls currant jelly,
- Dash cayenne,
- 1 cupful cold ham.

Cut the ham into narrow strips. Put the butter and currant jelly in a saucepan. As soon as they are melted, add the cayenne and ham, and simmer five minutes.

Ham Sandwiches.

- 2 cupfuls finely chopped ham,
- 1 cucumber pickle,
- 2 teaspoonfuls made mustard,
- 2 tablespoonfuls butter,
- $\frac{1}{2}$ teaspoonful pepper.

Put the ham through a meat chopper, using the finest knife. Mix perfectly smooth with the butter and seasonings and spread between slices of bread from which the crusts have been cut.

Ham-and-Potato Pie.

- 1 cupful cream sauce,
- 2 cupfuls cold potatoes,
- $1\frac{1}{2}$ cupfuls cold chopped ham,
- $\frac{1}{2}$ cupful dried bread crumbs.

Chop the ham coarsely and cut the potatoes into dice. Butter a vegetable dish, put in a layer of cold potato, then a layer of ham, and pour over it $\frac{1}{2}$ cupful cream sauce. Cover with another layer of potato and ham. Pour in the remainder of

the sauce, and cover with buttered crumbs. Bake twenty minutes.

Block Island Croquettes.

- 1 cupful minced ham,
- 1 cupful stale bread crumbs,
- 2 cupfuls chopped cold potatoes,
- 1 tablespoonful butter,
- 1 egg.

Mix the ham, crumbs, and potatoes with the butter and egg, make into small balls, flour, egg, crumb, and fry in hot fat.

Pork Cutlets.

- 2 cupfuls chopped cold pork,
- 2 eggs,
- $\frac{1}{2}$ cupful cracker crumbs,
- 1 teaspoonful minced parsley,
- 1 teaspoonful minced onion,
- 1 tablespoonful cream,
- Pepper and salt.

Beat the eggs thoroughly, mix with the cream, stir in the chopped pork, cracker crumbs, onion, parsley, and seasoning. Form into cutlet-shaped croquettes, roll in flour, egg, and crumbs. At the small end of the croquette insert a few inches of macaroni. Fry in deep fat, and serve with tomato sauce.

Ham Scallop.

- 2 cupfuls of cold boiled ham,
- 6 hard-boiled eggs,
- 2 tablespoonfuls butter,
- 4 tablespoonfuls flour,
- 1 pint sweet milk.

Mix the butter and flour well and heat until smooth. Add 1 pint sweet milk and allow to cook until it forms a good sauce, stirring constantly. Add seasoning to taste. Butter a baking dish well. Fill in the following order — one-half the sauce, then the ham well ground, remainder of sauce. Chop separately the yolks of four eggs. Add the layer of yolks, then whites. Sprinkle with cracker crumbs. Dot with butter and bake in a medium oven for one-half hour. — Mrs. Ivy Beckett.

Fried Ham Sandwiches.

- 6 thin slices of stale bread,
- 1 cupful of finely chopped ham,

1 egg,
1 cupful of milk,
Dash of salt,

Cut the bread in rounds or fingers.
Beat the egg and to it add the milk
and salt. Use one or two table-

spoonfuls of this to moisten the ham.
Then make the ham and bread into
sandwiches, dip each in the remain-
ing milk and egg and fry in butter
or drippings.—Margaret F. Krew-
son.

CHAPTER XI

POULTRY AND GAME DISHES AND LEFT-OVERS

BRAISED, GRILLED, PANNED, AND ROASTED CHICKEN AND
TURKEY — CHICKEN FRICASSEE — ROAST DUCK, SQUAB, ETC.
— RABBITS — FROGS' LEGS — SPECIAL POULTRY DISHES AND
LEFT-OVERS

In selecting a chicken, feel of the breastbone; it ought to be smooth and soft as cartilage and bend easily. A young chicken has soft feet, a smooth skin, and an abundance of pinfeathers. Long hairs, coarse scales on the feet, and an ossified breastbone are pretty sure signs of an old fowl. By the same marks you may choose a tender, young turkey or duck.

To dress and clean poultry, hold the bird over a flame, either of alcohol, gas, or burning paper, and blaze off all the hair and down. Cut off the head and pick out the pinfeathers with a fine-pointed knife. In case of an old fowl or turkey it is worth while to pull the tendons. This operation makes the dark meat so much more tender. Find the portion just behind the leg joint where there are a bunch of tendons, and with fine-pointed scissors, cut very carefully the cartilage skin that covers them, and strip it down till you leave exposed the bunch of white sinews. If the bird is fairly tender, they can be pulled by inserting a stout steel skewer, lifting each tendon by itself and twisting it until it snaps. A turkey will frequently require something as strong as a screw-driver.

To admit the hand, make an incision through the skin just below the breastbone and remove the gizzard,

heart, etc.; be very careful not to break the gall bladder, as even a drop of its contents would give a bitter flavor to everything it touches. Be careful also to remove the kidneys which lie close to the backbone in the two hollows near the tail piece. Pull out the lungs—they lie inside the ribs—also the kidneys, crop, and windpipe. Draw the neck skin down and cut the neck off close to the body, leaving skin enough to cover the opening. Cut out the oil bag in the tail. Finally wash the fowl by allowing cold water to run through it.

If a chicken is to be cut up, sever the skin between the leg and body, bend the leg back, and cut through the flesh. Separate the second joint from the drumstick, take off the limbs and cut the breast away from the back, starting just below the breastbone and letting the knife pass between the small ribs on either side through to the collar bone.

When trussing a fowl for roasting or boiling, draw the legs close to the body and insert a skewer under the middle joint, running it straight through until it comes out opposite. Cross the drumsticks, tie them with a long string together and fasten to the tail. Put the wings close to the body and keep them in place by a second skewer. Draw the skin of the neck under the back and pin down with a toothpick. Now turn

the bird on its breast, take the string attached to the tail and tie to the lower skewer, cross it, draw through the upper skewer, and cut off the ends.

Braised Chicken.

Truss a plump chicken, fry in the fat of salt pork, place on a trivet in a deep pan; into the fat put a carrot cut in squares, $\frac{1}{2}$ onion, $\frac{1}{2}$ bay leaf, and a sprig of parsley. Add 2 tablespoonfuls butter and allow the vegetables to fry delicately brown. Pour this over the chicken. Add 2 cupfuls hot chicken broth, cover, and set in a moderate oven. Baste frequently, adding water to the stock, if necessary. Lift the chicken to a hot platter, skim off the fat, thicken the gravy and season, then strain over the fowl.

Broiled Chicken.

Sprinkle a chicken, which has been cut up, with salt and pepper, dip into melted butter, then place in a broiler. Cook twenty minutes over a bright fire, turning the broiler so the pieces may be equally brown. Put on a platter spread with soft butter, sprinkle with pepper and salt, and set in the oven for a few minutes before serving.

Grilled Chicken.

Choose small chickens, split down the back, and soak each in olive oil, seasoned with salt and pepper, for an hour or two. Coat with flour, and broil over a clear fire till done. Into a saucepan put 1 cupful water and an onion; let cook fifteen minutes, take out the onion, and pour the sauce over thin slices of toast, on which arrange the chickens. Garnish with fried parsley.

Chicken with Dumplings (New England recipe).

3 or 4 pound chicken,
1 tablespoonful salt,
1 teaspoonful pepper,
2 onions,
1 tablespoonful flour,
2 tablespoonfuls butter,

$\frac{1}{2}$ cupful milk,
2 cupfuls prepared flour.

Cut chicken in 10 pieces and place in saucepan. Add salt, pepper, and onion, cover with boiling water, and cook till tender; then mix flour with butter, and thicken the gravy. Ten minutes before serving, mix prepared flour with butter and milk, and 2 eggs beaten to a stiff froth; cut with a tablespoon small portions from the dough, drop them into the gravy, cover, and boil six minutes; remove the saucepan to side of stove, where they may stop boiling. In serving, arrange the chicken on a platter, and lay the dumplings in a circle around it. Sprinkle 1 tablespoonful chopped parsley over the whole, and serve. This dough will make 12 dumplings.

Chicken Baked in Milk.

Prepare a chicken as though for roasting. Mix a dressing—using crumbed bread, butter, salt, and pepper. Stuff the chicken with this mixture; place it in a baker. In the bottom of the pan put 2 quarts rich milk; cover, and bake slowly, until the chicken is very tender, turning and basting as often as necessary. Thicken the gravy in the pan, seasoning with salt and pepper.

Chicken in Casserole.

2 $\frac{1}{2}$ -pound chicken,
1 can mushrooms,
1 carrot,
1 onion,
1 stalk celery,
1 tablespoonful chopped parsley,
1 teaspoonful salt,
 $\frac{1}{2}$ teaspoonful pepper,
1 teaspoonful beef extract,
1 tablespoonful flour,
2 cupfuls boiling water.

Clean and truss the chicken, and steam until tender. Melt the butter in a frying pan, add the vegetables chopped fine, cook five minutes, then add the flour. Dissolve the beef extract in boiling water, add the seasonings, and pour it into the frying pan. Cook five minutes. Put the chicken in a casserole, dredge with

flour, dust with salt and pepper, and pour the contents of the frying pan over it. Place it in the oven, and cook until the chicken is thoroughly browned. Remove from the oven, cover, and serve in the casserole.

Panned Chicken.

Prepare a chicken as for broiling, slightly flatten it, cover with bits of butter, and place in a moderate oven. When nearly done, sprinkle with salt and pepper and dredge with flour; return to the oven and brown, first on one side, then on the other. Keep hot while you make the sauce. Pour a cupful hot milk into the pan, and add 1 tablespoonful grated bread crumbs, also a few drops onion juice. Stir the sauce vigorously, let it boil one minute, turn over the chicken, garnish with parsley, and serve.

Fried Chicken (Southern recipe).

Cut a young chicken into neat pieces, drop in cold water, then roll in flour seasoned with salt and pepper. Put it in a saucepan with fat which has been fried out of salt pork, and cook, turning once or twice till it is well browned. Skim off as much of the fat as possible, add a cupful cream or rich milk, thicken with a little flour, seasoning if necessary, and strain over the chicken.

Chicken with Almond Sauce (Southern recipe).

- 1 young chicken,
- 1 tablespoonful lard,
- 1 tablespoonful flour,
- 2 cupfuls cream,
- 1 tablespoonful finely chopped parsley,
- 1 cupful chopped blanched almonds.

Cut up the chicken as for fricassee; fry golden brown in hot lard. Put it on a hot platter and make the sauce. Thicken the lard (in which the chicken was fried) with the flour; when the flour is cooked, add the cream, parsley, and almonds. Let it boil five minutes, and pour around the chicken.

Chicken with Peanuts (Spanish recipe).

Cut a young chicken into small pieces, roll in flour, and fry brown in lard or butter. When the chicken is done, pour over it a cupful sweet cream and sprinkle liberally with roasted peanuts coarsely powdered.

Creamed Chicken and Sweetbreads.

- 4-pound chicken,
- 4 sweetbreads,
- 1 can mushrooms,
- 1 quart cream,
- 4 tablespoonfuls butter,
- 5 tablespoonfuls flour,
- $\frac{1}{2}$ grated onion,
- Nutmeg, salt, and pepper.

Boil chicken and sweetbreads; when cold, cut them up. In a saucepan put cream; in another butter and flour. Stir until melted, then pour on the hot cream, stirring until it thickens; add onion and nutmeg, and season highly with pepper and salt. Put chicken and other ingredients, with sweetbreads and mushrooms, in a baking dish, cover with bread crumbs and butter, then bake twenty minutes.

Chicken Pie.

Stew a cut-up chicken in enough boiling water to cover, adding pepper and salt. When parboiled, remove to a deep earthen dish and cover with a crust. Use a recipe for rich baking-powder biscuit. Instead of putting a blanket of the dough on top of the pie, cut it into rounds, as for biscuit. Have the chicken laid lightly so the gravy will not touch the dough, and cover as closely as possible. Bake in a moderate oven until the crust is well risen and brown. This is an improvement on the old style of all-over crust, partly because it allows plenty of escape for steam. The biscuit can be easily served, and the paste is not made heavy by cutting with a knife.

Roast Turkey.

Remove the crusts from a stale loaf of bread. Break the loaf in the middle and grate or rub the bread into

fine crumbs. Season highly with salt and pepper. Add a cup of diced celery, cooked tender. With a fork mix celery and seasoning through the crumbs, then sprinkle with them 3 or 4 tablespoonfuls melted butter. With a spoon put the prepared crumbs in the place from which the crop was removed until the breast becomes plump. Put the remaining crumbs in the body. Do not pack the crumbs closely either in crop or body, but allow room for them to swell when moistened by the steam from the turkey in cooking. Fold back the wings. Press the legs close to the body, crossing the drumsticks in front of the tail. With small skewers and strong cord fasten in proper shape. Place the turkey, back up, on a rack in the roasting pan. When the back is browned, turn the turkey over, and when the breast and sides are nicely browned, baste with a thin gravy every ten or fifteen minutes until the fowl is cooked. An 8-pound turkey will cook in two hours. Use the water in which the celery was cooked to make basting gravy for the turkey.—Emma P. Ewing.

Roast Chicken.

4-pound chicken,
1 teaspoonful salt,
1 tablespoonful butter,
1 tablespoonful cornstarch,
 $\frac{1}{2}$ cupful boiling water.

Singe the chicken, wash it quickly in cold water, then dry with a towel; season inside and out with salt, fill the body and crop with bread dressing, sew it up, and spread butter over the breast. Cover the breast with thin slices of larding pork; bend the wings backward, put skewers through the thigh and body, and place it in a roasting pan. Set the pan in a medium-hot oven and roast until the chicken has become a fine brown all over, basting frequently with its own gravy; then add $\frac{1}{2}$ cupful boiling water; continue the roasting and basting till the chicken is done, which will take from one to two hours, according to the age of the fowl. If the gravy gets too brown, add a lit-

tle more water. The chicken feet, neck, and giblets may be used to make rice soup. Shortly before serving, lay the chicken on a dish, remove the skewers and thread, free the gravy from fat, mix the cornstarch with cold water, add it to the gravy, stir, and cook for a few minutes; then add sufficient boiling water to make a creamy sauce. Cook three minutes, strain, chop the boiled giblets fine and add to the sauce.

Chicken Fricassee.

Cut a fowl up into pieces, sift with flour to which a little salt and pepper has been added, then sauté slowly in pork fat, put in a saucepan covered with boiling water and cook very slowly till tender. When half done, season with salt and pepper. Arrange the chicken in pieces upon toast, or if liked better, fix New England style, with a circle of baking powder biscuits about them heaped on a platter. In arranging the chicken, lay it on the platter as much as possible in the shape of a whole bird, having the breast in the center, legs and wings in the natural position and back underneath; this makes it easy to serve. To the liquor from the chicken add a cup of cream or three tablespoonfuls of butter and thicken with a quarter of a cup of flour dissolved in cold water. Strain over the chicken and biscuits. If there is more gravy than the platter will hold serve it in a gravy boat.

Bread Dressing.

$\frac{1}{2}$ pound stale bread,
2 tablespoonfuls butter,
2 tablespoonfuls chopped onion,
1 teaspoonful salt,
 $\frac{1}{2}$ teaspoonful pepper,
1 teaspoonful thyme,
1 egg.

Soak bread in cold water, place a saucepan with butter and onions over the fire; cook five minutes without browning; inclose the bread in a towel and press out all the water, add it to the saucepan, stir over the fire five minutes, then remove; when cold, add salt, pepper, thyme, and egg; mix well and use as stuffing.

Roast Duck.

Pick, singe, and wipe outside of duck. Salt and pepper the inside after carefully drawing and wiping. Cut off the wings at the second point and truss the duck neatly. Roast in a very hot oven from one and a half to two hours in a baking pan containing a little water; baste frequently. Celery, onions, or apples, cored and quartered, are sometimes placed inside the duck to improve the flavor.

Broiled Squab.

Cut the squab down back, flatten and truss it as a fowl for broiling. Egg it on both sides, season with pepper and salt, dip it in chopped bread crumbs, warm a little butter, sprinkle it over. Then dip the squab again in the crumbs. Broil it a light brown. Add gravy thickened with flour and butter. Scald the liver, mince and butter, throw it into the sauce, add pepper, salt, and a little ketchup and two or three mushrooms chopped.—Marcy K. Benedick.

Fried Jack Rabbits.

Take the bone out of the fleshy parts of the legs and back and cut into slices across the grain, the same as for steak. Put in a frying pan with hot butter and cover with onions sliced thin. Salt to taste, and add a little ground sage if desired. If the rabbit is old it is better to parboil it before slicing.—Mrs. M. E. Smith.

Rabbit Pot Pie.

- 1 cupful flour,
- $\frac{1}{2}$ teaspoonful salt,
- 2 teaspoonfuls baking powder,
- 1 tablespoonful lard,
- 1 egg,
- $\frac{1}{2}$ cupful milk.

Sift together the flour, salt and baking powder. Mix in the lard, dry with the fingers and stir in the egg and milk. Skin and take the entrails out of the rabbit. Cut up in slightly pieces and put in an earthen dish, or some other kind of pudding dish. Salt and pepper to taste, dab

over with bits of butter and add water to cover. Put cover on tightly and simmer in the oven till almost tender. Then add the above mixture, by spoonfuls. After this, cover tightly again and let steam for fifteen minutes. Serve at once.

If gravy is wanted with this pie, take out pie and the meat. Stir up some flour with a little milk; add this to the hot stock in the baking dish, and let it boil.—Mrs. K. A. Krotke.

Frog Legs (Delicious).

Skin the frogs' hind legs. Parboil five minutes in salt water and vinegar. Dry on a clean cloth. Dip in egg, roll in cracker crumbs or corn meal, and fry in hot butter.—Mrs. William E. Hitchcock.

LEFT-OVER POULTRY

Chicken, even at twenty cents a pound, is not more extravagant than roast beef, when one considers that every morsel of it can be used, even to the bleaching of the bones in a soup. The carcasses of two good chickens or one turkey will make a quart or two of excellent stock provided, of course, that every bone, the giblets, and every morsel of skin is saved. A careful housewife gathers all these remains into a clean bowl and lets them stand in the refrigerator until ready to be used. Cover them with cold water, add the seasonings suitable for chicken soup, and set far back on the stove, where it will take at least an hour to begin to simmer. In four hours it will be ready to strain. Never add salt to a soup till after it has cooked. Cool the stock as quickly as possible, but never by putting it steaming hot into the refrigerator. I have seen that plan followed in more than one household; then I have heard the cook exclaim in wonder over spoiled stock and other foods ruined. Still, the sooner stock cools, the longer it will keep. Do not break the cake of fat on top until ready to use; it excludes the air and helps keep the soup sweet.

There is no meat so suitable for *réchauffés* as chicken. It makes ex-

cellent croquettes and timbales. Creamed, it loses none of its delicate flavor. It is excellent in pâtés or on toast. It is good scalloped, deviled, curried, in fritters, or as soufflé, while on hot summer days it appeals to the appetite as a salad, in aspic jelly, in a mousse, or potted. The meat of turkey, game, duck, and goose may be treated in many instances as chicken. The flavor of a turkey salad is not as delicate as a chicken salad, still it is a dish not to be despised. The same rule ought to apply to the warming over of poultry as to other meats. Do not *cook* it a second time; all it requires is *reheating*.

Scalloped Turkey.

Into small ramequin dishes sprinkle dried bread crumbs browned in butter. Over this put a layer, one and a half inches deep, of chopped, cold turkey moistened by a spoonful of giblet gravy. Cover with the browned crumbs, and bake till a chestnut brown.

Chicken-and-Ham Mold.

2 cupfuls cold chopped chicken,
1 cupful chopped ham,
1 cupful cold boiled macaroni,
2 eggs,
1 tablespoonful butter,
1 cupful gravy,
Pepper and salt.

Mix the chicken, ham, and macaroni, moisten with the eggs, melted butter and gravy, season highly. Butter a mold, pour the mixture in, put on cover tightly, and boil two hours. Dip the mold into cold water for a minute and turn out on a hot dish. Serve with tomato sauce.

Chicken Omelet.

2 tablespoonfuls milk,
4 eggs,
Salt and pepper,
1 cupful chopped cold chicken.

Beat the eggs till light, add milk and seasoning. Just before pouring into the pan, add the chicken to the egg mixture. Melt the butter in an

omelet pan, cook, and fold exactly like an omelet.

Chicken Gallosch (Hungarian recipe).

3 potatoes (raw),
1 tablespoonful butter,
 $\frac{1}{2}$ teaspoonful paprika,
1 cupful brown stock,
 $\frac{1}{4}$ teaspoonful salt,
 $\frac{1}{4}$ clove garlic,
1 cupful cold chicken.

Pare 3 small potatoes, cut into dice, and fry in melted butter in the spider. Toss about in the butter till they begin to brown, add the seasoning, stock, and chicken. Simmer slowly. Serve as soon as the potatoes are soft.

Chicken and Macaroni (Italian recipe).

1 cupful cold macaroni,
2 cupfuls cold chicken,
6 mushrooms,
 $\frac{1}{2}$ cupful cream,
 $\frac{1}{2}$ cupful chicken stock,
 $\frac{1}{2}$ cupful dried bread crumbs,
Pepper and salt,
1 tablespoonful butter.

Into a buttered dish put a layer of macaroni, then a layer of chicken cut in small strips. Sprinkle with pepper and salt and the mushrooms cut in quarters. Cover with a layer of macaroni, another of chicken, then pour over it the cream and stock. Sprinkle buttered bread crumbs over the top, and bake brown. If it browns too quickly, cover with a plate, and pour a little more stock in.

Chicken Soufflé.

2 tablespoonfuls flour,
2 tablespoonfuls butter,
1 teaspoonful salt,
 $\frac{1}{2}$ teaspoonful pepper,
2 cupfuls scalded milk,
2 cupfuls cold chicken,
 $\frac{1}{2}$ cupful stale bread crumbs,
1 tablespoonful chopped parsley,
3 eggs.

Make a white sauce from the butter, flour, salt, pepper, and milk. Add the crumbs, and cook until thick. Take from the fire and stir

in the chicken, parsley, and yolks of the eggs beaten till thick and lemon-colored. Whip the whites until stiff and dry and fold in. Pour in a buttered dish and set in a pan of hot water to bake in a hot oven thirty-five minutes.

Chicken Croquettes.

- 1½ cupfuls chopped chicken,
- ¾ cupful chopped ham,
- 6 chopped mushrooms,
- 4 tablespoonfuls flour,
- 2 tablespoonfuls butter,
- 1 cupful chicken stock,
- 1 tablespoonful cream,
- Pepper and salt,
- Nutmeg,
- 1 teaspoonful lemon juice.

Put in a saucepan the flour and butter. Mix till the butter absorbs the flour, then add stock made from boiling up the bones of the chicken, and stir till it becomes a thick paste. Add cream, pepper and salt enough to season, a little nutmeg and lemon juice. Stir in the chopped chicken and mushrooms. Mix well and turn on a plate to cool. When quite cold, roll a tablespoonful mixture in oblong shape, dip in egg and bread crumbs, and fry in hot fat.—Margaret Bailey.

Chicken Timbales.

Mix 2 cupfuls of chopped chicken, 1 cupful of milk, 1 cupful of bread-crumbs, two beaten eggs, celery-salt, lemon-juice, onion-juice and parsley to taste. Pack into buttered cups, and cook, covered, in a pan of hot water for fifteen minutes. Turn out and garnish with celery tops or parsley.—Carrie D. McComber.

Chicken Pie.

- Meat of 1 chicken cooked,
- 1 can mushrooms,
- 1½ pints potato balls parboiled,
- 6 hard-boiled eggs,
- 1 heaping tablespoonful minced parsley,
- 1½ pints cream dressing.

Cut chicken meat as for a salad, put in bottom of baking dish, cover with mushrooms, then with potato balls.

Season to taste. Sprinkle over it minced whites of eggs, then minced yolks. Scatter with minced parsley, and cover with dressing. On top put a cover of small biscuits as large as a finger ring. Bake three quarters of an hour.—Mrs. W. M. O. Dawson.

Chicken Pie.

Put chicken on to cook in plenty of water; after it is cooked you want 4 cupfuls of broth. When chicken is half done salt to taste and finish cooking. Remove chicken from bones, keeping the meat in large portions, lay in the bottom of baking dish light and dark meat mixed.

Prepare a sauce of three tablespoonfuls of butter melted, in which put 4 tablespoonfuls of flour and a little pepper, mix well and add 4 cupfuls of warm broth by degrees. Cook well and put in one cupful hot milk or cream, pour over chicken in the dish covering it till you can see only little particles. Keep rest of sauce for gravy, put this in oven to keep at cooking point while preparing crust.

Crust

- 2 cupfuls flour in mixing bowl,
- Add 4 teaspoonfuls baking powder.

Rub 3 tablespoonfuls shortening through flour, beat an egg and add 1 cupful of milk to it, add this to flour mixing well, drop onto the chicken in dish. Bake fifteen minutes.—Mrs. Chas. W. Stephenson.

Chicken à la King.

Melt 2 tablespoonfuls butter and sauté in this ½ green pepper chopped fine, seeds removed. One cupful mushrooms peeled and broken.

Add 2 tablespoonfuls flour, cook until smooth and brown, add 2 cupfuls cream, cook until thickened, add 3 cupfuls cooked chicken, put over hot water. Add to some of the hot sauce 3 egg yolks, beaten, stir into chicken. Season with few drops lemon juice, onion juice, ½ teaspoonful paprika. Serve on toast.—Anna Kinsley.

Scrambled Chicken.

Take left-over chicken, grind it fine—1 cupful. Grind 2 sweet pickles, 1 stalk celery; add 1 tablespoonful water, 2 well-beaten eggs,

1 cupful left-over mashed potatoes, 1 teaspoonful salt, 1 teaspoonful butter, $\frac{1}{8}$ teaspoonful pepper. Shape in loaf and place in well-greased pan in oven. Bake slowly thirty minutes.

CHAPTER XII

FISH DISHES AND LEFT-OVERS

CHOOSING FISH—METHODS OF COOKING FISH—PLANKING, FRYING, BROILING, BAKING, AND STUFFING—FISH LOAVES—SPECIAL RECIPES—FISH LEFT-OVERS—RAMEQUIN DISHES—CROQUETTES—CURRIES—SALADS—CHOWDERS—SOUFFLÉS—SOUPS.

CHOOSING FISH

I can think of no better lesson on how to choose fish than this: if it is possible in your neighborhood, or while vacationing, go to see a fish boat empty its gleaming cargo on the wharf. Learn to know the earmarks, the signs of perfect freshness on all fish. Do not be afraid of touching them; and every fish has a wholesome smell. Turn them over, examine them closely. "An eye like a dead fish" refers to a fish which has lain for weeks in cold storage, not to one just from the water. The latter will have eyes as full and almost as clear as those of a live creature. Notice the gills; they will be beautifully red, the fins will be stiff, the scales shining, and the flesh so firm that it will spring back after the finger has been pressed into it.

One cannot expect,—especially if one's home is at some distance from the ocean or the great lakes—to find in the market fish as superlatively fresh as when lifted straight from the net. Still, to be fit for human food, they should not have lost much of their beauty. The signs to avoid are limp fins, dull eyes, pale, liver-colored gills, flesh in which you leave a dent by an impression of the finger, streaks of gray or yellow in the skin and flesh, or the slightest symptom of a disagreeable odor. If you have

to make the choice between salt cod and a fish of this description, choose salt cod; it is infinitely more healthful for it does not contain a possibility of ptomaine poisoning.

When purchasing halibut or swordfish, if the head and fins have been removed, the test is pearly white or shining gray skin, firm flesh, and a good odor. It is an excellent rule never to buy fish which is out of season. If you want bluefish in February or shad in November, you can probably obtain it—a fish dealer will produce almost anything from his refrigerator at any time of the year—but you may rest assured it has seen a repose of months in cold storage. If not really dangerous to eat, it will be flabby, it will go to pieces before it is cooked, and be lacking in flavor. It is an excellent plan to post oneself thoroughly on the fish which is in season all the year round and purchase according to the month. A dealer will assure one that fish which has been packed in ice ten days is in as excellent condition as when fresh caught. I should say seven or eight days is the limit.

Although the old theory that fish is brain food has been exploded, the brain worker will find what he most requires in a bountiful diet of fish. It is digestible food, which is not overstimulating or overnutritive. But salmon, mackerel, and cels, which are

exceedingly oily, are an exception to the digestible rule.

It is no economy to be inveigled into buying a 5-pound bluefish when 2 pounds of halibut would have fed your family. Fish left over can be utilized nicely in many ways, but, in summer, cold fish has not remarkable keeping qualities. Decide when you order a fish how you will cook it. For should you so desire, the fish dealer can prepare it for planking or broiling better than you can. The cheapest fish is not always the most economical. Five pounds of cod contains about 2 pounds of waste in the shape of skin, head, tail, and bone, while 2 pounds of halibut is solid fish with scarcely an ounce of waste.

COOKING FISH

The cooking of fish depends largely on taste, for various methods apply frequently and most appetizingly to the same fish. Take halibut, for instance. It may be baked, broiled, fried or boiled, and be quite as delicious in one way as another. This rule is also true of cod, haddock, and nearly every kind of white-fleshed fish. What a cook or a fish dealer calls oily fish—this class contains bluefish, mackerel, herring, salmon, eels, and shad—are best suited for broiling, baking, or planking. They contain so much oil distributed through the flesh that it requires a dry intense heat to make them palatable. Salmon is an exception to this rule, being at its best when boiled.

The fish which plank to perfection are shad, whitefish, mackerel, bluefish, red snapper, and pompano. There are a number of real advantages to this method of cooking; it is very easy, it may be done in the hot oven of any coal or gas stove and the wood imparts a flavor to the fish which can be obtained in no other way. Then there is no difficult task of sliding it from a broiler or bake pan to the platter, because it is the proper thing to send the plank direct to the table laid on a tray or serving

platter. If you have to prepare a fish for planking, remember it must be cut down the back instead of the stomach, the thin portion of the flesh being folded on the middle of the plank.

Improvise a fish kettle if you haven't one. Line a wire basket with a towel, allowing the linen to fall over the edges, put in the fish, coiling it slightly if it is large, and drop the basket in a kettle of boiling water. This is an easier method for lifting it out whole than if set directly in the kettle.

An oily fish, such as mackerel or bluefish, needs no enrichment of fat before broiling; a white-fleshed fish does. If the latter is cut in steaks, dip it in oil or melted butter, add a good seasoning of pepper and salt, and put between the wires of the broiler. Lay the thickest end in the center of the broiler over the hottest part of the fire, skin side up. Let it get perfectly crisp and brown on the flesh side before turning. Broil the skin side carefully; it is apt to burn. Set it in a hot oven for five minutes thoroughly to finish cooking.

Fish of all sorts require the accompaniment of a starch food—as bread, rice, potatoes, or macaroni—to make a well-balanced meal.

An iron fish sheet, with rings at each end for handles, may be made by any tinsmith for twenty-five cents. Grease it well before setting the fish to cook and lay under it strips of salt pork, then set in a baking pan. You will find it easy to slip a baked fish from this sheet onto a platter.

When baking halibut, pour milk over and around it before setting it in the oven. It keeps the fish moist, improves the flavor, and makes it brown more thoroughly.

In spite of careful watching, a fish will occasionally break in the boiling. Do not try to patch it together into an unsightly heap of skin, bones, and meat. Flake it quickly and lay in good-sized portions on a large platter. Garnish with roses of mashed potatoes squeezed from a pastry bag, and over the fish pour a sauce. This transforms an almost hopeless

failure into a most attractive dish.

The same general rules for various methods of cooking apply to all kinds of fish; they may be boiled, fried, sautéd, planked, broiled, or baked. Then, after cooking by any process, a dish may be varied by garnishing and by adding one of the

varieties,—cod, halibut, and haddock, for instance—that are improved by a certain amount of seasoning, only it must be done very carefully.

The following methods for cooking fish can be applied to anything that swims, though the table appended will serve as a guide:

METHODS FOR COOKING FISH

Bass	May be baked, boiled, or broiled.
Bluefish	May be planked, baked, or broiled.
Butterfish	May be fried or sautéd.
Cod	May be boiled, broiled, or baked.
Eels	May be fried or broiled.
Flounder	May be baked, fried, or sautéd.
Haddock	May be baked, broiled, planked, or boiled.
Halibut	May be baked, boiled, fried, broiled or planked.
Herring	May be baked or broiled.
Kingfish	May be broiled.
Blackfish	May be baked or broiled.
Mackerel	May be baked, broiled, or planked.
Perch	May be fried or broiled.
Pickering	May be baked.
Pompano	May be broiled.
Red Snapper	May be fried or boiled.
Salmon	May be boiled, broiled, or baked.
Shad	May be broiled, baked, or planked.
Sheepshead	May be boiled or baked.
Smelts	May be sautéd, baked, or fried.
Trout	May be baked, broiled, or sautéd.
Muskellunge	May be baked.
Turbot	May be boiled.
Whitefish	May be planked, baked, or broiled.
Sturgeon	May be roasted, broiled, baked after being par-boiled.
Carp	May be boiled or baked.
Scrod	May be broiled.
Swordfish	May be baked, broiled or boiled.
Mullet	May be baked.
Pike	May be boiled.
Whitebait	May be fried.
Porgies	May be planked, broiled, or baked.
Catfish	May be fried.
Alewives	May be baked.

sauces which are to be found in a following chapter.

For highly flavored fish, such as shad or salmon, use the simplest sauce; drawn butter or egg sauce is much more appetizing than a rich herb-seasoned stock sauce, for the latter is apt to destroy the fine flavor of fish. There are certain fresh-water fish, as well as several white-fleshed

How to Plank Fish.

Heat and oil one of the oak planks which are made for this purpose; spread upon this, skin side down, a fish, dressed, cleaned and split down the under side; brush over with butter or oil, and set in the dripping pan in the lower gas oven, at first near the burners; after cooking a few minutes, remove to the floor of the oven to

finish cooking. Cook about twenty-five minutes, basting often. Set the plank upon a platter. Spread over the fish 3 tablespoonfuls butter, creamed and mixed with salt, pepper, and a tablespoonful lemon juice and chopped parsley. Garnish the edge of the plank with potato mashed, seasoned and made soft enough with butter and milk to put through a pastry tube. Return to the oven to brown the potato. Garnish with slices of tomato, cucumber and lemon and sprigs of parsley.

How to Sauté Fish.

Fish may be fried in oil, salt pork fat, lard, or clarified drippings. Have fat hot and use as little as possible to cook fish and keep from sticking to the pan. Pork fat is obtained by trying out thin slices of fat salt pork, being careful not to let it burn. Pork gives the fish a flavor not to be obtained by any other oil or fat. When pork fat is used, salt should be added but sparingly. Fried fish should be seasoned while cooking. After wiping dry, fish should be rolled in Indian meal, flour, or sifted crumbs before frying. If the fish has been on ice, or is very cold, do not put it in the fat fast enough to cool it perceptibly. Watch carefully while cooking; don't break or mutilate the fish in turning; cook brown, drain on a sieve, colander, or paper, and serve hot on a napkin. Unless fish are very small, they should be notched on each side before rolling in meal previous to frying.

How to Broil Fish.

Broiling is probably the simplest as well as the best method of cooking many kinds of fish, the flavor and juices being better preserved. Salt pork is the best thing to use. The double broiler is the best utensil, though they may be cooked on a gridle or a spider. Heat and grease well before laying in the fish, the flesh side first; when that is perfectly browned, turn and finish cooking. Serve on a hot platter, spread with butter or cream or both, and season to taste. Or a fish may be broiled

in a dripping pan, and if the oven is hot will cook nicely. Baste once or twice with butter or cream while cooking.

How to Boil Fish.

Boiling is the most insipid way of cooking fish, yet there are certain varieties that are better cooked this way if accompanied by a rich sauce. Fish, if boiled in a common kettle, should first be wrapped in cheese cloth, to preserve its shape. Boiled fish should be served with a sauce. A fish of 6 pounds should boil or steam in thirty or thirty-five minutes. The water should always be salted. A boiled fish may be stuffed if desired.

How to Bake Fish.

A baked fish presents a more attractive appearance when served in an upright position on the platter; it also cooks better. To keep it upright, press it down enough to flatten the under side, then, if necessary, brace with skewers or potatoes placed against it until it is well under way for cooking, then it will keep its position until cooked and dished. Sometimes it is advisable to bend the fish half-moon shape and cook it that way, or if the fish is long and slender, the tail may be tied to the mouth, either of which methods will keep the fish in upright position. Lay over the back and in the pan small strips of salt pork, add 1 cupful hot water and baste often while baking.

How to Fry Fish.

Small fish may be broiled, but in nearly every case they are better sautéed or fried. There are tiny fish, which cannot be treated in any other way. Lard may be used as a frying material, though a mixture of suet and lard is better; but best of all, if it can be afforded, is a clear frying oil, which leaves no greasy taste. To prepare a fish, such as perch, brook trout, catfish, smelts, or tiny mackerel, for frying, wash in cold water, clean thoroughly, and wipe dry inside and out. Small fish must be gently handled; they are tender and the flesh bruises easily. Roll them in flour,

then in beaten egg, to which a tablespoonful of cold water has been added, and roll again in finely sifted bread crumbs. Have the oil hot enough to brown a cube of bread in 60 seconds, put a few fish at a time into the frying basket, and cook five or seven minutes. Do not allow them to get dark brown. Drop on absorbent paper and drain off as much of the fat as possible. Lay on a folded napkin on a hot platter, and garnish with parsley and points of lemon. When smelts are very tiny, run a skewer through the heads of three or four of them and fry in bunches. Fish which is sliced, then cut in fillets, can be cooked in the same fashion. The easiest way to prepare it is to roll each fillet and fasten with a toothpick.

Baked Red Snapper.

- 1 5-pound red snapper,
- 1 beaten egg,
- $\frac{1}{2}$ cupful powdered crackers,
- 1 cupful oysters,
- 1 teaspoonful onion juice,
- 1 tablespoonful butter,
- 1 teaspoonful salt,
- $\frac{1}{2}$ teaspoonful paprika,
- 1 tablespoonful minced parsley.

Draw, clean, and wipe the fish; rub inside and out with salad oil and lemon. Make a stuffing of egg, cracker, oysters (drained and chopped), onion juice, butter, salt, paprika, and parsley; moisten with cream and oyster liquor. Fill the fish and sew it up. Put a layer of minced fat pork on the covered roaster, lay a few slices of tomato and onion on the pork, then the fish on this. Dredge with salt and flour, and put on more minced pork. Place in a hot oven, add a cupful boiling water, and cover. When well heated, reduce the temperature. Baste frequently. Bake one hour. Serve with Sauce Hollandaise.

Baked Fresh Cod with Cheese Sauce.

Lay a slice of cod in salt and water for half an hour; wipe dry and rub with melted butter and lemon juice. In the bottom of the baking pan, under the grating and not touching the

fish, have a cupful veal stock. Pepper and salt the fish, cover and bake ten minutes to the pound. Take up on a hot platter and sift fine buttered crumbs over it. Set in the oven to brown while you strain the gravy from the pan, thicken with browned flour, add the juice of $\frac{1}{2}$ lemon, 4 tablespoonfuls grated Parmesan cheese, and a little onion juice. Boil one minute, pour a few spoonfuls carefully over the crumb crust of the fish, the rest into a boat.—Marion Harland.

Baked Bluefish.

This recipe will answer for all sorts of fish. Have the fish opened at the gills, and the intestines drawn out through the opening. Make a stuffing of $\frac{1}{2}$ pint bread crumbs, a tablespoonful melted butter, a teaspoonful salt, and a dash pepper. Mix the ingredients, fill the fish, and sew the head down firmly. If you use pork, cut the fish into gashes two inches apart and all the way across on one side down to the bone; fill the gashes with larding pork, dust the fish thickly with bread crumbs, baste it with a little melted butter, put $\frac{1}{2}$ cupful water in the pan, and bake in a quick oven about an hour, basting frequently. Dish the fish carefully, garnish with parsley and lemon, and serve with brown or tomato sauce.—Sarah Tyson Rohrer.

Bluefish Baked with Tomato Sauce.

Prepare a fish of about 4 pounds, put in a buttered pan, cover with tomato pulp, sprinkle liberally with bread crumbs, and dot with bits of butter. Place in oven forty minutes, until the flesh begins to separate from the back bone.

Cod Steaks à la Cardinal (French recipe).

Cut 3 pounds fresh cod into slices an inch thick; sprinkle with salt, pepper, and lemon juice, fasten each slice with a toothpick to give it a neat shape. Brush the fish with warmed butter, lay it on the bottom of a large saucepan, pour over it a cupful white stock, and cover closely,

first with buttered paper, then with the pan lid. Simmer gently for twenty to twenty-five minutes, take skewers and arrange the fish neatly on a hot dish; pour over it tomato sauce, flavored with essence of anchovy; garnish round the edge with sprigs of fresh parsley and slices of lemon.

Fillets of Flounder à la Normandy.

Prepare the fillets and lay in a buttered baking pan, season with salt and pepper, dredge with flour, moisten with brown stock, adding a teaspoonful lemon juice; lay the fillets on serving dish, and pour over them Normandy sauce, garnish with slices of lemon.

Baked Haddock.

Stuff with a dressing, baste the fish with butter, put a cupful water into the pan, and bake in a moderate oven one hour, basting often; just before taking up, sprinkle a tablespoonful cracker crumbs over the fish and let it remain in the oven long enough to brown delicately. Put the fish on a warm platter, add water and thickening to the gravy, serve in a gravy tureen, garnish with parsley and sliced lemon.

Fish Timbales.

- $\frac{1}{2}$ pound halibut or other white fish,
- Whites 5 eggs,
- 1 teaspoonful salt,
- 1 cupful soft bread crumbs,
- $\frac{1}{2}$ cupful milk,
- 6 tablespoonfuls cream,
- 1 saltspoonful white pepper.

Put the uncooked fish through the meat chopper. Cook together, until you have a smooth paste, the milk and bread crumbs. When cold, add it gradually to the fish and press through a sieve; add the cream, salt, and pepper, and fold in carefully the well-beaten whites of the eggs. Grease small timbale molds with butter, and line the bottoms with paper; garnish with chopped truffle, mushrooms, or green peas, or they may be used plain. Fill in the mixture;

stand in a baking pan half filled with hot water; cover the top with greased paper, and bake in a moderate oven twenty minutes. Serve with lobster, shrimp, or oyster crab sauce.—Mrs. Sarah Tyson Rohrer.

Baked Halibut.

Take a square piece of fish, weighing 5 pounds, wash, wipe dry, and place in the dripping pan with a few thin slices of salt pork on top. Bake one hour; baste with melted butter and water. Stir into the gravy 1 tablespoonful Worcestershire Sauce, juice of 1 lemon, seasoning to taste, and thicken. Serve the gravy separate; garnish with slices of hard-boiled eggs.

Baked Smelts.

Dip in beaten egg, roll in cracker crumbs, season with salt, pepper, and a little nutmeg, lay on a sheet of buttered paper in a buttered baking pan, put a piece of butter on each fish and bake delicately brown; serve on a hot dish, garnished with slices of lemon and parsley.

Baked Salmon Trout with Cream.

Wipe dry and lay in a pan with enough water to keep from scorching. Bake slowly an hour, basting with butter and water. Into a cupful cream stir 3 or 4 tablespoonfuls boiling water, add 2 tablespoonfuls melted butter and a little chopped parsley; add it to the gravy from the dripping pan in which fish was baked; lay the trout on a hot platter and let the gravy boil up once, then pour over the fish; garnish with sprigs of parsley.

Baked Shad.

Stuff with a dressing; sprinkle the fish with flour, lay in a pan with a few thin slices of pork on top. Bake a medium-sized fish forty minutes; add a little hot water, butter, pepper, and salt to the gravy; boil up and serve in gravy tureen. Garnish the fish with sprigs of parsley. A tablespoonful anchovy sauce is a decided improvement by giving the gravy a better flavor.

Brochet of Smelts (French recipe).

Spread melted butter in bottom of shallow baking dish, dredge with raspings of bread, season with salt, pepper, chopped parsley, and shallots; put in fish and pour over it a teaspoonful anchovy sauce; cover with melted butter and bread raspings, and bake fifteen minutes. Serve hot; arrange the fish on a napkin, heads to heads, in center of dish, or lay them all one way in rows, each overlapping the next. Garnish with quartered lemon and fried parsley.

Broiled Turbot (English recipe).

Soak the fish in salted water to take off slime; do not cut off fins; make an incision down the middle of the back to prevent skin on the other side from cracking; rub it with lemon and lay in a kettle of cold water; let it boil slowly; when done, drain, and lay on hot napkin; rub a little lobster coral through a sieve, sprinkle it over fish, garnish with sprigs of parsley and sliced lemon. Serve with lobster or shrimp sauce, or plain drawn butter.

Baked Whitefish (Point Shirley Style).

Split the fish and lay open with the meat side up. Season with salt and pepper, and place in a baking pan on a bed of chopped salt pork. Bake in a quick oven, brushing it over with beaten egg and milk while cooking. Just before sending to the table, cover with crisp brown crumbs, made by frying grated bread crumbs in butter. Serve with oyster sauce.

Crimped Fish.

Cut uncooked fish into long strips, roll them around the finger, and fasten each roll with a wooden toothpick. Put into boiling salted water with 2 tablespoonfuls vinegar, and boil fifteen minutes. Drain, arrange on a platter, and serve hot with oyster or lobster sauce poured into cavities.

Codfish in Oyster Sauce.

Boil 3 slices fish; drain and dress upon a dish; blanch 3 dozen oysters by putting them into a stewpan with their juice; move them around occa-

sionally, but do not let them boil. As soon as they become firm, place a sieve over a basin, pour in the oysters, beard and throw them into their liquor. Put them into a stewpan. When boiling, add 2 cloves, $\frac{1}{2}$ blade mace, 6 peppercorns and 2 ounces butter, to which you have added a tablespoonful flour. Stir, season with salt, cayenne pepper, and essence of anchovies. Add a gill of cream, and pour the sauce over it.

To Roast Sturgeon.

Take the tail part, skin and bone it; fill the part where the bone comes from with stuffing, as for a fillet of veal; put buttered paper around it, and tie up like a fillet of veal. Roast, and serve with melted butter.

Flounders Souchet (French recipe).

Take 4 or 6 flounders, trim and cut in halves; put $\frac{1}{2}$ pint water in a sauté pan with a little scraped horse-radish, pepper, salt, and sprigs of parsley; place over the fire, boil a minute, then add the flounders, stew ten minutes; take them out and place in a dish, reduce the liquor they were stewed in, pour over and serve.

Hampton Court Perch (English recipe).

Clean the fish, dry well, and make an incision upon each side with a knife. Put 2 tablespoonfuls butter in a sauté pan over a slow fire, lay in the fish, season with salt, and sauté gently. When done, serve with the following sauce: Put 6 spoonfuls melted butter in a stewpan with a little salt and the juice of a lemon; when boiling, stir in the yolk of an egg mixed with a tablespoonful cream. Add small pieces of lemon rind and shredded parsley to the sauce, pour it over the fish, and serve.

Baked Shad Roe.

Skin two large roes, sprinkle with salt, and stand half an hour. In the bottom of a baking pan put a layer of fine bread crumbs mixed with a chopped onion, chopped parsley, 6 chopped mushrooms, melted butter, and a little lemon juice. Lay the

roes on the crumbs, sprinkle with more crumbs seasoned and dressed like those in the pan. Over all pour a cupful white stock. Bake half an hour, drain off the liquid, sprinkle the roes with bread crumbs moistened with melted butter, put back in the oven for fifteen minutes to finish cooking and brown. Thicken the liquid that was poured off with flour blended with melted butter, and pour over the roes.

Fish Dressing.

Either of the following recipes may be used to prepare a stuffing for any fish: 2 cupfuls bread or cracker crumbs, 1 cupful mashed potatoes, 1 well-beaten egg, 2 tablespoonfuls butter, teaspoonful sage and savory, or a little thyme, and 6 chopped clams or oysters; moisten with milk, salt, and pepper to taste.

For a plainer dressing, use 1 pint bread crumbs, or one-half pint cracker crumbs, 4 tablespoonfuls melted butter, 1 egg, beaten, pepper, salt, 2 tablespoonfuls chopped pickle, $\frac{1}{4}$ teaspoonful onion juice.

FISH LEFT-OVERS.

For fish *réchauffés* (left-overs) it is absolutely necessary to have a thorough knowledge of sauces. When fish left-overs come from the table, pick them over carefully before they cool and become gelatinized. Reject every bone, and flake the eatable portions neatly. Put in a bowl, cover closely, and set in the refrigerator till required. Generally a fish *réchauffé* with a sauce calls for a small amount of fish stock. To obtain this, put the bones, the poor pieces of fish and the skin into a small saucepan, cover with cold water, allow to simmer slowly for a few minutes, strain and cool. Never add salt to any fish without tasting, as it is very easy to overseason it.

Croquettes are an excellent method for using up scraps of fish, especially salmon or any white-fleshed fish. When heated in a sauce, it can be served in ramequins or large scallop shells which are sold by the dozen

in crockery stores. With a crust of buttered crumbs, these individual dishes are very attractive. Delicious curries, soups, and deviled dishes may be prepared from cold fish. It can be combined with mashed potatoes and crumbs in a pie; it makes a tempting *soufflé* or excellent timbales, and may be used with cold potatoes for a hash.

Save even a few spoonfuls of any sauce accompanying fish. Half a cupful of egg, tomato, shrimp, oyster, or plain white sauce adds much to the flavor of fresh sauce used for reheating a dish. If the amount of fish is scant, add 2 or 3 hard-cooked eggs, using them as a garnish or cutting the white in rings and pressing the yolk through a potato ricer or coarse sieve and sifting it over the top of the dish.

Sometimes there are small left-overs of cooked oysters or clams. If the oysters are in a milk stew, strain off the liquor and save it. It may be enriched by a spoonful of butter or $\frac{1}{2}$ cupful cream. Season well and heat in the double boiler, then add the oysters, but only just long enough to heat them. More than a minute will overcook them. Oysters or clams which have been cooked in any way may be deviled, curried, or used in rissoles. Chop coarsely a cupful of cold scalloped oysters with a well-beaten egg and bread or cracker crumbs enough to make forming possible and shape into croquettes. Flour, egg, crumb, and fry.

Lobster meat can be utilized in almost any recipe that calls for that shellfish, or can be converted into delicate lobster soup. The smallest amount of fish or shellfish can be utilized for a sauce to accompany baked fish, lobster, oyster, and shrimp being most suitable.

Fish Bisque.

2 cupfuls cold fish,
1 tablespoonful butter,
1 teaspoonful parsley,
1 teaspoonful of Worcestershire sauce,
1 quart white or chicken stock,
1 tablespoonful butter,

- 1 tablespoonful flour,
- 2 cupfuls hot milk,
- 2 tablespoonfuls cracker crumbs,
- $\frac{3}{4}$ teaspoonful salt,
- Dash cayenne.

Mince the fish, add to it the butter, chopped parsley, Worcestershire sauce, and stock. Bind with the butter and flour cooked together. Add the milk, cracker crumbs and seasonings.

Salmon Loaf.

- 2 cupfuls salmon,
 - 1 cupful stale bread crumbs,
 - 1 teaspoonful onion juice,
 - 1 teaspoonful chopped parsley,
 - 3 eggs.
- Salt and pepper to taste.

Flake the salmon fine, mix with the bread crumbs and seasonings, and moisten with the well-beaten eggs. Pack into a buttered mold and steam for an hour or pack in timbale molds and bake in pan of hot water twenty minutes. Serve hot. Any left-over of this dish may be broken into small pieces; then served with mayonnaise; it makes a palatable salad.

Halibut Boudins.

- $\frac{1}{2}$ cupful cold mashed potato,
- 1 cupful cold halibut,
- $\frac{1}{2}$ cupful soft bread crumbs,
- $\frac{1}{2}$ teaspoonful pepper,
- 1 teaspoonful salt,
- 1 egg,
- $\frac{1}{2}$ teaspoonful onion juice.

Mash the halibut, mix well with the other ingredients, and press through a potato ricer. Moisten with the beaten egg. Butter molds and dust them with fine bread crumbs. Fill each mold with the fish mixture, set them in a pan of hot water, and bake twenty minutes in a moderate oven. Serve on a hot platter, pour a white sauce over them, and garnish with slices of hard-boiled egg and parsley.

Fish with Rice.

- 1 cupful cold rice,
- 1 cupful cold flaked fish,
- 1 tablespoonful butter,
- 1 egg,

Salt and pepper.

- 1 tablespoonful finely minced parsley.

Into a double boiler put the rice and fish and let them grow quite hot, stirring lightly so the fish may not break and the mixture grow pasty. When hot, add the butter, the egg un-beaten, salt and pepper. Stir till well blended and the egg cooked, and serve.

Halibut Ramequins.

- 2 tablespoonfuls butter,
- 1 tablespoonful flour,
- $\frac{1}{2}$ cupful cream,
- $\frac{1}{2}$ cupful fish stock,
- 2 cupfuls cold flaked halibut,
- Yolk 1 egg.

Make a white sauce from the butter, flour, cream, and fish stock. Pepper and salt to taste. Add the flaked fish and egg beaten thick. Pour into ramequins and cover the top with buttered crumbs. Bake and just before serving lay on top a ring of hard-boiled white of egg, and inside each a sprig of water cress.

Fish Scallop.

- 2 tablespoonfuls butter,
- 2 tablespoonfuls flour,
- 1 cupful scalded milk,
- 1 egg,
- 2 cupfuls cold fish,
- $1\frac{1}{2}$ cupfuls buttered crumbs.

Make a sauce of the butter, flour, and milk. When it thickens, add the well-beaten egg. Take the remains of cold baked or boiled white-fleshed fish and separate it into flakes. Put a thin layer of butter crumbs into the bottom of a baking dish, cover with the flaked fish, sprinkle with salt, paprika, and nutmeg. Pour in a layer of sauce, then fish. Alternate in this fashion till the dish is filled, and cover with buttered crumbs. Bake for twenty minutes.

Curried Salmon.

- $\frac{1}{2}$ onion,
- 1 tablespoonful butter,
- 1 teaspoonful curry powder,
- 1 cupful hot water,

$\frac{1}{2}$ tablespoonful flour,
 $\frac{1}{2}$ tablespoonful tomato catsup,
 Salt and pepper to taste,
 1 cupful cold salmon.

Fry the onion brown in the butter, sift in the curry and flour, pour the water in slowly, and stir till smooth. Add the seasoning, and last the salmon. Serve hot with toast.

Salmon Croquettes.

3 cupfuls cold salmon,
 1 cupful cream,
 2 tablespoonfuls butter,
 1 tablespoonful flour,
 1 egg,
 Pepper and salt.

Flake the salmon into small pieces, and make a white sauce from the butter, flour, and cream. Cook till smooth and creamy, then add the salmon and seasonings. Just before taking from the fire, add 1 well-beaten egg, and spread on a buttered plate. When quite cool, roll into small croquettes with flattened ends, flour, egg crumb, and fry in deep fat.

Salmon Loaf.

1 can of salmon,
 3 eggs,
 Juice of $\frac{1}{2}$ a lemon,
 1 cupful of crackers rolled fine,
 1 tablespoonful butter,
 Salt and pepper and a little cream.

Hash the salmon fine, put in the eggs, crackers, butter, salt, pepper and cream and stir all up well together, put in a pan, form into a loaf, and cook one-half hour in a moderate oven.—Mrs. Fred S. Long.

Salmon Cakes.

1 can salmon,
 2 cupfuls bread crumbs,
 2 well-beaten eggs,
 Small piece butter, melted,
 2 tablespoonfuls vinegar,
 Salt and pepper to taste.

Mix thoroughly, make into cakes, and fry a rich brown. Serve with lettuce salad, if possible.

Salmon Loaf.

1 large cupful salmon (mashed)
 1 small cupful mashed potatoes,
 4 hard-boiled eggs in quarters,
 2 tablespoonfuls melted butter,
 1 cupful cream or rich milk,
 2 well beaten eggs.

Mix into the order given, adding the hard-boiled eggs last. Season with salt and pepper and dash of cayenne. Pack in well greased mold. Bake in a moderate oven until it is browned.—Mrs. J. Baumgartner.

Molded Salmon.

1 can salmon flaked in small pieces,
 $\frac{1}{2}$ tablespoonful flour,
 Few grains cayenne pepper,
 2 egg yolks,
 $\frac{3}{4}$ cupful milk,
 $\frac{3}{4}$ cupful vinegar,
 $\frac{1}{2}$ teaspoonful salt,
 1 tablespoonful gelatine,
 1 teaspoonful mustard,
 $\frac{1}{2}$ tablespoonful melted butter.

Make a cream salad dressing of flour, mustard, pepper, salt, egg yolks, butter, milk, vinegar, and salt. In meantime soak the gelatine in cold water and add to salad dressing. Then stir in the salmon, pour into a mold, and serve with cucumber sauce.—Anna Kinsley.

Lobster Croquettes.

1 cupful chopped lobster,
 $\frac{1}{4}$ teaspoonful salt,
 $\frac{1}{2}$ teaspoonful mustard,
 Dash tabasco sauce,
 $\frac{1}{2}$ cupful cream sauce.

Stir the lobster and seasonings into the hot cream sauce and spread on a plate to cool. Shape into tiny pyramids. Egg and crumb. Into the small end of each croquette stick a few inches of macaroni or a lobster claw. Fry in deep fat. Garnish with parsley or water cress.

Fish Puff Balls.

1 cupful cold flaked fish,
 2 tablespoonfuls butter,
 $\frac{1}{2}$ cupful flour,

- 1 cupful scalded milk,
2 eggs,
Pepper and salt.

Make a white sauce with the milk, flour, and salt. Season with pepper and salt. When it has thickened, stir in the fish, then the well-beaten eggs. Fry a tablespoonful at a time in smoking hot fat, fritter fashion.

Bluefish Salad.

- 3 cupfuls cold flaked bluefish,
 $\frac{1}{2}$ teaspoonful salt,
 $\frac{1}{4}$ teaspoonful white pepper,
 $\frac{1}{4}$ cupful olive oil,
1 tablespoonful vinegar.

Flake the bluefish neatly and marinate for an hour with a French dressing made from the oil, vinegar, and seasonings. Arrange on a nest of lettuce, and serve with mayonnaise garnished with chopped olives.

Clam Salad.

- 2 cupfuls cold clams,
1 cupful shredded lettuce.

Use for this salad cold steamed clams or left-overs from a Rhode Island bake. Take off the black heads and remove the skins. Serve in a nest of shredded lettuce. Marinate for ten minutes with French dressing, then serve.

Halibut Salad.

- 2 cupfuls cold halibut,
1 cupful shredded lettuce,
 $\frac{1}{2}$ cupful cold boiled potatoes.

Flake halibut into small pieces. Shred the lettuce with scissors. Cut the potato into half-inch cubes. Mix fish and potato lightly. Lay in a nest of lettuce, and pour over it French dressing.

Salmon Salad Molds.

- 1 cupful cold salmon,
 $\frac{1}{2}$ tablespoonful lemon juice,
 $\frac{1}{2}$ teaspoonful parsley,
2 drops tabasco sauce,
1 tablespoonful gelatin, softened in 4 tablespoonfuls cold water, then dissolved in $\frac{1}{2}$ cup boiling water.

Mix the salmon, lemon, parsley, tabasco, and gelatin, dissolved in a little water, with enough salad dressing to moisten. Wet $\frac{1}{2}$ dozen molds. Fill with salmon, level the top of each one, place on ice, and turn out on lettuce leaves. Serve with a mayonnaise.

Spiced Fish.

Cold salmon, halibut, or shad makes dainty dishes when flaked and covered with hot spiced vinegar and left a day before serving. Cold fried fish is excellent served very cold. Spanish mackerel is nice in this way. Any kind of catsup or salad dressing may be served with it, but it is quite palatable with bread and butter, and makes a change from cold meat.

HOW TO COOK SALT FISH

Stuffed Salt Mackerel.

Freshen 2 fish by soaking six or eight hours, wipe, dry, and squeeze lemon juice over the flesh side. Lay 1 fish in the bottom of a baking pan, and cover with a thick dressing made of bread crumbs well seasoned with parsley, pepper, salt, butter, and bits of thin lemon peel. Lay the other fish on this dressing and baste with melted butter and hot water. Bake until brown, remove to a hot platter without disturbing the layers, and cover the top with bread crumbs moistened in melted butter and baked brown. Garnish with parsley.

Baked Salt Mackerel.

Soak the mackerel in cold water over night, placing the split side down. Cut off the fins and tail. Wash and put in a baking pan with the split side up. Mix a teaspoonful flour with a little milk and stir into $\frac{1}{2}$ pint milk. Pour this over the mackerel, and bake in a moderate oven for half an hour. Just before the fish is done, add a teaspoonful butter.

Boiled Salt Mackerel.

Soak the mackerel over night; wash and put in a flat saucepan; cover with hot water, and cook slowly twenty

minutes. Serve with cream, butter, egg, tomato, brown, or parsley sauce.

Broiled Salt Mackerel.

Soak over night; wash and wipe. Broil over clear coals for twelve minutes. Put the split side over fire first. Season with butter, and serve hot.

Broiled Salt Salmon or Halibut.

If fish is very salt, freshen for an hour or two in cold water; if merely smoked and slightly salted, wash and cut in small pieces about an inch thick. Season well with pepper and salt, and wrap each slice in tough paper well buttered. Twist the ends so the fish is inside a paper bag. Put in a broiler, and move over a clear fire for about eight minutes. Take the fish from the paper cases and pour egg sauce over it.

Codfish Fritters.

Cut the codfish into strips about the size of a finger, freshen by soaking over night in cold water; in the morning, dry between towels. Dip each piece in fritter batter, and fry delicately brown in hot fat.

Creamed Salt Codfish.

Pick salt codfish in pieces (there should be $\frac{3}{4}$ cupful) and soak in lukewarm water. Drain, press out water and add 1 cupful white sauce. Garnish with slices of hard-boiled eggs.

Salt Codfish (Creole style).

- 1 pound boneless codfish,
- $\frac{1}{2}$ cupful rice,
- 2 tablespoonfuls butter,
- 1 can tomatoes,
- 1 onion,
- $\frac{1}{2}$ teaspoonful salt,
- 1 saltspoonful pepper.

Wash and soak the codfish several hours. Drain and press out water. When ready to serve, put the butter and onion in a saucepan; cover and cook on the back part of the stove until the onion is soft, not brown. Drain the codfish, add it and the rice, which has been boiled for twenty minutes; pour over the tomatoes strained; cover the saucepan, and cook gently

twenty minutes. When ready to serve, add salt and pepper, push the rice aside and dish the fish first; put on top of it the rice, and pour over the sauce.—Mrs. Sarah Tyson Rohrer.

Salt-Codfish Chowder.

- 2 cupfuls milk,
- 1 cupful shredded codfish,
- $1\frac{1}{2}$ cupfuls potato cubes,
- 3 ounces salt pork,
- 2 tablespoonfuls minced onion,
- $\frac{1}{4}$ teaspoonful pepper,
- 1 tablespoonful flour,
- Salt,
- 3 Boston crackers.

Wash the fish and cut in two-inch lengths. Tear these in pieces, and, covering with cold water, soak for three or four hours. Slice the pork, and cook in the frying pan for ten minutes. Add the onion, and cook ten minutes. Now add the flour, and stir until smooth; afterwards stir in 1 gill water. Put the potatoes in a stewpan and pour the mixture in the frying pan over them. Season with pepper and $\frac{1}{2}$ teaspoonful salt. Place on the fire, and cook ten minutes; then take out the slices of pork and add the fish, milk, and split crackers. Cook gently for half an hour, being careful to let the chowder only bubble at one side of the stewpan. At the end of the half hour, taste before serving, to be sure to have it salt enough.—Maria Parloa.

Codfish Balls.

- 1 cupful salt codfish,
- $2\frac{1}{2}$ cupfuls potato cubes,
- 1 tablespoonful butter,
- Dash pepper,
- 1 egg.

Cut the fish in small pieces, put in a saucepan with the raw potato, and cover with boiling water. Let them cook until the potatoes are nearly soft. Drain thoroughly and put through the meat chopper. Stir in the butter, the well-beaten egg, and pepper, beat with a fork until light and fluffy. Drop by tablespoonful into deep fat, fry until brown and drain on brown paper.

Soufflé Codfish.

2 cupfuls hot mashed potatoes,
1 pound salt codfish,
2 eggs,
Dash pepper.

Soak the codfish several hours; in the morning, pick into thin fine flakes, drain, and dry in a towel; add to it the beaten potatoes, pepper, and yolks of eggs well beaten. Whip the mixture until light, then blend in the whites of the eggs beaten to a stiff froth. Pile in a mound on a platter, and bake until delicately brown.

Codfish with Macaroni.

2 ounces macaroni,
1 cupful riced potatoes,
1 tablespoonful butter,
 $\frac{1}{2}$ teaspoonful salt,
 $\frac{1}{2}$ pound salt cod,
1 tablespoonful onion juice,
1 tablespoonful flour,
1 saltspoonful pepper.

Break macaroni in two-inch lengths, put in boiling water, boil rapidly for thirty minutes, drain, throw in cold water, and blanch fifteen minutes, then cut into pieces about half an inch long. Wash the codfish, cut it into blocks. It is better to have it soaked over night. If you wish to use it in a hurry, cover with cold water, bring to boiling point, drain, throwing away the water, and cover again. Do this three times, and it will be sufficiently fresh. Rub the butter and flour together, add the tomato, stir until boiling, then add the macaroni, fish, onion juice, salt, and pepper. Mix until boiling; stand over the teakettle or in hot water for thirty minutes, and it is ready to serve.—Mrs. Sarah Tyson Rohrer.

Toasted Codfish.

Cut the fish in thin strips and freshen it. Dry, put between the

wires of a broiler, and toast till delicately brown. Lay on a hot platter, and spread well with butter.

Creamed Haddie (Scotch recipe).

Trim the fins from a thick finnan haddie, cover with cold water, and let stand on the back of a range an hour, simmering slightly at the last. Drain carefully and set into a baking dish; pour over it a cupful milk; cover and set in the oven; cook ten minutes. Remove the fish to a serving dish and pour over the milk. Garnish with slices of lemon and pickles.

Shredded Haddie.

Braise 2 cupfuls finnan haddie that has been picked fine, 2 tablespoonfuls butter. Add 1 cupful cream into which 1 tablespoonful flour has been rubbed smooth. Let it come to a boil and when cooled a little add 1 large tablespoonful grated cheese, a dash pepper, and, just before serving, the beaten yolk of an egg. Serve on toast.

Finnan Haddie à la Delmonico.

Cut fish in strips (there should be 1 cupful), put in baking pan, cover with cold water, place on back of range, and allow water to heat to boiling point. Stand on range, keeping water below boiling point for twenty-five minutes, drain, and rinse thoroughly. Separate fish into flakes, add $\frac{1}{2}$ cupful heavy cream and 4 hard-boiled eggs thinly sliced. Season with cayenne, add 1 tablespoonful butter, and sprinkle with finely chopped parsley.—Fannie M. Farmer.

Baked Salt Herring.

Soak the herrings over night, roll in flour and butter, place in a dripping pan with a very little water over them; season with pepper, and after putting in the oven, baste frequently.

CHAPTER XIII

OYSTERS, CLAMS, LOBSTERS, AND OTHER SHELLFISH

SHELLFISH À LA NEWBURG, ESCALLOPED, ROASTED, BROILED,
DEVILED, CURRIED, CREAMED — RISSOLES — CRABS —
SHRIMPS — SCALLOPS.

Fried Clams.

Select plump clams, dry them on a towel, roll in cracker crumbs, dip in egg, again in crumbs, and fry in hot fat; lay a sheet of unglazed paper in dripping pan and put the clams on this as fast as taken up; serve on a napkin.

Clam Fritters.

Either whole clams or chopped ones may be used. Prepare a fritter batter, stir in the clams, using considerable clam liquor in making the batter. If whole clams are used, the large ones are best, having one in each fritter; when chopped clams are used, the fritters may be made any size. Fry in deep fat, drain, and serve on napkin.

Quahog Cocktail (an individual service).

6 tiny quahogs,
1 tablespoonful clam liquor,
Speck cayenne,
1 teaspoonful chopped celery,
1 teaspoonful tomato catsup,
1 tablespoonful vinegar,
Dash tabasco sauce,
 $\frac{1}{2}$ teaspoonful Worcestershire
sauce.

Put the quahogs in a glass with clam liquor, add cayenne, celery, tomato catsup, vinegar, tabasco and Worcestershire sauce. Stir thoroughly with fork.

Roast Clams.

Scrub the clam shells thoroughly and drain in a colander. Spread

them in a dripping pan and put in a hot oven. The shells will begin to open in five or eight minutes. Take from the oven, and, holding the shell over a warm dish, let the clam and juice drop out. Season with butter, salt, and pepper; serve very hot with thin slices of buttered brown bread.

Clams à la Newburg.

25 soft-shelled clams,
1 tablespoonful butter,
1 tablespoonful flour,
Yolks 2 eggs,
1 cupful cream.

Put butter into a saucepan; stir until heated; add the flour, and cook until it thickens. Add the beaten yolks of the eggs with cream; beat well and pour over the clams; stir thoroughly until heated and cooked, but do not boil.

Clams (Boston style).

12 soft clams,
 $\frac{1}{2}$ pound salt pork.

Cut pork in pieces size of dice, and fry crisp. Add clams, freed from the tough part, and sauté them in the pork fat. Serve on Boston brown bread.

Clams in Vienna Rolls.

Take a large Vienna roll, cut out a piece of the crust the size of a half dollar, and remove the soft bread from the inside. Open as many little-neck clams as will fill the roll, replace the small piece of crust, and place in the oven for ten minutes. Take the juice from the clams, make

a thickening of flour and the juice, mix with it paprika, black pepper, Worcestershire sauce, a dash tabasco sauce, and heat. Remove the baked roll from the oven and pour sauce over it.

Escalloped Clams.

25 clams,
1 cupful cracker crumbs,
 $\frac{1}{2}$ cupful milk,
 $\frac{1}{4}$ cupful clam liquor,
2 eggs (well beaten),
1 tablespoonful melted butter,
Salt and pepper.

Season the clams highly, mix with crumbs moistened with milk and clam liquor; add eggs and melted butter and the clams chopped. Fill each shell, sprinkle with buttered bread crumbs, and brown. This fills twelve shells.

Sautéed Oysters.

Put 2 tablespoonfuls butter into a sauté pan; when it is hot add as many drained oysters as will make 2 cupfuls. Add a little salt and pepper and a tablespoonful lemon juice. Shake them in the pan until the gills are curled, then add a tablespoonful parsley chopped fine. Serve on slices of toasted bread on a hot platter.

Fried Oysters with Cold Slaw.

Lay the oysters on a cloth to dry. Roll in cracker dust, then in egg diluted with 1 tablespoonful milk, season with pepper and salt, again cover with cracker dust. Lay in a frying basket and fry in hot fat long enough to give them a light-brown color. Oysters toughen if cooked too long. Prepare only 4 at a time; more lower the temperature of the fat too much, and if they are rolled before the moment of frying, they moisten the cracker dust. Place them on an unglazed paper in the oven when they are fried. Fold a napkin and place it in the center of a platter. Pile the oysters on the napkin, and make a wreath around them of cold slaw.

Oysters à la Newburg.

25 large oysters,
 $1\frac{1}{2}$ tablespoonfuls butter,

1 tablespoonful lemon juice,
Pepper and salt,
 $\frac{1}{2}$ cupful mushrooms,
Yolks 4 eggs,
1 cupful cream.

Place the oysters in a saucepan with the butter, lemon juice, pepper, and salt. Cook until the oysters are plump, then add the mushrooms cut in quarters. Beat the yolks of the eggs into the cream, turn it into the oyster mixture, let it get hot and a little thickened, without boiling. Turn it into a hot dish, and garnish with croutons.—Mary Ronald.

Oysters à la George Trimble Davidson.

Melt $\frac{3}{4}$ cupful butter, then pour in a quart of oysters and the strained liquor, flavor with salt and pepper, a teaspoonful paprika, and a dash tabasco. Cut up celery, put in 2 tablespoonfuls, and squeeze in the juice of $\frac{1}{2}$ lemon. Cook four minutes, and serve on hot toast. A pint of rich cream added to the broth of the oysters makes the dish richer.—Deschler Welsh.

Oyster Rarebit.

Clean and remove the hard muscles from a cupful oysters; parboil in their own liquor until the edges curl, and remove to a hot bowl. Put 1 tablespoonful butter, $\frac{1}{2}$ pound cheese (broken in small bits), 1 saltspoonful each salt and mustard, and a few grains cayenne into the chafing dish; while the cheese is melting, beat 2 eggs slightly, and add them to the oyster liquor; mix this gradually with the melted cheese, add the oysters, and pour over hot toast.

Oysters Encoquille (French recipe).

Clean large oyster shells, into each put a couple of small oysters, and sprinkle with bread crumbs which have been peppered and salted and tossed in melted butter. Set the shells closely together in a baking pan, put in a hot oven, and bake till the crumbs are delicately browned. Serve a shell to each person on a small plate. Garnish with $\frac{1}{4}$ lemon and a sprig of parsley.

Figs in Blankets.

Dust large, plump oysters with pepper and salt, wrap each inside a thin slice of bacon and skewer together with a toothpick. Lay in a hot spider, cook till oysters begin to curl and the bacon crisps. Take out the toothpicks, and serve three or four on a slice of toast to each person.

Broiled Oysters.

Drain large oysters from the liquor, dip each in melted butter, dust with pepper and salt, then roll in sifted cracker crumbs. Grease the wires of an oyster broiler, lay the oysters in closely, and broil over a clear fire until the juice begins to flow. Serve on toast.

Oyster Loaf.

- 1 small loaf bread,
- 1 pint oysters breaded and fried,
- 1 lemon,
- 4 sweet pickles,
- Butter, catsup, and chili sauce,
- 1 pint white sauce.

Slice the top off the bread, hollow out the inside, leaving the crust. Butter this thickly, line with thin slices of pickle, and lemon. Fill with fried oysters. Put more slices of pickle and lemon, pour a little catsup and put on the top of the loaf as a lid. Bake $\frac{1}{2}$ hour in moderate oven and serve with white sauce.—Anna Kinsley.

Oyster Patties.

Cup chopped oysters left from stew, one tablespoonful mashed potatoes, one tablespoonful flour, one egg, salt and pepper. If too dry add little milk. Shape into patties and fry in hot butter.—Mrs. Jos. S. Gerhart.

Escalloped Oysters.

Crush and roll several handfuls crackers, put a layer in the bottom of buttered pudding dish; wet this with a mixture of the oyster liquor and milk, slightly warmed, next a layer of oysters, sprinkle with salt and pepper, and lay small bits of butter upon them, then another layer of moistened

crumbs, and so on until dish is full. Let top layer be of crumbs, thicker than the rest, and beat an egg into milk you pour over them, put pieces of butter on top. Cover the dish, bake $\frac{1}{2}$ hour.—Mrs. A. J. Mielke.

Deviled Oysters.

Put 1 pint oysters with liquid in stew pan and cook until plump and edges begin to curl. Drain. Take $1\frac{1}{2}$ cups of liquor, adding water if not enough. Melt 3 tablespoonfuls butter. Add 4 tablespoonfuls flour, $\frac{1}{2}$ teaspoonful salt, $\frac{1}{2}$ teaspoonful curry powder, $\frac{1}{3}$ teaspoonful paprika. Put in liquor, gradually stirring. Add oysters, 1 teaspoonful Worcestershire sauce, 1 tablespoonful lemon juice, few drops tabasco, salt to taste. Serve on crackers.—Anna Kinsley.

Savory Oysters.

- 2 cupfuls chopped oysters,
- 1 cupful chopped mushrooms,
- 2 tablespoonfuls catsup,
- 2 tablespoonfuls Worcestershire sauce,
- 4 tablespoonfuls butter.

Mix in order given. Pour in buttered ramequins, cover with buttered cracker crumbs; bake until brown.—Helen Starkweather.

Roasted Oysters in the Shell.

Scrub the oyster shells thoroughly, lay them in a large roasting pan with the round side down, so they retain the juices as they cook. They may be roasted in a hot oven, on top of the stove, in a steamer, or under a blaze of a gas stove. When the shells open, remove the upper shell and serve the lower shells. Dust with pepper and salt and squeeze a dash of lemon juice over each. Serve immediately. If desired, they may be slipped from the shells upon slices of buttered toast and the juice poured over.

Scalloped Oysters.

- 1 pint oysters,
- $\frac{1}{2}$ cupful melted butter,
- Pepper and salt,
- 1 cupful stale bread crumbs,
- $\frac{1}{2}$ cupful milk.

Butter the crumbs in the batter. Cover the bottom of a baking dish with bread crumbs, and lay carefully over it the oysters lifted from the liquor. Cover with another layer of crumbs dusted with pepper and salt; then more oysters, and make the top layer crumbs. Strain the oyster liquor, add the milk scalding hot and pour it over the dish. Sprinkle over the top-layer of crumbs. Set it in the oven, and bake till the crumbs are brown.

Creamed Oysters.

1 cupful cream sauce,
1 pint oysters.

Make a cupful cream sauce, season with salt, pepper, paprika, and celery salt. Pick over the oysters, and parboil in their own liquor until they begin to curl. Drain and add to the sauce. Serve on slices of buttered toast, in puff-paste patties, in *vol-au-vent*, or in croustade boxes.

Oyster Pie.

Line a deep dish with good puff paste, not too rich, roll out the upper crust and lay on a plate just the size of pie dish, prick full of holes with a fork, set it on top of the dish and put into the oven, so the crust may be cooked before the oysters are put in. While the crust is baking, strain the liquor from the oysters and thicken. Add 2 tablespoonfuls butter and the same of cracker crumbs, season with salt, pepper, nutmeg, or mace. Let the liquor boil, slip in the oysters, boil it up once, stir, remove plate with the crust, pour the oysters and hot liquor into the pie dish, put the top crust on, and return to the oven for five minutes.

Curry of Lobster.

$\frac{3}{4}$ cupful lobster meat,
1 cupful meat stock,
2 tablespoonfuls butter,
1 tablespoonful flour,
1 teaspoonful salt,
Dash tabasco sauce,
 $\frac{1}{8}$ teaspoonful white pepper,
1 teaspoonful curry powder,
1 tablespoonful minced onion,
3 slices toast.

Cut the lobster into small pieces and season with half the salt and pepper. Put the butter and onion on the fire in a frying pan, and cook until the onion turns straw color; then add the flour and curry powder and stir until brown. Gradually add the stock to this, stirring all the while. Season, and cook for three minutes. Strain this into a saucepan, and add the lobster. Cook for five minutes. Cut the slices of toast in strips and lay in a warm dish. Pour the lobster over these, and serve at once.

Breaded Lobster.

1 large lobster,
1 egg,
1 teaspoonful salt,
 $\frac{1}{2}$ teaspoonful pepper,
Dried bread crumbs,
Fat for frying.

Split the claws and tail and set aside. Take the meat from the large joints and body and chop fine. Mix with this $\frac{1}{4}$ teaspoonful salt and 2 tablespoonfuls tomalley. Shape into three small, flat cakes. Season the lobster with salt and pepper. Beat the egg in a soup plate. Dip the pieces of lobster and the little cakes, one at a time, into the egg; then roll in crumbs, and, after arranging on a plate, put in a cool place. Put the breaded lobster in the frying basket, and cook in fat until crisp and brown. Serve with Sauce Tartare.

Lobster (French style).

Chop an onion and put it in a stewpan with 2 ounces butter; fry light brown; mix with it a tablespoonful flour; add $\frac{1}{2}$ pint milk, a teaspoonful salt, a little pepper and cayenne, nutmeg, and chopped parsley. Boil till rather thick; put in lobster meat cut in pieces. Let it boil up, add yolk of an egg, and a little cream, mix quickly; fill the shells, egg and bread-crumbs them; put in the oven for ten minutes; brown, and serve.

Creamed Lobster.

1 cupful lobster meat,
1 tablespoonful butter,

1 teaspoonful grated onion,
1 tablespoonful flour,
1 cupful stock,
1 tablespoonful lemon juice,
 $\frac{1}{2}$ cupful cream,
Yolk 1 egg.

Cut the lobster meat into inch dice. Put the butter in a saucepan with the grated onion, let them cook a minute, then add the flour. Stir for a few minutes, and add, slowly, the stock and lemon juice. When this thickens, add the lobster meat, turning carefully so as not to break it. When the meat is heated, remove from the fire and mix cream with the yolk of an egg beaten in it. Replace on the fire for a minute, and serve on toast or in timbales.

Rissoles of Lobster.

Mince the meat from a boiled lobster, season with pepper, salt, and a little mace. Add 3 tablespoonfuls melted butter and some bread crumbs; roll into balls, dip in yolk of beaten egg, put more crumbs over them, and fry brown.

Langosta à la Catalana (Mexican recipe).

Remove lobster meat from the shell, lay it in a bowl so as to save all the liquor, and cut into dice. Chop 4 large onions and a bunch of parsley, mash 4 cloves of garlic, and fry together in $\frac{1}{2}$ cupful olive oil until nearly brown. Season with salt and cayenne; add the lobster with the juice, a cupful washed rice, and a tablespoonful of capers. Cook until the rice is done. When serving, put whole pimentos on top.—May E. Southworth.

Lobster à la Newburg.

2 $\frac{1}{2}$ pound cans lobster or meat from one 2 pound lobster.
3 tablespoonfuls butter,
4 egg yolks,
1 pint cream,
 $\frac{1}{2}$ teaspoonful salt,
Few grains cayenne.

Cut up lobster, add butter, set on fire to cook 3 minutes, add seasonings,

eggs and cream and stir until it thickens.—Lelah R. Cheney.

Cangrejueloe (Mexican recipe).

1 teaspoonful butter,
 $\frac{1}{2}$ pound ham,
1 onion,
Dash salt,
Dash chili powder,
1 pint picked shrimps,
 $\frac{1}{2}$ pint washed rice,
1 bay leaf, thyme, and parsley.

Put the butter in a saucepan; when hot, add the ham, chopped fine, onion, salt, and chili powder. When these are well browned, add the shrimps and stir until hot; then put in the washed rice and parsley. Cover and simmer with sufficient water added to cook the rice until each grain stands out alone.

Scalloped Scallops.

Cut scallops into small pieces and mix with cracker crumbs, beaten egg, and a little milk or cream, seasoning to taste. Fill shells, washed for the purpose, cover with buttered crumbs, and bake delicately brown.

Fried Scallops.

Marinate the scallops in a mixture of oil, lemon juice, salt, and pepper. Roll in cracker dust, then in egg, and again in cracker dust or white bread crumbs. Fry in smoking-hot fat to a golden color.

Scallops on the Shell.

Cut scallops into quarters, if large. Place them in the scallop shells. Dredge with salt and pepper, and chopped parsley, cover with chopped mushrooms, some bits of butter, a teaspoonful lemon juice for each shell, and buttered bread crumbs. Place in a hot oven for ten or fifteen minutes.

Soft-Shell Crabs.

To prepare them for cooking, lift the shell at both edges and remove the gray, spongy substance, which can be plainly seen, then pull up the little triangular apronlike piece on under side of shell, wash and wipe

the crabs dry, dip in milk, roll in flour, and fry in hot fat; or dip in beaten egg, roll in crumbs, and either fry or broil.

Partan Pies (a Scotch dish).

Pick the meat, after boiling, from hard-shell crabs, clean the shells, mix the meat with a little pepper, a bit of butter, and bread crumbs; add 3 spoonfuls vinegar and put into the shells again; sprinkle buttered bread crumbs over, and set them in the oven. Serve when brown on top.

Crabs à la Creole (Southern recipe).

2 tablespoonfuls butter,
1 onion,
1 sweet Spanish pepper minced,
1 cupful strained tomato pulp,
 $\frac{1}{2}$ cupful chicken broth,
4 soft crabs.

Melt the butter, and cook for five minutes the onion and pepper; stir while frying, then add the tomato pulp, chicken broth, and the crabs cleaned and cut in two. Use celery salt in the seasoning, and simmer seven minutes.

CHAPTER XIV

MEAT AND FISH SAUCES AND FLAVORERS

BROWND FLOUR—FLAVORING VEGETABLES, HERBS AND SPICES—TIME OF COOKING FLAVORERS—TARRAGON VINEGAR—SAVORY DRIPPINGS—RECIPES FOR FAMOUS SAUCES

SAUCES ¹

The art of preparing savory gravies and sauces is more important in connection with the serving of the cheaper meats than in connection with the cooking of the more expensive.

There are a few general principles underlying the making of all sauces or gravies, whether the liquid used is water, milk, stock, tomato juice, or some combination of these. For ordinary gravy 2 level tablespoonfuls of flour or $1\frac{1}{2}$ tablespoonfuls of cornstarch or arrowroot is sufficient to thicken a cupful of liquid. This is true excepting when, as in certain recipes given elsewhere, the flour is browned. In this case about one-half tablespoonful more should be allowed, for browned flour does not thicken so well as unbrowned. The fat used may be butter or the drippings from the meat, the allowance being 2 tablespoonfuls to a cup of liquid.

The easiest way to mix the ingredients is to heat the fat, add the flour, and cook until the mixture ceases to bubble, and then to add the liquid. This is a quick method and by using it there is little danger of getting a lumpy gravy. Many persons, however, think it is not a wholesome method and prefer the old-fashioned

one of thickening the gravy by means of flour mixed with a little cold water. The latter method is of course not practicable for brown gravies.

Considering the large amount of discussion about the digestibility of fried food and of gravies made by heating flour in fat, a few words on the subject at this point may not be out of order. It is difficult to see how heating the fat before adding the flour can be unwholesome, unless the cook is unskillful enough to heat the fat so high that it begins to scorch. Overheated fat, as has already been pointed out, contains an acrid irritating substance called "acrolein," which may be readily considered to be unwholesome. It is without doubt the production of this body by overheating which has given fried food its bad name. Several ways of varying the flavor of gravies and sauces were suggested in the preceding section. One other should be especially mentioned here.

The Flavor of Browned Flour.

The good flavor of browned flour is often overlooked. If flour is cooked in fat until it is a dark brown color a distinctive and very agreeable flavor is obtained. This flavor combines very well with that of currant jelly and a little jelly added to a brown gravy is a great improvement. The flavor of this should not be combined with that of onions or other highly flavored vegetables.

¹ From "Economic Use of Meat in the Home," by C. F. Langworthy, Ph.D., and Caroline L. Hunt, A.B. Farmers' Bulletin No. 391.

Flavoring Vegetables, Herbs, Spices, Etc.

Many flavorings are used in meat dishes, some of which are familiar to all cooks—onions, carrots, turnips, and garlic being perhaps the most widely known. Butter, too, may be regarded as one of the most common seasonings, and of course makes the dish richer. Meat extract is also used for flavoring many meat dishes and other foods, as are also, though less commonly, similar extracts made from clams or other "sea food." The following list includes these with various others, a number of which it is convenient to keep always on hand: Onions, carrots, green peppers, parsnips, turnips, tomatoes, fresh, canned or dried; celery tops and parsley, either fresh or dried; sage, savory, thyme, sweet marjoram, bay leaf, garlic, lemon rind, vinegar, capers, pickles, olives, currant jelly, curry powder, cloves, peppercorns, celery seed, meat extract, Chili sauce, pepper sauce or some similar hot or sharp sauce and some kind of good commercial meat sauce. Some hints regarding the use of such flavorings follow:

Flavor of Fried Vegetables.—Most of the stews, soups, braised meats, and pot roasts are very much improved if the flavoring vegetables which they contain, such as carrots, turnips, onions, celery, or green peppers, are fried in a little fat before being cooked with the meat. This need not complicate the preparation of the meat or increase the number of utensils used, for the meat itself is usually seared over in fat, and the vegetables can be cooked in the same fat before the browning of the meat.

Onion Juice.—Cookbooks usually say that onion juice should be extracted by cutting an onion in two and rubbing the cut surface against a grater. Considering how hard it is to wash a grater, this method has its drawbacks. Small amounts of juice may be obtained in the following simpler way: Peel the onion and extract a few drops of juice by pressing one side with the dull edge of a knife.

Green Peppers.—The flavor of green peppers gives an acceptable variety. The seeds should always be removed. The peppers should be chopped and added to chopped meat or other meat dishes. Meat mixed with bread crumbs may be baked in the pepper shells and the stuffed peppers served as a separate dish.

Parsley.—It is easy to raise parsley by growing it in a pot in the kitchen window and thus to have it always on hand fresh, or the leaves may be kept for a long time if sealed up in a fruit jar and stored in a cool place. Parsley, mint, and celery tops may all be dried, rubbed into fine bits, and kept in air-tight jars. Recipes usually say to chop fresh parsley with a sharp knife on a board. But a board is a hard thing to wash and a sheet of paper serves the purpose quite as well.

Bay Leaf.—Bay leaf is one of the best and at the same time one of the most abused flavors. In small quantities it gives a very pleasant flavor to soups and gravies but in large quantities it gives a disagreeable resin-like taste. Remember that half of a bay leaf is the allowance for 3 quarts of soup stock. This will indicate how small a quantity should be used for the portion of gravy usually served at a meal. With this precaution in mind, bay leaf may be recommended as a flavoring for many sauces, particularly tomato sauce.

A Kitchen Bouquet.—A "bouquet" such as is often referred to in recipes may be made as follows: A sprig each of parsley, savory, and thyme, one small leaf of sage, and a bay leaf. This will flavor 1 gallon of soup when cooked in it for an hour and should not remain in it longer.

Horse Radish.—Horse radish, like mustard, is more often served with meat than used to flavor it during cooking. A very palatable sauce, especially good with boiled beef, is made by adding grated horse radish and a little vinegar to a little whipped cream, or as follows: Thicken milk with cracker crumbs

by heating them together in a double boiler, using 3 tablespoonfuls of cracker crumbs to $1\frac{1}{2}$ cups of milk. Add $\frac{1}{2}$ of a cup of grated horse radish, 3 tablespoonfuls of butter, and $\frac{1}{2}$ teaspoonful of salt; or thicken with butter and flour some of the water in which the meat was boiled, add a generous quantity (1 or 2 tablespoonfuls) of grated horse radish, boil a short time, and serve. This recipe is the most usual in German homes where the sauce is a favorite.

Acid Flavoring.—Vinegar, lemon juice, and sour jelly, like currant, are often used to flavor the thick gravies which are a part of meat stew or which are served with it. Vinegar is an old-fashioned relish which was often added to bacon or salt pork and greens, pork and beans, corned beef and cabbage, and similar dishes. These flavors combine well with that of brown flour, but not with onions or other vegetables of strong flavor. The idea that vinegar used in small quantities is unwholesome seems to be without foundation.

Pickles.—Chopped pickles are sometimes added to the gravy served with boiled mutton. They are cheaper than capers and serve somewhat the same purpose. Chopped pickles are also very commonly used in sauces for fish and in many others to give a distinctive flavor.

Olives.—Chopped olives also make a welcome variety in meat sauce, and are not expensive if they are bought in bulk. They will not spoil if a little olive oil is poured on the top of the liquor in which they are kept. This liquor should always completely cover them.

Chili Sauce, Commercial Meat Sauces, Etc.—Recipes often may be varied by the addition of a little Chili sauce, tomato catsup, or a commercial meat sauce. These may be called emergency flavors and used when it is not convenient to prepare other kinds of gravies.

Sausage.—A little sausage or chopped ham may be used in chopped beef.

Curry Powder.—This mixture of spices which apparently originated in

India, but which is now a common commercial product everywhere, is a favorite flavoring for veal, lamb, or poultry. The precaution mentioned in connection with bay leaves, however, should be observed. A small amount gives a good flavor. It is usually used to season the thick sauces with which meats are served or in which they are allowed to simmer. While the term "curry" is usually employed to describe a particular mixture of spices made up for the trade it has another meaning. The words "curry" or "curried" are sometimes used to describe highly seasoned dishes of meat, eggs, or vegetables prepared by methods that have come from India or other parts of the East.

Fried Vegetables for Seasoning.

Vegetables when used raw as a seasoning give a strong flavor, and only a little of each should be used. For flavoring soups, sauces, stews, etc., fried vegetables are far superior to the raw. To prepare them for use, clean and peel or scrape the vegetables, then cut them into small pieces, and put in a saucepan with butter or sweet fat, allowing two generous tablespoonfuls of butter to a pint of vegetables. Place on a hot part of the range and stir until the butter and vegetables become hot. Partially cover the saucepan and set back, where the vegetables, which should be stirred often, will cook slowly for half an hour. At the end of this time place the pan on a hot part of the range and stir the contents until the butter begins to separate from the vegetables. Drain the butter, saving it with savory drippings, which every housewife should always have on hand, and add the vegetables to the dish they are to flavor.

Fine Herbs.

In its broadest sense, the term "fine herbs" includes all the delicate, savory herbs, such as burnet, sweet basil, tarragon, and chervil. As commonly understood, three herbs enter into the seasoning known to

cooks as "fine herbs"; these are parsley, chervil, and chives. They are minced fine and added to the sauce, soup, omelet, etc. For an omelet, they are stirred into the beaten eggs in the proportion of a teaspoonful to three eggs. When added to sauces, the herbs must be added just as they are about to be served. These three herbs combine well with almost any vegetable, fish, or meat. In general, herbs should be washed, placed on a clean board, and cut with a sharp knife.

Chervil and tarragon when employed in soup or salad should be torn leaf by leaf into small pieces.

Time of Cooking Flavorers.

When a soup, sauce, or vegetable is to be flavored with an herb or another vegetable the flavorer should be added toward the end of the cooking period. Since the oils and other bodies which give seasoning vegetables and herbs their flavor are volatile they are either driven off by long-continued cooking or rendered much less delicate in flavor. Herbs that are to be left in the dish or served with the dish must be added just before the food is served. The herbs generally served with the dish are chervil, parsley, tarragon, and chives.

Burnet, thyme, summer savory, sage, and sweet basil are cooked with the dish a short time, not over twenty minutes, and are then removed.

The little bunch of mixed herbs, the "bouquet garni," so often referred to in cook books, is made with two branches of parsley, a sprig each of thyme and summer savory, a small leaf of sage, and a small bay leaf, all tied together. This is cooked with the dish from ten to twenty minutes, then removed. The bay leaves must be purchased at the grocer's. Turnips, carrots, parsnips, celery, leeks, cibol, onions, etc., when used just as flavorers, should be tied in a bunch and cooked twenty or thirty minutes in the dish and then be removed.

When shallot and garlic are used they should be separated into "cloves," and then cut fine. One clove will be enough for a small quan-

tity of soup, sauce, or ragout. Never fry shallot or garlic. Cook in the dish to be flavored about ten minutes, then remove.—Maria Parloa.

Tarragon Vinegar.

Strip about three ounces of leaves from the branches of tarragon; put into a quart fruit jar and fill with good vinegar. Close and let stand for about twenty days, then strain. The best vinegar to use for this purpose is white wine vinegar, but good cider vinegar will also answer. The best time to make tarragon vinegar is about the last of August, when the plants are large and vigorous. Tarragon vinegar may be used for salads and sharp sauces, when the fresh herb is not available.—Maria Parloa.

Butter with Vegetables.

It is almost universally conceded that vegetables require the addition of fat in order that they may be at their best, and there is no fat which is so suitable as butter for the majority of vegetables, judged by the texture of the dish and also by the flavor.

The American housekeeper has a way of looking upon the use of butter, milk, cream, and eggs in the preparation of vegetables, soups, and sauces as if these ingredients were simply "trimmings" and not food. But it should be remembered that these articles are valuable foods and naturally increase the food value of the dish of which they form a part. They are all wholesome, and, although almost always more expensive than the vegetable foods with which they are combined, their use in reasonable quantities is certainly to be recommended.

Increasing the cost of the dish by the free use of butter, cream, etc., may after all be economy if the increase is intelligently made, and the vegetable soups, purées, etc., made "hearty" as well as appetizing by the addition of butter, eggs, etc., are combined with smaller quantities of meat and with light and simple desserts.—Maria Parloa.

Savory Drippings.

As a substitute for butter in seasoning vegetables there is nothing better than sweet, savory drippings. Not all meats supply fats that are savory in the sense in which the word is employed here. The following fats may be employed alone or in combination for seasoning vegetables: The fat from fried sausages, ham, bacon, and pork, and from roast pork, veal, and chicken. Fats trimmed from poultry, veal, pork, and ham may be fried out carefully and saved for use in cooking vegetables. Such fats have a flavor which comes from seasoning, as in sausage, from smoke, as in ham and bacon, or from brown material, as in roast meat. The fat skimmed from the water in which poultry has been boiled and the fats skimmed from the gravies of most roast meats may be clarified and also employed in the preparation of vegetables for the table. Great care must be taken that all these fats are clean and sweet, and that the temperature at which they are fried out shall not be so high as to impair the flavor. Burned or scorched fat is not only unpleasant in flavor, but is a frequent cause of indigestion.

When rendering the trimmings of fat meat, add a small onion or a shallot (do not cut them), a few leaves of summer savory and thyme, a teaspoonful of salt, and a little pepper. This seasoning is enough for half a pint of fat. Keep the drippings covered, and in a cool, dry place.—Maria Parloa.

FAMOUS MEAT AND FISH SAUCES

Celery Sauce.

- 2 tablespoonfuls flour,
- 2 tablespoonfuls butter,
- 2 cupfuls milk,
- 3 cupfuls celery, cut in thin slices.

Boil celery in salted water until soft. Mix smoothly flour, butter, and milk, stir until boiling; add the celery pulp, season with salt and pepper and a little mace; let it boil quickly for two minutes. Strain.

Anchovy Sauce.

Bone 4 anchovies and bruise in a mortar to a smooth paste; stir them in 1 cupful drawn-butter sauce, simmer five minutes, or stir in 1 teaspoonful essence of anchovy. A little cayenne is an improvement.

Cardinal Sauce.

- 2 tablespoonfuls butter,
- 2 tablespoonfuls flour,
- 2 cupfuls lobster stock,
- $\frac{1}{2}$ teaspoonful onion juice,
- 1 bay leaf.

Cardinal sauce is, as a rule, made from lobsters and colored with coral; so, if possible, purchase lobsters containing coral. Boil the lobster, open and remove the coral, and press it through a sieve. Put the butter into pan and let melt. Add flour without browning, then add stock, onion juice, and bay leaf. Stir constantly until it boils. Take out bay leaf, add salt and pepper, the coral, and a little of the red part of the lobster chopped fine.

Sauce Soubise.

- 3 onions,
- 2 tablespoonfuls butter,
- 2 tablespoonfuls flour,
- 1 cupful fish stock,
- $\frac{1}{2}$ cupful cream or milk.

Peel and chop onions, simmer with butter for three quarters of an hour, but do not let them color. Add flour, salt, pepper, and a pinch of mace, and mix all together; moisten with a cup of fish liquor and $\frac{1}{2}$ cupful of hot cream or milk. Serve with mutton, pork chops or hard cooked eggs.

Sauce Allemande.

- 4 tablespoonfuls butter,
- 4 tablespoonfuls flour,
- 2 cupfuls white stock,
- Yolks 3 eggs.

Melt butter and mix thoroughly with flour over a gentle fire; add stock and a little salt and pepper; stir, boil fifteen minutes, remove from fire, skim off grease carefully, add eggs mixed in a little water, and stir

in with egg beater to make sauce light.

Spanish Sauce.

- 4 tablespoonfuls butter,
- 4 tablespoonfuls flour,
- 2 cupfuls brown stock,
- 2½ tablespoonfuls chopped lean raw ham,
- 2 tablespoonfuls chopped carrots,
- 1 tablespoonful chopped onion,
- 1 stalk celery, chopped,
- 2 cloves.

Melt butter in saucepan, add flour, and stir over a gentle fire until nicely browned; mix with stock, ham, carrot, onion, celery, cloves, a pinch of salt and pepper; stir until beginning to boil, then simmer gently on back of stove for one hour; skim off fat before serving.

Sauce Piquante.

- 4 tablespoonfuls butter,
- 1 small carrot,
- 6 shallots,
- Parsley,
- ½ bay leaf,
- 2 slices lean bacon,
- 2 cloves,
- 6 peppercorns,
- 1 blade mace,
- 3 allspice berries,
- 4 tablespoonfuls vinegar.
- 1 cupful stock,
- ½ teaspoonful sugar,
- Cayenne and salt to taste.

Put the butter into saucepan with the carrot and shallots cut into small pieces, add the bay leaf, spices, and bacon minced fine; let these ingredients simmer slowly until the bottom is covered with a brown glaze, keep stirring and put in remaining ingredients, simmer gently fifteen minutes, skim off every particle of fat. This is an excellent recipe when a sharp but not too acid sauce is required.

Cucumber Cream Sauce.

- 1 cucumber,
- ½ teaspoonful salt,
- ½ teaspoonful chopped parsley,
- ½ teaspoonful chopped onion,
- 1 tablespoonful tarragon vinegar,
- ¾ cupful cream.

Chop cucumber, season with salt, parsley, onion, and vinegar. Mix thoroughly and drain in colander half an hour. When ready to serve, add cream beaten stiff.

Sauce Tartare.

- 1 cupful mayonnaise,
- 2 sweet pickled cucumbers,
- 3 olives,
- 1 tablespoonful chopped water cress,
- 1 teaspoonful capers,
- ½ teaspoonful onion juice.

Stir into the mayonnaise the cucumbers, olives, water cress, capers, and onion juice.

Brown Sauce.

- 1 tablespoonful butter,
- 1 tablespoonful flour,
- 2 cloves,
- 1 bay leaf,
- 1 teaspoonful chopped onion,
- 1 teaspoonful chopped parsley,
- 1 cupful brown stock.

Heat stock; blend together butter and flour, add to hot stock with cloves, bay leaf, parsley, and onion. Cook for a few minutes. Strain, and serve hot.

Hollandaise Sauce.

- ½ cupful butter,
- Yolks 2 eggs,
- ½ cupful boiling water,
- ¼ teaspoonful salt,
- Dash cayenne,
- 1 tablespoonful lemon juice.

Wash and divide butter into three parts. Put one part with yolks of eggs and lemon juice in saucepan over hot water, stir constantly until butter is melted; add second piece of butter, and, as it thickens, third piece. Add water, cook one minute and season. Serve.

Bechamel Sauce.

- 1½ cupfuls white stock,
- 1 slice onion,
- 1 slice carrot,
- Bit bay leaf,
- Sprig parsley,

6 peppercorns,
4 tablespoonfuls butter,
4 tablespoonfuls flour,
1 cupful scalded milk,
Salt and pepper.

Cook white stock twenty minutes with onion, carrot, bay leaf, parsley, and peppercorns, then strain. It should be cooked down to about 1 cupful liquor. Melt butter, add flour, add the hot sauce to scalded milk, and season.

White Mushroom Sauce.

4 tablespoonfuls butter,
1 slice carrot,
1 slice onion,
Bit bay leaf,
Sprig parsley,
6 peppercorns,
4 tablespoonfuls flour,
2 cupfuls white stock,
 $\frac{1}{2}$ can mushrooms,
 $\frac{1}{2}$ teaspoonful lemon juice,
Salt and pepper.

Melt butter, add carrot, onion, bay leaf, parsley, peppercorns, flour, and, slowly, white stock. Cook five minutes, strain, and add mushrooms cut in pieces. Add lemon juice, salt, and pepper.

Shrimp Sauce.

1 cupful shrimps,
1 tablespoonful butter,
 $1\frac{1}{2}$ tablespoonfuls flour,
Salt, pepper, paprika,
1 teaspoonful anchovy paste.

Pound shrimps, skins and all, in a mortar. Boil afterwards for ten minutes in a cupful water. Press the liquor through a purée strainer. Mix butter and flour to a paste; pour shrimp liquor in slowly, and cook three minutes. Season with salt, pepper, and paprika; add anchovy paste. Just before serving, add six shrimps cut in inch pieces.

Drawn-Butter Egg Sauce.

1 tablespoonful butter,
1 tablespoonful flour,
1 cupful fish stock,
6 slices hard-boiled egg,
Salt and pepper.

Cook together until well mixed the butter and flour. Add fish stock. Simmer five minutes, season with salt and pepper, add sliced egg and serve.

Thin White Sauce.

2 cupfuls milk,
2 tablespoonfuls butter,
3 tablespoonfuls flour,
Pepper and salt.

Put the butter in a small saucepan, and let it melt over a slow fire. Add the flour, and blend to a paste with a wire whisk. Add the seasonings, then the scalded milk, and beat till the sauce gets creamy, boiling three minutes.

Tomato Sauce.

$\frac{1}{2}$ can tomatoes,
1 slice onion,
Bit bay leaf,
4 peppercorns,
 $\frac{1}{2}$ cupful butter,
4 tablespoonfuls flour,
Pepper and salt.

Cook the tomatoes with onion, peppercorns and bay leaf for fifteen minutes, rub through a strainer and to the pulp add the butter and flour rubbed to a paste, also the seasoning, bring to the boiling point, and beat till creamy.

Horse-Radish Sauce.

$\frac{1}{2}$ cupful grated horse-radish,
4 tablespoonfuls powdered cracker crumbs,
 $\frac{1}{2}$ cupful cream,
1 tablespoonful powdered sugar,
 $\frac{1}{2}$ teaspoonful mustard,
1 tablespoonful vinegar,
1 teaspoonful salt,
 $\frac{1}{2}$ teaspoonful pepper.

Blend all the ingredients together, heat over boiling water, and serve with boiled beef.

Cold Horse-Radish Sauce.

3 tablespoonfuls grated horse-radish,
1 tablespoonful vinegar,
Dash cayenne,
 $\frac{1}{2}$ teaspoonful salt,
 $\frac{1}{2}$ cupful thick cream.

Mix the horse-radish, vinegar, and seasonings, then beat in with a fork the cream, which has been beaten stiff.

Mint Sauce.

$\frac{1}{2}$ cupful sugar,
 $\frac{1}{2}$ cupful vinegar,
 $\frac{1}{2}$ cupful finely chopped mint leaves.

Add mint leaves to the vinegar, melt the sugar in a tablespoonful boiling water, add it to the sauce, and serve cold with roast lamb.

Tomato Sauce.

Cook one pint of peeled and cut tomatoes ten minutes, then rub through a strainer. Beat in a saucepan until smooth and light two tablespoonfuls of flour and two tablespoonfuls of butter. Gradually beat the hot tomato into this. Add the salt and pepper and cook ten minutes. This sauce may be served with macaroni, rice, etc., as well as with fish and meat. The flavor of the tomato sauce may be modified by the addition of onion, spice, or herbs.—Maria Parloa.

Pepper and Onion Sauce.

Cut 2 large onions into small dice, remove seeds from 2 green peppers, cut in rings, and fry onions and peppers together. Season with salt and pepper and serve with meat.—Verna Banta.

Horse-Radish Sauce.

To every 4 tablespoonfuls grated horseradish add 1 teaspoonful powdered sugar, $\frac{1}{2}$ teaspoonful salt, $\frac{1}{2}$ teaspoonful white pepper, 2 teaspoonfuls prepared mustard, and enough vinegar to make it of the consistency of cream. To add 3 or 4 tablespoonfuls of cream greatly improves the flavor.—Verna Banta.

Homemade Mustard.

1 tablespoonful ground mustard,
 2 tablespoonfuls flour,
 2 tablespoonfuls sugar,
 Pinch salt,
 Equal parts of vinegar and water

to make a thin smooth paste,
 1 well-beaten egg.

Thin to suit your taste with vinegar and water.—Mrs. B. H. Baker.

Cucumber Sauce.

1 eup cream,
 $\frac{1}{2}$ teaspoonful salt,
 1 medium sized cucumber pared, diced, and drained.
 3 tablespoonfuls vinegar.

Beat the cream, slowly add the seasonings, and vinegar, and add the cucumber just before serving.—Anna Kinsley.

Cream Mustard Sauce.

Make the cream sauce as directed above. Mix one tablespoonful of mustard with a teaspoonful of cold water and stir into the sauce about two minutes before serving. The quantity of mustard may be increased or diminished, as one may desire the flavor strong or mild.—Maria Parloa.

White Sauce.

This sauce is made like the cream sauce, except that half a pint of white-meat broth is substituted for the milk, and two tablespoonfuls of flour instead of one are used. The saucepan is put directly on the stove and the sauce is simmered ten minutes. White sauce, like cream sauce, may be modified by the addition of other flavors.—Maria Parloa.

Cream Sauce.

$\frac{1}{2}$ pint milk,
 1 tablespoonful butter,
 1 tablespoonful flour,
 $\frac{1}{2}$ teaspoonful salt,
 $\frac{1}{2}$ teaspoonful pepper.

Heat the milk over boiling water; beat the butter and flour to a cream and stir into the hot milk. Cook five minutes, then add salt and pepper, and use. This sauce is suitable for boiled cauliflower, potatoes, carrots, etc. It is also a good sauce for escalloped dishes. This sauce may be modified by the addition of flavoring herbs.—Maria Parloa.

CHAPTER XV

EGGS AND EGG DISHES

BOILED EGGS—BAKED EGGS—POACHED EGGS—FRIED EGGS
—FANCY EGG DISHES—OMELETS, ETC., ETC.

WHEN we consider that nine eggs are equal in nutritive value to a pound of meat, we realize they are not only capable of forming a most important item in everyday diet, but also an economical food during the season when eggs are cheap. Even when eggs are expensive, it is economy to use only the best grade. Eggs that cost fifty cents a dozen are cheaper than eggs at twenty-five cents provided half of the dozen are stale or worse.

There are a number of household tests of the freshness of eggs. The most reliable is to candle them. Hold the egg in the hand with the fingers wrapped about it and look through it against a bright light. In a perfectly fresh egg, you can see the yolk like a golden ball. The white about it will be clear as water. Or you may drop an egg into a basin of water; if perfectly fresh, it will sink and rest on its side. If it rolls around standing on its end, it is comparatively fresh; if it floats, you would better discard it unopened. When an egg is perfectly fresh it has a porous, dull surface; if shiny, it is pretty sure to be at least stale.

There are three ways in which eggs are generally used for breakfast or luncheon dishes: in a soft-cooked condition as in a poached egg; hard-boiled as in a salad; or with the yolk and white separated and beaten to a froth as in an omelet. Eggs are quickest digested in the soft-cooked stage, but to many are difficult of digestion when hard-boiled. Eggs

are deficient in fat; therefore they should be served with bacon, with an oil mayonnaise in salad, or with bread and butter. Indeed, their highly concentrated, nutritive properties demand always an accompaniment of some starchy food, such as potatoes or bread.

To Preserve Egg Yolks.

Often after baking, several egg yolks are left over. They will keep fresh for days without drying if put in a cup and covered with cold water. The membrane about the yolk must not be broken.—Lillie Nelson.

To Boil Cracked Eggs.

When boiling a cracked egg add a teaspoonful of salt to the water, and you will find that it cooks without any of the white leaving the shell.—Helen A. Lyman.

Soft Cooked Eggs.

Drop eggs into boiling water, and place where they will keep below the boiling point (180 degrees) for six or eight minutes. The whites should be soft and jelly like, and the yolks soft, but not liquid.

Hard Cooked Eggs.

Cook twenty or twenty-five minutes, in place where they will keep below the boiling point (180 degrees)—a double-boiler is a good utensil to use.

Baked Eggs.

Eggs (as many as needed),
Crackers,

2 tablespoonfuls milk to each egg,
Butter,
Salt,
Pepper.

Grease a gem pan well and break an egg into each cup or as many as you need. Cover with a thin layer of crackers. Add salt and pepper to taste, a small piece of butter and milk. Bake until done. Serve at once.—Zilda Southard.

Poached Eggs.

A deep spider is the best utensil in which to poach eggs. Fill it nearly full of boiling water which has been slightly salted. Break in a saucer, and drop into boiling water, cooking slowly, until the whites are like jelly.

Poached Eggs Ball-Shaped.

Have a shallow saucepan half full of water; add salt and a few tablespoonfuls of vinegar. When the water is boiling, stir with a wooden spoon until you start a sort of whirlpool, then into the center of it drop an egg from a cup. The egg will cook in a rounded form. When the white is set, lift it from the water and set it on a slice of toast.

Eggs Poached in Milk.

Instead of using water to poach eggs, drop them into boiling milk; as soon as the egg is set, lay it on a slice of toast. Thicken the milk with a little flour, add butter, salt, pepper, and a dash of celery salt; pour it over the eggs and around the toast.

Frizzled Beef with Poached Eggs.

$\frac{1}{2}$ pound finely chipped beef,
1 cupful milk,
1 tablespoonful butter,
1 tablespoonful flour.

Put the butter to melt in a saucepan, add the flour and stir it to a paste, then put in the milk, scalding hot, and beat with a wire whisk until creamy. Add the beef and stir for a few minutes. Turn into a deep platter and cover the top with poached eggs.

Eggs in Ramequins.

Butter small ramequins and drop a raw egg into each one, being careful that it remains whole. Set the ramequins in a pan of boiling water and put it in a hot oven until the eggs are set. Put a dab of butter on each one and a dust of pepper and salt before taking from the oven.

Eggs Baked in Tomatoes.

Pick out several well-shaped tomatoes, cut off the stem ends, and with a spoon lift out enough of the pulp so that each shell will hold an egg. Drop it in carefully, sprinkle with pepper and salt, put a dab of butter on top of each; place the tomatoes in a baking dish and pour the water around them. Cook until the eggs are set and the tomatoes soft. Lift each one on a slice of buttered toast, and serve.

Eggs Baked in Green Peppers.

Cut off the stems of green peppers, scoop out the seeds and ribs, and par-boil until tender. Break an egg into each one. Set them in a baking pan with $\frac{1}{2}$ cupful boiling water poured around. In fifteen minutes the eggs should be firm. Set each one on a slice of buttered toast and, if you wish, pour white sauce or tomato sauce about them.

Eggs in Tomato Sauce (Spanish recipe).

Cover the bottom of an earthen baking dish with well-seasoned tomato *purée*. Arrange on it poached eggs, leaving spaces to show the red color. Lay between the eggs small sausages, already cooked. Place a bit of butter on each egg and set the dish in the oven to heat.

Eggs with Bread Sauce.

1 cupful bread crumbs,
 $1\frac{1}{2}$ cupfuls milk,
 $\frac{1}{2}$ teaspoonful salt,
 $\frac{1}{2}$ teaspoonful onion juice,
6 eggs.

Put the bread crumbs in a saucepan, then add the milk, salt, a dash of cayenne, and the onion juice.

Simmer slowly till thick and smooth, beating several times with a spoon. Pour the sauce into a broad, shallow dish and break the eggs carefully over it. Place in a hot oven until they are set.

Eggs on Rice.

Butter a baking dish, fill it half full with well-seasoned boiled rice; make as many depressions in the rice as there are people to be served; break an egg into each one, sprinkle with salt and strew with bits of butter. Bake until the eggs are set.

Eggs and Mushrooms.

$\frac{1}{2}$ cupful milk,
1 pound mushrooms,
1 tablespoonful butter,
6 poached eggs,
Dash tabasco sauce.

Peel and wash the mushrooms; place them in a saucepan and cook gently, with the butter, milk, a pinch of salt and tabasco. Cook ten minutes, thicken with flour, let come to a boil, then pour on a hot platter. Have your poached eggs ready; serve on top of the sauce, the mushrooms being in the middle.

Cheesed Eggs.

Place in a baking dish a tablespoonful butter and several slices rich cheese. When it is melted, break whole eggs into it; put the dish into the oven. When the white sets, sprinkle grated cheese and pepper on them. Brown on top, and serve.

Eggs à la Bonne Femme (French recipe).

Cut an onion in thin slices; fry with a tablespoonful butter; add a tablespoonful vinegar; then butter a dish lightly, spread the onions over it, break in the eggs, and put the dish in the oven. When the eggs are done, strew over them fried bread crumbs, and serve hot.

Eggs in Nests.

Separate as many eggs as are needed for this dish and beat the whites to a stiff froth. Drop irregularly

on a flat buttered baking dish, dust with pepper and salt here and there, in the middle of the white, slide in carefully the raw yolks. Put a tiny bit of butter on each yolk. Place the dish in a hot oven until the egg is set. Serve immediately. If desired, the froth may be piled into individual dishes with the yolk in the center of each and baked as described.

Soft Cooked Eggs.

Put into a saucepan where the water is boiling, move to the back of the stove, and if you wish them soft, let them stand in the hot water for seven minutes.

Poached Eggs with Greens.

For this dish use outer leaves of lettuce; wash them thoroughly and boil until tender in salted water. Drain, chop fine, and season with salt, pepper, and butter. Toast a few slices of bread, butter them, cover with the chopped greens, and on top of each drop a poached egg.

Fried Eggs.

Fry thin slices of bacon to a crisp, lift them out and lay on a hot platter. Break into the pan as many eggs as you need; let them cook until the white is set, and baste with hot fat till a film forms over the yolk. If you like them turned, run a knife under each and reverse quickly. Serve on a platter with the crisp bacon.

Fried Eggs with Brown Sauce.

Fry eggs in butter in a spider, lift them and keep hot over boiling water. If there is not enough gravy in the pan, put in a little more butter, 1 tablespoonful vinegar, a dash of onion juice, salt, pepper, and a few drops of tabasco sauce. Thicken slightly with flour, beat till creamy, and strain the brown gravy over eggs.

Baked Soufflé of Eggs.

6 eggs,
1 cupful milk,
1 tablespoonful butter,
Pepper and salt.

Scald the milk in a double boiler, add to it the yolks of eggs, beaten till thick, also the butter and seasonings. When the mixture begins to thicken like a custard, stir in the whites of eggs, beaten to a stiff froth. Pour into a deep buttered baking dish and bake in a moderate oven till puffy and brown. Serve immediately.

Scrambled Eggs.

4 eggs,
 $\frac{1}{2}$ teaspoonful salt,
 Dash pepper,
 6 tablespoonfuls milk,
 1 tablespoonful butter.

Whip the eggs just enough to break them up; they do not need to be light or frothy. Heat the butter in the top of the double boiler. Put in the eggs and milk, beat with a silver fork until the eggs are cooked. Serve very hot.

Deviled Eggs.

5 hard-boiled eggs,
 $\frac{1}{2}$ cupful white sauce,
 Salt and pepper,
 Dash tabasco sauce,
 2 tablespoonfuls grated cheese.

Chop the eggs coarsely, sprinkle the cheese through them, and toss the mixture together with a fork. Add the seasonings, then stir in the sauce. Put in a saucepan, simmer gently for a few minutes, and serve on slices of buttered toast.

Eggs Farci (French recipe).

6 hard-boiled eggs,
 $\frac{1}{2}$ teaspoonful onion juice,
 Pepper and salt,
 4 tablespoonfuls stale bread crumbs,
 2 tablespoonfuls chopped parsley,
 $\frac{1}{2}$ cup white sauce,
 Dash tabasco sauce.

Shell the eggs, cut them in halves lengthwise, remove the yolks and mash them. Add the bread crumbs, soften with a little milk, the seasonings, and parsley. Mash the yolk and bread mixture together till pasty, fill it into the whites of the eggs,

and with what is left make a small mound in a baking dish; set the stuffed eggs on top, pour a white sauce over them, and set in the oven till piping hot.

Curry of Eggs.

6 hard-boiled eggs,
 1 tablespoonful flour,
 1 tablespoonful butter,
 1 tablespoonful curry powder,
 $\frac{1}{2}$ teaspoonful onion juice,
 Pepper and salt,
 1 cupful veal or chicken stock.

Melt the butter in a saucepan, blend with the flour, put in the stock and seasoning, and beat the sauce till creamy. Lay on eggs cut in slices, cook to the boiling point, and serve hot on buttered toast.

Eggs Lucanian (Italian recipe).

5 eggs,
 1 cupful cooked macaroni,
 $\frac{1}{2}$ cupful grated cheese,
 1 $\frac{3}{4}$ cupfuls white sauce,
 $\frac{1}{2}$ cup buttered crumbs.

Boil the eggs hard, cutting in sixths, lengthwise, then add the macaroni, cheese, and sauce; season with salt, paprika, onion juice, and anchovy essence. Turn into a buttered baking dish, cover with buttered crumbs, and set in the oven long enough to brown the crumbs.

Eggs à la Cuba (Spanish recipe).

4 tablespoonfuls sausage meat,
 1 teaspoonful minced onion,
 8 eggs.

Cook the sausage meat and minced onion for five minutes over a hot fire. Beat the eggs until light and add to the meat and onion; season with salt and pepper; stir until the eggs become thick. Serve on slices of hot, buttered toast.

Egg Croquettes.

6 eggs,
 $\frac{1}{2}$ can mushrooms,
 2 cupfuls milk,
 3 tablespoonfuls of butter,
 6 tablespoonfuls of flour.

Boil the eggs hard; chop the whites and add the mushrooms (which should be drained from liquor). Mash the yolks of the eggs through a press. Scald the milk; rub together until smooth the flour and butter; add to the milk and stir until it thickens; add the yolk of one raw egg, the whites and yolks of the boiled eggs, mushrooms, and salt and pepper to taste. Stir quickly, take from the fire, and put away to cool. When thoroughly cold, form into croquettes; dip in egg and bread crumbs and fry in smoking hot fat. Garnish with parsley, and serve.

Daffodil Eggs with Spinach Border.

- 8 small rounds of toast,
- 2 cupfuls of creamed spinach,
- 4 hard cooked eggs,
- $\frac{1}{2}$ teaspoonful of salt,
- A dash of white pepper.

Place small rounds of toasted bread on a hot platter, on each put a tablespoonful of creamed spinach, covering the bread. Cut the whites of four hard cooked eggs into small pieces and put through a fruit press, or chop fine. Cover the spinach with the whites of eggs. The yolks are grated and sprinkled over the top. Add salt and pepper. Warm in oven. Garnish with parsley.—Willie Clifford Scott.

Egg Vermicelli.

Separate the yolk from the white of hard cooked eggs. Chop the white fine, and mix it with thin white sauce made according to the following recipe. Pour it on the toast and rub the yolk through a strainer over the top.

White Sauce.

- 1 cup milk, scalded,
- $\frac{1}{2}$ tablespoonful butter,
- 1 tablespoonful flour,
- 1 saltspoonful salt,
- $\frac{1}{2}$ saltspoonful pepper.

Melt butter. When bubbling hot, add flour and seasoning. Add hot milk, one-third at a time, stirring it smooth and letting it boil each time before adding more milk.

Eggs à la Goldenrod.

- 1 cupful of rice,
- 4 hard cooked eggs,
- 2 tablespoonfuls of butter,
- 2 tablespoonfuls of flour,
- 1 cupful of milk,
- 1 level teaspoonful of salt,
- A dash of white pepper,
- A dash of paprika.

Wash the rice and boil for 25 minutes. Drain, blanch, spread it on a platter and sprinkle it with one teaspoonful of salt. Make a sauce of butter, flour and milk. Chop the whites of the eggs very fine and add to the sauce and pour the cream sauce on the rice. Garnish the rice with grated egg yolks, parsley and paprika.—Willie Clifford Scott.

Eggs à la Goldenglow.

- 3 hard cooked eggs,
- 1 tablespoonful flour,
- 1 tablespoonful butter,
- 1 cup milk,
- $\frac{1}{2}$ teaspoonful salt,
- $\frac{1}{8}$ teaspoonful pepper,
- 5 slices of toast,
- Parsley.

Make a thin white sauce of butter, flour, milk and seasonings. Separate yolks from whites of eggs. Chop whites finely and add them to the white sauce. Cut four slices of toast in halves lengthwise, arrange on platter and pour over sauce. Force yolks through a strainer sprinkling over top. Garnish with parsley and toast points. Cut bread into points and then toast; making toast points for garnishing.—Zilda Southard.

Eggs à la Caracas.

Chop two ounces dried beef very fine, one cupful canned tomatoes, liquid drained off, ten drops onion juice, one-fourth teaspoonful paprika, a dash of cinnamon, a dash of cayenne, two tablespoonfuls grated cheese, one tablespoonful of butter.

Put in chafing dish and when smoking hot add three well-beaten eggs.—Mrs. M. L. Judd.

Scrambled Eggs with Mushrooms.

- 1 tablespoonful butter,
- 1 can mushrooms,
- 5 eggs,
- Pinch of salt,
- 5 tablespoonfuls sweet milk,

Fry mushrooms in the butter, beat the eggs well and add the milk and salt. Pour over mushrooms and scramble all together.—Ola Miller.

Parisian Omelet.

Beat yolks of 5 and whites of 3 eggs together. Season with salt and pepper, add $\frac{1}{2}$ cup milk, and the beaten whites of 2 eggs. Heat 1 tablespoonful butter in a skillet. Pour in the mixture. Cook over slow heat, when brown fold and turn out onto a hot platter.—Gertrude B. Day.

Plain Omelet.

2 eggs, 2 tablespoons milk, salt and pepper to taste, beat all together slightly, brush omelet pan with oil, heat this without burning, pour in mixture, shake constantly and with a fork lift up cooked portion, allowing uncooked part to flow under. Cook until soft and creamy, fold over, and turn out on hot plate.—Mrs. A. J. Mielke.

Omelet.

- 1 egg,
- $\frac{1}{2}$ teaspoonful butter,
- $\frac{1}{2}$ saltspoonful salt—speck of pepper,
- 1 tablespoonful milk or water.

Separate egg, beat thoroughly, yolk creamy, white stiff. Add milk, salt, and pepper to yolk; fold in white. Melt butter in omelet pan. Pour in the mixture. When firm on the bottom, place in the oven and finish.

Omelet Rudolph (German recipe).

- 2 tablespoonfuls butter,
- 1 raw onion,
- 1 tablespoonful salt pork,
- 1 tablespoonful roast beef,
- 2 mushrooms,
- 1 tablespoonful tomato sauce,
- 1 tablespoonful grated bread crumbs,
- Dash tabasco sauce.

Into a saucepan put the butter and raw onion chopped very fine; add the salt pork, which has been slightly cooked, the beef, mushrooms, a pinch of salt, chopped parsley and tabasco, cook together for two minutes, then stir in the tomato sauce and bread crumbs. Make a plain omelet; when cooked, spread with the above mixture and turn over carefully.

Plain Omelet.

- 4 eggs,
- 4 tablespoonfuls hot water,
- 1 tablespoonful butter,
- Pepper and salt.

Separate the whites from the yolks, beat the yolks with an egg beater till thick, and the whites until stiff. Add the water to the yolks and cut in the whites. Heat the omelet pan and butter the bottom and sides. Turn in the mixture and spread evenly, cook slowly, turning the pan around that it may brown all over. When puffed and delicately browned on the bottom, take it from the fire and set on the grate of the oven for a few minutes to finish cooking. Press with your finger; if none of the mixture clings, it is cooked. Score lightly down the center, and fold, put on a hot platter.

Bread Omelet.

- 6 eggs,
- 3 tablespoonfuls stale bread crumbs,
- 1 cupful milk,
- Pepper and salt,
- $1\frac{1}{2}$ tablespoonfuls butter.

Scald the milk, pour over the crumbs and allow it to soak, beat the whites and yolks separately until very light. Stir the crumb mixture into the yolks, add the seasoning, then cut in with a palette knife the whites beaten to a stiff froth. Pour into a deep buttered baking dish and bake in a hot oven till browned on top.

Bread Omelet.

- 4 eggs,
- 1 cupful bread crumbs, soaked in milk,

- 1 saltspoonful salt,
- $\frac{1}{2}$ saltspoonful pepper,
- 1 tablespoonful minced onion.

Drain off unnecessary milk; add eggs well beaten, and seasonings. Cook in buttered pan, placing in oven to finish. Serve with meat sauce.

Bread Omelet.

- 1 cupful bread crumbs, soaked in milk,
- $\frac{1}{2}$ minced onion,
- 1 tablespoonful parsley,
- 1 egg,
- 1 saltspoonful salt,
- $\frac{1}{2}$ saltspoonful pepper.

Drain off unnecessary milk; add egg well beaten, and seasonings. Cook in buttered pan, placing in oven to finish. Serve with meat sauce.

Oyster Omelet.

- 12 oysters,
- 3 tablespoonfuls cream,
- 3 tablespoonfuls strained oyster liquor,
- Pepper and salt,
- 1 tablespoonful butter,
- 1 tablespoonful flour.

For this dish, prepare the oyster filling before beginning to cook the omelet. Strain the oysters and cut them with a scissors into small pieces. Make a white sauce from the butter, flour, oyster liquor, cream, and seasonings. When hot and creamy, put in the chopped oysters and cook a few minutes. Set the sauce over boiling water to keep hot while making the omelet. When ready, pour over the oyster mixture, fold, and serve immediately.

Cheese Omelet.

Over an omelet, when ready to fold, sprinkle grated cheese with a little seasoning. Slip out on a hot platter

and sprinkle again with cheese. Set in a hot oven for a few minutes before serving.

Ham Omelet.

Over the top of an omelet, before the egg begins to set, sprinkle $\frac{1}{2}$ teacupful minced ham; let it cook for a minute or two longer, then set in the oven as directed, and serve hot.

Bismarck Omelet (German recipe).

- $\frac{1}{4}$ pound bacon,
- 8 eggs,
- 6 tablespoonfuls of milk.

Fry the bacon cut in dice; beat the eggs with milk, pepper and salt; and turn into pan until bacon cooks as a plain omelet. Fold, serve on hot platter.

Parsley Omelet (Scotch recipe).

- $\frac{1}{2}$ cupful cream,
- 6 eggs,
- 1 tablespoonful butter,
- 1 tablespoonful minced parsley.

Beat the yolks of the eggs with a little cayenne and salt; add a small piece of shallot and parsley shredded fine; mix; whip the whites of the eggs and cut into the yolks, melt the butter in a frying pan, and pour in the eggs. Cook slowly over low heat, when brown, finish cooking in the oven. Serve very hot.

Eggs Fricassee.

Put a piece of butter in a stewpan with some finely minced parsley and minced onion, 1 teacupful stock and 1 tablespoonful flour. Boil 6 eggs hard, cut in slices, and put them in with a little salt and pepper. Beat up the yolk of an egg in $\frac{1}{2}$ cupful cream; add this with the juice of half a lemon. Mix well, make very hot, and serve on hot buttered toast.

CHAPTER XVI

CHEESE AND ITS ECONOMICAL USES IN THE DIET¹

KINDS OF CHEESE USED IN AMERICAN HOMES—CHEESE DISHES AND THEIR PREPARATION—CHEESE SAUCES—CHEESE DISHES WHICH MAY BE SUBSTITUTED FOR MEAT—CHEESE SOUPS AND VEGETABLES COOKED WITH MEAT—CHEESE SALADS, SANDWICHES, AND SIMILAR CHEESE DISHES—CHEESE PASTRY, SWEETS, AND SIMILAR DISHES.

KINDS OF CHEESE USED IN AMERICAN HOMES

The American factory cheese—the so-called American cream cheese—is of the English Cheddar type, and as it is the most commonly used of all the commercial varieties in the United States, may be taken as a standard. Other types are, however, well known, particularly in cities and large towns where there are well stocked markets and stores, and it is interesting to note also, at least briefly, the characteristics of some of them.

Cheddar and American Full Cream Cheese.

Cheddar cheese—named from the English village where it originated—is a comparatively old type of cheese, very popular in England and also in the United States. The name is now more fitly applied to a process than to any particular shape.

Cheddar cheese is made from sweet cows' milk, which may be skimmed, partly skimmed, or unskimmed. If made from unskimmed milk the cheese is called "full cream." If cream is removed the cheese is designated "part-skim" or "skim," as the case may be.

Cheese of Cheddar type as made in the United States is perhaps most often marketed in large, flat, round forms, 13 to 16 inches in diameter, about 5 or 6 inches in height, and weighing 26 to 32 pounds each, though other shapes and sizes are also fairly common. It is usually pale to darker yellow in color, though it may be white when uncolored. When fresh it is mild in flavor, but when well ripened has a characteristic and sharp taste. The new cheese is soft, though not waxy, in texture, and may be easily shaved or broken into small pieces. When well ripened it may be finely grated.

These characteristics, together with its distinctive and peculiar flavor and its wide distribution in the markets, are qualities which help to make it the variety most commonly used in the United States.

Sage cheese is a variety of Cheddar cheese, which is flavored with sage and is further characterized by the green mottled appearance formerly due to bits of sage leaf but now generally obtained in another way.

English Dairy Cheese.

From the standpoint of the cook who frequently wishes to use grated cheese this variety is important.

¹ U. S. Department of Agriculture. Farmers' Bulletin No. 487.

Though made in much the same way as Cheddar, it differs from it, in that the curd is heated to a somewhat higher temperature, and the cheese is therefore harder. It commonly sells for somewhat more per pound than the standard or American factory variety and is likely to be found only in the larger markets.

Soft Cream Cheeses.

Cream cheese true to name is made from rich cream thickened by souring or from sweet cream thickened with rennet. The whey is removed by draining. It is then covered, salted, and turned occasionally, being ready for market in 5 to 10 days. A variety is also made with rennet from cream of low fat content, as well as a number of other special sorts much more common in France than in the United States.

The term "cream cheese," however, is an elastic one and includes many varieties which are sold under special trade names. Such cheese is common in most markets.

Soft cream cheese differs from standard cheese, so far as composition is concerned, in having more water and fat and less protein, water usually making up about one-half of the total weight. It differs also in being much more perishable. These cheeses commonly sell for 10 or 15 cents each, which is about 40 to 50 cents a pound.

Of late there have been on the market varieties of such cheese or of Neufchâtel, made by combining the cheese with chopped pimiento. These bring a relatively high price in market and may be easily prepared at home if this seems more convenient.

Neufchâtel Cheese.

This very popular variety — named from a town in Northeastern France — is similar in appearance and in the way it is marketed to soft cream cheese. It is made either from whole or skim milk curdled with rennet. After draining and pressing, it is kneaded thoroughly, formed into small rolls or blocks, and then ripened until special molds develop,

which requires about four weeks. It is then wrapped in tinfoil and marketed.

Parmesan Cheese.

This is a name given outside of Italy to a very hard cheese which in that country is said to be known as Grana, a name given because of the granular appearance which it has after it has been broken. It is sometimes sold in grated form and brings a relatively high price, but is more commonly sold ungrated. When well made it will keep for years and may be easily broken and grated. It is very generally used in Europe for serving with soups, for seasoning macaroni, and for other similar purposes, and is quite common in American markets.

Sap Sago.

This is a skim milk cheese made in Switzerland, which is suitable for grating. It contains, for every 4 pounds of cheese, 1 pound of a clover (*Melilotus caeruleus*) grown in Switzerland. It is greenish in color and has an unusual flavor. It is not high priced.

Gorgonzola and Roquefort.

These are highly flavored cheeses characterized by the presence of molds through their entire mass. Roquefort is made from the milk of sheep; Gorgonzola, from cows' milk.

Potted or Sandwich Cheeses.

Ordinary cheese is often mixed with butter or oil in the proportion of 5 parts of cheese to 1 of butter or oil, by weight. The mixture is sometimes seasoned with mustard or with curry powder. Such cheeses, unseasoned or seasoned, are on the market in great variety. Potted cheese may be easily prepared at home if the housekeeper wishes to take the trouble.

Swiss Cheese (Emmentaler, Gruyère, Etc.).

This term as used in America is somewhat vague. Different names are given to the varieties according to

the districts of Switzerland in which they are made, but they are all similar and characterized by a mild, sweetish flavor and the presence of large holes or "eyes." Foreign and domestic brands are to be found in most markets. They are suitable for cooking purposes, as well as for use without being cooked, and are much used in this way in Europe and well known and liked in the United States.

Edam Cheese.

This is a cheese made in Holland. It is molded in spherical form, and the outside is usually dyed red. It is usual in this country to cut off a section of the top, which serves as a lid, and to scoop out the inside as needed. In Holland it is frequently served in slices, particularly when it is fresh. Edam cheese is seldom used in cookery in American homes, though thrifty housewives, after the greater part of the cheese has been removed, often stuff the hollow shell with cooked and seasoned macaroni, rice, or something similar and bake.

Brie and Camembert Cheese.

These are very soft rennet cheeses of foreign origin and of somewhat smaller nutritive value than standard cheese, and of strong flavor and odor. They are not often used in cookery, but are used as an accompaniment to other foods.

Cottage Cheese.

Cottage cheese and other sour milk and cream cheeses, junket, Devonshire cream, and a number of other cheese-like products are described in the section which deals with home-made cheese.

The Care of Cheese in the Home.

One of the best ways of keeping cheese which has been cut is to wrap it in a slightly damp cloth and then in paper, and to keep it in a cool place. To dampen the cloth, sprinkle it and then wring it. It should seem hardly damp to the touch. Paraffin paper may be used in place of the cloth. When cheese is put in a covered dish, the air should never be

wholly excluded, for if this is done, it molds more readily.

In some markets it is possible to buy small whole cheeses. These may be satisfactorily kept by cutting a slice from the top, to serve as a cover, and removing the cheese as needed with a knife, a strong spoon, or a cheese scoop. It is possible to buy at the hardware stores knobs which inserted in the layer cut from the top make it easy to handle. The cheese below the cover should be kept wrapped in a cloth.

Cheese as a Food.

Cheese is used in general in two ways — in small quantities chiefly for its flavor and in large quantities for its nutritive value as well as for its flavor. Some varieties of cheese are used chiefly for the first purpose, others chiefly for the second. Those which are used chiefly for their flavor, many of which are high priced, contribute little to the food value of the diet, because of the small quantity used at a time. They have an important part to play, however, in making the diet attractive and palatable. The intelligent housekeeper thinks of them not as necessities, but as lying within what has been called "the region of choice." Having first satisfied herself that her family is receiving sufficient nourishment, she then, according to her means and ideas of an attractive diet, chooses among these foods and others which are to be considered luxuries.

Those cheeses, on the other hand, which are suitable to be eaten in large quantities and which are comparatively low priced are important not only from the point of view of flavor, but also from the point of view of their nutritive value. Among such cheeses the one which, as noted above, is known to the trade as standard factory cheese and to the housewife as American cheese stands out pre-eminently. Therefore when the word "cheese" is used without specification in the following pages it may be taken to refer to this particular variety.

The Use of Cheese in the Diet.—It

has been the purpose, in preparing this discussion of cheese, to consider ways in which mild flavored sorts may serve as staple articles of diet, rather than the use of highly flavored varieties as appetizers and as accompaniments of other foods. The use of highly flavored cheese as a condiment is customary and may profitably be extended, since it offers a simple way of adding to the attractiveness of the diet. The variety of the cheese selected is a matter of choice, some persons preferring such kinds as well-ripened American full cream cheese or the potted cheeses, and others such sorts as Roquefort, Camembert, and other varieties. From the physiologist's standpoint, cheese used in this way for its flavor should really form a part of a well-balanced meal rather than be added to a meal which already supplies an abundance of nutritive material. In other words, condimental cheeses may better accompany a moderate than a very generous menu.

In considering the use of cheese in quantity as an integral part of the diet there are many possibilities from simple combinations like bread and cheese to elaborate dishes in which cheese is used as a flavor and as a principal constituent.

As has been pointed out, cheese, being rich in both protein and fat, would logically replace such foods as meat, fish, and eggs, when taken in quantity, rather than cereal foods characterized by a large amount of starch, or succulent foods, such as vegetables and fruits. In planning menus of which cheese forms a large part the housekeeper should bear these facts in mind.

Bill-of-Fare Making with Cheese as the Central Food.—Since meat has so generally been the chief protein food of a meal, and the kind selected usually has determined the choice of vegetables and condiments, it is not strange that very many housekeepers should be inexperienced and consequently unskillful in planning meals in which cheese is substituted for meat when for any reason

they may desire to make such a change. In seeking skill they might take a suggestion from the experiments to which reference has been made, and also from a case investigated and reported by the Office of Experiment Stations, of a man who lived for months upon a diet of bread, fruit, and cheese, and who remained in good health and active, and did not weary of the monotony of the diet.

The first two articles of the diet mentioned, namely, the bread and the cheese, could have been taken in such amounts as to constitute what is usually considered a balanced ration, *i. e.*, in such amounts as to supply the right quantity of muscle forming foods in comparison with the energy value. The bread and cheese taken with the fruit, however, make a ration which is well balanced not only in the older and more widely accepted sense, but also in the more modern sense that it makes an attractive and palatable combination of foods, as well as a balanced ration, and thus favors digestion. The watery and refreshing fruits or succulent vegetables with their large supply of cellulose are a pleasant contrast to the concentrated and fatty cheese.

Housekeepers would probably find that if in planning menus of which a cheese dish is the chief feature they were to take pains to supply also crisp, watery vegetables, water cress, celery, lettuce, served with a dressing or with salt alone, or simple fruit salads, and would give preference to refreshing fruits, either fresh or cooked, rather than to what are known as heavy desserts, they would in general be more successful in pleasing those who are served.

There is another point also to be considered in combining cheese with other foods. Whether it is raw or cooked it is likely to be somewhat soft, and so seems to call for the harder kinds of bread—crusty rolls or biscuit, zwieback, toast, pulled bread, rye bread, the harder brown breads, or crackers, and some of the numerous crisp ready-to-eat cereal

breakfast foods. Brittle cookies, too, seem more suitable than rich soft cakes or puddings for the dessert in such meals.

A few bills of fare are given below which experience has shown to represent combinations of dishes which are palatable and which, if eaten in usual amounts, will supply protein and energy in proportions which accord with usual dietary standards. Menus such as these are more commonly served at lunch or at supper, but they might equally well be served for dinner, the selection of dishes for any meal being of course chiefly a matter of custom and convenience for those who have any range of choice.

Suggested bills of fare in which cheese dishes are the chief source of protein and fat.

MENU No. 1.

Macaroni and cheese.
Raisin bread or date bread.
Orange and water cress salad.
Baked apples.
Sugar cookies.
Cocoa.

MENU No. 2.

Cheese fondue.
Toast, zwieback, or thin and crisp baking-powder biscuit.
Celery.
Potatoes, baked, boiled, or fried in deep fat.
Peas, or some other fresh vegetable.
Coffee.
Fruit salad with crisp cookies or meringues.

MENU No. 3.

Clear soup.
Baked eggs with cheese or Boston roast.
Baked potatoes.
Lettuce salad.
A sweet jelly, crab apple or quince for example, or a preserve.
Rye bread.
Orange or banana shortcake.
Tea.

These bills of fare should be taken as suggestive merely and not as a solution of the problem. In fact, the

whole art of making bills of fare needs developing. There is abundant evidence that overeating, where it exists, is frequently due to the fact that meals are not skillfully planned. People often continue eating after they have taken enough in total bulk because they have not had all they want of some particular kind of food. The meal has contained too large a percentage of proteid or too much starch; has been too moist or too dry; too highly flavored or not sufficiently flavored. Bill-of-fare making calls not only for knowledge of food values but also for skill in combining flavors and textures.

In this discussion of menu making, and of the use of cheese as an integral part of the diet, the aim has been to suggest ways of using cheese to add to the palatability of meals made up of usual dishes, and to suggest dishes containing cheese which could serve as substitutes for meat dishes when so desired, and also for dishes of many sorts to be used as taste suggests and in which the nutritive value as well as the flavor is increased by the addition of cheese. If cheese is used and in quantity, it is obvious that some other proteid and fat foods should be diminished, in order that the meal or day's menu may not be unduly hearty.

For the convenience of the housekeeper, a number of recipes for cheese dishes are given in later pages, these being preceded by directions for making cottage cheese and other similar cheeses which are usually made in the home.

Homemade Cheese.

Even as late as a generation or two ago cheese of different kinds was made at home for family use, as sour-milk or cottage cheese still is, and cheese making was very generally a farm industry, cheese, like butter, being sold by the farmer who made it. Cottage cheese is very commonly homemade. Most types of cheese, however, are now as a rule made on a large scale in factories where advantage may be taken of labor-saving devices.

Curds and Whey.

Cheese curds and whey, an old-fashioned dish, which is often spoken of in accounts of life in earlier times, sometimes refers to sour-milk curds and sometimes to curd separated with rennet. This dish when made with rennet is much like junket and though far less common to-day than was once the case is wholesome and palatable.

Cottage Cheese.

This cheese is very commonly prepared in the home, and the process of making it is very simple. It consists merely of curdling the milk, separating the curd from the whey, seasoning, and pressing it.

The curd is formed by the souring of the milk, and the process is hastened if the milk is kept warm, the best temperature being about blood heat, 96° F. A temperature much above this should be avoided, as the curd is likely to become hard and tough if much heated. The danger is usually not that the whole will be overheated but that the portion nearest the fire will be. In the old-fashioned kitchen there was usually a place where the milk could stand till it was uniformly warm throughout. With our present cooking arrangements it is often desirable to hasten the process. This may be done by setting the milk into a pan of warm water or by pouring hot water directly into the milk itself. The effect of the latter method is to remove much more of the acid than when the whey is left undiluted. Some consider this a great advantage.

If, for any reason, the curd is overheated, it should be put through a meat chopper. This will insure cottage cheese of excellent texture.

If the milk is thoroughly chilled before the whey is drained off it retains more of the fat than if this is done when warm. Under no circumstances, however, is much of the fat retained in cottage cheese. It is therefore more economical to make it out of skim milk and to add the fat to the curd in the form of butter or cream.

Chopped parsley, caraway seeds, chopped olives, and pimiento may all be used for flavoring if such flavored cheese is preferred to plain cottage cheese.

Cottage cheese is most commonly consumed immediately, but if made in quantity for commercial purposes, it may be packed in tubs and placed in cold storage. Sometimes it is formed into rolls or blocks and wrapped in tinfoil when marketed. Such cheese is used without ripening.

Though cottage cheese is usually made by allowing the milk to sour naturally, it is sometimes more convenient to curdle the milk by adding rennet, and some housekeepers have a preference for cottage cheese thus made, since the flavor is milder and the acid taste which it possesses when made from sour milk is lacking.

Sour-Cream Cheese.

When cream is to be made into cheese similar to cottage cheese, it should be drained without having previously been heated. The drainage is facilitated by moistening the cloth in salt water before the cream is poured in. The curd is formed either by souring or by the addition of rennet.

Uncooked Curd, or French Cottage Cheese.

The French make cheese from sour milk without heating it. They pour the milk into earthen molds which have holes in the bottom. A very fine sieve may be used instead of the molds. The whey drips out and the curd assumes a custardlike consistency and takes the shape of the mold. When sufficiently stiff, the cheese is chilled, and is eaten with sweet cream and sugar. It is a staple dessert in many French families, especially in hot weather, and is delicious served with acid fruit, such as currants, or with strawberries.

Junket.

If cottage cheese is made from sweet milk and rennet and served without breaking and separating the curd and whey, the dish is called junket. It is customary to season it

a little, as with grated nutmeg or with cinnamon and sugar.

Buttermilk Cheese.

To make buttermilk cheese, heat buttermilk to about 130° or 140° F. Allow it to cool and strain it. As the curd will settle to the bottom, most of the whey may be poured off before the draining is begun.

This cheese is, of course, almost wholly without fat and yet, probably because the particles of curd are very finely divided, it has a smooth consistency, which suggests the presence of fat. It may be served seasoned with salt only, or it may be mixed with butter or cream and seasonings. It is suitable for combining with olives and pimientos, as elsewhere recommended, or for any use to which the ordinary cream cheeses are put.

Buttermilk Cream.

By controlling the temperature in heating the buttermilk and not allowing it to go above 100° F., a compound is made which after draining has the consistency of a very thick cream. It is claimed that this "cream" is suitable for eating on bread in place of butter.

The recipes given on other pages suggest ways of making a salad dressing out of buttermilk cream.

Devonshire Cream.

Devonshire cream somewhat resembles sweet cream in flavor and consistency. It is very much liked in England, where it is commonly eaten with fresh or preserved fruit, but it is not so well known in America.

To make Devonshire cream, allow a pan of whole milk to stand for 24 hours in a cool place or for 12 hours in a warmer place. Place the pan on the cooler part of the stove and heat until the milk is very hot, but not to the boiling point. If heated too much a thick skin will form on the surface. The more slowly the milk is heated the better. Having been heated, the milk should be kept in a cool place for 24 hours and then skimmed. The thick cream obtained

has a characteristic flavor and texture.

CHEESE DISHES AND THEIR PREPARATION

The list of cheese dishes in the culinary literature of this and other countries is a long one, but most of them are variations of a comparatively small number of general types. Those which have been selected and studied experimentally represent the principal types and in many cases have been adapted to American methods of preparations and tastes. In some instances, this has resulted in new and perhaps more rational combinations than those which served as models.

For convenience, the cheese dishes included in this bulletin have been grouped under the following heads:

(1) Cheese dishes which may serve as meat substitutes.

(2) Cheese soups and vegetables cooked with cheese.

(3) Cheese salads, sandwiches, and similar dishes.

(4) Cheese pastry, cheese sweets, and similar dishes.

Variety may be obtained in the recipes by varying the flavorings. Among the best flavorings for cheese dishes are onion, chives, and the ordinary green sweet pepper. Since the cheese needs very little cooking, however, and onion or the pepper needs a great deal, they should always be previously cooked, either by stewing in a very little water, or by cooking in butter. The seeds of the pepper, of course, should be removed before cooking. Where chopped celery is used, as it may be in most of these dishes, it, too, should be cooked beforehand until tender. Other good flavors are mustard, curry powder, onion juice, chopped olives, pimiento, and, according to European recipes, nutmeg or mace.

In preparing the cheese it often has been found convenient to use a very coarse grater, having slits instead of the usual rounded holes. Such a grater, in spite of its name, shaves the cheese instead of grating

it. When the cheese is soft this is an advantage, since the grater does not become clogged.

CHEESE DISHES WHICH MAY BE USED IN THE SAME WAY AS MEAT

Meat is wholesome and relished by most persons, yet it is not essential to a well-balanced meal and there are many housekeepers who for one reason or another are interested in lessening the amount of meat which they provide or to substitute some other foods for it. The problem with the average family is undoubtedly more often the occasional substitution of other palatable dishes for the sake of variety, for reasons of economy, or for some other reason than the general replacement of meat dishes by other things.

Foods which are to be served in place of meat should be rich in protein and fat and should also be savory. Cheese naturally suggests itself as a substitute for meat, since it is rich in the same kinds of nutrients which meat supplies, is a staple food with which every one is familiar, and is one which can be used in a great variety of ways. In substituting cheese for meat, especial pains should be taken to serve dishes which are relished by the members of the family. A number of recipes for dishes which contain cheese are given below. They are preceded by several recipes for cheese sauces which, as will appear, are called for in the preparation of some of the more substantial dishes.

Cheese Sauce No. I.

- 1 cupful of milk,
- 2 tablespoonfuls of flour,
- 1 ounce of cheese ($\frac{1}{4}$ cupful of grated cheese),
- Salt and pepper.

Thicken the milk with the flour and just before serving add the cheese, stirring until it is melted.

This sauce is suitable for use in preparing creamed eggs, or to pour over toast, making a dish correspond-

ing to ordinary milk toast, except for the presence of cheese. It may be seasoned with a little curry powder and poured over hard boiled eggs.

Cheese Sauce No. II.

Same as cheese sauce No. I, except that the cheese is increased from 1 to 2 ounces.

This sauce is suitable for using with macaroni or rice, or for baking with crackers soaked in milk.

Cheese Sauce No. III.

Same as cheese sauce No. I, except that two cupfuls of grated cheese or 8 ounces are used. This may be used upon toast as a substitute for Welsh rarebit.

Cheese Sauce No. IV.

Same as cheese sauce No. II, save that 2 tablespoonfuls of melted butter are mixed with the flour before the latter is put into the milk. This sauce is therefore very rich in fat and has only a mild flavor of cheese.

Among the recipes for dishes which may be used like meat, the first 30 are such that, eaten in usual quantities, they will provide much the same kind and amount of nutritive material as the ordinary servings of meat dishes used at dinner. In several cases there is a resemblance in appearance and flavor to common meat dishes, which would doubtless be a point in their favor with many families.

While, chiefly owing to custom, it may not accord with the taste of the family to serve cheese dishes at dinner in place of meat, it is much more in accord with usual dietary habits in American homes to serve such dishes at least occasionally for lunch, for supper, or for breakfast; that is, for a less formal meal than dinner. The last group of recipes in this section, beginning with "breakfast cereals with cheese," supply rather smaller proportions of nutritive materials than those in the first group and so may be more suitable for use at the less hearty meals. There is no hard and fast line to be

drawn between the two groups, however, and many of the recipes may be used interchangeably.

In the recipes calling for large amounts of cheese the food value is given, not in figures, but in comparison with beef of average composition and average percentage of waste. This comparison is necessarily rough owing to the varying composition of the foods and the varying weights of such ingredients as a cupful of grated cheese or bread crumbs. In making the comparisons, beef of average composition has been considered to have 15.2 per cent of protein, and a fuel value of 935 calories per pound; ordinary American cheese has been considered to have 26 per cent of protein and a fuel value of 1,965 calories per pound. After many weighings, 4 ounces was decided to be the average weight of a cupful of cheese and $2\frac{1}{2}$ ounces the average weight of a cupful of bread crumbs. These weights have been taken, therefore, in calculating the food value of dishes. When cheese is very soft, however, it may be pressed into a cup and measured like butter. Under these circumstances, the weight of a cupful of cheese may be considered one-half a pound. The price of cheese is taken as 22 cents a pound, of butter 25 cents a pound, of eggs 25 cents a dozen, in this and all similar calculations in this bulletin. Prices vary with time, place, and season. Those mentioned above are such as were paid for materials at the time the experiments here summarized were made and are not extreme values in either direction. Like all such estimates, the calculations are only relative, and the housekeeper who wishes to estimate the comparative cost of the cheese dishes and other foods can readily do so by taking into account the amount of materials used and the prices paid for ingredients at any particular time.

Cheese Fondue No. I.

- 1½ cupful of soft, stale bread crumbs,
- 6 ounces of cheese (1½ cupful of grated cheese or 1½ cups-

- ful of cheese grated fine or cut into small pieces),
- 4 eggs,
- 1 cupful of hot water,
- ½ teaspoonful of salt.

Mix the water, bread crumbs, salt and cheese; add the yolks thoroughly beaten; in this mixture cut and fold the whites of eggs beaten until stiff. Pour into a buttered baking dish and cook 30 minutes in a moderate oven. Serve at once.

The food value of this dish, made with the above quantities, is almost exactly the same as that of a pound of beef of average composition and a pound of potatoes combined. It contains about 80 grams of proteids and has a fuel value of about 1,300 calories. Estimated cost, 18 cents, calculated as explained elsewhere.

Cheese Fondue No. II.

- 1½ cupful of hot milk,
- 1½ cupful of soft, stale bread crumbs,
- 1 tablespoonful of butter,
- 4 eggs,
- ½ of a pound of cheese (1½ cupful of grated cheese or 1 cupful of cheese cut into small pieces),
- ½ teaspoonful of salt.

Prepare as in previous recipe.

The protein value of this dish is equal to that of 1½ pounds of potato and beef, the fuel value, however, being much in excess of these. Calculated cost, 22 cents.

In making either of these fondues, rice or other cereals may be substituted for bread crumbs. One-fourth cupful of rice measured before cooking, or one cupful of cooked rice or other cereals, should be used.

A comparison of the recipes for the two fondues may indicate the general principle on which the recipes in this bulletin have been worked out. The second recipe is one commonly found in cookbooks. In the first one, the butter has been omitted and water substituted for milk and the amount

of cheese is slightly increased. This makes a somewhat cheaper dish and one which is less rich because its percentage of fat is not so great. For this reason it is easier to adjust to the ordinary bill of fare. A dish in which there is combined cheese with its large percentage of fat, butter with its 85 per cent of fat, and eggs with their 10 per cent of fat, is too rich to admit of being combined rationally with other fatty dishes. It therefore limits the number of dishes that may be served with it, making milk soup, for example, or dishes containing white sauce or those containing much butter or oil seem out of place. The omission of butter from the ordinary recipes and the substitution of water or skimmed milk for whole milk may perhaps be the means of making cheese dishes more wholesome and more generally acceptable.

Another advantage of omitting butter from cheese dishes and of substituting water or skimmed milk for whole milk is that it makes it possible to increase the amount of cheese without making the dish too rich. This is of advantage to those who like the flavor of cheese, and also, because it tends to increase the tissue forming value of the dish, particularly if skimmed milk is used rather than water.

Boiled Fondue.

- 1½ cupsful of bread crumbs,
- 1½ cupsful of milk,
- 1½ cupsful of cheese cut into small pieces,
- 1 egg,
- 2 tablespoonsful of butter,
- 6 ounces of crackers.

Soak the bread in the milk. Melt the butter and add the cheese. When the cheese has melted add the soaked crumbs, the eggs slightly beaten, and the seasoning. Cook a short time and serve on toasted crackers.

Since it consists of essentially the same ingredients, the food value of this dish is obviously much the same as that of fondue made in other ways.

Rice Fondue.

- 1 cupful of boiled rice,
- 2 tablespoonsful of milk,
- 4 eggs,
- 1 cupful of grated cheese,
- ½ teaspoonful of salt,
- 1 teaspoonful of some commercial meat sauce, or similar flavoring.

Heat the rice in the milk, add the other ingredients, and cook slowly until the cheese is melted. Serve on crackers or toast.

The food value is not far from that of a pound of beef of average composition, and the calculated cost is 15 cents.

Corn and Cheese Soufflé.

- 1 tablespoonful of butter,
- 1 tablespoonful of chopped green pepper,
- ¼ cupful of flour,
- 2 cupsful of milk,
- 1 cupful of chopped corn,
- 1 cupful of grated cheese,
- 3 eggs,
- ½ teaspoonful of salt.

Melt the butter and cook the pepper thoroughly in it. Make a sauce out of the flour, milk, and cheese as explained elsewhere; add the corn, cheese, yolks, and seasoning; cut and fold in the whites beaten stiffly; turn into a buttered baking dish and bake in a moderate oven 30 minutes.

Made with skimmed milk and without butter, this dish has a food value slightly in excess of a pound of beef and a pound of potatoes. Calculated cost about 20 cents.

Welsh Rabbit.

- 1 tablespoonful of butter,
- 1 teaspoonful of cornstarch,
- ½ cupful of milk,
- ½ pound of cheese, cut into small pieces,
- ¼ teaspoonful each of salt and mustard,
- A speck of cayenne pepper.

Cook the cornstarch in the butter; then add the milk gradually and cook two minutes; add the cheese and stir

until it is melted. Season and serve on crackers or bread toasted on one side, the rabbit being poured over the untoasted side. Food value is that of about $\frac{3}{4}$ of a pound of beef. Calculated cost, 13 cents.

Tomato Rabbit.

- 2 tablespoonsful of butter,
- 2 tablespoonsful of flour,
- $\frac{3}{4}$ cupful of milk,
- $\frac{3}{4}$ cupful of stewed and strained tomatoes,
- $\frac{1}{2}$ teaspoonful of soda,
- 1 pound of cheese,
- 2 eggs, slightly beaten,
- Salt, mustard, cayenne pepper.

Cook the butter and the flour together, add the milk, and as soon as the mixture thickens add tomatoes and soda. Then add cheese, eggs, and seasoning. Serve on toasted whole wheat or Graham bread.

Green Corn, Tomato, and Cheese.

- 1 tablespoonful of butter,
- 2 cups of grated cheese,
- $\frac{3}{4}$ cup of canned or grated fresh corn,
- 1 ripe pimiento,
- $\frac{1}{2}$ cup of tomato purée,
- 2 egg yolks,
- 1 teaspoonful of salt,
- $\frac{1}{2}$ teaspoonful of paprika,
- 1 clove of garlic,
- 4 slices of bread,

Into the melted butter stir the cheese until it, too, is melted. Then add the corn and pimiento, stir for a moment and add the egg yolks beaten and mixed with the tomato juice and the salt and paprika. Have ready the bread toasted on one side and very lightly rubbed on its untoasted side with the garlic cut in two. Pour the mixture over the untoasted side of the bread and serve at once. A poached egg is sometimes placed on top of each portion, making a very nutritious combination.

Macaroni and Cheese No. I.

- 1 cupful of macaroni, broken into small pieces,
- 2 quarts of boiling water,

- 1 cupful of milk,
- 2 tablespoonsful of flour,
- $\frac{1}{2}$ to $\frac{3}{4}$ pound of cheese,
- $\frac{1}{2}$ teaspoonful of salt,
- Speck of cayenne pepper.

Cook the macaroni in the boiling salted water, drain in a strainer, and pour cold water over it to prevent the pieces from adhering to each other. Make a sauce out of the flour, milk, and cheese. Put the sauce and macaroni in alternate layers in a buttered baking dish, cover with buttered crumbs, and heat in oven until crumbs are brown.

Macaroni and Cheese No. II.

A good way to prepare macaroni and cheese is to make a rich cheese sauce and heat the macaroni in it. The mixture is usually covered with buttered crumbs and browned in the oven. The advantage of this way of preparing the dish, however, is that it is unnecessary to have a hot oven, as the sauce and macaroni may be reheated on the top of the stove.

Macaroni with Cheese and Tomato Sauce.

Boiled macaroni may be heated in tomato sauce and sprinkled with grated cheese just before serving.

Italian Macaroni and Cheese.

- 1 cupful of macaroni broken into small pieces,
- 2 quarts of boiling salted water,
- $\frac{1}{2}$ onion,
- 2 cloves,
- $1\frac{1}{2}$ cupsful of tomato sauce,
- $\frac{1}{2}$ cupful or more of grated cheese,

Cook the macaroni in the boiling salted water with the onion and cloves. Drain, remove the onion and cloves, reheat in tomato sauce, and serve with grated cheese.

Cheese and Macaroni Loaf.

- $\frac{1}{2}$ cupful of macaroni broken into small pieces,
- 1 cupful of milk,

- 1 cupful of soft bread crumbs,
- 1 tablespoonful of butter,
- 1 tablespoonful of chopped green pepper,
- 1 teaspoonful each of chopped onion and parsley,
- 3 eggs,
- 1 teaspoonful of salt,
- $\frac{1}{2}$ cupful of grated cheese,

Cook the macaroni in boiling salted water until tender, and rinse in cold water. Cook the parsley, onion, and pepper in a little water with the butter. Pour off the water or allow it to boil away. Beat the egg, white and yolk separately. Mix all the ingredients, cutting and folding in the stiffly beaten whites at the last. Line a quart baking dish with buttered paper; turn the mixture into it; set the baking dish in a pan of hot water, and bake in a moderate oven from one-half to three-fourths of an hour. Serve with tomato sauce.

Baked Rice and Cheese No. I.

- 1 cupful of uncooked rice and
- 4 cupsful of milk;
- or,
- 3 cupsful of cooked rice and
- 1 cupful of milk,
- 2 tablespoonsful of flour,
- $\frac{1}{2}$ pound of cheese,
- $\frac{1}{2}$ teaspoonful of salt,

If uncooked rice is used, it should be cooked in 3 cupsful of milk. Make a sauce with one cupful of milk, add the flour, cheese, and salt. Into a buttered baking dish put alternate layers of the cooked rice and the sauce. Cover with buttered crumbs and bake until the crumbs are brown. The proteids in this dish, made with rice cooked in milk, are equal to those of nearly $1\frac{1}{2}$ pounds of average beef. If skimmed milk is used, the fuel value is equal to nearly $3\frac{1}{2}$ pounds of beef. Whole milk raises the fuel value still higher. Estimated cost 28 cents.

Baked Rice and Cheese No. II.

- $\frac{1}{2}$ pound of cheese grated or cut into small pieces,
- 1 cupful of rice,
- Milk as needed.

Cook the rice; put into a buttered baking dish alternate layers of rice and cheese; pour over them enough milk thoroughly to soak the cheese and the rice; cover with buttered crumbs and brown.

If the rice is cooked in milk either whole or skimmed, and one cup of milk is used to pour over it, this dish has as much protein as $1\frac{1}{2}$ pounds of beef of average composition and a much higher fuel value.

Baked Crackers and Cheese No. I.

- 9 or 10 butter crackers or Boston crackers,
- $\frac{1}{4}$ pound of cheese or 1 cupful of grated cheese,
- $1\frac{1}{2}$ cupsful of milk,
- $\frac{1}{2}$ teaspoonful salt,
- Flour.

Split the crackers, if the thick sort are selected, or with a sharp knife cut them into pieces of uniform size. Pour the milk over them and drain it off at once. With the milk, flour, cheese, and salt, make a sauce. Into a buttered baking dish put alternate layers of the soaked crackers and sauce. Cover with bread crumbs and brown in the oven, or simply reheat without covering with crumbs.

The above is a very satisfactory substitute for macaroni and cheese, and can be prepared in less time.

Baked Crackers and Cheese No. II.

- 9 or 10 butter crackers or soda crackers,
- 2 cupsful of hot milk, whole or skimmed,
- 1 cupful of grated cheese,
- $\frac{1}{2}$ teaspoonful of salt.

This is more quickly prepared than the preceding recipe, but as the milk is likely to curdle, it has not so good a consistency.

Soak the crackers in the milk; place them in a buttered baking dish in alternate layers with the cheese; pour the remaining milk over them and bake. This dish may be covered with buttered crumbs. Variety may be secured, in either this recipe or the preceding one, by putting a very

small amount of mixed mustard on each cracker.

Cheese Rolls.

A large variety of rolls may be made by combining legumes, either beans of various kinds, cowpeas, lentils, or peas, with cheese of various kinds, and adding bread crumbs to make the mixture thick enough to form into a roll. Beans are usually mashed, but peas or small Lima beans may be combined whole with bread crumbs and grated cheese, and enough of the liquor in which the vegetables have been cooked may be added to get the right consistency. Or, instead of beans or peas, chopped spinach, beet tops, or head lettuce may be used. Home-made cottage cheese, and the soft cream cheese of commerce, standard cheese, or English dairy may be used.

Boston Roast.

1 pound can of kidney beans or equivalent quantity of cooked beans,
 $\frac{1}{2}$ pound of grated cheese,
 Bread crumbs,
 Salt.

Mash the beans or put them through a meat grinder. Add the cheese and sufficient bread crumbs to make the mixture stiff enough to be formed into a roll. Bake in a moderate oven, basting occasionally with butter and water. Serve with tomato sauce. This dish may be flavored with onions, chopped and cooked in butter and water.

Pimiento and Cheese Roast.

2 cupsful of cooked Lima beans,
 $\frac{1}{2}$ pound of cream cheese, commercial or home made,
 3 canned pimientos chopped,
 Bread crumbs.

Put the first three ingredients through a meat chopper. Mix thoroughly and add bread crumbs until it is stiff enough to form into a roll. Brown in the oven, basting occasionally with butter and water.

Nut and Cheese Roast.

1 cupful of grated cheese,
 1 cupful of chopped English walnuts,
 1 cupful of bread crumbs,
 2 tablespoonsful of chopped onion,
 1 tablespoonful of butter,
 Juice of half a lemon,
 Salt and pepper.

Cook the onion in the butter and a little water until it is tender. Mix the other ingredients and moisten with water, using the water in which the onion has been cooked. Pour into a shallow baking dish and brown in the oven.

Cheese and Spinach Roll.

2 quarts of spinach,
 1 cupful of grated cheese,
 1 tablespoonful of butter,
 Salt,
 Bread crumbs.

Cook the spinach in water for 10 minutes. Drain off the water, add the butter, cook until tender, and chop. Add the cheese and the eggs, and bread crumbs enough to make a mixture sufficiently stiff to form into a roll, or leave more moist and cook in a baking dish.

Vegetable and Cheese Rolls.

For the spinach of the above recipe there may be substituted beet tops, Swiss chard, or the outer leaves of lettuce.

Cheese Used in the Stuffing of Meats.

The mixtures in the preceding two recipes may be used for stuffing veal or beef. Eggs may be added if desired, and chopped onions or parsley may be cooked with the greens. In Italy roasts thus prepared are sprinkled with a little finely chopped garlic, and covered with celery tops and thin slices of bacon or fat pork before roasting.

Creamed Cheese and Eggs.

3 hard boiled eggs,
 1 tablespoonful of flour,
 1 cupful of milk,

- $\frac{1}{2}$ teaspoonful of salt,
- Speck of cayenne,
- $\frac{1}{2}$ cupful or 1 ounce grated cheese,
- 4 slices of toast.

Make a thin white sauce with the flour and milk and seasonings. Add the cheese and stir until melted. Chop the whites and add them to the sauce. Pour the sauce over the toast, force the yolks through a potato ricer or strainer, sprinkle over the toast.

Baked Eggs with Cheese.

- 4 eggs,
- 1 cupful, or 4 ounces, of grated cheese,
- 1 cupful of fine, soft, stale bread crumbs,
- $\frac{1}{2}$ teaspoonful salt,
- A few grains of cayenne pepper.

Break the eggs into a buttered baking dish or into ramequins and cook them in a hot oven until they begin to turn white around the edge. Cover with the mixture of crumbs, cheese, and seasonings. Brown in a very hot oven. In preparing this dish it is essential that the oven be very hot or the egg will be too much cooked by the time the cheese is brown. To avoid this, some cooks cover the eggs with white sauce before adding crumbs.

The food value of the dish is very close to that of a pound of beef of average composition. The estimated cost is about 14 cents.

For those who are particularly fond of cheese the amount of cheese in this recipe may be very much increased, thus making a much more nourishing dish. Or, the amount may be reduced so as to give hardly more than a suggestion of the flavor of cheese.

Scrambled Eggs with Cheese.

- $\frac{1}{2}$ pound of cheese grated or cut into small pieces,
- 8 eggs,
- 1 tablespoonful of chopped parsley,
- A pinch of nutmeg,
- $\frac{1}{2}$ teaspoonful of salt.

Beat the eggs slightly, mix them with the other ingredients, and cook over a very slow fire, stirring constantly, so that the cheese may be melted by the time the eggs are cooked. In food value the dish is equal to nearly 2 pounds of average beef. The calculated cost is about 30 cents.

Swiss Eggs.

- 4 eggs,
- $\frac{1}{2}$ cupful of cream,
- 1 tablespoonful of butter,
- Salt and pepper,
- $\frac{1}{2}$ cupful of grated cheese.

Heat the butter and cream together, break in the eggs whole, sprinkle with salt and pepper. When nearly done, add the cheese. Serve on buttered toast. Strain the cream over the toast.

Cheese Omelet No. I.

Cheese may be introduced into omelets in several ways. An ordinary omelet may be served with thin cheese sauce made in the following proportions:

- 1 $\frac{1}{2}$ tablespoonsful of flour,
- 1 $\frac{1}{2}$ tablespoonsful of cheese,
- 1 cupful of milk.

This sauce may also be added to omelets in which boiled rice, minced meat, or some other nutritious material has been included.

Cheese Omelet No. II.

Grated cheese may be sprinkled over an ordinary omelet before it is served.

Cheese Omelet.

- Yolks of 2 eggs,
- 2 tablespoonsful of hot water,
- 1 cupful of grated cheese,
- Salt and pepper,
- Whites of 4 eggs,
- 1 tablespoonful of butter.

Beat the yolks until lemon colored and add the hot water and the seasoning. Beat the whites until they are stiff, and add the cheese. Cut and fold the two mixtures together.

Heat the butter in omelet pan and cook the mixture very slowly until it is brown on the underside. If possible, cook the top of the omelet in the oven or by means of a hot plate held over it.

Breakfast Cereals with Cheese.

That cheese combined with cereal foods makes a rational dish as regards the proportion of nutrients it supplies has been pointed out on another page. Cheese and some of the crisp "ready to serve" cereal breakfast foods is a combination which is common, the cheese being melted with the cereal food, or simply served with it.

There are many who relish a piece of cheese with the cooked cereal so commonly eaten for breakfast and find such a combination satisfying to appetite and taste. Oatmeal or some other home cooked breakfast cereal prepared with cheese is palatable, and such dishes have an advantage in that they may be served without cream and sugar. Since such a dish contains considerably more protein than the breakfast cereals as ordinarily served, it has a further advantage in that it may well serve as the principal item of a breakfast menu, instead of a preliminary to other courses. Such a combination as cereals cooked with cheese, toast, fruit, and tea, coffee, or chocolate, makes a palatable as well as nutritious breakfast and one which does not require much work to prepare and to clear away. A recipe for preparing oatmeal with cheese follows. Wheat breakfast foods, either parched or unparched, corn meal, and hominy may be prepared in the same way.

Oatmeal with Cheese.

- 2 cupsful of oatmeal,
- 1 cupful of grated cheese,
- 1 tablespoonful of butter,
- 1 level teaspoonful of salt.

Cook the oatmeal as usual. Shortly before serving, stir in the butter and add the cheese, and stir until the cheese is melted and thoroughly blended with the cereal.

The cheese should be mild in flavor and soft in texture. The proportion of cheese used may be increased if a more pronounced cheese flavor is desired.

Cheese with Mush.

Cheese may be added to cornmeal mush or to mush made from any of the corn or wheat preparations now on the market. The addition of cheese to cornmeal mush is particularly desirable when the mush is to be fried.

Fried Bread with Cheese No. I.

- 6 slices of bread,
- 1 cupful of milk,
- 2 ounces of cheese, or $\frac{1}{2}$ cupful of grated cheese,
- $\frac{1}{2}$ teaspoonful of salt,
- $\frac{1}{2}$ teaspoonful of potassium bicarbonate,
- Butter or other fat for frying.

Scald the milk with the potassium bicarbonate; add the grated cheese, and stir until it dissolves. Dip the bread in this mixture and fry it in the butter. The potassium bicarbonate helps to keep the cheese in solution. It is desirable, however, to keep the milk hot while the bread is being dipped.

Fried Bread with Cheese No. II.

Cut stale bread into thin pieces. Put two pieces together with grated cheese between them; dip into a mixture of egg and milk and fry in butter or other fat.

Roman Gnocchi.

- 2 cupsful of milk,
- $\frac{1}{4}$ cupful of flour,
- $\frac{1}{2}$ cupful of cornstarch,
- 2 cupsful of milk,
- 2 egg yolks,
- $\frac{3}{4}$ cupful of grated cheese,
- Salt.

Melt the butter; cook the cornstarch thoroughly, and then the flour in the butter; add the milk gradually; cook three minutes, stirring constantly; add the yolks and one-half cupful of the cheese. Pour into a

buttered shallow pan and cool. Cut into squares; place them on a platter a little distance apart; sprinkle with remaining cheese, and brown in the oven.

The proteid value is that of three-fourths of a pound of average beef, the fuel value that of $1\frac{3}{4}$ pounds. Calculated cost 17 cents.

Cheese Soufflé.

- 2 tablespoonsful of butter,
- 3 tablespoonsful of flour,
- $\frac{1}{2}$ cupful of milk (scalded),
- $\frac{1}{2}$ teaspoonful of salt,
- A speck of cayenne,
- $\frac{1}{4}$ cupful of grated cheese,
- 3 eggs.

Melt the butter; add the flour and, when well mixed, add gradually the scalded milk. Then add salt, cayenne, and cheese. Remove from the fire and add the yolks of the eggs, beaten until lemon colored. Cool the mixture and fold into it the whites of the eggs, beaten until stiff. Pour into a buttered baking dish and cook 20 minutes in a slow oven. Serve at once.

The proteid value of this recipe is equal to that of a half pound of beef; the fuel value is equal to that of three-fourths of a pound.

Cheese Soufflé with Pastry.

- 2 eggs,
- $\frac{2}{3}$ cupful of thin cream,
- 1 cupful of grated cheese,
- $\frac{1}{2}$ cupful of Swiss cheese cut into small pieces,
- Salt, cayenne pepper, and nutmeg.

Add the eggs to the cream and beat slightly, then add the cheese and seasoning. Bake 15 minutes in a hot oven, in patty tins lined with puff paste.

Cheese Croquettes.

- 3 tablespoonsful of butter,
- $\frac{1}{4}$ cupful of flour,
- $\frac{2}{3}$ cupful of milk,
- Yolks of 2 eggs,
- 1 cupful of cheese cut in very small pieces,

- $\frac{1}{2}$ cupful grated cheese,
- Salt and pepper.

Make with a white sauce, using the butter, flour, and the milk. Add the unbeaten yolks and stir until well mixed, then add the grated cheese. As soon as the cheese melts, remove from the fire, fold in the pieces of cheese, and add the seasoning. Spread in a shallow pan and cool. Cut into squares or strips, cover with an egg and crumb mixture, and fry in deep fat.

Fried Cheese Balls.

- $1\frac{1}{2}$ cupful of grated cheese,
- 1 tablespoonful of flour,
- The whites of 3 eggs,
- Salt, pepper, cracker dust.

Beat the whites of the eggs; add the other ingredients; make into balls and roll in cracker dust. If the amount of flour is doubled, the mixture may be dropped from a spoon and fried without being rolled in crumbs.

CHEESE SOUPS AND VEGETABLES COOKED WITH CHEESE

In these dishes the cheese is used not only to add nutritive value, but also to give its characteristic flavor either to materials otherwise rather mild in taste (as in potatoes with cheese) or to combine its flavor with that of some more highly flavored vegetables (as in cheese and vegetable soup). The ingenious house-keeper whose family is fond of cheese can doubtless think of many desirable ways of making such combinations besides those given in the following recipes:

Milk and Cheese Soup.

- 3 cupsful of milk, or part milk and part stock,
- $1\frac{1}{2}$ tablespoonsful of flour,
- 1 cupful of grated cheese,
- Salt and paprika.

Thicken the milk with the flour, cooking thoroughly. This is best done in a double boiler, with frequent stir-

rings. When ready to serve, add the cheese and the seasoning.

The proteids in this soup are equal in amount to those in five-sixths of a pound of beef of average composition; its fuel value is higher than that of a pound of beef.

Cheese and Vegetable Soup.

- 2 cupsful of stock,
- 2 tablespoonsful of finely chopped carrots,
- 1 tablespoonful of chopped onion,
- A very little mace,
- 2 tablespoonsful of butter,
- 2 tablespoonsful of flour,
- 1½ teaspoonsful of salt,
- 1 cupful of scalded milk,
- ¼ cupful of grated cheese.

Cook the vegetables a short time in one-half of the butter, add the stock and the mace, boiling 15 or 20 minutes. Strain and add the milk. Thicken with flour cooked in the remaining butter. Just before serving, stir in the cheese and cook until it is melted.

Scalloped Potatoes with Cheese No. I.

Put into a buttered baking dish alternate layers of cheese sauce No. I and cold boiled potatoes, sliced or cut into dice. Cover with buttered crumbs and bake.

Scalloped Potatoes with Cheese No. II.

Put into a buttered baking dish alternate layers of white sauce and cold boiled potatoes, either sliced or cut into dice. Put over the top a layer of grated cheese and then a layer of buttered bread crumbs. Brown in the oven.

Scalloped Cabbage or Cauliflower with Cheese.

Cauliflower or cabbage may be scalloped according to either of the recipes given for scalloped potatoes and cheese. Sometimes a cauliflower is boiled whole, spread with grated cheese, then with buttered bread crumbs. It is browned in the oven and served with white sauce poured around it.

Cheese with Potato Puffs.

- 1 cupful of mashed potatoes.
- ¼ cupful of milk,
- 1 egg,
- ½ teaspoonful of salt,
- ½ cupful of grated cheese.

Beat the potatoes and milk together until thoroughly mixed. Add the egg and the salt and beat thoroughly. Finally add the cheese. Bake in muffin tins in a slow oven 10 or 15 minutes.

A similar dish may be made by scooping out the inside of a baked potato and mixing it with cheese as above. Fill the potato-skin shell with the mixture, return to the oven, and bake until light brown.

Potatoes with Cheese Sauce.

Cut boiled potatoes into cubes and serve with cheese sauce No. I. This is one of the cheese and vegetable dishes most frequently found on restaurant menus.

CHEESE SALADS, SANDWICHES, AND SIMILAR CHEESE DISHES

Cheese of one sort or another is a very common accompaniment of salads, and the combination is rational as well as palatable, for the constituents of the succulent foods—chiefly water and cellulose—supplement the protein and fat of the cheese. Cheese is often used also as a part of the salad.

A number of recipes are given below for cheese salads and other cheese dishes which may be served with dinner or other regular meals, or served as part of a special lunch or special supper. Many of the cheese dishes discussed in other sections are also commonly used for such occasions when something savory is desired which can be easily and quickly prepared.

Cheese with Salads.

Cheese or cheese dishes are an acceptable addition to salads. Neuf-châtel or other cream cheese, either plain or mixed with pimientos and olives may be passed with lettuce or

may be cut into slices and served on lettuce.

Cheese balls are often served with salad. They are made of some soft cream cheese, and are frequently combined with chopped chives, olives, sweet peppers, chopped nuts, etc., for the sake of adding flavor. Cooked egg yolk, spinach extract, etc., are sometimes mixed in for the sake of color. If the balls are rolled in chopped chives or parsley, both flavor and color are supplied.

Plain Cheese Salad.

Cut Edam or ordinary American cheese into thin pieces, scatter them over lettuce leaves, and serve with French dressing.

Olive and Pimiento Sandwich or Salad Cheese.

Mash any of the soft cream cheeses and add chopped olives and pimientos in equal parts. This mixture requires much salt to make it palatable to most palates, the amount depending chiefly on the quantity of pimiento used. The mixture may be spread between thin slices of bread or it may be made into a roll or molded, cut into slices, and served on lettuce leaves with French dressing.

Cheese and Tomato Salad.

Stuff cold tomatoes with cream cheese and serve on lettuce leaves with French dressing.

Cheese and Pimento Salad.

Stuff canned pimientos with cream cheese, cut into slices, and serve one or two slices to each person on lettuce leaves with French dressing.

Cheese Jelly Salad.

$\frac{1}{2}$ cupful of grated cheese,
1 tablespoonful of gelatin,
1 cupful of whipped cream,
Salt and pepper to taste.

Mix the cheese with the whipped cream, season to taste with salt and pepper, and add to the gelatin dissolved in a scant cupful of water.

This may be molded in a large mold or in small molds.

When the jelly begins to harden, cover with grated cheese. The jelly should be served on a lettuce leaf, preferably with a cream dressing or a French dressing, to which a little grated cheese has been added.

Cheese Salad and Preserves.

Epicures have devised a dish which consists of lettuce with French dressing served with cream cheese and thick preparations of currants or other fruits preserved in honey or sugar, which, owing to the fact that the seeds have been extracted by a laborious process, are fairly expensive. The soft cheese often found in market is also relatively expensive. There is a suggestion in this dish, however, for others which are much less costly. Buttermilk cream, or ordinary cottage cheese served with lettuce or other green salad and a small amount of rich homemade preserves, is a combination with much the same character, and also very appetizing.

Deviled Eggs with Cheese.

In making deviled eggs, either to be eaten alone or upon lettuce leaves in the form of salad, a little grated cheese may be mixed with the yolks in addition to the usual salad dressing and flavorings with which the yolks are mixed.

Cheese and Celery.

Cut stalks of celery having deep grooves in them into pieces about 2 inches long. Fill the grooves with cream cheese salted or flavored with chopped pimientos, and serve with bread and butter as a salad course or serve as a relish at the beginning of a meal.

Although not cheese dishes, strictly speaking, the following salad dressings made with buttermilk cream may be included in this section.

Buttermilk Salad Dressing.

$\frac{1}{2}$ cupful of buttermilk cream,
1 tablespoonful of vinegar,

$\frac{1}{4}$ teaspoonful of salt,
Cayenne pepper.

This dressing is particularly suitable for serving with cucumbers.

Buttermilk Cream Horseradish Salad Dressing.

To buttermilk cream add a little grated horseradish and vinegar and salt. Serve on whole or sliced tomatoes.

Cheese Sandwiches.

Mash or grate American cheese, add salt, a few drops of vinegar and paprika, and a speck of mustard. Mix thoroughly and spread between thin slices of bread.

Cheese and Anchovy Sandwiches.

To the mixture mentioned in the preceding recipe, add a little anchovy essence. Sardines mashed or rubbed into a paste or any other fish paste may be used in a similar way.

Cuban Sandwiches.

This sandwich may be described as a kind of club sandwich with cheese. It is usually made large so that it is necessary to eat it with a knife and fork. It may be made in such proportions as to supply a large amount of nourishment.

Cut the crusts from slices of bread. Between two slices lay first lettuce with a little salad dressing or salt on it, then a slice of soft mild cheese and finally thin slices of dill pickles or a little chopped pickle.

Toasted Cheese Sandwiches.

Plain bread and butter sandwiches with fairly thick slices of cheese put between the slices are frequently toasted, and on picnics, or at chafing dish suppers, are often browned in a pan in which bacon has just been fried.

CHEESE PASTRY, CHEESE SWEETS, AND SIMILAR DISHES

In the foregoing pages a large number of recipes have been included in which cheese is combined with ma-

terials without cooking, as in salads, or used in cooked dishes of creamy or custard-like consistency, as in soufflés and Welsh rabbit or in combination with vegetables or cereals, such as rice.

There are a number of cheese dishes of quite different character in which the cheese is combined with dough, batter, or pastry in various ways, and a number of dishes in which cheese or cheese curd is used in combinations suitable for dessert. Such sweet dishes were once much more common than they are to-day, as reference to old cookery books will show, but some of them are well worth retaining.

In cheese sweets, flavor and richness are both contributed by the cheese.

When cheese is used in pastry or dough it may serve simply as a flavor, as in cheese sticks or cheese straws, or it may wholly or in part replace with its fat the usual shortening, as butter or other fat, and with its protein (casein) the protein (albumin) of eggs. As an illustration of such a use of cheese, cheese gingerbread may be cited.

Using cheese in this way is often an economy when eggs are scarce. Better results will be obtained if soft cheese is used which can be worked into the dough in much the same way as butter or other shortening. To those who like cheese the flavor which it imparts would be an advantage. However, if a very mild cheese is used in combination with molasses or spice the dish differs a little in flavor from one prepared in the usual way.

Cheese Biscuit No. I.

2 cupsful of flour,
4 teaspoonsful of baking powder,
2 tablespoonsful of lard or butter,
 $\frac{7}{8}$ of a cup of milk,
 $\frac{1}{4}$ teaspoonful of salt,
Grated cheese sufficient to give desired flavor.

Mix all the ingredients excepting the cheese as for baking powder biscuits. Roll thin, divide into two

parts, sprinkle one half with grated cheese, lay the other half of the dough over the cheese, cut out with a small cutter, and bake.

Cheese Biscuit No. II.

- $\frac{1}{2}$ pound of soft cheese,
- 2 cupsful of flour,
- 1 cupful of water,
- 4 teaspoonsful of baking powder,
- $1\frac{1}{2}$ teaspoonsful of salt.

Mix and sift the dry ingredients, then work in the cheese with a fork or with the fingers, and add the water gradually. The approximate amount of water has been given; it is impossible to give the exact amount, as flour differs in its capacity for taking up moisture. Toss the dough on a floured board and roll out and cut with a biscuit cutter. Place in a buttered pan and bake in a quick oven from 12 to 15 minutes. The biscuit may be sprinkled with cheese before being put into the oven.

If the cheese is sufficiently soft it can be measured just as butter is. This recipe, then, would call for $\frac{1}{2}$ cupful.

Cheese Drops.

- $2\frac{1}{2}$ tablespoonsful of milk,
- 1 teaspoonful of butter,
- $1\frac{1}{4}$ cupsful of flour,
- $\frac{1}{2}$ teaspoonful of salt,
- 1 egg,
- 2 tablespoonsful of grated Parmesan cheese or dry American cheese.

Heat the butter and milk to boiling point, add the flour and the salt and stir thoroughly. Remove from the fire, add the egg and cheese and stir until well mixed. When cold, drop in small pieces in deep fat and brown. This makes a good addition to any clear soup or to consommé.

Cheese Wafers.

Spread grated cheese on thin crackers, heat in the oven until the cheese is melted. Serve with soup or salad.

Cheese Relish.

Spread bread which has been toasted or fried in deep fat with grated cheese, or with grated cheese mixed with a little mustard, then heat in the oven until the cheese is melted. This may be served with salad, or as a relish to give flavor to some dish such as boiled rice or hominy, which has no very marked flavor.

Cheese Straws.

Roll out plain or puff paste until one-fourth of an inch thick. Spread one-half of it with grated cheese. Fold over the other half and roll out again. Repeat the process three or four times. Cut into strips and bake. Serve with soup or salad.

Salad Biscuit.

- $\frac{1}{2}$ pound of cheese,
- 2 cupsful of flour,
- 4 teaspoonsful of baking powder,
- $1\frac{1}{2}$ teaspoonsful of salt,
- 1 cupful of water.

Mix as for cheese biscuits No. I or No. II, depending on whether the cheese is hard or soft.

Cheese Gingerbread No. I.

- 1 cupful of molasses,
- 4 ounces of cheese,
- 1 teaspoonful of soda,
- $\frac{1}{2}$ cupful of water,
- 2 cupsful of flour,
- 2 teaspoonsful of ginger,
- $\frac{1}{2}$ teaspoonful salt.

Heat the molasses and the cheese in a double boiler until the cheese is melted. Add the soda and stir vigorously. Mix and sift dry ingredients and add them to the molasses and cheese alternately with the water. Bake 15 minutes in small buttered tins.

Cheese Gingerbread No. II.

- $\frac{1}{2}$ cupful of molasses,
- $\frac{1}{2}$ cupful of sugar,
- 4 ounces of cheese,
- 2 cupsful of flour,
- 1 teaspoonful of soda,
- 2 teaspoonsful of ginger,

$\frac{1}{2}$ teaspoonful of salt,
 $\frac{1}{4}$ cupful of water.

Rub the cheese and the sugar together. Add the molasses. Mix and sift the dry ingredients and add them to the cheese mixture alternately with the water.

Cheese Custard.

1 cupful of grated cheese,
 $\frac{1}{2}$ cupful of cream or rich milk,
 Yolks of 2 eggs,
 A speck of salt and of paprika.

Mix the cream and the cheese and heat until the cheese is melted. Remove from the fire and add the yolks of the eggs. Bake in paper cases or buttered ramequins. Serve with jelly or preserves.

Cheese Cakes.

1 quart of milk,
 Rennet,
 1 ounce of sugar,
 Yolks of 2 eggs,
 A speck of nutmeg,
 $1\frac{1}{2}$ ounces of butter,
 1 ounce of dried currants or small raisins.

Warm the milk and add the rennet, using the amount prescribed on

the package. Let the milk stand until the curd forms, then break up the curd and strain off the whey. Add the other ingredients to the curd; line patty tins with pastry, fill them with the mixture, and bake.

Brown Betty with Cheese.

Arrange in a deep earthenware baking dish, alternate layers of bread crumbs and thinly sliced apples. Season with cinnamon, also a little clove if desired and brown sugar. Scatter some finely shaved mild full cream cheese over each layer of apple. When the dish is full, scatter bread crumbs over the top and bake 30 to 45 minutes, placing the dish in a pan of water so that the pudding will not burn.

If preferred, this may be sweetened with molasses mixed with an equal amount of hot water and poured over the top, a half cupful of molasses being sufficient for a quart pudding dish full.

Cheese may be used in place of butter in a similar way in other apple puddings. Apple pie made with a layer of finely shaved cheese over the seasoned apple and baked in the usual way is liked by many who are fond of cheese served with apple pie.

CHAPTER XVII

PREPARATION OF VEGETABLES FOR THE TABLE¹

GENERAL PRINCIPLES—SUCCULENT VEGETABLES—PEAS—
BEANS—POTATOES—OTHER ROOTS AND BULBS—MIS-
CELLANEOUS VEGETABLES

GENERAL PRINCIPLES

Vegetables are baked, roasted, fried, or boiled, are used for making a great variety of dishes, and are prepared for the table in other ways; but the most common method of cooking them is in boiling water. Steaming is not infrequently resorted to as a method of cooking vegetables and is, of course, similar in principle to boiling in water.

The simpler the methods of cooking and serving vegetables the better. A properly grown and well-cooked vegetable will be palatable and readily digestible. Badly cooked, water-soaked vegetables very generally cause digestive disturbances, which are often serious. Nearly every vegetable may be cooked so that with plain bread it may form a palatable course by itself, if it is desired to serve it in this manner.

All green vegetables, roots, and tubers should be crisp and firm when put on to cook. If for any reason a vegetable has lost its firmness and crispness, it should be soaked in very cold water until it becomes plump and crisp. With new vegetables this will be only a matter of minutes, while old roots and tubers often require many hours. All vegetables should be thoroughly cleaned just before being put on to cook. Vege-

tables that form in heads, such as cabbage, cauliflower, and Brussels sprouts, should be soaked, heads turned down, in salted cold water, to which a few spoonfuls of vinegar may be added. If there are any worms or other forms of animal life in these vegetables, they will crawl out. To secure the best results all vegetables except the dried legumes must be put in boiling water, and the water must be made to boil again as soon as possible after the vegetables have been added, and must be kept boiling until the cooking is finished. Herbaceous vegetables should boil rapidly all the time. With tubers, roots, cauliflowers, etc., the ebullition should not be so violent as to break the vegetables. Green beans and peas when removed from the pod must also be cooked gently, i.e., just simmer. When the pods and all are used they are to be cooked rapidly, like the herbaceous vegetables.

To secure the most appetizing and palatable dishes, only fresh tender vegetables should be cooked. If, however, green beans, peas, etc., have grown until a little too old and it still seems best to gather them, a very small piece of baking soda added to the water in which they are boiled makes them more tender, it is commonly believed, and helps to retain the color. Too much soda injures the flavor, and an excess must be carefully avoided. A little soda

¹ U. S. Department of Agriculture. Farmers' Bulletin No. 256.

may also be used to advantage if the water is quite hard. Peas may be boiled for fifteen or twenty minutes in the water to which the soda has been added, then to be cooked the same as peas with pork.

During the cooking of all vegetables the cover must be drawn to one side of the stewpan to allow the volatile bodies liberated by the heat to pass off in the steam. All vegetables should be thoroughly cooked, but the cooking should stop while the vegetable is still firm. This, of course, does not apply to vegetables that are cooked in soups, purées (thick strained soups), etc. The best seasoning for most vegetables is salt and good butter. Vegetables that are blanched and then cooked with butter and other seasonings and very little moisture are more savory and nutritious than when all the cooking is done in a good deal of clear water.

Blanching Vegetables.—Blanching, which in cookery is entirely different from the bleaching or blanching of green vegetables in the garden, is a cooking process often used with vegetables, since it removes the strong or acrid taste and improves the quality. It is also convenient, since blanching may be done at any time, and the cooking completed in a very short time when the dish is to be served.

Have a large stewpan half full of rapidly boiling water. Add a table-spoonful of salt for every 2 quarts of water. Have the vegetables cleaned and well drained. Drop them into the boiling water, and bring the water back to the boiling point as quickly as possible. Boil rapidly, with the cover partially or wholly off the stewpan, five to twenty minutes, depending upon the vegetable, then drain off the water. If the cooking of the vegetable is not to be finished at once, pour cold water over the vegetable to cool it quickly, then drain and set aside until needed. If the cooking is to be continued at once, it will not be necessary to rinse the vegetable with cold water. To complete the cooking the vegetable should be put in a small stewpan

with butter or drippings and the other seasonings and cooked gently until done. A few spoonfuls of liquid will be required for every quart of very juicy vegetables, and half a pint of liquid for drier vegetables. The stewpan is to be covered, only a slight opening being left for ventilation. All vegetables cooked in this manner should be cut up rather small either before or after the blanching.

Waste in Preparing Vegetables.—In preparing vegetables for the table there is almost always a larger or smaller loss due to inedible matter, skins, roots, seeds, etc., and also a waste of good material, which is caused by careless paring, etc., all these losses being grouped together in reporting analyses under the name "refuse." The amount of refuse varies greatly in different vegetables. The amount may be very small (7 per cent) in such vegetables as string beans; medium (10 per cent to 15 per cent) in such vegetables as onions, cabbage, leeks, lettuce, cucumbers; or high (50 per cent) in such vegetables as beans in pod, pumpkins, and squash. With tubers, such as potatoes, the average amount of refuse is 20 per cent, and with such roots as turnips, 30 per cent.

In preparing vegetables for the table the careful cook will remove all inedible portions and will see to it that the total amount of refuse is as small as is consistent with good quality. Thin paring of potatoes and other vegetables is an economy which it is worth while to practice, and is an easy way of decreasing useless loss.

* * *

Changes that Take Place in Cooking Vegetables.—Briefly, these are the principal changes that take place in vegetables during cooking: The cellular tissue is softened and loosened; the nitrogenous substances are coagulated; the starch granules absorb moisture, swell, and burst; and flavors and odors are developed.

As long as the vegetable is kept at a temperature above 125° F. changes continue to go on in the vege-

table substance. The most marked of these are in the starch and in the odor, color, and flavor of the vegetable. Starch will not dissolve in cold water, but pure starch gelatinizes readily in hot water, and if the temperature is high enough will become gummy and opaque. If starch is cooked in just moisture enough to swell and burst its granules and is then kept hot, but without additional moisture, a change will continue to take place, though the starch will remain dry and glistening. The flavor grows sweeter and more nutty the longer the starchy food cooks in dry heat. (See Boiled Potatoes, Boiled Rice.) It is only vegetables that are composed largely of starch that can be kept hot in this manner without acquiring a strong taste and poor color. Potatoes, if kept in a closely covered vessel or with the unbroken skins on, will become soggy and dark and have a rank flavor. This is owing to the retention of moisture, which changes some of the starch to a sticky gummy mass, and very probably to the noxious volatile bodies which are generated by heat and should be allowed to pass away. If the skins are broken and the vessel ventilated, potatoes may be kept warm a long time without spoiling.

* * *

Overcooking changes and toughens the texture of vegetable foods and destroys the chlorophyll and other coloring matters and volatilizes or injures the bodies which contribute to the flavor. Overcooked vegetables are inferior in appearance and flavor and often indigestible (that is, promotive of digestive disturbance) as well as unpalatable.

SUCCULENT VEGETABLES

Cabbage.—Because of the relatively large amount of sulphur which cabbage contains it is apt to be indigestible and cause flatulence when it is improperly cooked. On the other hand, it can be cooked so that it will be delicate and digestible. It is one of our most useful vegetables,

being available during the late fall, winter, and spring months, when other green vegetables are difficult to procure. The quickest and simplest methods of cooking cabbage are the best. The essentials for the proper cooking of this vegetable are plenty of boiling water, a hot fire to keep the water boiling all the time, and thorough ventilation, that the strong-smelling gases, liberated by the high temperature, may be carried off in the steam.

Young cabbage will cook in twenty-five or thirty minutes; late in the winter it may require forty-five minutes. The vegetable when done should be crisp and tender, any green portion should retain the color, and the white portion should be white and not yellow or broken. Overcooked cabbage or cauliflower is more or less yellow, has a strong flavor, and is very inferior to the same dish properly cooked. In addition, overcooking is a cause of digestive disturbance.

To Boil Cabbage.—Cut a small head of cabbage into four parts, cutting down through the stock. Soak for half an hour in a pan of cold water to which has been added a tablespoonful of salt; this is to draw out any insects that may be hidden in the leaves. Take from the water and cut into slices. Have a large stewpan half full of boiling water; put in the cabbage, pushing it under the water with a spoon. Add one tablespoonful of salt and cook from twenty-five to forty-five minutes, depending upon the age of the cabbage. Turn into a colander and drain for about two minutes. Put in a chopping bowl and mince. Season with butter, pepper, and more salt if it requires it. Allow a tablespoonful of butter to a generous pint of the cooked vegetable. Cabbage cooked in this manner will be of delicate flavor and may be generally eaten without distress. Have the kitchen windows open at the top while the cabbage is boiling, and there will be little if any odor of cabbage in the house.

Cabbage Cooked with Pork.—For a small head of cabbage use about half a pound of mixed salt pork.

Boil the pork gently for three or four hours. Prepare the cabbage as for plain boiled cabbage. Drain well and put on to boil with the pork. Boil rapidly for twenty-five to forty-five minutes. Serve the pork with the cabbage. The vegetable may require a little more salt.

Smoked bacon or ham may be substituted for the pork. Cabbage may be cooked in water in which corned beef was boiled.

Creamed Cabbage.

- 1 pint boiled and minced cabbage,
- $\frac{1}{2}$ pint hot milk,
- 1 tablespoonful butter,
- 1 teaspoonful flour,
- $\frac{1}{2}$ teaspoonful salt,
- $\frac{1}{2}$ teaspoonful pepper.

Put the cabbage, hot milk, salt, and pepper in a stewpan and on the fire. Beat the butter and flour together until creamy, then stir into the contents of the stewpan. Simmer ten minutes, being careful not to scorch the sauce; serve very hot.

Cabbage with Sausage.

- 6 sausages,
- 1 quart minced cabbage,
- $\frac{1}{2}$ teaspoonful pepper,
- Salt, if necessary.

Fry the sausages crisp and brown. Take from the frying pan and pour off all but three tablespoonsful of the fat. Put the minced cabbage in the frying pan and cook six minutes. Arrange in a hot dish and garnish with the sausages. Serve mashed potatoes with this dish.

Purée of Cabbage and Potatoes.

- 1 pint boiled finely-minced cabbage,
- 6 medium-sized potatoes,
- 2 tablespoonsful butter or savory drippings,
- 2 teaspoonsful salt,
- $\frac{1}{2}$ teaspoonful pepper,
- $\frac{1}{2}$ pint hot milk.

Peel the potatoes and put them in a stewpan with boiling water enough

to cover them. Cook just thirty minutes. Pour off the water and mash fine and light. Beat in the hot milk, seasoning, and cabbage. Cook about five minutes longer.

Cauliflower.—This vegetable, which a few years ago was a luxury, is now cultivated by nearly all market gardeners, and is within the means of all housekeepers. It is a most delicious vegetable, when properly cooked, and vile when improperly cooked, which generally means when overcooked.

Remove all the large green leaves and the greater part of the stalk. Put the head down in a pan of cold water which contains to each quart a teaspoonful of salt and a teaspoonful of vinegar. Let it soak in this water an hour or more. This is to draw out worms, if any should be hidden in the vegetable. When ready to cook the cauliflower put it into a large stewpan, stem end down, and cover generously with boiling water. Add a tablespoonful of salt and cook with the cover of the saucepan partially off, boiling gently all the time. A large, compact head will require a full half hour, small heads from twenty to twenty-five minutes. If the flowers are loose the heat penetrates to all parts quickly. When compact a little extra time should be allowed for the cooking, but the time must never exceed the half hour. The cauliflower begins to deteriorate the moment it begins to be overcooked. Overcooking, which is very common, can be told by the strong flavor and dark color. It makes the vegetable not only unpleasant to the eye and palate, but indigestible also. If this vegetable must be kept warm for any length of time, cover the dish with a piece of cheese cloth. In hotels and restaurants it is better to blanch it, chill with cold water, and then heat in salted boiling water when needed.

Creamed Cauliflower.

- 1 pint cooked cauliflower,
- 1 pint milk,
- 1 teaspoonful salt,
- $\frac{1}{2}$ teaspoonful pepper,

1 tablespoonful butter,
 $\frac{1}{2}$ tablespoonful flour,
 3 slices toasted bread.

Have the cooked cauliflower broken into branches and seasoned with half the salt and pepper. Put the butter in a saucepan and on the fire. When hot add the flour and stir until smooth and frothy, then gradually add the milk, stirring all the time. When the sauce boils add the salt, pepper, and the cauliflower. Cook 10 minutes and dish on the slices of toast. Serve very hot.

Broccoli.—This vegetable is a species of cauliflower and can be cooked and served in the same manner.

Brussels Sprouts.—This is a species of cabbage, which forms in many small heads about the size of an English walnut on the stock of the plant. It is fairly common in most large markets and is worthy of more extended use than it has commonly met with in the United States.

Brussels Sprouts Blanched.—Remove the wilted or yellow leaves from the little heads or "sprouts," cut the stock close to the head, and soak in salted cold water for an hour or more. Drain well and put into plenty of boiling salted water. Allow one teaspoonful of salt to two quarts of water. Boil rapidly for fifteen or twenty minutes, the time depending on the size of the heads. When done turn into a colander and pour cold water over the heads. They are now ready to cook in butter, or to serve with any kind of sauce. Or the boiling water may be drained from the sprouts, which can then be seasoned with butter, salt, and pepper.

Brussels Sprouts Sauté.

1 quart Brussels sprouts,
 3 tablespoonfuls butter,
 $\frac{1}{2}$ teaspoonful salt,
 $\frac{1}{4}$ teaspoonful pepper.

To sauter a food is to cook it quickly in a frying pan in a little fat. Blanch the sprouts and drain well. Put them into a broad-bottomed saucepan with the butter and other seasonings. Place over a hot

fire and shake frequently. Cook five minutes. Serve hot.

Kale, or Borecole.—There are several varieties of this vegetable. The dwarf, green-curved kale is the best for the table and is a fall and spring vegetable. The leaves are sweeter and more tender after having been touched by the frost. In the North the roots may be banked with earth at the beginning of winter and when extreme cold weather sets in the plants may be covered lightly with hay or straw. In the spring the old stalks will produce young shoots that make delicious greens.

Kale Boiled with Pork.—Cook the kale the same as cabbage with pork.

Minced Kale.—Remove all the old or tough leaves. Wash the kale thoroughly and drain, then put on to cook in a kettle of boiling water, to which has been added salt in the proportion of 1 tablespoonful to 4 quarts of water. Boil rapidly, with the cover off the kettle, until the vegetable is tender. Pour off the water, and chop the kale rather fine; then put back into the kettle and add 1 tablespoonful of butter and 2 of meat broth or water for each pint of the minced vegetable. Add more salt if required. Cook for ten minutes and serve at once. The time required for cooking kale varies from thirty to fifty minutes. If young and fresh from the garden it will cook in thirty minutes.

Sea Kale.—This is a delicious spring vegetable. It requires practically the same culture as asparagus, and the young shoots are cooked in the same way as this vegetable. Sea kale may be cut the third year from the planting of the seed. Cutting should not be continued after the flower heads begin to form. The flower heads may be cooked the same as broccoli.

Spinach.—This vegetable is a great resource in cold weather when green vegetables are scarce.

The common spinach, which is the sort usually met with in gardens or markets, goes to seed quickly in hot weather, but New Zealand spinach, which is a very different plant from

ordinary spinach and far less well known in the United States, yields tender greens all summer. The shoots should be cut regularly; if not, the old shoots become tough and rank flavored.

Spinach has little food value, but its refreshing and slightly laxative qualities make it a valuable adjunct to the more substantial foods. It contains little starch and only a suggestion of sugar, and is therefore one of the vegetables that physicians include in the bill of fare of many invalids who require a diet without these carbohydrates.

Like most other vegetables, it is rarely cooked to perfection, yet it is not difficult to prepare. Except for special reasons the simplest methods are the best for this vegetable. No matter how cheap the raw spinach may be, it is always expensive in two things—labor and butter. It takes a good deal of time, water, and patience to wash it clean, and no other vegetable requires so much butter if it is to be at its best. Where strict economy must be practiced, sweet drippings from roast beef or chicken can be substituted for the butter.

To clean the spinach cut off the roots, break the leaves apart and drop them into a large pan of water, rinse them well in this water and put them in a second pan of water. Continue washing in clean waters until there is not a trace of sand on the bottom of the pan in which the vegetable was washed. If the spinach is at all wilted let it stand in cold water until it becomes fresh and crisp. Drain from this water and blanch. For half a peck of spinach have in a large saucepan 3 quarts of boiling water and 1 tablespoonful of salt. Put the drained spinach in the boiling water and let it boil ten minutes, counting from the time it begins to boil. When it begins to boil draw the cover of the saucepan a little to one side to allow the steam to escape. At the end of ten minutes pour the spinach into a colander, and when the hot water has passed off pour cold water over it. Let it drain well and mince coarse or fine, as is suitable for the

manner in which it is to be served.

One peck of spinach will make about 1½ pints when blanched and minced.

Spinach with Cream.

½ peck spinach,
2 tablespoonfuls butter,
1 tablespoonful flour,
1 teaspoonful salt,
½ teaspoonful pepper,
½ pint cream or milk.

Blanch and mince the spinach. Put the butter in a saucepan and on the fire. When hot add the flour and stir until smooth and frothy, then add the minced spinach and the salt and pepper. Cook for five minutes, then add the milk or cream, hot, and cook three minutes longer. Serve.

Spinach with Egg.

½ peck spinach,
3 tablespoonfuls butter,
½ teaspoonful pepper,
2 eggs,
3 teaspoonfuls salt.

Wash and blanch the spinach, using two teaspoonfuls of the salt in the water in which the vegetable is boiled. Drain the blanched spinach and chop rather fine, return it to the saucepan, and add the salt, pepper, and butter. Place on the fire and cook ten minutes. Heap in a mound on a hot dish and garnish with the hard-boiled eggs, cut in slices.

Spinach Cooked without Water.—Fresh spinach when washed holds enough water for cooking. Put the spinach in a stewpan and on the fire; cover and cook ten minutes. Press down and turn the spinach over several times during the cooking. At the end of ten minutes turn the spinach into a chopping bowl, and mince rather fine. Return to the stewpan and add the seasonings, allowing for half a peck of spinach two generous tablespoonfuls of butter and a teaspoonful of salt. Simmer ten minutes; or if very tender five minutes will be sufficient.

Spinach cooked in this manner will retain all its salts. It will be more

laxative and the flavor stronger than when blanched (boiled in water). In young, tender spinach this is not objectionable, but when the overgrown vegetable is cooked in its own moisture the flavor is strong and somewhat acrid.

Lettuce.—If lettuce has grown until rather too old for salad, it may be cooked, and makes a fairly palatable dish.

Boiled Lettuce.—Wash four or five heads of lettuce, carefully removing thick, bitter stalks and retaining all sound leaves. Cook in plenty of boiling salted water for ten or fifteen minutes, then blanch in cold water for a minute or two. Drain, chop lightly, and heat in a stewpan with some butter, salt and pepper to taste. If preferred, the chopped lettuce may be heated with a pint of white sauce seasoned with salt, pepper, and grated nutmeg. After simmering for a few minutes in the sauce, draw to a cooler part of the range and stir in the well-beaten yolks of two eggs. See also, "Peas with lettuce."

Swiss Chards.—This vegetable is a variety of beet in which the leaf stalk and midrib have been developed instead of the root. It is cultivated like spinach, and the green, tender leaves are prepared exactly like this vegetable. The midribs of the full-grown leaves may be cooked like celery.

Beet Greens.—Beets are usually thickly sowed, and as the young beet plants begin to grow they must be thinned out. The young plants pulled from the bed make delicious greens, particularly if the root has attained some little size. Unfortunately, of late years the leaves are attacked by insects; therefore, they must be examined leaf by leaf, and all which are infested rejected. Do not separate the roots from the leaves. Wash thoroughly in many waters. Put into a stewpan and cover generously with boiling water. Add a teaspoonful of salt for every two quarts of greens. Boil rapidly until tender. This will be about thirty minutes. Drain off the water,

chop rather coarse, season with butter and salt.

The vegetable may be boiled with pork as directed for "Cabbage and pork."

Asparagus.—This delicious spring vegetable should be treated very simply, yet carefully.

Cut off the woody part, scrape the lower part of the stalks. Wash well and tie in bunches. Put into a deep stewpan, with the cut end resting on the bottom of the stewpan. Pour in boiling water to come up to the tender heads, but not to cover them. Add a teaspoonful of salt for each quart of water. Place where the water will boil. Cook until tender, having the cover partially off the stewpan. This will be from fifteen to thirty minutes, depending upon the freshness and tenderness of the vegetable. Have some slices of well toasted bread on a platter. Butter them slightly. Arrange the cooked asparagus on the toast, season with butter and a little salt and serve at once. Save the water in which the asparagus was boiled to use in making vegetable soup.

Another method of cooking asparagus is to cut all the tender part into short pieces. Add boiling water enough to just cover the vegetable and place where the water will boil. Cook until tender (about fifteen minutes), season with salt and butter, and serve in the greater part of the juice.

If preferred, a cream dressing may be served with asparagus.

Globe Artichoke.—The large flower bud of the *Cynara scolymus* is known as the globe or French artichoke. The flower buds must be used before they open. The edible portion consists of the thickened portion at the base of the scales and the receptacle to which the leaf-like scales are attached. In cookery books the receptacles are always spoken of as the bottoms. The parts of the flower in the center of the bud are called the "choke" and must always be removed.

When the artichoke is very young and tender the edible parts may be

eaten raw as a salad. When it becomes hard, as it does very quickly, it must be cooked. When boiled it may be eaten as a salad or with a sauce. The scales are pulled with the fingers from the cooked head, the base of each leaf dipped in the sauce and then eaten. The bottoms (receptacles), which many consider the most delicate part of the artichoke, may be cut up and served as a salad, or they may be stewed and served with a sauce. To prepare the artichoke remove all the hard outer leaves. Cut off the stem close to the leaves. Cut off the top of the bud. Drop the artichokes into boiling water and cook until tender, which will take from thirty to fifty minutes, then take up and remove the choke. Serve a dish of French salad dressing with the artichokes, which may be eaten either hot or cold. Melted butter also make a delicious sauce for the artichokes if they are eaten hot.

Spring Greens.—After months of a very limited supply of herbaceous vegetables, which is the usual condition in the northern regions of the United States, there is a craving for "greens." In almost all localities many of the common weeds are tender and well-flavored when very young. If one has a garden, it can be so managed that there shall be an abundance of fresh roots and greens until the time when the regular garden products are ready. There are a number of plants that may be left in the garden over winter for early spring use. Jerusalem artichokes, parsnips, salsify, leeks, and potato onions will give roots or buds as soon as the frost will permit digging. For greens there are such plants as curled green kale, and cabbage. The roots of these plants should be well earthed up, and when the real hard freezing weather comes the plants must be covered with hay or straw.

Spinach and kale, or German winter greens, may be sown in September. When the hard freezing weather comes protect them with leaves, straw, etc. Sorrel, if properly protected, will make a rapid growth as soon as anything begins to grow. It makes

delicious greens by itself, or it may be cooked with other greens. It also makes a refreshing salad. The young shoots of the milkweed are almost as delicious as asparagus, when cooked according to the second method for cooking asparagus. In fact, the milkweed and asparagus may be cut up and cooked together.

The white goosefoot (*Chenopodium album*), better known by the common names "pigweed" and "lamb's quarters," grows in almost all cultivated land. When very young it makes good greens, and should be cooked like spinach. The dandelion, when gathered before the flower bud has attained any size, makes tender greens, and is greatly liked by many people because of its pleasant, bitter flavor. The cultivated dandelion is larger leaved, more tender, and of a milder flavor, and is also a fine salad if blanched like celery. A small bed of this vegetable will give a generous return in the spring, for the small amount of care it requires.

The marsh marigold, commonly called "cowslip," is found in many regions in marshy places. In the early spring this plant makes good greens. Cook the same as spinach. Purslane is a weed common in most gardens and is very palatable as a pot herb. It is also cooked like spinach.

In the Southern States the young shoots of the pokeberry or poke tops are favorite greens, and are cooked like asparagus, while turnip sprouts, cabbage sprouts, and collards are favorite greens of garden origin.

In some regions of Europe young hop sprouts are much prized, being cooked like asparagus. Though eaten to some extent, they do not seem to be known to many housewives in this country.

Every locality produces some wild plants that are safe and pleasant to use as greens. It is important, however, that the wild greens shall be gathered by persons who are familiar with the plants.¹

¹ For a discussion of wild plants used as pot herbs, see "Some Additions to our Vegetable Dietary," by F. V. Coville, U. S. Dept. Agr. Yearbook 1895, p. 205.

PEAS

Green Peas.—This vegetable should be gathered when the seeds are about half grown, and it should be cooked as soon as possible after gathering. When the peas are thus young and tender they are best simply boiled and seasoned with salt and good butter. Some varieties of peas lack sweetness, and in this case a little sugar in the water in which they are cooked improves the flavor. Overcooking spoils the color and flavor of the vegetable. Peas should always be boiled slowly, and with the cover partially off the stewpan. It is impossible to give the exact time of cooking this vegetable, since so much depends upon the maturity of the peas, the length of time they have been picked, etc. Young, tender peas will generally cook in twenty or thirty minutes, and the seasoning should be added while they are still firm and crisp. If the peas are cooked until the green color of the chlorophyll is destroyed they are overdone and their delicate flavor is spoiled. When peas are overgrown and a little hard they should be cooked by the rule "Peas with pork." When this rule is followed a pinch of delicate, small, white onions may be added to the peas and other ingredients and will give a very savory dish.

Boiled Peas with Butter.—Put one quart of shelled peas in a stewpan and add enough boiling water to cover them generously. Place over a hot fire and when they begin to boil draw back where the water will bubble gently. Until the peas are done cook with the cover partially off the stewpan. When the peas are tender add one teaspoonful of salt and three tablespoonfuls of good butter. Cook ten minutes longer. If the peas are not the sweet kind add a teaspoonful of sugar with the salt and butter.

Peas with Pork.

- 1 quart peas,
- 4 ounces pork,
- 1 tablespoonful butter,
- 1 gill water ($\frac{1}{2}$ cupful),
- 2 small white onions,
- $\frac{1}{2}$ teaspoonful pepper.

Cut pork into small bits. Put butter into stewpan and on the fire. When the butter is melted add the pork and cook gently until a light brown, then add the water, peas, onion, and pepper. This is a good way to cook peas when they are a little old and hard.

Peas with Lettuce.

- 1 quart peas,
- 2 tablespoonfuls butter,
- 1 head lettuce—the heart,
- 1 small onion,
- 1 teaspoonful sugar,
- $\frac{1}{2}$ gill water.

Put all the ingredients into a stewpan, cover and place over the fire and cook for five minutes, tossing the vegetables several times. Now draw the pan back where the contents will simmer slowly for half an hour.

Purée of Dried or Split Peas.—Soak one quart of dried peas over night and follow the directions for purée of dried beans.

Sugar Peas.—The green pods of the sugar pea may be prepared like string beans.

Gather the pods while the seeds are still very small. String them like beans and cut into two or three lengths. Cover with boiling water and boil gently until tender. If they are young and fresh they will cook in twenty-five or thirty minutes. Pour off some of the water, which will serve for soup. Season with salt and butter and serve at once. When the pods are fresh and tender they have an exquisite flavor. When the seeds have grown large and the pods become tough they may be shelled and cooked like any other variety of peas. The seeds of the sugar pea are tender and fine flavored.

BEANS

Beans are served as a vegetable in three stages of growth, namely, the tender young pods, the fresh seeds, and the dried seeds. The pods are known as green or string beans and as butter beans, depending upon the variety. String beans make one of

our most delicious vegetables, if young and properly cooked. They should be gathered before the seeds begin to form. In this state the bean is sweet, delicate, and tender, but not a highly nutritious food. Shelled beans, both dried and fresh, particularly the former, contain a large percentage of nitrogenous matter. The dried, ripe, shelled beans are apt to produce flatulence and sometimes colic. This trouble is largely due to the hull or skin and the germ, and may be remedied in a great measure by proper cooking, and, when possible, the removal of the hulls. The best forms in which to eat dried beans are in soups and purées. Beans that have been thoroughly stewed or baked under the right conditions may be eaten by people who live a good deal out of doors. Fat of some kind is necessary in the cooking of beans. The fat has a softening influence on the composition of the beans, and, since this vegetable has a very small percentage of fat, it is very desirable to supply this element either when cooking or when serving the vegetable. When possible, beans should be cooked in soft water. Dried beans are always hard when raw and have a strong acrid flavor. To soften them and remove the strong flavor, the vegetable should be soaked in cold water, and then brought to the boiling point in fresh cold water. This water should be thrown away and the cooking be finished in fresh water. A little soda in the water in which the beans are soaked and in the water in which they are first scalded will help to soften and sweeten the vegetable.

Green or String Beans.—Formerly it was difficult to find the slender, stringless green beans, but to-day the progressive market gardeners make a point of raising beans of this kind. Unfortunately, not all market gardeners and farmers are progressive, and many still raise a coarse, fibrous bean that is a disappointment to the consumer. In the very early stage of the pod almost any kind of bean will be good, if

properly cooked, but all except the stringless kind must have their strings carefully removed. The pods should be gathered while small and tender. If for any reason they become wilted, they must be made crisp and fresh by being soaked in cold water. The beans that are brought from the South in cold weather are usually more or less wilted. They should be freed from strings, cut up, and soaked at least twelve hours in cold water. They will then cook like fresh beans.

To Blanch Green Beans.—Green beans should always be blanched. To do this drain them from the cold water and put them into water that is boiling rapidly, allowing a teaspoonful of salt to two quarts of water. Boil rapidly, with the cover partially off the saucepan, for twenty minutes. Turn into a colander and let cold water run upon them. They are now ready to be finished in any manner you like. The blanching can be done in the morning while the fire is good and the beans be finished for dinner at the proper time.

Green Beans, Plain.

1 quart beans,
 $\frac{3}{4}$ pint water,
 1 generous tablespoonful butter,
 1 level teaspoonful salt.

String the beans if necessary and cut them into two-inch lengths. Blanch them as directed. Drain and put in the saucepan with the water, salt, and butter. Cook for ten minutes over a hot fire, turning the contents of the saucepan from time to time. Serve very hot. If the beans are not tender it may take fifteen minutes to cook them, but under all circumstances be careful not to overcook, as this ruins the flavor. If overcooked, green beans become yellow or brown.

Green Beans Boiled with Pork.—Boil about a quarter of a pound of pork for five hours. Have the beans free from strings and cut about 2 inches long. Cook them with the pork until tender (about half an hour).

Green Beans with Pork (French Method).

- 1 quart boiled beans,
- 2 ounces pork,
- 1 pint hot water,
- 1 teaspoonful flour.

Cut the pork into small dice and put in the stewpan. Cook slowly for twenty minutes, then add the water. Mix the flour with a few spoonfuls of cold water; stir into the pork and water. Place the stewpan where the contents will cook slowly for an hour. At the end of this time add the beans and cook half an hour. Taste to see if more salt is required. A tablespoonful of butter added just before serving is a great acquisition to this dish.

Butter beans, the varieties of string beans which are pale yellow in color, may be cooked like the green string beans.

Scarlet Runner Beans.—In Great Britain the scarlet runner beans, which are raised in the United States almost exclusively as an ornamental plant, are highly prized for the table. The tender green pods are "whittled" into small sections (after stringing) and cooked in water until just tender. Like other green vegetables, they lose their color and delicate flavor if overcooked. These beans are at their best seasoned only with butter and salt.

Shelled Kidney Beans.—All the varieties of this bean, when gathered while the seeds are still tender, may be cooked like the Lima beans. They may also be boiled with pork like green beans. It takes from one to two hours to cook kidney beans.

Stewed Shelled Beans.

- 1 quart shelled beans,
- $\frac{1}{4}$ pound salt pork,
- 1 onion,
- $\frac{1}{2}$ teaspoonful pepper,
- 1 tablespoonful flour,
- 1 quart boiling water,
- Salt to taste.

Cut the pork in slices and fry it slowly ten minutes in a stewpan. Add the onion, cut fine, and cook

twenty minutes very slowly. Cover the beans with boiling water and boil ten minutes. Drain off the water. Put the beans and flour in the stewpan with the pork and onion, and stir over the fire for five minutes. Add the quart of boiling water and the pepper. Place the saucepan where its contents will simmer for two hours. Taste to see if salt enough; if not, add salt.

This method of cooking new shelled beans gives a savory and substantial dish.

Green Lima Beans.—Cover 1 quart of the shelled beans with boiling water. Place on the fire where they will boil up quickly, then draw back where they will just simmer until done. When tender pour off a part of the water. Season the beans with a teaspoonful of salt and 2 heaping tablespoonfuls of butter.

Or drain the water from the beans. Put the butter in a saucepan with 1 tablespoonful of flour. Stir over the fire until smooth and frothy, then add the beans and stir over the fire for five minutes. Draw back and add half a pint of water, meat stock, or milk. Simmer ten minutes. If liked, a teaspoonful of fine herbs may be added a few minutes before serving. It will take from forty-five to sixty minutes to boil the beans sufficiently.

Dried Beans.—All dried beans require the same preliminary treatment, no matter how they are to be finally cooked and served. Look them over carefully to remove all dirt and pebbles, then wash clean. Soak them overnight in plenty of cold water. In the morning pour off the water and put them in a stewpan with cold water enough to cover them generously. Let them come to the boiling point in this water, then drain. If the beans are old and hard, for each quart put a piece of soda about the size of a large bean in the water in which they are soaked overnight, also in the first water in which they are boiled.

The scalded and drained beans should be put back in the stewpan and covered generously with boiling water. Add 1 tablespoonful of salt

for 1 quart of beans. They should now cook slowly, with the cover partially off the stewpan until they have reached the required degree of tenderness. For stewed and baked beans the cooking must stop when the skins begin to crack. For beans served with a sauce they should cook until perfectly tender, but they must not be broken or mushy. For purées and soups they should be cooked until very soft.

Purée of Dried Beans.

Cook 1 quart of beans in water until very soft, then drain well (saving the water) and rub through a purée sieve. Put 1 pint of the strained beans in a stewpan with 2 tablespoonfuls of butter or savory drippings, 1 teaspoonful of sugar, 1 teaspoonful of salt, one-fourth of a teaspoonful of pepper, and hot milk enough to make the purée like thick mush. About half a pint of milk will be right. Cook in the double boiler for one hour, stirring often and adding more milk if too dry. Heap the purée in the center of a hot platter. Garnish with a circle of fried sausages, pork chops, mutton chops, or any fat meat. The purée may be served as a vegetable, with any kind of meat. A soup may be made with the water in which the beans were cooked and the remainder of the strained beans.

Dried Beans Sauté.

Cook the beans until tender, but not broken. Drain off the water and save it for soup. For 1 quart of beans put 3 tablespoonfuls of savory drippings or butter in a large-bottomed stewpan. When the fat is hot put in the drained beans, which have been seasoned with a tablespoonful of salt and half a teaspoonful of pepper. Cook over a hot fire for fifteen minutes, frequently turning the beans over with a fork. Cover and let them cook for half an hour where they will not burn. If the beans are liked moist add a cupful of meat broth, milk, or water before putting them to cook for the last half hour.

This dish may be made more sa-

vory by frying a tablespoonful of minced chives, shallot, or onion in the butter or fat before adding the beans. A tablespoonful of fine herbs may also be added to the beans to make them more savory.

Dried Beans with Sauce.

The well-cooked and drained beans may be moistened with any good sauce and cooked for half an hour.

Dried Beans in Salad.

Season the cooked and drained beans with any of the salad dressings described elsewhere and serve as a salad.

Baked Beans.

Cook the dried beans gently until the skins begin to break, then drain off the water. Put a layer of beans in a bean pot or deep earthen dish, and on this layer, in the center of the dish, place a piece of salt pork ("streak of fat and streak of lean") having the rind side up, using for 1 quart of beans a half pound of pork; the rind should be scored. Fill up the dish with the beans and add seasonings and water to cover the beans. The simplest seasoning is 1 tablespoonful of salt and half a teaspoonful of pepper to a quart of beans. Mix the salt and pepper with the water. If liked, a tablespoonful of mustard may be added as well as a tablespoonful or more of molasses and an onion. Instead of the pork a piece of salt or fat beef or mutton may be employed. In this case there should be from 1½ to 2 pounds of the meat per quart of beans. If fresh meat be used, add more salt to the beans. If, on the other hand, salt meat is used, probably 1 teaspoonful of salt will be enough.

When mutton is employed trim off every particle of the skin.

Bake the beans in a very moderate oven for eight or ten hours. Add a little boiling water from time to time, but never enough to bring the water beyond the top of the beans. Any kind of bean may be baked in this manner. However, the small pea bean is the best for "Boston baked

beans." The Lima and large white beans are best for the deep earthen dish. Do not cover the beans while baking.

Lentils.—Lentils may be cooked in purées, soups, etc., like dried beans.

Baked Lentils.

- 1 quart lentils.
- 1 quart water.
- 6 ounces mixed salt pork,
- 1 clove of garlic or 1 small onion,
- 1 generous teaspoonful salt,
- $\frac{1}{2}$ teaspoonful pepper.

Pick over and wash the lentils. Soak in cold water overnight. In the morning pour off the water and put the lentils in a stewpan with two quarts of cold water and place on the fire. As soon as the water begins to boil the lentils will rise to the top. Take them off with a skimmer and put them in a deep earthen dish, with the pork and onion in the center. Mix the pepper and salt with a quart of boiling water and add. Put the dish in a moderate oven, and cook slowly for four or five hours. The lentils must be kept moist, and it may be necessary to add a little water from time to time. If the pork is not very salt the dish may require a little more salt.

Stewed lentils are prepared in about the same manner, but using more water. Instead of pork, fat corned beef or the shank of a ham may be employed.

Cowpeas.—Cowpeas (a common leguminous vegetable in the southern United States), also called black-eye peas, Whip-poor-will peas, Lady peas, cornfield peas, etc., are most excellent cooked like shelled beans when green. The young pods are also served like string beans. The ripe, dry beans, which are also very palatable and nutritious, may be cooked like dried beans or lentils.

POTATOES

There are many varieties of this vegetable. Tastes differ as to the most desirable kinds. In America

and in England the white, mealy varieties are the most prized. On the Continent of Europe the "Yellow Holland" is a favorite variety. The white potato, when light and dry, is of delicate flavor and thought to be easy of digestion. It is especially suited for boiling, steaming, and baking, and for soups and purées. The yellow potatoes are more suitable for preparations in which it is desirable that the whole or pieces of potatoes shall retain their shape when cooked. Such potatoes are the best kind to use for salads, ragouts, hash, and for the fried potato known as "Pommes de terre soufflée," which is like a Saratoga chip, except that it puffs up like a little sack filled with air. In general the yellow potato has a richer flavor than the white.

The potato is in such common use that it would seem as if all its characteristics would be well understood and it would be cooked in perfection. Unfortunately, the contrary is true, and perhaps no other vegetable is so carelessly cooked as a rule.

The potato is a starchy food that contains enough moisture in its composition to cook the starch. This moisture is in the form of a watery juice, in which is dissolved the nitrogenous matter, the various salts, sugar, gum, etc. The starch cells are surrounded and penetrated by this watery bath. In cooking, the nitrogenous juice is coagulated in part at least by the heat, the starch granules swell and burst, and the starch absorbs the watery part of the juice. When this stage is reached, if the moisture has been in the right proportion, all parts of the potato will present a light, dry, glistening appearance. Every one concedes that such a potato will not cause digestive disturbance. However, the moisture is not always in the right proportion. Ripe potatoes and potatoes grown on a well-drained or sandy soil will, as a rule, be dry and mealy if properly cooked. Potatoes grown in a wet season or in a heavy, damp soil as a rule contain too large a proportion of moisture for the starch. Old potatoes that are allowed to

sprout will be watery, probably owing to the withdrawal of some of the starch for food for the growing sprouts.

A poisonous substance called solanin is found in or near the skin of potatoes which have grown exposed to the sun or a strong light. Solanin also develops when potatoes are allowed to sprout, and serious illness has been known to follow the eating of exposed and sprouted potatoes. The green color which a potato exposed to a strong light takes on is largely due to the grains of chlorophyll developed in the parts of the tuber exposed to the light. The strong flavor is probably due to some substance which develops along with the chlorophyll. It will be seen that potatoes intended for the table should not be exposed to strong light or be allowed to sprout.

Potatoes cooked in dry heat, as by baking in the oven, roasting in ashes, frying in deep fat, or steaming in their jackets retain all their salts and other constituents, and the flavor is more pronounced and savory than when cooked in water. But potatoes so cooked must be served just as soon as they are done, or else they will become soggy and bad flavored.

Potatoes cooked in the skin should be free from any blemish and washed absolutely clean. Old potatoes, that is, potatoes that are kept into the spring and early summer, are better for being soaked in cold water and peeled before cooking.

OTHER ROOTS AND BULBS

Jerusalem Artichoke.—This vegetable is in season in the fall and spring, and may be cooked like kohlrabi and served in a white cream or sauce. The artichoke may also be cooked in milk.

When this is done, cut the washed and peeled artichoke into cubes, put in a stewpan, and cover with milk (a generous pint to a quart of cubes). Add one small onion and cook twenty minutes. Beat together one tablespoonful of butter and one level tablespoonful of flour, and stir this

into the boiling milk. Then season with a teaspoonful of salt and one-fourth of a teaspoonful of pepper, and continue the cooking half an hour longer. The cooking should be done in a double boiler. The artichoke also makes a very good soup.

Turnips.—This vegetable is generally spoiled by overcooking. The flat, white summer turnip, when sliced, will cook in thirty minutes. If the cooking is prolonged beyond this time, the vegetable begins to deteriorate, growing dark in color and strong in flavor. The winter turnips require from forty-five to sixty minutes.

Boiled Turnips.

Have the turnips peeled and sliced. Drop the slices into a stewpan with boiling water enough to cover generously. Cook until tender, then drain well. They are now ready to mash or chop. If they are to be served mashed, put them back in the stewpan; mash with a wooden vegetable masher, as metal is apt to impart an unpleasant taste. Season with salt, butter, and a little pepper. Serve at once.

Hashed Turnips.

Chop the drained turnips into rather large pieces. Return to the stewpan, and for a pint and a half of turnips add a teaspoonful of salt, one-fourth of a teaspoonful of pepper, a tablespoonful of butter, and four tablespoonfuls of water. Cook over a very hot fire until the turnips have absorbed all the seasonings. Serve at once. Or the salt, pepper, butter, and a tablespoonful of flour may be added to the hashed turnips; then the stewpan may be placed over the hot fire and shaken frequently to toss up the turnips. When the turnips have been cooking five minutes in this manner add half a pint of meat stock or of milk and cook ten minutes.

Carrots.—The carrot is valuable as a vegetable and as a flavorer. When partially grown and fresh from the ground they have a delicious flavor, and are so tender that they may be cooked without water. As the carrot

grows old the flavor grows stronger, and in the majority of varieties the heart grows hard and woody. When the carrot reaches this stage only the outer layers are desirable for food.

Carrots with White Sauce.

Scrape the carrots lightly; then cut into large dice or slices. Put into a stewpan with salted boiling water, allowing a teaspoonful of salt for a quart of water, and boil until tender. The young carrots will cook in thirty minutes and the old ones in forty-five. Drain, season with a little salt, put them in a vegetable dish, and pour the white sauce over them. Or the carrots may be cut into dice before cooking, and boiled and drained as directed; then put them back in the stewpan, and for every pint add one tablespoonful of butter, one teaspoonful of sugar, half a teaspoonful of salt, and one gill of water or meat stock. Cook over a hot fire until the carrots have absorbed the seasonings and liquid.

Parsnips.—This vegetable, because of its pronounced taste, is probably not so generally liked as are most of the other roots. It is at its best in the early spring, when it has been in the ground all winter.

The simplest method of cooking the parsnip is to wash it clean, boil it, and then scrape off the skin. Now cut in slices and put in the vegetable dish. Season with salt and butter. When the parsnips are tender and just out of the ground they will cook in thirty-five minutes; when old it takes from forty to fifty minutes to cook them. The cooked and peeled parsnips may be chopped rather coarse, seasoned with salt, and put into a stewpan with hot milk enough to cover them. Place the stewpan on the range where the heat is moderate.

For a pint and a half of parsnips beat together one tablespoonful of butter and one teaspoonful of flour. Stir into the parsnips and milk. Simmer for ten minutes. Parsnips are often cut in slices after boiling and fried in butter.

Salsify.—This vegetable is sometimes called oyster plant, because the

flavor suggests that of the oyster, particularly when the boiled vegetable is sliced and fried in butter. Salsify is one of the roots that may be left in the ground over winter, thus making this vegetable available for the late summer, fall, and spring.

To prevent this root from turning dark it must be dropped as soon as it is pared and cut into a mixture of flour and water made slightly acid with vinegar. For 6 good-sized roots mix together 1 tablespoonful of vinegar, 2 tablespoonfuls of flour, 1 teaspoonful of salt, and 3 pints of water. Wash and scrape the roots, then cut into slices about 3 inches long. Drop into the prepared water. Place the stewpan on the fire and cook the salsify thirty minutes, counting from the time it begins to boil. Drain and serve in a white sauce. Or mix together 1 tablespoonful of butter, half a teaspoonful of salt, 1 teaspoonful of lemon juice, and 1 teaspoonful of minced parsley or chervil. Add this to the drained salsify and serve at once.

Beets.—Beets are among our most useful vegetables, since they may be had all through the summer and may also be stored in good condition for winter use. Sometimes beets are cut in small pieces, after boiling, and served with white sauce, but the most common as well as the most palatable way of serving them is with butter.

Beets with Butter.

Wash the beets, being careful not to break the skin. Put into a stewpan and cover generously with boiling water and boil until tender. Young beets will cook in one hour. As the beets grow old the time of cooking must be increased. In winter this vegetable becomes so hard it may require four or more hours of steady boiling to soften it. It is then only suitable for pickling in vinegar after being thoroughly boiled.

When the young beets are cooked, take them from the boiling water and drop them into cold water. Rub off the skin. Cut the beets in thin slices

and season with salt and butter. Serve at once.

Kohl-Rabi, or Turnip Cabbage.—This vegetable is a variety of the cabbage, but instead of the reserve nutritive matter of the plant being stored largely in the leaves or flowers, it is collected in the stem, which forms a turniplike enlargement just above the ground. Kohl-rabi is fine flavored and delicate, if cooked when very young and tender. It should be used when it has a diameter of not more than 2 or 3 inches. As it grows large it becomes tough and fibrous.

Boiled Kohl-Rabi.

Wash and pare the vegetables, then cut in thin slices. Put into slightly salted boiling water and boil, with the cover partially off the stewpan, until the vegetable is tender. This will take from thirty to fifty minutes. Pour off the water and season with butter, salt, and pepper.

Kohl-rabi may be boiled with pork in the same way as cabbage. The cold boiled vegetable may be served as a salad.

Celeriac.—This vegetable is also known as "knot celery" and "turnip-rooted celery." The roots, which are about the size of a white turnip, and not the stalks are eaten. They are more often used as a vegetable than as a salad.

Pare the celeriac, cut in thin, narrow slices, and put into cold water. Drain from this water and drop into boiling water and boil thirty minutes. Drain and rinse with cold water. The celeriac is now ready to be prepared and served the same as celery.

Purée of Celeriac.

- 1 quart celeriac cut in dice,
- 2 tablespoonfuls butter,
- 1 tablespoonful flour,
- 1 teaspoonful salt,
- 1 gill stock or cream.

Cook the celeriac thirty minutes in boiling water, rinse in cold water, then press through a purée sieve. Put the butter in a saucepan and on the fire. When hot add the flour and

stir until smooth and frothy, and then add the strained celeriac and cook five minutes, stirring frequently. Add the salt and stock or cream and cook five minutes longer. If the purée seems dry, add more stock or cream. The vegetable varies as to the amount of moisture it requires. It should be eaten very hot. If used as a garnish, it is generally put in the center of the dish and the poultry or meat placed on it or around it. Otherwise it may be served on toast or fried bread as a dish by itself.

Celery.—The culture of this vegetable is so general that one can find it in large markets nearly every month of the year. Celery is at its best in the late fall and early winter, when the weather has been cold enough to crisp the blanched stalks. This plant is most useful as a salad and flavorer, but is perhaps most commonly eaten raw, without any dressing except salt, as an accompaniment of fish, meat, etc.

Only the tender, inner stalks should be eaten raw. The hard, outside stalks make a delicious and wholesome dish when properly cooked. When thus used, celery should be blanched and served with a sauce.

Stewed Celery.

To blanch celery in cooking, remove all the leaves from the stalks. Scrape off all rusted or dark spots, cut into pieces about 3 inches long, and put in cold water. Have a stewpan of boiling water on the fire, wash and drain the celery and put in the boiling water. Add one teaspoonful of salt for every 2 quarts of water. Boil rapidly for fifteen minutes, having the cover partially off the stewpan. Pour off the water and rinse with cold water, then drain. The celery is now ready to finish in the following manner: Put the celery in the stewpan with one tablespoonful of butter, and one teaspoonful of salt for each quart of celery. Cover and cook slowly for fifteen minutes. Shake the pan frequently while the celery is cooking. Serve hot.

Onion.—This vegetable is the most

useful of all our flavorers, and there is hardly a soup, stew, sauce, etc., that is not improved by the addition of the onion flavor. As a vegetable the onion may be prepared in a variety of ways. The white onions are the most delicate and are therefore more suitable as a vegetable than the yellow or red variety. The large Spanish onions and the Bermuda onion are also delicate and suitable for a table vegetable. If the stronger onions are used for this purpose they must be thoroughly blanched.

Boiled Onions in White Sauce.

Peel the onions and cut off the roots, dropping into cold water as fast as they are peeled. Drain from the cold water and put in a stewpan with boiling water to cover generously. Add a teaspoonful of salt for each quart of water. Boil rapidly for ten minutes, with the cover partially off the saucepan. Drain off the water and cover the onion with hot sweet milk (a quart of onions will require a pint of milk). Simmer for half an hour. Beat together one tablespoonful of butter and one level tablespoonful of flour. Add one teaspoonful of salt and one-fourth of a teaspoonful of white pepper. Gradually beat in about half a cupful of the milk in which the onions are cooking. When smooth, stir the mixture into the onions and milk. Let the dish cook ten minutes longer and serve.

Stewed Onions.

Cut the onions in slices and boil in salted water for ten minutes. Drain well and return to the stewpan.

For a quart and a half of onion, measured before it was boiled, add two tablespoonfuls of butter, one teaspoonful of salt, and one-fourth of a teaspoonful of pepper. Cover the stewpan and cook over a hot fire for five minutes, shaking the pan to prevent the onion from browning. Set the stewpan back where the contents will cook slowly for forty minutes. Drippings may be substituted for the butter, but, of course, the dish will not be so delicate in flavor.

MISCELLANEOUS VEGETABLES

Cucumbers.—The cucumber is much oftener eaten in the United States as a salad than cooked, yet it is a very palatable vegetable when stewed and served with a white sauce, or seasoned with butter, salt, and pepper, and served on toast. The pared and quartered cucumber should be cooked until tender in boiling salted water, which will require about fifteen minutes, and then served as directed. Cucumbers may also be cut in slices lengthwise and fried like summer squash or eggplant.

Stewed Cucumbers.

Stew pared cucumbers, cut in quarters or in thick slices, for fifteen minutes in a saucepan with a little water and a minced shallot or a small minced onion. Pour off the water; stir in a little flour, butter, and salt; heat for two or three minutes, and then serve.

Cucumber Sauté.

Boil pared and quartered cucumbers for three minutes only. Then drain the pieces and season with salt and pepper. Roll in flour and cook in a saucepan with butter for twenty minutes. This dish may be varied by adding minced parsley, chives, and chervil about five minutes before the cooking is finished.

Tomatoes.—The tomato, although not very nutritious, may be classed as one of our most useful vegetables. Raw, it makes an attractive and refreshing salad and may be served by itself or in combination with other vegetables, with meat or with fish. As a vegetable the tomato may be prepared in many ways. It makes a good foundation for soups and sauces. Made into catsup or pickles it serves as a relish. The addition of a little tomato gives a pleasant, acid flavor to many soups and sauces, and also to meat, fish, and vegetable dishes. If possible the tomatoes should ripen fully on the vines, as the flavor is much better than when picked green and then allowed to ripen.

When properly canned this vegetable keeps well and retains its natural flavor. The housekeeper who has a generous supply of canned tomatoes on hand will find them very valuable at all times of the year, but especially in the winter months when the variety of vegetables is not great.

Overcooking spoils the flavor and color of the tomato.

To Peel Tomatoes.

Put the ripe tomatoes into a dish and pour boiling water over them. Let them rest in the water about one minute; then pour the water off. The thin skin will now peel off readily.

When a quantity of tomatoes are to be peeled have a deep stewpan a little more than half filled with boiling water and on the fire where the water will continue to boil. Put the tomatoes in a frying basket and lower into the boiling water. Let the basket remain one minute in the water. There must, of course, be water enough to cover the tomatoes.

Stewed Tomatoes.

Peel the tomatoes and cut into small pieces. Put into a stewpan and on the fire. Boil gently for twenty minutes or half an hour, counting from the time it begins to boil. Season five minutes before the cooking is finished. Allow for each quart of tomato one generous teaspoonful each of salt and sugar and one tablespoonful or more of butter.

Escalloped Tomatoes.

- 1 pint peeled and cut tomatoes,
- 1 pint grated bread crumbs,
- 1 level teaspoonful salt,
- 1 tablespoonful butter,
- A suggestion of pepper.

Reserve three tablespoonfuls of the bread crumbs, and spread the remainder on a pan. Brown in the oven, being careful not to burn them. Mix the tomato, browned crumbs, salt, pepper, and half the butter together, and put in a shallow baking dish. Spread the unbrowned crumbs on top, and dot with the remainder of the butter, cut into bits. Bake in

a moderately hot oven for half an hour. The top of this dish should be brown and crisp.

Tomato Toast.

Boil one quart of peeled and cut tomatoes for ten minutes, then rub through a strainer. Return to the stewpan and add two level teaspoonfuls of salt, half a tablespoonful of pepper, and two tablespoonfuls of butter. Place on the fire and cook five minutes. Have the bottom of a hot platter covered with well-toasted slices of bread and pour the hot tomato over it. Serve at once. A dropped or poached egg may be put on each slice of toast.

Okra.—Though okra, a variety of *Hibiscus* with mucilaginous edible pods, will grow in most parts of the United States, it is much more commonly eaten in the Southern States than elsewhere. The young pods should be boiled in salted water until tender (about twenty minutes), drained, and heated for five minutes with cream (a scant cup to a quart of okra), a tablespoonful of butter, and salt and pepper. Okra is also a common ingredient of soups.

The cultivation of okra, methods of serving it, and related topics are discussed in a recent publication of the U. S. Department of Agriculture.

Green Peppers.—The sweet green pepper, though fairly common in our city markets, is not as widely known as a vegetable as it deserves. Sliced, it makes a very fine salad alone, or, more commonly, mixed with other salad plants like lettuce. Stuffed and baked peppers are very palatable.

Green Peppers Stuffed and Baked.

Use only tender sweet peppers. For six medium-sized peppers make a dressing in the following manner: Soak, in cold water, enough stale bread to make one pint when the water is pressed out. Season this with two teaspoonfuls of salt, one tablespoonful of fine herbs, about one-fifth of a teaspoonful each of sweet basil and summer savory, and two tablespoonfuls of butter or savory drippings.

Cut off the stem end of the pepper and remove all the interior, being careful to take out every seed. Fill the peppers with the dressing. Place them on end in a shallow baking dish and pour around them a sauce prepared as follows: Put into a saucepan and on the fire, one tablespoonful of drippings. When hot, add one level tablespoonful of flour. Stir until smooth and brown, then add, gradually, three gills of meat stock or water. Season with one level teaspoonful of salt. Cook five minutes, then pour around the stuffed peppers. Put the dish in a moderately hot oven and bake the peppers one hour, basting often with the sauce in the dish. Peppers may also be filled with a well-seasoned dressing of chopped meat, made with or without the addition of bread crumbs or rice.

Eggplant.—This vegetable, as well as potato and tomato, belongs to the nightshade family. Like all succulent green vegetables, it has little nutritive value. The common methods of cooking are by frying, broiling, and baking.

Baked Eggplant.

For baked eggplant make a dressing as for stuffed peppers, except that a little more salt, pepper, and butter are used. Cut the eggplant in two lengthwise, scrape out the inside, and mash it fine, then mix with the dressing and return to the shells. Place on a pan and in the oven. Cook forty-five minutes.

Fried Eggplant.

For fried eggplant cut the vegetable in slices about half an inch thick and pare. Sprinkle the slices with salt and pile them upon one another, put a plate with a weight on top of the slices. Let them rest for an hour, then remove weight and plate. Add one tablespoonful of water, half a tablespoonful of salt, and half a teaspoonful of pepper to an egg. Beat well. Dip the slices of eggplant in the egg, then in dried bread crumbs. Spread on a dish for twenty or more minutes. Fry till brown (in deep fat).

Broiled Eggplant.

The eggplant is sliced and drained as directed above. Then spread the slices on a dish, season with pepper, and baste with salad oil, sprinkle with dried bread crumbs and broil.

Squash.—The various varieties of the summer squash are generally cooked when so small and tender that the thumb nail can pierce the rind easily.

To prepare for the table wash the squash, cut into small pieces, and either cook in boiling water or steam it. It will cook in boiling water in half an hour. It takes about an hour to cook it in the steamer. The cooked squash is mashed fine and seasoned with salt, pepper, and butter. This method gives a delicate flavored but rather watery dish.

Summer squash is very palatable cut in slices and fried like eggplant.

It is claimed by many that the very young summer squashes, particularly the turban variety, or "cymlin" of the Southern States, are very delicate and palatable cooked whole. For this dish they should not be much larger than a silver dollar. In the opinion of the writer the crook-necked and other summer squashes are richer in flavor when grown to a large size. From the more mature squash remove the thin skin and seeds. Cut the squash in small pieces and put in a stewpan with boiling water enough to cover. Boil for half an hour. Drain, mash, and season with salt, pepper, and butter.

Cook winter squash in the same manner. Squash is one of the vegetables that require a good deal of butter.

Green Corn.—Green corn, a typical American food product, is a vegetable which, for most palates, is easily spoiled by overcooking, since the longer the cooking period the less pronounced the delicate corn flavor.

Boiled Corn on the Cob.

The most satisfactory way to serve green corn is on the cob. Free the corn from husks and "silk." Have a kettle of water boiling hard, drop the corn into the water and cook ten min-

utes. If only a few ears of corn are put in a kettle of boiling water, the temperature of the water is not lowered greatly and the corn will cook in eight minutes. On the other hand, if a large quantity of corn is crowded into a kettle of boiling water, the temperature is very much lowered and the time of cooking must be increased. When possible, surround the corn with a generous quantity of boiling water.

Corn Cut from Cob.

Corn may be cut from the cob and heated with butter, pepper, and a little milk. For this dish cook the ears five minutes in boiling water to set the juice. Then with a sharp knife cut through the center of each row of grains and with the back of a case knife press the grains of corn from the hulls. Put the corn in a saucepan and season with salt, pepper, and butter. Add enough hot milk to moisten well, and cook ten minutes. Serve at once.

The raw corn may be cut from the cob and treated in the same manner.

Succotash.

To a pint of corn cooked as above add a pint of cooked and seasoned shelled beans.

Vegetable Hash.—Hash may be made with one or many cooked vegetables, the vegetable or vegetables being used alone or combined with meat or fish. Potato is the most useful vegetable for a hash, as it combines well with the animal food or with other vegetables.

The conditions essential to a good hash are that the vegetables shall be cut fairly fine, but not so fine that the pieces shall lose their shape or stick together—that is, the particles should drop apart readily when shaken on a fork. Each vegetable must be cut up separately, then all be mixed. The vegetables, or vegetable, and meat or fish must be well seasoned with salt and pepper, and if liked there may be added a little minced onion, chives, parsley, chervil, or green pepper finely minced. The hash must be moistened

a little with meat broth, milk, or water (not more than half a cupful for a quart of hash). When the hash is mixed, seasoned, and moistened put a tablespoonful of butter or savory drippings in a frying pan. When this is melted put in the hash, and spread evenly and lightly in the pan. Over this put little dots of butter or savory drippings, using about one tablespoonful in all. Cover the pan and place where the hash will not burn, but where the heat is fairly good, and cook half an hour, then fold and turn on a hot platter. A rich brown crust will have formed on the bottom of the hash if the heat was sufficient. Serve very hot. The plates on which hash is served should be hot.

Rice.—Wash 1 cupful of rice in several waters, rubbing the grains between the hands to remove all the dirt. Put the washed rice in a stewpan with $2\frac{1}{2}$ cupfuls of water and 1 teaspoonful of salt. Cover and place where the water will boil. Cook for twenty minutes, being careful not to let it burn. At the end of this time put the stewpan on a tripod or ring and cover the rice with a fold of cheese cloth. Let it continue to cook in this manner an hour, then turn into a hot vegetable dish. The rice will be tender, dry, and sweet, and each grain will be separate. During the whole process of cooking the rice must not be stirred. If a tablespoonful of butter is cut up and sprinkled over the rice when it has cooked twenty minutes the dish will be very much improved.

Hominy and Corn Meal.—The large hominy, which is so common in the southern part of the United States, is frequently served as a vegetable, either boiled or fried in drippings. Fine hominy, which is more common in the northern part of the country, and which is often served as a vegetable, should be thoroughly washed, and cooked in boiling water in the proportion of 1 gill of hominy to a pint of water, to which a half teaspoonful of salt has been added. When cold, the boiled hominy may be cut in slices and fried.

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The slices will brown more readily if they are first rolled in flour.

Fried corn-meal mush is often served as a vegetable, with chicken and other meats, and is very palatable and useful when fresh vegetables

are not common. It is interesting to note that in the Southern States rice and hominy are much oftener used as starchy vegetables in place of potatoes than in other parts of the country.

CHAPTER XVIII

VEGETABLE DISHES AND LEFT-OVERS

CLASSES AND PROPERTIES OF VEGETABLES—MARKETING FOR VEGETABLES—PREPARATION FOR COOKERY—CARROTS, PARSNIPS AND OTHER ROOTS—CABBAGE AND OTHER SUCULENT VEGETABLES—ONIONS—BEANS, PEAS AND LENTILS—FRUIT AND FUNGOUS VEGETABLES—VEGETABLE LEFT-OVERS

POTATOES, peas, corn, beans, and many of the vegetables which are universally used, receive fair treatment, but in American kitchens there is still much to learn on the subject of how to make the best of what a country cook calls "greens." In the spring, one craves this sort of food for the well-being of the body and because appetite demands it. The earth yields with the seasons exactly the sort of food we ought to eat, and eat liberally, for it is nature's own medicine.

First, let us divide vegetables into classes. The cereals are rice, wheat, barley, corn and other grains. The legumes include the large family of beans, peas, and lentils. In the root class we have beets, carrots, parsnips, turnips, and radishes. Green vegetables include a variety of things herbaceous, from cabbage to dandelions. In bulbs there is the onion family and garlic. Then there are what are called fruit vegetables, eggplant, peppers, okra, cucumbers, and squash. There is also the fungous class, such as mushrooms and truffles. Each class has a different food value; they require different treatment in cookery and are suited to accompany different foods, although our nation would be in no way the loser, either in health or economy, if it learned, like the French people, to make an excellent cooked vegetable serve for a complete course.

Before we consider the cooking of vegetables, let us study what their properties are and what they do for our bodies. Every vegetable contains more or less of what is called cellulose tissue. This helps to keep the stomach and intestines healthy. For when we eat meat, we put into our stomachs a highly concentrated food that requires the addition of other foods, bulky and less easily digested, to make a perfectly balanced meal. Strange as it may seem, the value of vegetables lies in the fact that they are made up largely of a membranous substance so bulky and full of refuse that the stomach expels it to the intestines in an almost unchanged condition. Meanwhile, the blood has taken to itself such mineral matter and salts as are necessary to the human system. While digestion is in progress, the loose mass of cellulose is keeping up the peristaltic action that goes on in the healthy stomach for several hours after eating. It is not necessary that there be nourishment in everything we eat. We require the pure water and salts of green vegetables just as much as we do the proteid of meat and the nitrogen of legumes.

MARKETING FOR VEGETABLES

To get the fullest value from vegetables, they must be fresh. The country woman, who can pick green things

from her garden before the dew has dried from them, is lucky indeed. The best that can be done by a city housewife is to do her own marketing intelligently and carefully. In marketing, beware of root vegetables which are overclean about the roots. The greengrocer has his method of reviving stale goods; roots are soaked from a withered condition back to a fresh appearance. Cabbage and lettuce are skillfully stripped of their outer leaves, and although dirty, sandy spinach is less attractive in looks than cleaner leaves, it is apt to be fresher than that which has been revived by washing. Even cucumbers, eggplant, and tomatoes can be revived by an ice-water bath.

Within thin, membranous walls vegetables inclose a semifluid mass that stores up minute cells of starch or other material. As soon as the tender growth of the young plant is over, these cells grow woody and tough. You can readily see this process in old asparagus, something we hesitate to eat; yet in thousands of families stale vegetables, which have developed the same conditions as if they were old, are used for economy's sake. It would really, in such a case, be better to omit vegetables from a menu. One is eating woody fiber, which can be torn apart like threads, and is almost as difficult as thread to digest.

Suppose we see for ourselves just what this fibrous mass is like. Take two messes of peas, one of them green things fresh from the pod. Cook in boiling water. They will be ready for the table in ten minutes, but first make them into a purée by forcing the pulp through a potato ricer. They contain little but pulp. Nothing except skins is left in the strainer. Their value lies in the sugar and mineral salts they contain. Now, take old dried peas such as are used as a base for soup. They must first be soaked for twenty-four hours in cold water. Afterwards long, slow cooking softens them so they can be squeezed through the ricer. Then it actually takes muscle to get a purée from them, and it is small in proportion to the resi-

due retained by the strainer. The latter consists not only of the dry, husky skins of the peas, but also contains a quantity of waste which no stomach can properly digest. Still, this pulp made into a soup is a nutritious dish. That is why so many people with slow digestion can take in soup such vegetables as corn, tomato, beans, lentils, and celery, when the vegetable in its entirety would cause them great distress.

Every vegetable is almost lacking in fat; the legumes have the largest proportion, and they average only three per cent. Therefore, fat in some form should be added to every vegetable dish. Hence we beat cream or butter into mashed potatoes, bake beans with a bit of pork on top of them, and pour oil over salads.

PREPARATION OF VEGETABLES

Now to the various methods of preparation and cooking of vegetables. Probably root vegetables are used most largely in every household. Keep a small stiff brush for their thorough cleaning. The brush scrubs earth from every crevice. Carrots, parsnips, and salsify also require scraping after having been scrubbed. Turnips, kohlrabi, and celeriac should be pared. Beets must be well cleansed, but not broken anywhere, nor even have the tops cut, else they will "bleed," thus losing their fine sweet flavor.

With most of the root vegetables, except potatoes, white and sweet, the only method for cooking is to boil them by dropping them into water at a bubbling boil. Turnips, carrots, parsnips, kohlrabi, and celeriac will cook in half an hour if they are young and fresh; winter vegetables require from forty to sixty minutes. Young beets take an hour; old beets require boiling all day. The best way to cook them is to consign them to the fireless cooker. But one can make these root vegetables as palatable as skilled French cooks do by the simple process of blanching.

Blanching means bleaching; its object is to remove from winter vege-

tables their strong acrid flavor. Then too, it improves their quality. Let us blanch turnips, for instance; then you can apply the same process to a variety of vegetables. Have a large saucepan with 2 quarts water at a rapid boil; add 1 tablespoonful salt; drop into it the pared turnips and bring the water back to the boiling point as quickly as possible. Cook rapidly, uncovered, for thirty minutes. Drain off the water, put the turnips in a strainer, and cool them under the cold-water faucet; then set away in a covered dish until you are ready to prepare them for the table. Cut them into rather large pieces, put in a saucepan with a tablespoonful butter, a dash pepper, a teaspoonful salt, and 4 tablespoonfuls meat stock or milk. Cook over a hot fire until the vegetables have absorbed both seasonings and liquid. Serve at once.

Blanching of vegetables results in a saving of time, because they may be cooked in the leisurely hours of the morning, then quickly reheated when dinner is being prepared. Cabbage, cauliflower, Brussels sprouts, string beans, peas, onions, celery, kohlrabi, carrots, parsnips, spinach, Swiss chard, artichokes, and salsify are vegetables which may be blanched before the final cooking.

Before using vegetables which form heads, such as lettuce, cabbage, cauliflower, kale and Brussels sprouts, cleanse thoroughly by soaking half an hour, head down, in cold, salted water, with a few tablespoonfuls vinegar in it. This causes insects or worms concealed among the curly leaves to crawl out. Spinach requires no end of washing. The best way to cleanse it is to keep filling two pans with cold water and washing the greens till not a grain of sand settles in the bottom. Celery also requires thorough washing, as considerable dirt clings to both stalks and roots during the blanching process.

VEGETABLE COOKERY

Different vegetables require different methods of boiling. All of them should be dropped into water which

is vigorously bubbling. For a few minutes the process will be interrupted, but if the kettle is placed over a hot part of the stove, it will soon begin to boil again rapidly. This must be continued for herbaceous vegetables, young peas, and beans. Root vegetables and cauliflower require gentler treatment. To quote a French cook, "Do not let the water grin; keep it smiling."

As soon as vegetables are tender, lift them off the fire and drain, never allowing anything to stay in hot water for a minute after it has been cooked. While cooking vegetables of any kind, leave the saucepan uncovered; volatile bodies liberated by heat pass off in steam. Cabbage and onions closely lidded are sure to fill the house with an unpleasant odor as soon as they are uncovered; but if cooked without a lid, such odors are scarcely noticeable.

When peas and beans are so ripe as to be slightly tough, they may still be made appetizing and digestible if $\frac{1}{4}$ teaspoonful soda is added to the water. This helps to make them tender as well as retain the color, but beware of adding too much soda; it will give the food an exceedingly unpleasant flavor.

Vegetables are invaluable for making cream soups. Take green peas, for instance. Boil 1 quart peas and 1 small onion in 3 pints water. When soft, squeeze the purée through a potato ricer; add it to the liquor in which the vegetables were boiled. Rub together 1 tablespoonful flour with 2 tablespoonfuls butter. This makes sufficient thickening. Season with 2 level teaspoonfuls salt and $\frac{1}{2}$ teaspoonful pepper; then add 1 quart scalding-hot milk. Cook ten minutes, stirring frequently. Serve with croutons or wafers.

The outside stalks of celery, besides corn, beans, onions, potatoes, cauliflower, spinach, leeks, tomatoes, or lettuce may often be economically converted into cream soups. In this way a vegetable left-over is deliciously re-served.

When spinach and dandelion are expensive, try cooking celery leaves

exactly as you would other greens, boiling them in salted water, then chopping slightly and seasoning with butter, pepper, and salt. By saving the leaves from three or four bunches and keeping them bouquet fashion, with their stalks in water, you may soon accumulate enough leaves for a small, savory dish of celery greens.

Boiling potatoes is such an everyday task that it seems almost unnecessary to offer a recipe for it, yet how seldom do we find a cook make the best of potatoes. If potatoes are "new," they should merely have their skins rubbed off; if old, wash them well, soak half an hour in cold water, then pare off a ring lengthwise around the potato. This allows the skin to be taken off easily after boiling. Put them in a saucepan with plenty of boiling water, add a tablespoonful salt, boil another fifteen minutes, then drain off every drop of water, and leave them to dry for ten minutes covered with a folded towel.

To prevent staining your fingers, while paring potatoes keep the potatoes in cold water. To peel new potatoes without staining the hands, place them in a pail with a few small stones and some water. Shake the pan briskly and all the skins will soon rub off.

If beans, potatoes, or other vegetables should be burned while cooking, the scorched flavor can be largely removed by promptly plunging the kettle, containing the vegetables, into cold water. Allow it to stand for several minutes. Remove the contents of the kettle to another vessel, cover with boiling water, and finish cooking.

If a kitchen window is kept open two inches at the top while frying foods, boiling cabbage or other odorous vegetables, the unpleasant odor will go out of the window instead of spreading through the house.

Cream Sauce for Vegetables.

A favorite method for serving many vegetables is in cream sauce. A dish of creamed cauliflower will illustrate how potatoes, carrots, cabbage, peas, parsnips, artichokes, salsify, celery,

onions, Brussels sprouts, and asparagus may be cooked. Blend 2 tablespoonfuls butter with 2 tablespoonfuls flour; then add gradually 1 pint milk, and beat till creamy. Add 1 teaspoonful salt, a dash pepper, and a small head blanched cauliflower broken into branches. Set it at the back of the stove where it may cook slowly for ten minutes.

Steamed Spinach.

The best way to cook spinach for preserving its refreshing and laxative qualities is not to add water, for after thorough washing the leaves retain enough moisture to steam it. Put it dry in a saucepan over the fire; in ten minutes it will be ready to drain and chop. Afterwards return it to the pan and season with 2 tablespoonfuls butter and a teaspoonful salt. Let it simmer ten minutes before serving. Old, tough spinach is better if blanched before it is seasoned and served.

When cooking an old fashioned boiled dinner, place the spinach in a cheese cloth bag, then when the dinner is done it can be easily taken out and the other vegetables will not be covered with bits of green.

Boiled Lettuce.

Wash 4 or 5 heads lettuce, removing thick, bitter stalks and retaining all the sound leaves. Cook in boiling salted water for ten or fifteen minutes, then blanch in cold water. Drain, chop lightly, and heat in a stewpan with butter and pepper to taste, or the chopped lettuce may be heated with a pint of white sauce seasoned with salt, pepper and grated nutmeg. After simmering for a few minutes in the sauce, draw to a cooler part of the range. A little of the hot sauce may be added to the well-beaten yolks of 2 eggs and then combined with the creamed lettuce.

Beet Greens.

Wash thoroughly, put into a stewpan, and cover with boiling water. Add a teaspoonful salt for every 2 quarts greens. Boil rapidly for thirty minutes. Drain off the water, chop

rather coarsely, season with butter and salt.

Asparagus Tips in Cream.

Cut the tender part of asparagus into short pieces. Add boiling water enough to cover the vegetable, and cook fifteen minutes. Drain. Serve in a cream dressing.

Boiled Peas with Butter.

Put 1 quart shelled peas in a stewpan and add enough boiling water to cover them. When they begin to boil, draw back where the water will bubble gently. When tender, add 1 teaspoonful salt. Cook ten minutes longer. Drain off what little water remains, add 3 tablespoonfuls of butter. If the peas are not the sweet kind, add a teaspoonful sugar.

Peas with Pork.

- 1 quart peas,
- 4 ounces pork,
- 1 tablespoonful butter,
- $\frac{1}{2}$ cupful water,
- 2 small white onions,
- $\frac{1}{8}$ teaspoonful pepper.

Cut pork into small bits. Put butter into stewpan; when it melts add the pork and cook gently until light brown, then add the water, peas, onion, and pepper. This is a good way to cook peas when they are old.

Peas with Lettuce (French recipe).

- 1 quart peas,
- 2 tablespoonfuls butter,
- 1 head lettuce (the heart),
- 1 small onion,
- 1 teaspoonful sugar,
- $\frac{1}{4}$ cupful water.

Put the vegetables into a stewpan, cover, and cook for five minutes. Draw the pan back where the contents will simmer slowly for half an hour, drain, season, and serve hot.

Sugar Peas in the Pod.

Gather the pods while the peas are very small. String them like beans and cut into two or three lengths. Cover with boiling water, and boil gently twenty-five or thirty minutes.

Season with salt and butter, and serve at once.

Peas with Dumplings.

- 1 pint grated bread-crumbs,
- 2 tablespoonfuls butter,
- $\frac{1}{2}$ teaspoonful sugar,
- 1 teaspoonful parsley (chopped fine),
- Pinch of salt,
- 2 eggs.

Stir the butter through the bread-crumbs, add the sugar, salt and parsley. Beat the eggs well and add. Lastly stir all together with a fork and form into small balls very lightly with the hands. Cook peas in the usual way and season with salt, butter, milk and a little thickening. Drop dumplings in and cook five minutes. Keep lid on tight.—Ola Miller.

Peas and Carrots.

Wash carrots, scrape and cut into cubes. Put into boiling water and boil till tender with cover on. When done drain off water. Cook peas as usual. Put peas in middle of dish and carrots around edge of peas. Season with salt, pepper, and butter. Serve hot.—Mabel Dahl.

Peas in Potato Cases.

Boil 2 pounds peeled potatoes; drain and beat until smooth and light; season with salt, pepper and grated nutmeg, and add 1 tablespoonful of butter and the yolks of 2 eggs. Beat until these ingredients are well blended and smooth. When cool roll out, using a little flour, to the thickness of about $1\frac{1}{2}$ inches. Cut into rounds the size of a tumbler and with a smaller cutter remove a piece from the top of each as though making patties. Brush over with beaten egg, roll in fine breadcrumbs and fry to a light brown color in hot fat. Fill the cases with cooked peas seasoned and tossed in butter, and place the piece removed from the center on top of the peas to form a lid.—Gladys Brown.

Baked Beans with Tomato.

Soak 3 pints of beans over night, drain, cover with boiling water, add

$\frac{1}{2}$ teaspoonful soda, parboil for $\frac{1}{2}$ hour and drain again. Put 1 can tomatoes in a stew pan with 1 chopped onion, $\frac{1}{2}$ dozen cloves, $\frac{1}{2}$ teaspoonful celery seed, salt and cayenne to taste, boil 20 minutes, add $\frac{1}{2}$ cup of ginger-snap molasses, and strain. Place a couple of pork chops in the bottom of a stone baking dish and then the beans. Pour over this the prepared liquid, adding water enough to cover, if necessary. Bake about $2\frac{1}{2}$ hours.—Mrs. Thad Henderson.

Chile Con Carne.

Boil 1 can tomatoes (into which 1 medium sized onion has been cut very fine) for $\frac{1}{2}$ hour. Strain and add 2 pounds hamburger steak. Simmer slowly about 2 hours. Add 1 teaspoonful salt, $\frac{1}{2}$ teaspoonful ground red pepper, and 1 can red kidney beans. Let the ingredients simmer. Chicken gravy may be added.—Mrs. E. Long.

Shelled Beans Stewed.

- 1 quart shelled beans,
- $\frac{1}{4}$ pound salt pork,
- 1 onion,
- $\frac{1}{2}$ teaspoonful pepper,
- 1 tablespoonful flour,
- 1 quart boiling water,
- 1 teaspoonful salt.

Cut the pork in dice and fry ten minutes in a stewpan. Add the onion, cut fine, cook twenty minutes. Cover the beans with boiling water and boil ten minutes. Drain off the water. Put the beans and flour mixed with a little cold water in the stewpan with the pork and onion, and stir over the fire five minutes. Add the boiling water and pepper. Place the saucepan where its contents will simmer for two hours.

Green Lima Beans.

Cover 1 quart shelled beans with boiling water. Place on the fire where they will boil up quickly, then draw back where they will simmer until done. When tender, pour off the water. Season with a teaspoonful salt and 2 tablespoonfuls butter.

Dried Beans Sautéd.

Soak beans over night, and cook until tender, but not broken. Drain when soft. For 1 quart beans put 3 tablespoonfuls butter in a stewpan. When hot, put in the beans, which have been seasoned with a tablespoonful salt and $\frac{1}{2}$ teaspoonful pepper. Cook for fifteen minutes, frequently turning the beans with a fork. Cover, and let cook slowly for half an hour. If they are liked moist, add a cupful meat broth, then cook for half an hour.

Baked Lentils.

- 1 quart lentils,
- 1 quart water,
- 6 ounces mixed salt pork,
- 1 clove garlic or 1 small onion,
- 1 teaspoonful salt,
- $\frac{1}{2}$ teaspoonful pepper.

Pick over and wash the lentils. Soak in cold water over night. In the morning pour off the water and put them in a stewpan with 2 quarts cold water and place on the fire. As soon as the water begins to boil, the lentils will rise to the top. Take them off with a skimmer and put in a deep earthen dish, with the pork and onion in the center. Mix the pepper and salt with a quart boiling water and add. Put the dish in a moderate oven, and cook slowly four or five hours. The lentils must be kept moist, and it may be necessary to add a little water from time to time.—Maria Parloa.

Stewed Okra.

Use only the small green pods, not more than two and a half inches long. Wipe the pods, cut off the stems and tips, if the latter be discolored. Put them into boiling salted water and cook gently for twenty to thirty minutes. Drain off the water, add 1 tablespoonful butter, 1 tablespoonful vinegar, and a little pepper and salt. Let them simmer at the back of the range until the butter is absorbed, then turn out without breaking the pods, and serve hot.

Baked Hubbard Squash.

Select a thoroughly ripened squash, cut in halves and remove the seeds, scraping the inside thoroughly. Bake one and a half hours in a moderate oven, remove the thin brown skin and with a spoon scrape the squash out of the shell into a hot dish, mashing it with butter, salt, and pepper to taste.

Scalloped Onions.

Boil 6 or 8 onions till tender, changing the water once. Separate them with a fork and arrange in layers in a buttered earthen dish, alternating the layers with buttered bread crumbs. Season with salt and pepper, pour over milk to nearly cover, spread with buttered crumbs, and brown in a moderate oven.

Yankee Fried Parsnips.

Scrape parsnips thoroughly and parboil in salted water; cut in slices lengthwise, and fry in fat.

Creamed Carrot Pulp.

Wash and scrape carrots, and grate outer red portion into a bowl. Season this pulp with salt and paprika, moisten with cream, and beat very hot in a double boiler. Place in individual baking dishes, cover with buttered crumbs and brown in oven.—Lelah R. Cheney.

Fried Parsnips.

Boil about 45 minutes. Salt to taste while boiling. Drain, split lengthwise, roll lightly in flour and drop into skillet of hot butter. Fry brown.

Sugared Parsnips.

Boil about 45 minutes in milk and salt to taste while boiling.

Drain, split lengthwise, roll lightly in flour. Place 1 tablespoonful of butter, 1 tablespoonful of sugar in skillet. Drop parsnips in hot butter and fry to light brown.

Scalloped Parsnips.

- 6 medium sized parsnips,
- 2 cups cracker crumbs,
- 2 cups sweet milk,
- 1 tablespoonful butter.

Peel and slice parsnips. Parboil in salt water until tender. Drain off salt water. Place a layer of parsnips in a buttered casserole, then a layer of cracker crumbs, and so on, until all parsnips have been used. Sprinkle top with cracker crumbs and morsels of butter. Cover with milk and bake in oven one-half hour.—Mrs. E. C. Kaiser.

Creamed Parsnips.

Pare parsnips and clean thoroughly in lukewarm water. Then allow to stand a short time in cold water. Cut in small cubes and boil in salted water from $\frac{1}{2}$ to $\frac{3}{4}$ of an hour. Drain, and set back over a slow fire to steam while preparing the following—

White Sauce.

Melt 3 tablespoonfuls butter. When bubbling add 3 tablespoonfuls flour and $\frac{1}{2}$ teaspoonful salt and mix thoroughly. Add 2 cups of milk, stirring constantly over a medium fire until the sauce becomes smooth and thickens like a gravy. Then pour the sauce over the hot parsnips.—Mrs. Mary E. Dobson.

Stuffed Tomatoes.

Take fresh, firm tomatoes, skin and chill, and cut pulp from them with a sharp knife. Mix together chopped cucumber, onion to taste, cabbage, pepper, celery and salt, with some pulp of tomato. Place this mixture in scooped tomatoes and serve on lettuce with a garnish of mayonnaise.—Mrs. John W. Bailey.

Fried Ripe Tomatoes.

Slice 3 large ripe tomatoes with the skins on and roll in flour. Place in a hot frying pan and fry until they are a delicate brown. Salt and pepper. Serve warm. Remove from pan with pan-cake turner.

Fried Green Tomatoes.

Slice 3 green tomatoes with skins on and roll in flour. Salt and pepper and place in hot frying pan. Fry until a delicate brown.

Welsh Tomatoes.

Slice 3 ripe tomatoes very thin. Add $\frac{1}{2}$ cup warm water and boil 15 minutes. Add $\frac{1}{4}$ cup cracker crumbs. Slice an onion thin and fry in hot butter. Melt $\frac{1}{2}$ cup of cheese and pour into tomatoes, and then pour the onion grease and all in, stirring constantly. Salt and pepper. Serve hot.

Baked Tomatoes.

Fresh tomatoes are excellent cooked in this way, but in winter and spring canned ones may be used. Place in the bottom of a pan or baking dish that will hold the amount you wish to prepare a layer of sliced tomatoes; salt and pepper these, and dot with bits of butter. Then put in a layer of cracker or bread crumbs. Continue until dish is full, ending with a layer of crumbs. If the tomatoes are not juicy, add a little water. Bake in a slow oven about an hour.—Lois Percy.

Stewed Tomatoes.

Put ripe tomatoes into hot water and skin them, then remove them to an earthen stewpan (a new tin one will do, but is not so good). Cut up the tomatoes and let them cook gently a few minutes, season with butter, pepper, salt, and serve. Or add bread crumbs and sugar to the tomatoes if preferred. Some cooks stew tomatoes for a long time, but the flavor is finer if they are allowed to simmer but a few moments.—Mrs. A. J. Mielke.

Tomatoes Stuffed with Succotash.

Wash, wipe, and remove a thin slice from the stem end of 6 tomatoes, scoop out the inside, sprinkle with salt, invert, stand half an hour. Mix the pulp with 1 cupful succotash; stuff the tomatoes and arrange them in a buttered pan, sprinkle the top of each with buttered cracker crumbs. Bake in a hot oven twenty minutes. Baste with melted butter.

Peppers with Macaroni (Italian recipe).

Cut the tops from green peppers, remove seeds and core, and let stand ten minutes in boiling water. Chop

cooked macaroni into small pieces and mix with a thin cream sauce. Drain the peppers, fill with macaroni, adding to each a generous spoonful of grated cheese. Bake in a granite dish with very little water until the peppers are tender. Serve with tomato sauce made from fresh or canned tomatoes pressed through a sieve and thickened with melted butter to which a tablespoonful flour has been added. Salt and a few drops of onion juice should be added, but no pepper.

Pepper Relish.

- 6 large red peppers,
- 6 large green peppers,
- 6 small onions,
- 1 small head cabbage.

Remove seeds and membrane from peppers. Mix and chop fine. Pour boiling water over the mixture and then squeeze dry. Add 1 cup sugar, 2 tablespoonfuls salt, 1 quart vinegar and let come to boil. Serve cold.—Mrs. Alice Hartman.

Scalloped Asparagus.

Boil asparagus until very tender. Remove from pan and cut in small pieces. Grate bread crumbs or crackers and season with salt and pepper. Place layers alternately of asparagus and crumbs, add lumps of butter on top, pour 1 cup of milk over whole and bake.

Fried Cucumbers.

Wash carefully ordinary sized green cucumbers, cut into slices lengthwise, halve, and roll in flour or egg and bread crumbs and fry in lard and butter. The butter is used to give to them a golden brown color. The purpose of keeping the skin on cucumbers is to prevent the pieces from breaking. But if cucumbers are not too tender, they may be pared before frying, as they will keep in shape.—Mrs. A. J. Mielke.

Fried Turnips.

Peel the turnips, cut in inch cubes, boil until tender, drain, and fry in butter until golden brown on all sides.

Potatoes Hashed with Green Peppers.

To hashed brown potatoes add chopped bacon in the proportion of one slice to each person, and minced red or green peppers.

Stuffed Cucumbers and White Sauce.

Peel large cucumbers and cut lengthwise; scoop out the centers; fill with bread-crumb stuffing, plain or mixed with chopped meat; put side by side in a pan, and bake in a hot oven, basting frequently with melted butter and hot water. When the cucumbers are soft, remove, and put a spoonful white sauce over each as it is served.

Corn Custard.

6 ears corn,
3 eggs,
1 cupful milk,
 $\frac{1}{2}$ teaspoonful salt,
Dash cayenne.

Scrape the corn from the ears, beat the eggs, add the milk to the corn, then add a seasoning of salt and cayenne, and mix the eggs in lightly; bake in a deep buttered dish in a pan of hot water in the oven till a knife blade put into the custard comes out dry. Serve at once.

Pepper Rings.

Cut a large pepper in 4 rings, removing the seeds; boil fifteen minutes; cut 4 rounds of stale bread and brown them in the oven. Butter the slices, lay a ring of pepper on each and fill the center with well-seasoned, cold minced meat. Moisten with water, adding salt and pepper to season, and set in the oven.

Chile con Carne (a Mexican recipe).

Soak 1 pint dried Lima beans over night; in the morning arrange in the bean pot with 1 pound solid lean beef, 2 ounces sweet fat or suet, a red pepper cut in rings, and $\frac{1}{2}$ onion, shaved. Cover with water, season with salt, $\frac{1}{2}$ teaspoonful mustard wet up with vinegar, a dash tabasco sauce, and bake slowly in a moderate oven for three or four hours.

To Boil Cabbage.

Cut a head of cabbage in 4 parts. Soak half an hour in a pan of cold water to which has been added a tablespoonful salt; this will draw out insects or worms that may be hidden in the leaves. After soaking, cut in slices. Have a large stewpan half full of boiling water; put in the cabbage, pushing it under the water with a spoon. Add 1 tablespoonful salt, and cook twenty-five to forty minutes. Turn into a colander and drain. It may be put in a chopping bowl and minced. Season with butter, pepper, and more salt if required. Allow a tablespoonful butter to a pint cooked vegetable.

Cabbage Cooked with Pork.

For a small head of cabbage use $\frac{1}{2}$ pound salt pork. Boil the pork gently for three or four hours. Prepare the cabbage, and boil rapidly till tender. Serve the pork with the cabbage.

Creamed Cabbage.

2 cupfuls boiled and minced cabbage,
1 cupful hot milk,
1 tablespoonful butter,
1 tablespoonful flour,
 $\frac{1}{2}$ teaspoonful salt,
 $\frac{1}{2}$ teaspoonful pepper.

Put the cabbage, salt, and pepper in a stewpan. Beat the butter and flour together until creamy, add to hot milk, cook until it thickens, then stir into the contents of the stewpan. Serve very hot.

Cabbage and Potato Purée.

2 cupfuls boiled finely minced cabbage,
6 medium-sized potatoes,
2 tablespoonfuls butter,
2 teaspoonfuls salt,
 $\frac{1}{2}$ teaspoonful pepper,
1 cupful hot milk.

Peel the potatoes and put them in a stewpan with enough boiling water to cover. Cook thirty minutes. Pour off the water and mash fine. Beat in

the hot milk, seasoning, and cabbage. Cook five minutes longer.

Cabbage with Fried Onions.

Cut the cabbage in fine shreds and put it, dripping, in a kettle with 1 tablespoonful of butter or oil. Season with salt and cayenne pepper to taste. Cover closely and let it cook in its own steam. Cut one large onion in small cubes and fry in 1 tablespoonful of butter or oil. When slightly browned add the cabbage and fry both together to a fine golden brown.

An Old Dutch Dish of Cabbage.

1 head of cabbage cut very fine,
1 tablespoonful pork drippings,
1 cup rich sweet cream,
 $\frac{1}{2}$ cup vinegar,
Scant teaspoonful sugar,
Salt and pepper to season.

Put pork drippings in cooking utensil and when hot add cream. When boiling, stir in slowly the vinegar, then add cabbage, salt, pepper and sugar. Cook about 20 minutes but not until it turns red. If it dries out before tender add more milk or water.—Frances Owsley.

Sweet Slaw.

1 head of cabbage cut fine,
 $\frac{3}{4}$ cup sugar,
 $\frac{1}{2}$ pint vinegar,
1 pint rich cream, slightly turned.

Season with salt and pepper. Stir together until foamy. Serve cold.—Gertrude B. Day.

Stuffed Cabbage.

Remove the heart of a cabbage, mix together a portion of chopped meat, an equal amount of cold potatoes, 1 chopped onion and seasoning. Fill cavity with this. Tie to hold together and boil in salted water.—Mabel Dahl.

To Prepare Cauliflower.

Separate one head of cauliflower into flowerets, and let cook in boiling salted water until tender. Drain and add to a cream sauce, using 2 table-

spoonfuls each of butter and flour to 1 cup of milk. Season with salt and pepper.—Mrs. A. J. Mielke.

Boiled Cauliflower.

Remove the green leaves and the greater part of the stalk. Put the head in a pan of cold water which contains to each quart a teaspoonful salt and a teaspoonful vinegar. Let it soak an hour or more. Put the cauliflower in a large stewpan, stem down, and cover with boiling water. Add a tablespoonful salt, and cook with the cover of the saucepan off, boiling gently all the time. A large, compact head requires half an hour, small heads from twenty to twenty-five minutes. Cauliflower begins to deteriorate the moment it is overcooked.

Creamed Cauliflower.

2 cupfuls cooked cauliflower,
2 cupfuls milk,
1 teaspoonful salt,
 $\frac{1}{2}$ teaspoonful pepper,
4 tablespoonfuls butter,
4 tablespoonfuls flour,
3 slices toasted bread.

Break the cauliflower into branches and season with half the salt and pepper. Put the butter in a saucepan. When hot, add the flour, and stir until smooth, then add the milk, stirring all the time. When the sauce boils, add salt, pepper, and cauliflower. Cook ten minutes; serve on toast.

Brussels Sprouts Blanched.

Remove wilted or yellow leaves from the sprouts, cut the stocks close to the head, and soak in salted cold water for an hour or more. Drain and put into boiling water. Allow 1 teaspoonful salt to 1 quart water. Boil rapidly for fifteen minutes. When done, turn into a colander and pour cold water over them. They are ready now to serve with any kind of sauce, or can be seasoned with butter, salt, and pepper.

Brussels Sprouts Sautéd.

1 quart Brussels sprouts,
3 tablespoonfuls butter,

- $\frac{1}{2}$ teaspoonful salt,
- $\frac{1}{4}$ teaspoonful pepper.

Blanch the sprouts and drain well. Put them in a saucepan with butter and other seasonings. Place over a hot fire and shake frequently. Cook five minutes; serve hot.

Kale Boiled with Pork.

Cook kale the same as cabbage with pork.

Minced Kale (Scotch recipe).

Remove old or tough leaves. Wash the kale thoroughly and drain; then put to cook in a kettle of boiling water to which has been added 1 tablespoonful salt to 4 quarts water. Boil rapidly till tender. Pour off the water, and chop the kale fine; put back into the kettle, add 1 tablespoonful butter and 2 tablespoonfuls meat broth for each pint minced vegetable. Cook ten minutes, and serve at once. The time required for cooking kale varies from thirty to fifty minutes.

To Boil Spinach.

To clean spinach, cut off the roots, break the leaves apart and drop in a pan of water, rinsing them well. Continue washing in clean water until there is no sand left in the bottom of the pan. If young, cook in its own juices until tender, about twenty-five minutes. If old boil $\frac{1}{2}$ peck in 1 quart of water, salted with 1 teaspoonful of salt. Drain well. Chop, reheat with salt, pepper, and butter.

Spinach with Cream.

- 2 cupfuls boiled spinach,
- 2 tablespoonfuls butter,
- 1 tablespoonful flour,
- 1 teaspoonful salt,
- $\frac{1}{2}$ teaspoonful pepper,
- 1 cupful scalded cream.

Mince the spinach. Put the butter in a saucepan on the fire. When hot, add the flour and stir until smooth, then add the minced spinach and salt and pepper. Cook five minutes; then add cream, and cook three minutes longer.

Spinach with Egg.

- 2 cupfuls boiled spinach,
- 3 tablespoonfuls butter,
- $\frac{1}{2}$ teaspoonful pepper,
- 2 eggs, hard cooked,
- 3 teaspoonfuls salt.

Drain the blanched spinach and chop fine, return to the saucepan, and add salt, pepper, and butter. Place on the fire, and cook ten minutes. Heap in a mound on a hot dish, and garnish with hard-cooked eggs cut in slices.

Spinach Cooked without Water.

Young, tender spinach can be cooked without water. When well washed, put in a stewpan over the fire; cover, and cook for ten minutes. Turn it several times during the cooking. Put it in a chopping bowl and mince fine. Return to the stewpan and add seasonings, allowing for $\frac{1}{2}$ peck spinach 2 generous tablespoonfuls butter and a teaspoonful salt. Simmer ten minutes; if very tender, five minutes will be sufficient.

Cucumber Sautéd.

Boil pared and quartered cucumbers for three minutes. Drain the pieces, and season with salt and pepper. Roll in flour, and cook in a saucepan with butter for twenty minutes. This dish may be varied by adding minced parsley and chives about five minutes before the cooking is finished.

Stewed Tomatoes.

Peel tomatoes and cut in small pieces. Put into a stewpan on the fire. Boil gently twenty minutes or half an hour. Season five minutes before the cooking is finished. Allow for each quart tomato 1 teaspoonful salt and sugar and 1 tablespoonful butter.

Scalloped Tomatoes.

- 2 cupfuls peeled and cut tomatoes,
- 2 cupfuls grated bread crumbs,
- 1 level teaspoonful salt,
- 1 tablespoonful butter,
- Dash pepper.

Mix the tomato, crumbs, salt, pepper, and butter together, and put in a shallow baking dish, reserving $\frac{1}{2}$ cupful of crumbs. Spread the remaining crumbs on top. Bake in a moderately hot oven half an hour.

Stuffed Green Peppers (Italian recipe).

- 6 sweet peppers,
- 1 pint soaked stale bread,
- 2 teaspoonfuls salt,
- 1 tablespoonful fine herbs,
- 2 tablespoonfuls butter.

Cut off the stem end of the pepper and remove the interior, being careful to take out every seed. Fill the peppers with the dressing. Place them on end in a shallow dish, and pour around them a sauce prepared as follows:

- 1 tablespoonful butter,
- 1 tablespoonful flour,
- $1\frac{1}{2}$ cupfuls meat stock,
- 1 teaspoonful salt.

Heat the butter; add the flour. Stir until smooth and brown, then add the meat stock. Season with salt. Cook five minutes, pour around the stuffed peppers. Put the dish in a moderately hot oven and bake the peppers one hour, basting with the sauce in the dish. Peppers may be filled with a well-seasoned dressing of chopped meat, with or without the addition of bread crumbs or rice.

Beans in a Casserole (Spanish recipe).

- 2 cupfuls white or pink beans,
- 1 onion,
- Small piece pork or bacon,
- 1 cupful canned tomatoes,
- 2 shredded chili peppers,
- Dash tabasco sauce.

Soak the beans over night. In the morning boil fifteen minutes and drain. Fry the onion with the pork or bacon. Add these to the beans, also the tomato, peppers, salt, and sufficient hot water to cover well. Boil briskly for ten minutes, then put in a casserole, and bake in a slow oven four hours.

Cauliflower Brownd.

Soak cauliflower in cold salted water for a few hours, boil one hour in salted water, drain, and sprinkle with a few drops of vinegar mixed with salt and pepper, and dust with soft bread crumbs fried in butter till brown.

Boiled Turnips.

Peel and slice the turnips; drop in a stewpan with boiling water enough to cover. Cook until tender, then drain. Mash with a wooden vegetable masher. Season with salt, butter, and pepper. Serve at once.

Hashed Turnips.

Chop drained turnips in large pieces. Return to the stewpan, and for $1\frac{1}{2}$ pints turnips add a teaspoonful salt, $\frac{1}{2}$ teaspoonful pepper, a tablespoonful butter, and 4 tablespoonfuls water. Cook over a hot fire until the turnips have absorbed the seasonings. Serve at once. Or the salt, pepper, butter, and a tablespoonful flour may be added to the hashed turnips, then the stewpan be placed over the hot fire and shaken frequently to toss up the turnips. When the turnips have been cooking five minutes in this manner, add $\frac{1}{2}$ pint meat stock or milk, and cook ten minutes.

Carrots with White Sauce.

Scrape carrots lightly, then cut into large dice. Put in a stewpan with salted water and boil until tender. Young carrots will cook in thirty minutes, old ones in forty-five. Drain, put back in the stewpan, and for every pint add 1 tablespoonful butter, 1 teaspoonful sugar, $\frac{1}{2}$ teaspoonful salt, and 1 gill meat stock. Cook until they have absorbed the seasonings and liquid.

Salsify.

To prevent salsify from turning dark, drop it as soon as pared and cut into a mixture of flour and water made slightly acid with vinegar. Cook thirty minutes, drain, and serve in a white sauce. Or mix 1 tablespoonful butter, $\frac{1}{2}$ teaspoonful salt, 1 teaspoon-

ful lemon juice, and 1 teaspoonful minced parsley. Add this to the drained salsify, and serve at once.

Beets with Butter.

Wash beets, being careful not to break the skins. Put in a stewpan, cover with boiling water, and boil until tender. Young beets will cook in one hour. When tender, take from the boiling water and drop into cold water. Rub off the skins. Serve whole or cut in thin slices and season with salt and butter. Serve at once.

Boiled Kohl-Rabi.

Wash and pare the vegetable, then cut in thin slices. Put in salted boiling water and boil until the vegetable is tender. This will take from thirty to fifty minutes. Pour off the water, and season with butter, salt, and pepper.

Stewed Celery.

Remove the leaves from the stalks. Scrape rusted or dark spots, cut into pieces one inch long, and put in boiling water. Add 1 teaspoonful salt for one quart water. Boil rapidly fifteen minutes. Pour off the water, rinse with cold water, then drain. Finish in the following manner: Put the celery in the stewpan with 1 tablespoonful butter, and 1 teaspoonful salt for each quart celery. Cover, and cook slowly for fifteen minutes. Shake the pan frequently while the celery is cooking. Serve hot.—Maria Parloa.

Boiled Onions in White Sauce.

Peel the onions and drop in cold water. Put in a stewpan with boiling salted water. Cook rapidly for fifteen minutes. Drain off the water and cover the onions with hot milk. Simmer half an hour. Beat together 1 tablespoonful butter and 1 level tablespoonful flour. Add 1 teaspoonful salt and $\frac{1}{2}$ teaspoonful white pepper. Gradually beat in $\frac{1}{2}$ cupful of the milk in which the onions are cooking. When smooth, stir the mixture into the onions and milk. Let it cook ten minutes longer.

Stewed Onions.

Cut the onions in slices and boil in salted water fifteen minutes. Drain, add 2 tablespoonfuls butter, 1 teaspoonful salt, $\frac{1}{2}$ teaspoonful pepper. Cover the stewpan, and cook over a hot fire five minutes, shaking the pan occasionally. Set it back where it will cook slowly for forty minutes.

Peeling Onions.

The peeling of onions is very unpleasant unless some means of preventing the acid from entering the eyes is adopted. The following methods are suggested:

Immerse the onions in cold water, and peel while under water. Or stand by a window, opened just far enough to have the draught carry the fume away. Or peel the onions while holding them over the hot stove. The heat that rises will carry the fumes away.—Mrs. K. A. Krotke.

Baked Onions.

Peel medium sized white onions, and cut in the shape of a cross a little over half way down. Place in a baking dish, with a little butter in the center of each onion, sprinkle salt and pepper over them, pour hot milk or water half way up on the onions, and bake from $\frac{3}{4}$ to 1 hour in moderate oven.—Mrs. W. M. Parrett.

Stuffed Onions.

- 6 onions,
- 6 crackers,
- 24 walnuts,
- 12 tablespoonfuls melted butter,
- $\frac{1}{2}$ teaspoonful salt,
- $\frac{1}{2}$ teaspoonful pepper.

Remove skins from onions, scoop out the center and pare. Boil 20 minutes in boiling salted water. When done take out of water and cool. Fill cavities with equal parts of finely chopped walnuts, cracker crumbs and the centers of onions, finely chopped. Season with salt and pepper and moisten with cream or butter. Place in a baking pan, sprinkle with cracker crumbs, and bake in a moderate oven until soft.—Mabel Dahl.

Onion Brown Betty.

Peel 2 good sized onions, slice thin, put them into an ordinary bread pan and cover the bottom. Salt and pepper the layer of onions well, and cover the onions with a layer of thin slices of bread. Over the bread place a slice of bacon cut into several pieces. Pour over the bread $1\frac{1}{2}$ cups of boiling water or milk. Bake in a hot oven ten minutes, then turn the bacon and bake ten minutes longer.—James Thompson, Sr.

Stuffed Onions.

Parboil 6 or 8 large onions; when ready take out the center and stuff with sausage meat mixed with bread soaked in milk, 1 raw egg, salt, pepper and nutmeg. Fill the onions well, take a deep pan, and put the onions in side by side, puts bits of butter on each, fill the pan one-third full of boiling water and bake for three-quarters of an hour.—Mrs. P. C. A. Van Tuners Jansse.

Stewed Cucumbers.

Stew pared cucumbers, cut in quarters, for fifteen minutes, with a little water and a small minced onion. Pour off the water; stir in flour, butter, and salt; heat for two or three minutes, then serve.

Baked Eggplant.

For baked eggplant make a dressing as for stuffed peppers, except that a little more salt, pepper, and butter are used. Cut the eggplant in two lengthwise, scrape out the inside, and mash fine, then mix with the dressing and return to the shells. Place on a pan in the oven. Cook forty-five minutes.—Maria Parloa.

Fried Eggplant.

Cut the vegetable in slices half an inch thick and pare. Sprinkle with salt and pile them upon one another; put a plate with a weight on top. Let them rest an hour, then remove weight and plate. Add 1 tablespoonful water, $\frac{1}{2}$ tablespoonful salt, and $\frac{1}{2}$ teaspoonful pepper to an egg. Beat well. Dip the slices of eggplant in

the egg, then in dried bread crumbs. Fry in deep fat.

Broiled Eggplant.

The eggplant is sliced and drained; then spread the slices on a dish, season with pepper, baste with salad oil, sprinkle with dried bread crumbs, and broil.

Summer Squash.

Wash the squash, cut into small pieces, and cook in boiling water or steam; drain. The cooked squash is mashed fine and seasoned with salt, pepper, and butter.

Boiled Corn on the Cob.

Free the corn from husks and "silk." Drop into boiling water, and cook ten minutes.

Corn Cut from Cob.

Corn may be cut from the cob and heated with butter, pepper, and a little milk. First cook the ears five minutes in boiling water to set the juice. Then with a sharp knife cut through the center of each row of grains, and with the back of a knife press the grains from the hulls. Put it in a saucepan and season with salt, pepper, and butter. Add enough hot milk to moisten well, and cook ten minutes.

Beans with Gravy (Mexican recipe).

Soak 2 cupfuls beans over night; in the morning add a small onion and boil gently until soft; take out the onion and drain the beans. Put a tablespoonful lard in a skillet, and when sizzling hot add the drained beans. Mix beans and lard thoroughly until each bean seems to have a coating of the fat and begins to burst. Add a cupful liquid in which the beans were boiled, and gently crush a few of the beans with the spoon to thicken the gravy. Add the remainder of the bean liquor and a chopped chili pepper, and simmer until the beans are dry.

Cidracayote (Mexican recipe).

Take young summer squash, wash and cut into dice. Put in a stewpan

a tablespoonful lard, and when hot add $\frac{1}{2}$ teaspoonful finely minced onion; stir, then put in the squash, salt, and black pepper. Fry for ten minutes, stirring often, add tender, sweet corn fresh from the cob, $\frac{1}{2}$ cupful corn to a pint squash. Cook until sufficiently soft to mash.—May E. Southworth.

Ejotes con Vino (Mexican recipe).

Cook string beans until tender in boiling salted water. Fry a little chopped onion and green pepper in oil till brown; add the beans, with a seasoning of salt and pepper.

Estilo Seco (Mexican recipe).

Boil a pint pink beans until tender. Put in a frying pan a heaping tablespoonful lard and butter mixed; drain the beans and put into the fat; add a sliced onion, salt, and red pepper. Stir and brown slightly. Ten minutes before taking from the frying pan, add 7 tablespoonfuls grated American cheese. Serve with thin slices of hot buttered toast and sliced cucumbers with oil and vinegar.—May E. Southworth.

Suculento (Mexican recipe).

Fry $\frac{1}{2}$ pound chopped salt pork with a sliced onion and 6 green peppers cut small. When brown, add a can of corn and 4 small summer squashes sliced. Cover with milk, and cook slowly two hours, without stirring.

Beans à la Bretonne (French recipe).

Boil $\frac{1}{2}$ pint haricot beans till tender; slice 4 large onions, and fry them in butter till brown. Put the beans and onions together in a stewpan, and add a little strong stock, pepper and salt, and finely minced parsley. Serve hot.

Beans à la Poulette (French recipe)

Put young, tender beans in a stewpan with plenty of water, and 1 teaspoonful salt to every quart of water, and set them over a strong fire. When done, blanch, drain, and put in a stewpan with a bit of butter, an onion or two cut in dice, and previously fried in butter. Sprinkle

in a tablespoonful flour; let them stew a few minutes, but do not allow them to brown; add a spoonful stock, some minced parsley and green onions, with salt and pepper. Let them come to a boil, stirring well, and thicken with the yolks 2 eggs, beaten in a little cream. Just before serving, add the juice of a lemon.

Turnips Glacé au Sucre (French recipe).

Clean young, tender turnips, put them in a stewpan with a small piece of butter, 2 tablespoonfuls sugar, a little salt, and $\frac{1}{2}$ pint stock. Simmer forty minutes. When nearly done, place the stewpan over a brisk fire to reduce the sauce to a glaze, rolling the turnips about in it, but with great care to avoid breaking them; dish, and pour the glazed sauce over them.

Stewed Red Cabbage.

Split a red cabbage, cut in thin slices, soak in salt and water, then put in a saucepan with some stock and a little butter blended with flour; add pepper and salt, a cup of vinegar, and a bit of bacon. Stew till tender, take out the bacon, and serve.

Shredded Red Cabbage (Dutch recipe).

Cut a red cabbage in shreds and boil till tender; drain as dry as possible; put in a stewpan with a tablespoonful pure olive oil, a tablespoonful butter, 3 tablespoonfuls vinegar and water, an onion cut small, some pepper and salt. Let it simmer till all the liquor evaporates. This is eaten in Holland hot or cold.

Chouffleurs au Gratin (French recipe).

- 1 cauliflower,
- 2 tablespoonfuls grated Parmesan cheese,
- 2 tablespoonfuls butter,
- Dash pepper and salt,
- 2 tablespoonfuls lemon juice,
- Yolks 2 eggs.

Boil the cauliflower, drain, put it on the dish in which it is to be served; prepare a sauce of the cheese, butter,

pepper, and salt, lemon juice, and yolks of eggs beaten; beat and mix together, pour it over the cauliflower, grate Parmesan cheese over the top, put in the oven, and bake twenty minutes. Brown the top.

Artichokes à la Crème (French recipe).

Boil artichokes in salted water; when they are done, drain. About half an hour is sufficient to cook them if they are tender. Toss in butter in a stewpan, add some cream and a little chopped parsley. Thicken the sauce with the yolk of an egg; season with salt and cayenne.

Leland Tomatoes (English recipe).

Wipe 4 tomatoes, pare, and cut in 3 slices. Sprinkle with salt and pepper, dredge generously with flour, and sauté in butter, first on one side, then on the other. Remove to a hot serving dish and pour over them the following sauce: Melt $2\frac{1}{2}$ tablespoonfuls butter, add $2\frac{1}{2}$ teaspoonfuls flour, and stir until blended; then pour on, while stirring or beating constantly, 1 cupful milk. Bring to the boiling point, season with salt and pepper.

Tomato Surprise.

- 6 tomatoes,
- 2 hard-boiled eggs,
- 2 tablespoonfuls red pepper,
- 2 tablespoonfuls green pepper,
- 1 shallot,
- 1 clove garlic,
- 4 anchovies.

Wipe the tomatoes, cut a slice from the stem end of each, scoop out the inside, invert, and stand thirty minutes. Add the eggs, peppers, shallot, garlic and anchovies finely chopped. Moisten with mayonnaise dressing. Fill the tomato cases with the mixture, mask with mayonnaise, and garnish with anchovies. Serve as a first course at dinner.

Broiled Tomatoes.

Wipe and cut tomatoes in halves crosswise; then cut a thin slice from the rounding part of each. Sprinkle

with salt and pepper, dip in crumbs, egg, and crumbs again, place in a well-buttered broiler, and broil six to eight minutes.

Baked Tomatoes.

Wipe 6 smooth, medium-sized tomatoes and remove a thin slice from the stem end of each. Take out the seeds and pulp and drain off most of the liquid. Add to the pulp an equal quantity of buttered cracker crumbs, and season with salt, pepper, and a few drops of onion juice. Refill the tomatoes with the mixture, place in a buttered pan, sprinkle with buttered cracker crumbs, and bake twenty minutes in a hot oven.

Deviled Tomatoes.

- 4 tablespoonfuls butter,
- 2 teaspoonfuls powdered sugar,
- 1 teaspoonful mustard,
- $\frac{1}{2}$ teaspoonful salt,
- Few grains cayenne,
- Yolk hard-boiled egg,
- 1 egg slightly beaten,
- 2 tablespoonfuls vinegar.

Wipe, peel, and cut tomatoes in slices. Sprinkle with salt and pepper, dredge with flour, and sauté in butter. Remove to a hot serving dish, and pour over a dressing made from the above ingredients. Cook over hot water, stirring constantly, until the mixture thickens.

Escalloped Corn.

- 1 can corn,
- 8 or 10 crackers,
- Salt,
- Pepper,
- Butter,
- $1\frac{1}{2}$ cups milk.

Put a layer of corn on the bottom of a pan. On top of the corn put a layer of rolled crackers, salt, pepper and small pieces of butter. Alternately put a layer of corn and then crackers until all are used up, having the last layer crackers. Then pour on milk enough to cover and bake in an oven until crackers are brown.—Zilda Southard.

Corn Relish.

Mix 2 dozen ears sweetcorn, cut from cob, an equal amount of chopped cabbage, 1 dozen medium sized seeded red peppers or mangoes, 1 cup sugar, and season with salt and grain mustard. Place all in a granite pan, cover with vinegar, bring to a boil, and boil 20 minutes. Place in any can or jar.—Viola B. Maxson.

Corn Relish.

- 1 dozen ears corn cut off cob,
- 1 bunch chopped celery,
- 1 chopped cabbage,
- 2 chopped red peppers.

Make dressing of:

- 2 cups white sugar,
- 2 tablespoonfuls salt,
- 1 tablespoonful tumeric,
- $\frac{1}{4}$ can mustard,
- 1 quart cider vinegar.

Pour dressing over corn, celery, cabbage, and peppers, boil one hour and can.—Mrs. Albert Kruse.

Fried Corn.

Scrape corn carefully from the cob. Cut through the center of the kernel, so that all the pulp and juices may be extracted without the removal of the hulls. Sift a little flour over the corn, with salt and pepper to taste. Place some slices of bacon over the fire in frying pan, until all the grease has been extracted. Remove the meat and put the corn in the pan to fry in the bacon fat until it becomes delicately brown and tender; it must be stirred constantly for fifteen or twenty minutes.

Corn Patties Garnished with Husks.

- Green corn,
- 3 eggs,
- 1 cupful fine cracker crumbs,
- $\frac{1}{2}$ teaspoonful sugar,
- Pepper and salt.

This calls for enough green corn after it has been grated to make a pint. To the corn add 2 eggs and the cracker crumbs, season with salt and pepper—about $\frac{1}{4}$ teaspoonful pepper and a teaspoonful salt. Add the sugar and form the mixture into

cakes about the size of a large oyster; then roll in egg and afterwards in cracker crumbs. Wash the corn husks and shred the ends with a fork for about two inches. Arrange them on a platter with the fringe hanging over the sides. Cook the patties in smoking-hot lard until brown and crisp; then heap in a mound in the center of the platter and serve at once.—Maria Parloa.

Vegetarian Sausages.

- 1 $\frac{1}{2}$ cupfuls Lima beans,
- 2 tablespoonfuls butter,
- 1 teaspoonful salt,
- Dash tabasco sauce.

Soak the beans over night, cook in salted water until soft. Drain perfectly dry, then squeeze the pulp through a potato ricer. Beat in the butter and seasonings. If not moist enough, add a beaten egg or as much of it as required, make the paste so soft it can be rolled into croquettes. Shape like small sausages, dip in beaten egg and flour, then fry in butter, rolling the sausages over in the pan till brown on all sides. Serve with cold slaw.

Beans à la Bretonne (French recipe).

- $\frac{1}{2}$ pint haricot beans,
- 4 large onions,
- 2 tablespoonfuls butter,
- 1 cupful brown stock,
- Dash tabasco sauce,
- 1 teaspoonful salt,
- 1 teaspoonful finely minced parsley.

Boil the beans till tender; slice the onions thin, and fry in butter till brown. Put the beans and onions in a stewpan and add the stock, pepper, salt, and parsley. Serve very hot.

Curried Onion.

Fry sliced onions in butter or fat; salt and pepper, then add 1 teaspoonful curry, 2 raw eggs, and a few drops lemon juice. Serve hot.

VEGETABLE LEFT-OVERS

The possibilities for utilizing cold vegetables are greater than those for

any dish that comes to the American table. Almost every vegetable in common use, from the ragged outside leaves of lettuce to a cupful of cold string beans, may reappear as a tasty hot dish or a tempting salad. Left-over spinach, corn, lettuce, tomato, string beans, peas, squash, cauliflower, carrots, onions, or beans may be converted into savory soups, and nearly every vegetable in the market when cold can reappear as a salad. If the left-overs are many and small, the result may be a Macedoine salad, a name which is applied to any salad in which cold boiled vegetables are combined. Each vegetable in such a salad should be kept separate, and generally the dish can be arranged in such a charming scheme of color that it is a pleasure to the eye. Vegetables may be cut in cubes, strips, triangles, tiny balls, or in fancy shapes, formed by a vegetable cutter. During the summer, when young beets, turnips, carrots, and green vegetables are at their best, these salads may be had in perfection. If left-overs of vegetables come from the table coated with cream sauce or mayonnaise, put each by itself in a colander. Wash off in cold water, drain thoroughly, chill before using, and the vegetable will be as good as if freshly cooked. Plenty of a crisp green vegetable, lettuce, water cress, or parsley, is necessary, however, to make a Macedoine salad perfect.

Spinach in Molds.

- 2 cupfuls cold spinach,
- Pepper and salt,
- 1 tablespoonful lemon juice,
- 1 tablespoonful melted butter.

Drain the spinach and chop fine. Season and stir in the melted butter. Butter Dario molds and pack in the mixture. Set on ice until chilled. Remove from the molds and arrange the spinach on thin slices of cold boiled tongue cut in rounds. Garnish the base of each with parsley, and serve on top a spoonful sauce tartare.

Baked-Bean Sandwiches.

- $\frac{1}{2}$ cupful baked beans,
- 1 tablespoonful horse-radish,

- 1 teaspoonful celery and parsley minced fine,
- $\frac{1}{2}$ teaspoonful onion juice,
- $\frac{1}{2}$ teaspoonful mustard,
- Dash tabasco sauce.

Press the beans through a potato ricer, mix with the seasoning, and spread between slices of entire-wheat bread.

Corn Soup.

- 1 quart veal stock,
- 1 cupful green corn cut from the cob and chopped.

Add the corn to the stock and simmer slowly for twenty minutes. Add pepper and salt to taste, thicken slightly, and strain.

Pea Soup.

- 2 cupfuls cold green peas,
- 4 cupfuls veal stock,
- 1 slice onion,
- 1 teaspoonful salt,
- $\frac{1}{2}$ teaspoonful pepper,
- 2 tablespoonfuls butter,
- 2 tablespoonfuls flour.

Add the peas and onion to the stock and simmer till they begin to fall to pieces. Rub through a sieve, reheat, season, and bind with butter and flour rubbed together. Peas that are too old to serve as a vegetable may be used for soup.

Cream-of-Corn Soup.

- 2 cupfuls cold corn,
- 2 cupfuls boiling water,
- 2 cupfuls milk,
- 1 slice onion,
- Sprig parsley,
- 2 tablespoonfuls butter,
- 2 tablespoonfuls flour,
- Pepper and salt.

Put the corn through a meat chopper. Add the boiling water and simmer for twenty-five minutes. Rub through a sieve. Scald the milk with the onion and parsley. Remove the seasonings, and pour the milk over the corn pulp. Melt the flour and butter together and use for binding. Season with pepper and salt.

Baked-Bean Soup.

- 3 cupfuls cold baked beans,
- 2 cupfuls water,
- 4 cupfuls stock,
- 2 slices onion,
- 3 stalks celery,
- 1½ cupfuls canned tomatoes,
- 2 drops tabasco sauce,
- Salt and pepper,
- 2 tablespoonfuls butter,
- 2 tablespoonfuls flour.

Put the beans, celery, onion, tomatoes, with the stock and water, into a saucepan and simmer half an hour. Rub through a sieve, leaving nothing in the sieve except the skins of the beans and the seeds of the tomato. Add the seasonings, bind with the butter and flour melted together.

Wilted Lettuce.

- 1 slice ham,
- ½ cupful vinegar,
- 1 egg,
- ½ teaspoonful mustard,
- Pepper and salt,
- Outside leaves 2 heads lettuce.

Fry a slice of ham with some fat on. When done, remove the ham, leaving the fat gravy in the frying pan. Have ready the vinegar, beaten egg, mustard and pepper and salt to taste. Add the egg to the vinegar slowly so it will not curdle. When well mixed, pour slowly into the ham gravy, stirring well. Let it come to a boil. Put the lettuce in with a fork, toss and thoroughly mix with the hot mixture in the frying pan for two minutes. Cover the pan for two minutes, then turn out in a deep dish.

Vegetable Hash.

From the remains of a boiled dinner there are generally enough leftovers to make a vegetable hash. Chop coarsely cabbage, turnips, parsnips, potatoes and ½ a carrot. Combine in equal quantities and to each pint of the vegetable use a tablespoonful butter melted in a spider. Pepper and salt to taste and add 2½ tablespoonfuls brown stock. Cook

slowly, and let it just come to a boil. Serve hot with pickled beets.

Sauce Robert.

- 2 drops tabasco sauce,
- 8 tablespoonfuls oil mayonnaise,
- 4 tablespoonfuls French mustard,
- 2 tablespoonfuls vinegar,
- 2 cold boiled onions.

Chop the onions fine and mix with the other ingredients. This is a delicious accompaniment to pork tenderloin, veal cutlet, lamb chops, or a steak.

Cabbage Jelly (German recipe).

Drain cold boiled cabbage perfectly dry, chop fine, add butter, pepper, and salt to taste. Press the whole closely into a small pudding dish, and bake an hour.

Corn Omelet.

- 1 cupful cold corn,
- 3 eggs,
- ½ cupful milk,
- ½ teaspoonful salt,
- Dash pepper,
- 1 tablespoonful butter.

Chop the corn slightly. Beat the yolks of the eggs till thick, mix with the milk, salt and pepper. Add the corn and fold in the whites of the eggs beaten dry. Melt the butter in an omelet pan, pour in the mixture, and cook exactly as you would an omelet.

Corn Fritters.

- 1 cupful cold chopped corn,
- 1 cupful milk,
- 1 teaspoonful baking powder,
- Yolks 2 eggs,
- 4 tablespoonfuls flour,
- ½ teaspoonful salt,
- ½ teaspoonful pepper,
- Whites 2 eggs.

Beat the yolks till thick and lemon-colored, add the milk and seasoning, then the corn, flour, and baking powder. Last of all, cut in the whites of eggs beaten to a stiff froth. Drop from a tablespoon into hot lard, and fry a delicate brown.

Curried Vegetables.

- 1 cupful cold potatoes,
- 1 cupful cold carrots,
- $\frac{1}{2}$ cupful cold turnips,
- $\frac{1}{2}$ cupful cold peas,
- 2 tablespoonfuls butter,
- 2 slices onion,
- 2 tablespoonfuls flour,
- $\frac{3}{4}$ tablespoonful salt,
- $\frac{1}{2}$ teaspoonful curry powder,
- $\frac{1}{2}$ teaspoonful pepper,
- Dash celery salt,
- 1 cupful milk,
- 1 teaspoonful chopped parsley.

Cut the potatoes, carrots, and turnips into tiny cubes; add the peas. Pour over them the onion cooked in the butter for five minutes. Add flour, and seasonings, and pour on slowly the scalded milk. Sprinkle with finely chopped parsley.

Spinach Réchauffé (French recipe).

- 2 cupfuls cold spinach,
- 4 tablespoonfuls butter,
- 3 tablespoonfuls flour,
- $\frac{3}{4}$ cupful chicken stock,
- 1 teaspoonful powdered sugar,
- Salt and pepper,
- Grated nutmeg,
- Grated lemon rind.

Chop the spinach fine, reheat in a double boiler. Heat the butter, add the flour; cook until the sauce thickens the flour and chicken stock. Add the seasonings. Combine with the spinach.

Baked-Bean Rarebit.

- 2 tablespoonfuls butter,
- $\frac{1}{2}$ teaspoonful salt,
- $\frac{1}{4}$ teaspoonful paprika,
- 1 cupful cold baked beans,
- $\frac{1}{2}$ cupful milk,
- 2 drops tabasco sauce,
- $\frac{3}{4}$ cupful chopped cheese.

Press the beans through the potato ricer and sprinkle the pulp with the seasonings. Put in an omelet pan with the butter, and when hot add the milk and cheese. Stir till thoroughly blended. Serve on slices of toast laid on very hot plates.

Onion Soufflé.

- $\frac{1}{2}$ cupful stale bread crumbs,
- 1 teaspoonful chopped parsley,
- 1 cupful cold boiled onions,
- Yolk 1 egg,
- 1 tablespoonful butter,
- 1 tablespoonful flour,
- $\frac{1}{2}$ teaspoonful salt,
- Paprika,
- 1 cupful milk,
- Whites 2 eggs.

Chop the onions fine. Make a white sauce from the butter, flour, seasonings, and milk. When it boils, add to it the bread crumbs, parsley, chopped onion, and beaten yolk of the egg, first combining a little of the hot milk with the egg. Beat the whites of the eggs to a stiff froth and fold them into the onion mixture. Pour into a buttered dish and bake fifteen minutes in a moderate oven. Serve with cream sauce.

Scalloped Tomatoes and Onions.

- 1 $\frac{1}{2}$ cupfuls cold boiled onions,
- 6 tomatoes,
- Pepper and salt,
- 1 cupful buttered crumbs,

Cut the tomatoes into thin slices and chop the onions fine. Butter a baking pan. Put in a layer of sliced tomatoes, season with pepper and salt. Cover with a sprinkling of buttered crumbs, cover with sliced onions, then a layer of tomatoes. Make the last layer onion slices covered liberally with crumbs. Bake in a moderate oven three quarters of an hour.

Monday's Soup.

- $\frac{1}{2}$ can tomatoes,
- 6 boiled or baked potatoes,
- $\frac{1}{2}$ onion,
- 1 stalk celery,
- Few celery tops,
- Pepper and salt,
- 1 cupful hot milk,
- Pinch soda.

Boil vegetables together until they are soft. Put through a potato ricer, add pepper, salt, and soda. Just be-

fore serving pour in the milk. Sift over the top dry bread crumbs.

Green-Pea Soup.

Take what remains of the peas cooked for dinner the day before and a little of any kind of soup left, or 1 quart of soup stock and boil together until the peas are soft. If you have a heaping cupful peas you can make soup enough for four or five persons. Put in salt and pepper and onion. The quantity of each must depend upon the character of the soup which you have put in. Put a tablespoonful butter into a frying pan, and when it is hot, put a handful stale bread cut in dice. Stir until they are quite brown. Strain the soup, rubbing the peas through a colander. Sprinkle in a little chopped parsley and a few celery tops cut up fine. Put the fried bread in the tureen, and pour in the soup.

Savory Cauliflower (Dutch recipe).

Steam cold boiled cauliflower until it is hot, and pour over it a sauce made as follows: Boil 1 cupful thin cream, thicken by adding 1 teaspoonful flour, stirred smooth in a little cold cream; let the mixture boil up, stirring constantly, add a pinch salt,

a little pepper, and a small quantity nutmeg.

Cauliflower au Fromage (French recipe).

Put cold boiled cauliflower in a baking dish, and turn over it enough water and butter in equal quantities to moisten; grate cheese over the top, cover with sifted bread crumbs, put small bits of butter on top, and bake until light brown.

Asparagus with Scrambled Eggs.

Put a tablespoonful butter in a frying pan; when melted, pour in 3 eggs which have been beaten just enough to mix the yolks with the whites, and 3 tablespoonfuls of milk; stir constantly; when the mixture thickens, take from the fire; season with salt and pepper, and stir into it what you have left of cold boiled asparagus cut into small bits.

Scalloped Corn.

Mix one can of corn, two cupfuls of milk, five rolled crackers, one tablespoonful of butter, and salt and pepper to taste. Bake about thirty minutes in a slow to moderate oven till the top is a delicate brown.

CHAPTER XIX

POTATO DISHES AND LEFT-OVERS

BAKED, BOILED, STUFFED AND ESCALLOPED POTATOES—
FRIED POTATOES—POTATOES LYONNAISE, JULIENNE, AND
FRENCH FRIED—POTATO CHIPS—POTATO CAKES—SWEET
POTATOES—POTATO LEFT-OVERS

Boiled Potatoes.

In boiling potatoes, choose tubers, if possible, which are of the same size. When this cannot be done, put the larger potatoes at the bottom of the saucepan, the small ones on top. Wash, pare, and put in cold water to prevent them from becoming discolored. During the winter, when potatoes grow old and soft, soak for two hours before cooking. Put in boiling salted water and cook until soft. Drain and serve in a dish with folded napkin over them.

Baked Potatoes.

Select the smoothest potatoes and those of uniform size for baking. Scrub with a vegetable brush and lay on rack in oven. They will require forty minutes in a hot oven. When soft, break open and serve immediately.

Mashed Potatoes.

Take boiled potatoes and put them through a potato ricer, add butter, milk, pepper, and salt, and beat with a potato masher or large spoon until fluffy. Heap lightly in a dish and, if you wish, brown them over the top.

Stuffed White Potatoes.

2 tablespoonfuls butter,
 $\frac{1}{2}$ cup hot milk,
 $\frac{1}{4}$ teaspoonful salt,
 $\frac{1}{8}$ teaspoonful pepper,
6 baked potatoes.

Select medium sized potatoes and bake from 45 to 60 minutes. Remove from oven and cut in half, then without breaking the skin remove with a spoon the inside; mash, add seasoning, butter and milk, and fill the shells, leaving the top rough. Place in a hot oven for ten minutes, or until the potatoes are a light brown. The white of an egg beaten light may be added if desired. Potatoes may be sprinkled with grated cheese before putting in oven. Serve hot with fish or roast pork.—Lelah R. Cheney.

Pimento Baked Potatoes.

Bake large potatoes, scoop out insides, put through ricer, add butter, salt, pepper, a little grated cheese to taste, and shredded pimento. Return to shells, add a little butter on top, and bake.—Anna Kinsley.

Baked Potatoes with Cheese.

Select medium sized, smooth potatoes, wash with vegetable brush, lay in hot oven and bake 30 or 40 minutes. Remove and cut off end. Run knife through center and insert long strip of cheese. Put ends back on with tooth picks and return to oven 5 minutes. Remove the tooth picks and serve hot.—Mrs. Geo. Bohnert.

Au Gratin Potatoes.

Pare and slice potatoes very thin, boil in salted water until half done, drain and place in baking pan alternate layers of potatoes and grated

cheese. Add salt, pepper and bits of butter. Almost cover with sweet milk and bake in oven until a light brown.—Ellen Ault.

Scalloped Rice Potatoes.

- 4 or 5 large potatoes,
- 4 or 5 large onions,
- $\frac{3}{4}$ cup rice,
- 1 cup grated cheese,
- $\frac{1}{2}$ cup butter,
- 1 cup milk.

Pare and dice potatoes, cook until done in salt water. Slice onions and boil. Cook rice. Then drain water from onions, rice and potatoes and mix all together. Put into baking dish and bake for half an hour, or until brown.—Huldah Beutenmiller.

Scalloped Potatoes.

Butter a baking dish, pare potatoes and slice. Put in a dish a layer of potatoes, salt, pepper and bits of butter, cover with cracker crumbs, then add another layer of potatoes and crackers and continue until pan is full. Cover with rich sweet milk and bake one hour. Or, if desired, the cracker crumbs may be omitted.—Viola B. Maxson.

Creamed Potatoes.

- 1 $\frac{1}{2}$ cups creamed sauce,
- 2 cups cubed boiled potatoes.

Heat potatoes in sauce and serve.

Scalloped Potatoes.

Cut potatoes in thin slices, put in layers in a baking dish sprinkled with pepper and salt, dredged with flour, and with a little butter here and there. Pour hot milk over it, until the milk can be seen through the potatoes, sprinkle with bread crumbs and bake in a hot oven for an hour.

Potatoes Baked on Half Shell.

Bake 6 or 8 good-sized potatoes; as soon as they are soft, cut in halves lengthwise, scoop out the inside, mix with butter, cream, pepper, and salt, and the whites of 2 eggs beaten to a stiff froth. Whip the potato until white and fluffy, then put back into

the skins and rake them with a fork until they have a rough appearance on top. Return to the oven, and bake until brown on top.

Potato Omelet.

Prepare mashed potatoes; put them in a spider in which a tablespoonful butter has been melted, smooth with a palette knife, allow them to cook a few minutes over a moderate fire; when delicately crusted underneath, score in the center, fold omelet fashion, then put on a hot platter.

Potatoes a la Hollandaise (French recipe).

- 1 $\frac{1}{2}$ cupfuls white potatoes,
- 3 cupfuls potato cubes,
- 4 tablespoonfuls butter,
- $\frac{1}{2}$ teaspoonful salt,
- Dash tabasco sauce,
- 1 tablespoonful lemon juice,
- 1 tablespoonful shredded parsley.

Pare the potatoes, cut into small cubes, and soak for half an hour in cold water. Cook until almost soft in the white stock, drain, and add the lemon juice, butter, and seasonings. Cover the saucepan and set back on the stove where it will not cook for five minutes. Serve in a vegetable dish sprinkled with the parsley.

Roasted Brown Potatoes.

Wash and pare potatoes, soak in cold water, boil for seven minutes, then remove from the kettle and lay in the gravy of a roast about half an hour before the meat is to be taken from the oven. Baste with fat two or three times. Sweet potatoes may be cooked in the same way.

Chambrey Potatoes (French recipe).

Wash and pare potatoes, then cut into thin flakes on a vegetable slicer, soak for half an hour in ice water, drain, and dry in a towel. In an iron spider fry out a couple slices salt pork, cook 2 slices onion delicately brown, lift out the onion, then put in the potatoes, having the spider more than half full, season with pepper and salt and dot over the top with bits of butter. Set the spider back

on the stove where there is moderate heat. Cover tightly until the potatoes are softened and brown. Occasionally, while cooking, turn them over to prevent burning.

Hongroise Potatoes (French recipe).

- 1 cupful scalded milk,
- $\frac{4}{4}$ tablespoonfuls butter,
- 3 cupfuls potato cubes,
- $\frac{2}{2}$ tablespoonfuls flour,
- $\frac{1}{2}$ teaspoonful salt,
- $\frac{1}{2}$ teaspoonful lemon juice,
- Dash tabasco sauce.

Soak the potato cubes in ice water half an hour. Parboil five minutes, and drain. Put the butter in a spider, and sauté the potatoes delicately brown. Add the seasonings, dust on the flour, and pour in the hot milk; allow it to cook for a few minutes, then turn into a hot dish and sprinkle with shredded parsley.

Potatoes Brabanconne (French recipe).

Into 2 cupfuls mashed potatoes, stir a tablespoonful finely chopped chives, 1 teaspoonful chopped parsley, a dash pepper, teaspoonful salt, 2 teaspoonfuls butter, and a tablespoonful cream. Turn out on a platter, shape into a mound, dust over it grated cheese and stale-bread crumbs. Cover with bits of butter, and brown in the oven.

METHODS OF FRYING POTATOES

Saratoga Chips.

Pare potatoes, slice into thin shavings on a vegetable cutter, and allow to soak in ice water for an hour. Lift from the water, dry in a towel, place in frying basket, fry in deep fat or oil until they curl and are delicately brown. Shake as free from fat as possible before lifting frying basket from the kettle, and put to drain on absorbent paper. Dust with salt. Be careful that the fat is not too hot, as the potatoes must cook before they brown, also allow the fat to reheat each time before frying another portion of potatoes.

French Fried Potatoes.

Wash and pare potatoes, cut them into lengthwise strips, and soak an hour in ice water. Drain and dry, then fry in hot fat. When taken from the kettle, shake them on a sheet of brown paper to absorb the fat, and dust with salt. Be careful not to cook too many potatoes at a time, as the fat is apt to become chilled and the potatoes grease-soaked.

Julienne Potatoes.

Cut large and long potatoes into slices $\frac{1}{4}$ inch thick. Cut these crosswise into rectangular prisms $\frac{1}{4}$ inch on a side and about 3 inches long. Drop into hot fat and cook till golden brown.—Mrs. A. J. Mielke.

Lyonnaise Potatoes.

- 1 pint cold potatoes diced,
- $\frac{1}{2}$ teaspoonful salt,
- $\frac{1}{2}$ scant saltspoonful pepper,
- 1 tablespoonful onion,
- 1 tablespoonful butter,
- 1 tablespoonful parsley.

Brown onion in butter, add potatoes, and brown. Sprinkle with parsley.

Potato Croquettes.

Roll cold mashed potatoes into balls about 3 inches in diameter. Flatten and dip in one egg beaten smooth, 1 tablespoonful of water, salt and pepper. Roll in soft bread crumbs and fry in very hot fat. Serve hot. If any cold meat is at hand this may be cut fine and rolled in the potatoes. Onion may also be used.—Amy Beddow.

Potato Cakes.

Mix left-over mashed potatoes with one well-beaten egg and make into cakes. Fry in hot butter to delicate brown.

Fried Potato Balls.

- 2 cupfuls hot mashed potatoes,
- $\frac{1}{2}$ teaspoonful salt,
- $\frac{1}{4}$ teaspoonful celery salt,
- Dash cayenne,
- 1 tablespoonful butter,
- 1 egg,
- 1 teaspoonful shredded parsley.

Into the hot potatoes beat the butter and seasonings. Allow it to cool for a few minutes, then add the parsley and egg. Whip with a fork until thoroughly blended, roll between the hands into small balls, dip in flour, fry in hot fat, and drain on brown paper.

Potato Croquettes.

Prepare mashed potatoes as for fried balls, adding a little onion juice and a dash tabasco, make into cork-shaped croquettes, roll in flour, egg, and finely sifted bread crumbs. Fry delicately brown in hot fat, then drain on absorbent paper.

Kartoffelklöße (German recipe).

3 cupfuls mashed potatoes,
1 cupful toasted bread crumbs,
2 eggs,
Dash pepper,
1 teaspoonful salt,
1 tablespoonful chopped parsley,
 $\frac{1}{4}$ teaspoonful nutmeg.

Beat the bread crumbs into the mashed potatoes, add the seasoning and parsley, moisten with the yolks of eggs beaten thick and lemon-colored. Whip the whites of eggs to a stiff froth, then blend with the potato. Mold into small balls and fry until delicately brown in hot fat. Kartoffelklöße has sometimes a teaspoonful baking powder added to the mixture and they are boiled like dumplings in salted water, when they puff up till half as large again; then they are served with tomato sauce poured about them and a sprinkling of crisp, buttered bread crumbs.

SWEET POTATOES

Boiled Sweet Potatoes.

Select potatoes which are of about the same size; if wished, they may be boiled in skins and peeled before going to the table, or pare them, and cook twenty minutes in salt water.

Baked Sweet Potatoes.

Wash potatoes, wipe, dry, and bake quickly in a hot oven. If they cannot be served immediately, prick with a

fork and allow the steam to escape to prevent becoming soggy.

Stuffed Sweet Potatoes.

Bake sweet potatoes, scoop out center, put through potato ricer, add salt, butter, 1 egg yolk, cream, and brown sugar (to taste) and beaten egg white. Stuff shells, sprinkle with brown sugar, bake until browned.—Anna Kinsley.

French Fried Sweet Potatoes.

Wash and pare the sweet potatoes, same as for French fried Irish potatoes. Make a batter of 1 egg, 1 teaspoonful of salt, 1 of sugar, 1 pint of sweet milk and 1 teaspoonful of baking powder. Add enough flour to make a thin batter. Dip the sliced potatoes in this mixture then brown in deep fat. The batter will cause them to brown more easily and will also add a sweeter taste to the potato. Cook until they can be easily pierced with a fork.

Browned Sweet Potatoes.

Boil medium sized sweet potatoes. Put in a baking pan, baste with butter or drippings and season with salt. Cook in a hot oven for 20 minutes.—Mabel Dahl.

Glazed Sweet Potatoes.

Wash 3 medium sized sweet potatoes and boil for 15 minutes in salted water with the skins on. Drain, remove the skins, cut in halves lengthwise and place in a buttered pan. Make a sirup by boiling for 3 minutes $\frac{1}{2}$ cup of sugar and 2 tablespoonfuls water. Add $\frac{1}{2}$ tablespoonful butter. Brush potatoes with the sirup and bake until brown, basting with the remaining sirup. Keep the sirup on top of the potatoes as much as possible.—Lelah R. Cheney.

Scalloped Sweet Potatoes.

Steam 5 large sweet potatoes until tender; peel and slice them; place a layer in a baking dish, season with salt and a little pepper, butter and mace; cover with a layer of bread or cracker crumbs and proceed thus until the dish is filled. Lastly pour over all 1 beaten egg and $\frac{1}{2}$ cup sweet

cream. Bake one-half hour.—Mrs. Fred S. Long.

Sweet Potato Pudding.

For a small sized family peel and grate 3 medium sized potatoes and add 2 eggs, 1 tablespoonful melted butter, 1 tablespoonful allspice, 1 cup sugar. Stir in new milk to make batter. Bake until brown.

Sweet Potato Puff.

Put 2 cups mashed potato over the fire with the beaten yolks of 2 eggs, $\frac{1}{2}$ cup cream and a little salt. Beat well, take from the fire and add the stiffly beaten whites of the eggs. Heap in a conical loaf on a buttered dish, brush with white of egg and brown in a hot oven.—Miss Elizabeth Turmo.

Sweet Potato (Southern style).

Bake medium-sized potatoes; when they are soft, cut in two lengthwise and scoop out the inside with a spoon. Put it through a potato ricer, have butter, salt, pepper, and enough thick cream to moisten. Whip with a fork until light and fluffy, refill the skins, heaping the potato into rough little mounds, and bake delicately brown.

Sweet Potatoes in Cream (Southern recipe).

Bake a large sweet potato for twenty minutes. Take from oven and prick skin. When cool, pare it, and chop to the size of peas; season with salt and butter and heap lightly in a buttered baking dish. Pour over it 3 or 4 tablespoonfuls cream, spread the top with melted butter and dust with powdered sugar.

Sweet Potato Croquettes

Two cupfuls mashed, boiled, steamed, or baked potatoes; add the beaten yolks of 2 eggs, and season to taste. Beat thoroughly. When cold, form into small croquettes, roll in egg and bread crumbs, and fry in hot lard to an amber color. Serve on a napkin.

Broiled Sweet Potatoes.

Steam, pare, and cut in slices three eighths of an inch thick, lay the slices

in a double broiler; salt, cover with melted butter, and broil over a slow fire.

Glazed Sweet Potatoes.

Boil sweet potatoes until nearly cooked, then peel and cut into quarters lengthwise. Lay on a baking plate, sprinkle over them salt, brown sugar, and melted butter, add a few tablespoonfuls boiling water. Set in a hot part of the oven, and bake till the potatoes are covered with a thin brown glaze. Baste occasionally with the sirup.

LEFT-OVER POTATOES

There are all sorts of methods for making warmed-up potatoes, so different that they will never taste alike twice in succession. One day there may be a suspicion of onion about the dish, another a rich flavor given by a spoonful of beef extract, a dash of chives, parsley, cayenne, or celery. Or they may appear *au gratin* with a delicate cheese flavor. Mashed potato may be warmed again or may reappear in a dozen different ways.

There are a few rules to remember in the keeping of left-over potatoes. Never put them hot into the refrigerator. Nor allow them to stand in an uncovered dish. For if you do, they will acquire a tough, disagreeable skin, and will be reduced to nothing by paring. Use cold potatoes before they are two days old. In hot weather they will not keep more than twenty-four hours. The sense of smell will speedily reveal to you if they have soured.

In hot weather use potatoes as often as possible in a salad. In this, too, seek variety. There are endless recipes for potato salads. Do not make a salad of old potatoes, the newer they are the more satisfactory the salad. In Germany, potatoes for a salad are always boiled in their skins, and it is a fact that they taste better than when pared before cooking. The neatest method for preparing them is to cut the potatoes into cubes about half an inch square or in tiny balls with a potato scoop. Do not cut them too thin or small; if you

do they will break, and nothing looks more uninviting than a mushy potato salad.

Potatoes absorb a great deal of dressing, and they ought to marinate at least an hour before being served. One of the most acceptable of potato salads is a combination of potato and pickled beet with Worcestershire sauce and onion juice added to the marinade. Another is made with finely sliced onions as a flavor, and a sprinkling of chopped tarragon, parsley, and chervil. A third has celery and chopped cabbage with minced pickle and hard-boiled egg. Mushrooms and minced pickle combined are a favorite addition to potato salad. Lettuce or celery enters into the make-up of others. Indeed, there are few things among vegetables that will not combine well with potatoes. Cold peas are good, so are tomatoes, green peppers, olives, asparagus, red cabbage, cauliflower, capers, turnips, carrots, cucumbers, or string beans. Sometimes a relish is added to the potato salad by a few slices of salt salmon, several anchovies, or sardines.

Sweet potatoes may be put through the potato ricer and converted into croquettes or a pudding or pie. They may be glazed with sugar and butter, warmed in cream, or make an excellent soufflé. Another way is to cut them in thick slices, dip in flour, egg, and crumbs, and fry in deep fat, or slice them into a fritter batter, and fry.

Delmonico Potatoes.

5 cold potatoes,
1 tablespoonful butter,
1 tablespoonful flour,
1 cupful milk,
 $\frac{1}{2}$ teaspoonful salt,
Dust pepper,
 $\frac{1}{2}$ cupful grated cheese.

Cut the potatoes into fine dice, make a white sauce from the butter, flour, milk, and seasonings, and toss the potatoes lightly into the sauce. Turn into a baking dish, sprinkle with grated cheese, and bake till light brown.

Potato Puffs.

2 cupfuls finely chopped cold potatoes,
2 tablespoonfuls cream,
1 egg,
Pepper and salt,
2 tablespoonfuls flour.

Mix the potatoes thoroughly with the seasonings, flour, egg, and cream. Drop by spoonfuls in hot fat in a spider.

Stewed Potatoes.

Cut cold potatoes in neat cubes. Scald 1 cupful milk, 1 tablespoonful butter, and seasoning of salt and pepper. Add the potato. Let it cook in the milk, and serve very hot.

Lyonnais Potatoes.

1 onion,
2 tablespoonfuls butter,
5 cold potatoes,
Pepper and salt.

Chop the onion, and fry five minutes in the butter. Into this put 5 potatoes cut into dice, season with pepper and salt. Serve when brown and crisp.

Browned Potato.

Boil a pint or 2 of the tiny potatoes left in a barrel and let them cool. Skin and sauté in 2 tablespoonfuls butter. Pepper and salt while in the spider. When well browned, put in a heated vegetable dish and sprinkle with chopped parsley.

Creamed Potatoes.

3 cupfuls cold boiled potatoes,
 $1\frac{1}{4}$ cupfuls white sauce.

Cut the potatoes into fine slices, and heat in the white sauce.

Chartreuse Potatoes.

3 cupfuls cold boiled potatoes,
Pepper and salt,
 $\frac{1}{2}$ teaspoonful onion juice,
 $\frac{1}{2}$ cupful flour,
 $\frac{1}{4}$ teaspoonful salt,
 $\frac{1}{2}$ cupful milk,
1 egg.

Mix the flour, salt, and pepper. Add the milk gradually and well-beaten egg. Cut the potatoes into half-inch slices. Sprinkle with salt, pepper, and onion juice. Dip into the batter. Fry in deep fat and drain.

Potatoes with Hard-Boiled Eggs.

- 8 cold boiled potatoes,
- 6 hard-boiled eggs,
- Pepper and salt,
- 2 cupfuls thin white sauce,
- ½ cupful buttered bread crumbs.

Cut the potatoes and eggs into quarter-inch slices. Put a layer of potatoes in a buttered baking dish. Sprinkle with pepper and salt. Cover with a layer of eggs cut in slices, then a layer of potatoes. Pour over it the white sauce. Cover with crumbs, and bake until brown.

Whipped Potato.

If you have 2 cupfuls cold mashed or riced potato, put a tablespoonful butter and 4 tablespoonfuls milk or cream in the double boiler, then add the potato. Leave the lid off. In ten minutes it will be hot. Beat with a silver fork till light and fluffy. Serve as ordinary mashed potato or use it as a border for any dish. It tastes like newly cooked potato.

Duchesse Potatoes.

- 2 cupfuls cold mashed potatoes,
- 1 egg,
- 2 tablespoonfuls cream.

Beat the yolk of the egg till very thick, add the cream to it, and work into the potatoes. Shape in small pyramids. Rest each one on the broad end in a buttered tin. Beat the white of the egg slightly; add to it a teaspoonful milk and brush each cone with the mixture. Bake till golden brown. Serve on a hot platter garnished with parsley.

Potato Croquettes.

- 3 cupfuls cold mashed potatoes,
- 1 tablespoonful butter,
- ½ cupful cream,
- Whites 2 eggs,
- Salt and pepper,
- Grating of nutmeg.

Warm the potatoes, add the butter, cream, well-beaten eggs, salt and pepper to taste, and a slight grating of nutmeg. Let the mixture cool, then shape, roll in egg and cracker crumbs, and fry.

Potato Scones (Scotch recipe).

Take cold mashed potatoes, moisten with cream, and work in sufficient flour, use 2 teaspoonfuls baking powder to 1 cupful of flour, with which baking powder is mixed, to make a firm dough, adding a pinch salt. Roll out the potato paste, sprinkle with dry flour, roll in beaten egg, again in flour, cut into rounds, and bake on a hot griddle for ten minutes; butter while hot, and serve.

Potato-and-Tomato Salad.

- 1 cupful boiled new potatoes,
- 2 fresh tomatoes,
- 1 green pepper.

Cut the potatoes in neat cubes, the tomatoes in quartered slices. Arrange a nest of lettuce leaves, place the potatoes in the center and the tomatoes around them, sprinkle with chopped green pepper, salt, and powdered sugar. Pour over it a French dressing.

Glazed Sweet Potatoes.

- 6 cold sweet potatoes,
- 4 tablespoonfuls butter,
- 4 tablespoonfuls brown sugar,
- Pepper and salt,
- 2 tablespoonfuls of water.

Pare the potatoes and cut in two lengthwise, dusting with pepper and salt. Melt the butter and sugar together; dip the slices of potatoes in this. Arrange in a baking pan. Baste with the sirup and bake till they are rich brown.

Sweet Potatoes (Cuban recipe).

- 8 cold sweet potatoes,
- ½ cupful water,
- 1 cupful brown sugar,
- 1 teaspoonful butter.

Pare cold sweet potatoes that have been boiled or baked. Put them in a sirup made from the water, sugar, butter, and a dust of cinnamon. Bake

until the potatoes are covered with a fine, brown glaze.

Sweet Potato Salad.

- 2 cupfuls cold sweet potatoes,
- 1 cupful celery,
- 6 olives,
- 1 tablespoonful minced parsley.

Cut the potatoes into small cubes and the celery into half inch pieces. Mix and finish with French dressing. Sprinkle with chopped olives and parsley.

Sweet Potatoes au Gratin.

- 1½ pints cold sweet potato,
- 2 tablespoonfuls brown sugar,
- 2 tablespoonfuls water,
- 2 tablespoonfuls butter,
- Pepper and salt,
- ½ cupful buttered crumbs.

Cut the potatoes into tiny cubes and arrange in a loose layer in the bottom of a buttered baking dish. Sprinkle with pepper, salt, sugar, water, and morsels of butter. Repeat with another layer of potato; on top put a layer of buttered crumbs. Bake till well browned.

Hashed Brown Potatoes.

- ½ cupful fat salt pork,
- 2 cupfuls cold boiled potatoes,
- ½ teaspoonful pepper,
- ½ teaspoonful salt.

Try out the fat salt pork, cut in small cubes, remove scraps. Add the potatoes, finely chopped, pepper, and salt. Mix potatoes thoroughly with fat; cook three minutes, stirring constantly; brown underneath. Fold as an omelet, and turn on hot platter.

Curried Potatoes.

- ¼ cupful butter,
- 1 small onion,
- 3 cupfuls cold boiled potato cubes,
- ¾ cupful white stock,
- ½ tablespoonful curry powder,
- Juice 1 lemon,
- Salt and pepper.

Cook the butter with the onion until yellow; add the potato and cook until it has absorbed butter, then add the stock, curry powder, lemon juice, salt and pepper to taste.—Fannie M. Farmer.

CHAPTER XX

THE ART OF SOUP-MAKING

DIRECTIONS FOR SOUP-MAKING—SOUP STOCK—THICK SOUPS
—CLEAR SOUPS—VEGETABLE SOUPS—PURÉES—MEAT
SOUPS—BROTH—CREAM SOUPS—CHOWDERS—BOUILLONS
—FISH SOUPS.

Soup making is as much of an art as turning out fine cake or pastry, still the American housewife devotes twice as much study to the making of sweet dishes as to soup. The French woman makes a trifle of something sweet serve as dessert, while her soups are famous the world over. It is economy to be able to provide a soup which will often take the place of the *pièce de résistance* in a dinner, for a fine bisque or smooth, creamy soup is a meal in itself. Then there are the stimulating thin soups which make a proper beginning to a dinner. Soup is divided into several classes—soups with stock and soups without—and the variations which can be wrought by a clever housewife on these are numberless. With a pot of stock on hand and the assistance of vegetables for stockless soups, even in a frugal home there may be a soup for everyday in the year. Besides, we have excellent soups made from fish, and satisfying chowders with the addition of potatoes which makes the dish a full meal.

In recipes for making stock, the list of ingredients for seasoning seems endless. Still, a good cook keeps on hand everything that tends to fine flavoring. Spices such as mace, bay leaves, peppers, etc., are very cheap, so are the winter vegetables that most recipes call for and they may be kept constantly on hand. In a large family where there is a roast or

meat dish once, perhaps twice, a day, little fresh meat is required for the stock pot if all bones and scraps are saved and utilized. Every morsel of a stew, roast with its gravy, chop and steak bones, carcasses of chicken or game, and the trimmings from meat, which a housewife pays for and should insist on having, are all good for the soup kettle. The meats to avoid using are bits of raw lamb or mutton with fat on them, which gives a disagreeable flavor, also smoked or corned meat. Scraps of bacon, cold ham, or even calf's liver may be added; they give a touch of good flavoring. Several utensils are a necessity for soup making. First there is a sharp meat knife, a hard-wood board, a strong *purée* strainer, a soup pot with a tight lid, and a strainer with a slide, which allows it to be placed across the tureen.

A soup pot need not do a continuous performance on the back of a stove from Monday to Saturday. It is too handy for all sorts of fag-ends to be thrown in without being critically looked over; besides, the stock which is constantly at the boil, or very near it, does not extract the nourishment from meat and bones that cold water does. If you would have fine-flavored, good-colored soup, save all the scraps and keep in a scrupulously clean jar in the refrigerator. Make soup twice a week; three times if the weather is too hot for meat remains to keep, or if they

accumulate very fast. Never add a morsel of anything that has the slightest taint; it will spoil the whole kettleful. Break bones thoroughly. If you would extract all the flavor from bits of meat, put them through a chopper. Lay the bones at the bottom of the pot.

If there are any left-overs in the refrigerator of such vegetables as onions, celery, tomatoes, carrots, parsnips, or peas, chop fine and add, but do not put in too much of one thing; it gives too strong a flavor to the soup. If there are no left-over vegetables on hand, chop $\frac{1}{2}$ cupful each of carrot, turnip, and celery, and add for flavoring, with $\frac{1}{2}$ teaspoonful peppercorns, 1 bay leaf, sprig of parsley, 6 cloves, and 1 chopped onion. Do not add salt till the stock is half cooked.

If you relish celery in soup and live where it cannot be secured the year round, dry the celery leaves as you get them and put them away in a fruit jar. When preparing soup, tie a few of the leaves in a cloth, and drop it into the kettle. You will find that the soup will have even more of the taste of celery than when using the stalk.

Cover the bones with cold water and set far back on the stove where it will come to the boil slowly. Let it simmer five or six hours, strain through a fine sieve, and cool as quickly as possible. Do not remove the cake of fat from the top of the soup until you are ready to use it, then run a thin knife around the edge to loosen it. Cut into quarters and lift each piece carefully. If there are any grains of fat left on the top of the jellied stock, dampen a bit of cheese cloth and carefully wipe over the top. Floating globules of grease will ruin the finest-flavored soup.

For an everyday family soup in which nourishment is the first consideration, it does not require clearing. In the sediment there is considerable nutriment. If it is to be cleared, set the strained, skimmed soup over the fire, mix with the white and crushed shell of one egg,

a dash of celery seed, the chopped rind and juice of half a lemon, and pepper and salt if required. Mix thoroughly, heat slowly, stirring constantly, and boil ten minutes. Pour through the finest strainer and two thicknesses of cheese cloth, and heat again to the boiling point before serving.

Mutton Broth.

4 pounds neck mutton,
2 quarts water,
1 onion,
3 stalks celery,
1 small carrot,
Bay leaf,
Few peppercorns.

Wash the mutton thoroughly, cut it up and place it in the vessel of fireless cooker with water, allow it to come to a boil slowly, then skim and boil slowly fifteen minutes. Add the flavoring and vegetables. Cook ten minutes longer without raising the lid, set it into the cooker five hours.

Mock-Turtle Soup.

1 calf's liver,
1 calf's heart,
Small knuckle veal,
2 quarts water,
1 onion,
Salt and pepper,
 $\frac{1}{2}$ teaspoonful ground cloves,
2 tablespoonfuls flour browned,
Yolks 4 hard-boiled eggs.

Put the liver, heart, and veal into the saucepan of the cooker, cover with cold water and boil slowly fifteen minutes. Put into the cooker for six hours. When soup is lifted out, strain it, chop the meat fine, add the chopped onion, seasonings, thicken with brown flour, and cook for a few minutes. After pouring into the turcen, add the yolks of the eggs cut in pieces, also some fine cubes of lemon. An excellent way to make this soup, as well as many others, is to leave it in the cooker over night, then strain, skim off any fat that may rise, allow it to cool, and prepare when needed for the table.

Bean Soup.

- 1 quart white beans,
- 3 pints boiling water,
- 1 teaspoonful salt,
- 1 slice salt pork.

Wash the beans and soak over night; in the morning put them in the fireless vessel, add the pork and salt, boil ten minutes, then set into the cooker for five hours. Strain, thicken, and serve.

Creole Soup.

- 1 quart brown soup stock,
- 1 pint tomatoes,
- 3 tablespoonfuls chopped green peppers,
- 2 tablespoonfuls chopped onion,
- $\frac{1}{4}$ cupful butter,
- $\frac{1}{3}$ cupful flour,
- Salt,
- Pepper,
- Cayenne,
- 2 tablespoonfuls grated horse-radish,
- 1 teaspoonful vinegar,
- $\frac{1}{4}$ cupful macaroni rings.

Cook pepper and onion in butter five minutes. Add flour, stock, and tomatoes, and simmer fifteen minutes. Strain, rub through sieve, and season highly with salt, pepper, and cayenne. Just before serving, add horse-radish, vinegar, and macaroni previously cooked and cut in rings. — Fannie Merritt Farmer.

Veal Soup.

- 2 pounds veal,
- 2 quarts cold water,
- 1 cupful chopped ham,
- 1 onion,
- 1 tablespoonful parsley,
- Pepper and salt,
- 1 pint cream,
- 3 slices carrot.

Cook veal in water slowly for two or three hours. Take out the veal and add to the boiling stock ham, onion, parsley, and carrot. Let this simmer slowly for an hour, strain, then add the cream, season with salt and pepper, and serve with croutons.

Consommé.

- 3 pounds knuckle of veal,
- 3 pounds lean beef,
- 1 carrot,
- 1 turnip,
- 1 parsnip,
- 1 onion,
- 1 red pepper,
- 4 whole cloves,
- 1 tablespoonful chopped parsley,
- 4 stalks celery,
- 3 quarts water.

Cover the meat with water, and simmer four hours. Add the other ingredients, and cook one hour longer. Strain and stand over night. Next day skim off the grease, add the white and shell of one egg to clear it, boil up, strain again, and serve with imperial sticks.

Brown Stock.

- 10 pounds shin beef,
- 3 slices bacon,
- 4 onions,
- 3 carrots,
- 1 turnip,
- 1 bunch celery,
- 1 sprig parsley,
- 1 sprig thyme,
- 8 cloves,
- 2 tablespoonfuls butter,
- 2 tablespoonfuls salt,
- 1 tablespoonful pepper,
- 7 quarts cold water.

Cut in rather small pieces all the meat from a shin of beef; break the bone in pieces, and put into a large pot with bacon, onions, carrots, turnip, celery, parsley, thyme, salt, cloves, pepper, butter, and a cupful cold water. Set it over a brisk fire, stirring frequently to prevent burning. Cook until the juice from the meat and vegetables begins to thicken. Then add cold water, set it back on the fire, where it will simmer slowly for six hours, skimming very often. Strain carefully through a fine sieve, not bruising the vegetables. Next morning skim off the fat. You can make a variety of soups from this stock by adding to it macaroni, Italian paste, or finely cut vegetables.

Tomato Soup.

- 2 tablespoonfuls butter,
- 2 tablespoonfuls onion,
- 1 bay leaf,
- 10 pepper corns,
- 1 tablespoonful chopped ham,
- 3 tablespoonfuls flour,
- 1 can tomatoes,
- 3 cupfuls stock,
- 1 teaspoonful salt,
- Dash cayenne.

Place a saucepan with butter and fine-chopped onion, over the fire; cook five minutes; add bay leaf, peppers, ham, and flour; stir and cook two minutes; add the tomatoes; stir and cook five minutes; add salt, stock, and cayenne; cook ten minutes, then press the soup through a sieve and serve with toasted bread cut into dice.

Soup à la Reine (French recipe).

- 1 fowl,
- Small knuckle veal,
- 4 quarts cold water,
- 1 tablespoonful salt,
- 2 leeks,
- 2 onions,
- 3 sprigs parsley,
- 2 blades mace,
- 4 tablespoonfuls butter,
- 1 pint cream,
- Yolks 4 eggs.

Place in a soup kettle the fowl, cut up knuckle of veal, and cold water; as soon as it boils, add salt, leeks, onions, parsley, and mace; cover and boil slowly; when the chicken is done, take it out, remove the meat, chop the bones, return them with the skin to the soup kettle and boil half an hour longer. Strain through a sieve, remove the fat, return $2\frac{1}{2}$ quarts soup to the kettle and place it over the fire; melt butter in a saucepan, add flour, stir until the flour has absorbed all the butter; pour in slowly 1 pint stock, and stir until smooth; then add it to the soup; boil fifteen minutes; mix the yolks of 4 eggs with 1 pint cream; season to taste with salt; draw the soup kettle to side of stove; add a little of the soup to the cream and yolks; mix well; then pour it into the soup; place the fine-cut

chicken meat from the breast in tureen, pour the soup over, and serve.

Vegetable Mutton Soup.

- 1 turnip,
- 1 carrot,
- 1 onion,
- 2 tablespoonfuls butter,
- $\frac{1}{2}$ cupful chopped celery,
- $1\frac{1}{2}$ quarts mutton broth.

One hour before serving, cut the vegetables into slices, put in saucepan with butter and celery. Stir over the fire six minutes, then add the mutton broth, cover and cook till done, season to taste and serve.

Potato Cream Soup.

- 1 tablespoonful butter,
- 1 onion,
- 3 stalks celery,
- 1 teaspoonful salt,
- 1 meat bone,
- 1 quart cold water,
- 2 large potatoes,
- 2 cupfuls milk,
- 1 teaspoonful chopped parsley.

Place a saucepan with butter, onion, and celery over the fire; cook and stir five minutes, add salt, small meat bone, and water. Cover and cook slowly one hour, then strain the broth into another saucepan. Boil potatoes, drain and mash them fine, add with butter and milk, to the broth, cook a few minutes, season to taste, garnish with chopped parsley and serve.

Soup Bègue (Southern recipe).

- 3 pounds fowl,
- 3 tablespoonfuls butter,
- 2 quarts cold water,
- 1 teaspoonful salt,
- 1 cupful green lima beans (par-boiled),
- 1 cupful sweet corn,
- 1 cupful diced celery,
- $\frac{1}{2}$ cupful stewed tomatoes,
- Pepper,
- 1 cupful cream.

Choose a young fowl; after disjointing it and dividing the large pieces, brown it carefully in butter,

then place in the soup kettle with water and salt, and simmer until tender. Remove the chicken, carefully skim the grease from the broth, and add to it the lima beans, sweet corn, celery and tomato, with salt and pepper to taste. Simmer until the vegetables are perfectly cooked, then the choice chicken meat may be cut in small pieces and added to the soup, and, lastly, the cream.

Soup à la Menestra (French recipe).

- 2½ pints mutton broth,
- 1 carrot,
- 1 onion,
- 1 stalk celery,
- 1 cupful fine-cut cabbage,
- 2 tablespoonfuls butter,
- 1 tablespoonful rice,
- Dash pepper.

Cut fine the carrot, onion, celery, and cabbage; place a saucepan with butter over the fire, add the vegetables, and cook ten minutes, then add the rice, mutton broth, salt, and pepper; boil slowly, well covered, for one hour; serve with grated cheese.

Du Barry Soup (French recipe).

- 1 cupful rice,
- 2 quarts chicken stock,
- 1 cupful cold cauliflower,
- Pepper and salt,
- 2 cupfuls cream.

Boil rice in the stock, add cauliflower pressed through a potato ricer. Season with white pepper and salt, add cream and bring again to the boil. Serve in bouillon cups; garnish with small flowerets of cauliflower.

Fish Chowder.

- 4 pounds fish, cod or haddock,
- ½ pound pork,
- 2 onions,
- 1 quart potato cubes parboiled,
- 1½ quarts water,
- 2 tablespoonfuls flour,
- Dash of cayenne,
- 1 cupful tomatoes.

Skin the fish and cut the flesh from the bones. Put the bones on to cook

in the cold water and boil slowly ten minutes. Fry the pork, then add the onions, cut into slices. Cover and cook five minutes; add the flour, cook ten minutes longer. To this add the water in which the fish bones were cooked and boil for five minutes; then strain all on the potatoes and fish. Add salt and cayenne and let it simmer fifteen minutes. Add tomatoes, let it boil up once, and serve.

White Soup Stock.

- 3 pounds knuckle veal,
- 1 pound lean beef,
- 3 quarts boiling water,
- 1 onion,
- 6 slices carrot,
- 1 large stalk celery,
- ½ teaspoonful peppercorns,
- ½ bayleaf,
- 2 sprigs thyme,
- 2 cloves.

Wipe veal, remove from bone, and cut in small pieces; cut beef in pieces, put bone and meat in soup kettle, cover with cold water, and bring quickly to boiling point; drain, throw away the water. Wash thoroughly bones and meat in cold water; return to kettle, add vegetables, seasonings, and 3 quarts boiling water. Boil three or four hours; the stock should be reduced one-half.—Fannie M. Farmer.

Purée de Lentilles (French recipe).

Take 6 heads celery, 3 onions, 2 turnips, and 4 carrots; put them into a stewpan with 1 pound lentils, a slice of ham, 4 tablespoonfuls butter; set it upon a stove to stew slowly for an hour, then add 2 quarts stock; let it stew for two hours; strain the soup into a dish, rub vegetables through a sieve; put again in the stewpan with salt and pepper; let it simmer for quarter of an hour longer, and serve.

Chicken Soup.

- Carcass roast chicken,
- 2 quarts cold water,
- 1 pound lean veal,
- 2 tablespoonfuls chopped bacon,
- 1 bay leaf,

- 1 slice onion,
- 1 stalk celery,
- 2 tablespoonfuls cornstarch,
- 1½ teaspoonfuls salt,
- ¼ teaspoonful pepper,
- 1 tablespoonful flour,
- 2 tablespoonfuls butter,
- Yolks 2 eggs,
- 1 cupful cream.

Slice the best meat from fowl, leaving only wings and carcass, with skin removed from meat as well. Break bones, put them into the soup kettle with cold water and the uncooked neck and feet, scalded and cleaned. Cut veal in dice, dust with flour and pepper, and brown in finely chopped bacon; add 1 cupful hot water, simmer for a few minutes, cool, and pour into the soup kettle. Cook slowly for one hour, then add bay leaf, onion, and celery; cook half an hour longer, strain, and cool. Mix together in a saucepan cornstarch, salt, pepper, flour, and butter. Add gradually 1 pint hot stock and cook until thickened, then add 1½ cupfuls hot stock, mix well and add yolks of eggs beaten and diluted with cream. Do not boil after egg is added, but keep hot until egg has thickened. Serve in bouillon cups, with or without a spoonful of whipped cream on top of each.

Mulligatawny Soup.

- 3 quarts chicken stock,
- 4 onions,
- 1 carrot,
- 2 turnips,
- 6 stalks celery,
- 1 tablespoonful curry powder.

Chop the vegetables, add to the stock, and put them in a saucepan over a hot fire until it begins to boil, then set aside to simmer for twenty minutes. Add curry powder and flour. Mix well, boil three minutes, and strain. In serving, add some pieces of the white meat of the chicken chopped.

Soup à la Flamande (French recipe).

Take 2 quarts veal stock, put in 1 cupful cooked spinach and 1 cupful sorrel, and let it boil till tender; sea-

son with salt and while it is boiling, but about two minutes before serving stir into it a pint of cream previously mixed with the yolks of 2 eggs.

Barley Broth (Scotch recipe).

- 1 neck mutton,
- 3 carrots,
- 3 turnips,
- 2 onions,
- 1 celery head,
- 4 tablespoonfuls barley,
- 2 quarts water.

Soak the mutton in water an hour; cut off the scrag, and put it into a stewpot with 2 quarts water; as soon as it boils, skim it well; let it simmer for an hour and a half, then take the best end of the mutton, divide in cutlets, trim off some of the fat, and add as many to the soup as you wish; skim the moment the fresh meat boils up, and every quarter of an hour after; then add the carrots, onions, turnips, celery, cut, but not too small; and barley previously washed in cold water. The broth should stew for three hours before serving; some chopped parsley may be added, and season to taste.

Mutton Broth (Irish recipe).

- 2½ pounds mutton,
- 1 quart water,
- 3 turnips,
- 3 carrots,
- 2 leeks or onions,
- 3 mutton chops,
- 1 head lettuce,
- 3 spoonfuls barley.

Boil the mutton with a little barley, slowly, for three or four hours; strain it off and remove the fat; add turnips, carrots, and leeks, cut fine; put them, with mutton chops, into the broth, and boil till tender; when nearly done, add some lettuce, previously blanched and drained; boil for ten minutes, season with salt, and serve. The vegetables should be quite thick in the broth, but cut very fine.

Sheep's-Head Broth (Scotch recipe).

Take a cupful of barley, sheep's head and trotters, and, if the broth

should be wanted stronger, a neck of mutton; put them into a pot with 2 quarts cold water; as soon as it comes to the boil, skim it well.

Cock-a-Leekie (Scotch recipe).

- 1 fowl,
- 4 pounds beef,
- 12 leeks,
- Dash pepper,
- 1 tablespoonful salt,
- 5 quarts water.

Truss a fowl as for boiling, put it into a stewpan with a piece of lean beef, leeks cut in pieces an inch long, rejecting the coarser green part, a little pepper and salt, and water. Cover the stewpan closely and allow its contents to stew slowly four hours; then place the fowl in a tureen; remove the beef, pour the soup and leeks over it, and serve.

Friar's Chicken (French recipe).

- 1 knuckle veal,
- 2 turnips,
- 2 carrots,
- 3 onions,
- 4 sprigs sweet herbs,
- 1 quart cream,
- 6 yolks eggs,
- 2 chickens.

Boil veal, carrots, turnips, onions, and a few sweet herbs to a good stock and strain it. Have ready the chickens, boiled tender and cut in pieces, cream and yolks of eggs beaten together; add these to the broth, heat them up together, and send it to table. A little minced parsley may be added just before serving.

Rabbit Soup (English recipe).

- 1 rabbit,
- 1 carrot,
- 1 head celery,
- 3 onions,
- 1 teaspoonful peppercorns,
- 1 bunch herbs,
- 1 tablespoonful ground rice.

When the rabbit is skinned, take care to save all the blood. Cut in pieces and put into a dish with the water required for soup. Let it stand

an hour; then add the blood of the rabbit, strain it through a sieve into a soup pot, and put all on the fire; stir constantly till it boils, to prevent its curdling, and skim it a little; put in carrot, celery, onions, pepper-corns tied up in a bit of muslin, herbs, salt, and chopped onion. Boil for three hours; take it off an hour before dinner; strain through a sieve; take out the onions, carrot, pepper, etc., and put in some of the best pieces of the rabbit; return it to the saucepan, and let it boil. Stir the ground rice dissolved in water into the soup; continue stirring till removed from the fire.

Tomato Bouillon with Oysters.

- 1 can tomatoes,
- 1½ quarts brown stock,
- 1 chopped onion,
- ½ bay leaf,
- 6 cloves,
- 1 teaspoonful peppercorns,
- 1 pint parboiled oysters,
- Pepper and salt,
- Dash cayenne.

Boil together the stock, tomatoes, bay leaf, cloves, cayenne and peppercorns. Cook twenty minutes. Strain, cool and clear, then strain into cups over parboiled oysters. When cooked, clear it as if you were making a plain, clear soup. Beat the white of 1 egg lightly, just enough to separate it, and add to it the eggshell broken up. When the stock has cooled, add this and set it where it will come slowly to the boil, stirring constantly. The egg will attract all particles of tomatoes and everything solid. Let it boil two minutes, then strain through two thicknesses of cheese cloth. It will be perfectly clear, but with the red-tomato coloring. If it were left to cool, it would become a solid jelly.—Stella A. Downing.

Okra Gumbo (Southern recipe).

- 1 chicken,
- 1 onion,
- ½ pod red pepper without the seeds,
- 2 pints okra, or about 50 pods,
- 2 slices ham,

- 1 bay leaf,
- 1 sprig thyme or parsley,
- 2 tablespoonfuls butter,
- Salt and cayenne to taste.

Clean and cut up the chicken. Cut the ham into small squares or dice, and chop the onion, parsley, and thyme. Skin the tomatoes and chop fine, saving the juice. Wash and stem the okras and slice into thin layers of half an inch each. Put the butter into the soup kettle; when hot, add the chicken and ham. Cover closely and let it simmer ten minutes. Then add the chopped onions, parsley, thyme, and tomatoes, stirring frequently to prevent scorching. Add the okras, and when well browned, the juice of the tomatoes. The okra is very delicate and is liable to scorch if not stirred frequently. When well fried and browned, add about 3 quarts boiling water and set on the back of the stove to simmer for an hour longer. Serve hot with boiled rice.

Beef Gumbo (Southern recipe).

Another recipe for gumbo, which is similar to the preceding one, the manipulation being practically the same, calls for the following ingredients:

- 1 quart tomatoes sliced,
- 2 pounds beef cut in small pieces,
- 2 quarts okras sliced,
- 4 tablespoonfuls butter,
- $\frac{1}{2}$ pound corned ham or pork, cut up,
- Small piece red pepper without seeds,
- Spray parsley.

Cream-of-Celery Soup.

- 1 head celery,
- 1 slice onion,
- 2 cupfuls milk,
- 3 tablespoonfuls cornstarch,
- 3 tablespoonfuls butter.

Clean outside stalks and white leaves of celery. Cut into small pieces and cook until tender in 3 cupfuls water. Scald onion in milk in double boiler. Rub the celery, when soft, through a sieve. Blend to-

gether cornstarch with butter, cook for a few minutes, lifting from fire, beating and cooking in turn. Season with salt and white pepper to taste, gradually add the strained, scalded milk, cook thoroughly, then add the strained celery stock, and reheat. Serve with croutons, bread sticks, or toasted wafers.

Cream-of-Corn Soup.

- 1 can corn,
- 2 cupfuls boiling water,
- 1 teaspoonful salt,
- $\frac{1}{2}$ teaspoonful celery salt,
- $\frac{1}{2}$ teaspoonful onion juice,
- 3 tablespoonfuls flour,
- 3 tablespoonfuls butter,
- 2 cupfuls milk,
- 1 cupful whipped cream.

Rub corn through sieve into a saucepan, add water, salt, celery salt, and white pepper to taste. Blend together in a saucepan flour, with butter, gradually add the milk, and cook together five minutes, stirring constantly. Just before serving add beaten cream. Serve with crisp wafers.

Leek Soup.

- 3 quarts boiling water,
- 2 cupfuls leeks cut fine,
- 4 cupfuls potatoes cut in dice,
- 2 tablespoonfuls butter,
- 3 teaspoonfuls salt,
- $\frac{1}{2}$ teaspoonful pepper,
- 4 slices stale bread cut in small pieces,
- 4 tablespoonfuls minced onion.

Wash the leeks and cut off the roots. Cut the white part in thin slices. Pare the potatoes and cut in dice, put them in a bowl of cold water. Put the butter, leeks, and onion in the soup pot and on the fire. Cook slowly twenty minutes, stirring frequently, then add the hot water, potatoes, and seasoning, and cook at least half an hour longer. Serve very hot. If it is convenient and liked, cook with the leeks and butter the white stalks of 4 or 5 cibols, or 1 shallot may be cut fine and cooked with the leeks.—Maria Parloa.

Hotchpotch (Scotch recipe).

2 pounds lean beef,
 2½ quarts stock,
 1 cupful beans (green),
 2 carrots,
 2 onions,
 2 stalks celery,
 2 turnips,
 1 small cauliflower,
 4 tablespoonfuls butter,
 1 tablespoonful flour,
 Dash cayenne.

Mince the beef in chopper, and place in a stewpan with stock and beans. When these come to a boil, add chopped carrots, onions, celery, turnips, and cauliflower; cover, and boil gently for three hours. Melt butter and mix with it the flour; let it brown, dilute with a little broth, and add to the stew. Season with salt, pepper, and cayenne.

Cream-of-Onion Soup.

2 large onions,
 3 tablespoonfuls butter,
 5 tablespoonfuls flour,
 1 teaspoonful salt,
 ¼ teaspoonful white pepper,
 2 cupfuls boiling water,
 1 quart milk,
 1 cupful mashed potatoes,
 1 cupful croutons.

Slice the onions and fry until lightly brown in butter, then add flour, salt, and pepper. Stir until slightly browned, but do not allow to burn. Pour in gradually boiling water, and cook until smooth. Keep hot. Scald milk, pour it gradually on mashed potatoes. Combine the mixtures. Simmer and stir for a few minutes, add croutons, cover, and let stand a moment before serving.

Soup Normandie (French recipe).

1 onion,
 2 tablespoonfuls butter,
 2 cans tomatoes,
 1 quart cold water,
 1 tablespoonful flour,
 12 cloves,
 1 tablespoonful sugar,
 Dash tabasco sauce or cayenne,
 Salt and pepper.

Fry the onion in butter (do not let brown), add tomatoes and water. Boil twenty minutes. Strain through a colander, set back on stove, and add flour dissolved in water, cloves, salt, and sugar. Let boil five minutes, then season with tabasco. Serve with croutons.

Dried-Bean Soup.

2 cupfuls dried beans,
 4 quarts water,
 1 large onion minced fine,
 4 tablespoonfuls butter,
 3 tablespoonfuls flour,
 1 tablespoonful minced celery or
 a few dried celery leaves,
 ½ teaspoonful peppers,
 2 teaspoonfuls salt.

Wash the beans and soak them over night in cold water. In the morning pour off the water and put them in the soup pot with 3 quarts cold water. Place on the fire, and when the water comes to the boiling point, pour it off. Add 4 quarts boiling water to the beans and place the soup pot where the contents will simmer for four hours. Add the celery the last hour of cooking. Cook the onion and drippings slowly in a stewpan for half an hour. Drain the water from the beans (save this water) and put them in the stewpan with the onions and drippings. Then add the flour and cook half an hour, stirring often. At the end of this time mash fine and gradually add the water in which the beans were boiled until the soup is like thick cream. Then rub through a sieve and return to the fire; add the salt and pepper, and cook twenty minutes or more. Any kind of beans may be used for this soup; Lima beans give the most delicate soup, but the large or small white beans are very satisfactory and are less expensive than Limas. In cold weather the quantities of beans and flavorings may be doubled, but only 6 quarts water are used.

The resulting thick soup can be kept in a cold place and a portion boiled up as required and thinned with meat stock or milk.—Maria Parloa.

Bouillabaise (English recipe).

Take 3 pounds cod, cut in pieces from 2 ounces to $\frac{1}{4}$ pound each. Slice 2 good-sized onions and place them in a stewpan large enough to contain all the fish at the bottom. Add 2 tablespoonfuls olive oil; fry the onions light brown; put in the fish with as much warm water as will cover it well, a teaspoonful salt, dash pepper, half bay leaf, peeled lemon cut in dice, 2 tomatoes cut in slices, a few peppercorns, and $\frac{1}{2}$ clove garlic. Boil till the liquor is reduced to one third. Then add a tablespoonful chopped parsley, let it boil one minute longer, and pour into a tureen over croutons. This is also good made from any white fleshed fish; the garlic may be omitted, if preferred.

Oxtail Soup.

1 small oxtail,
6 cupfuls brown stock,
 $\frac{1}{2}$ cupful carrot cut in fancy shapes,
 $\frac{1}{2}$ cupful turnip cut in fancy shapes,
 $\frac{1}{2}$ cupful onion cut in thin slices.
 $\frac{1}{2}$ cupful celery cut in small pieces,
 $\frac{1}{2}$ teaspoonful salt,
Few grains cayenne,
1 teaspoonful Worcestershire Sauce,
1 teaspoonful lemon juice.

Cut oxtail in small pieces, wash, drain, sprinkle with salt and pepper, dredge with flour, and fry in butter ten minutes. Add to brown stock, and simmer one hour. Then add vegetables, which have been parboiled twenty minutes; simmer until vegetables are soft; add cayenne, Worcestershire sauce, and lemon juice.—Fannie M. Farmer.

Asparagus Cream Soup.

1 bunch asparagus,
3 cupfuls milk,
1 cupful veal stock,
3 tablespoonfuls flour,
3 tablespoonfuls butter,
Salt and pepper.

Cook the asparagus in boiling, salted water for thirty minutes. Take from water, cut off tips, and put into soup tureen. Press pulp from stalks through sieve. Scald milk, add stock. Mix flour with butter in a saucepan over the fire, adding gradually portion of scalded milk to make very smooth. When thoroughly done, add remainder of milk and asparagus pulp. Season with salt and pepper. Stir till boiling, then strain into the tureen.

Soup Maigre (French recipe).

6 cucumbers,
4 heads lettuce,
2 onions, blanched,
1 cupful spinach,
Sprig mint,
1 pint green peas,
Small piece ham,
4 tablespoonfuls butter.

Put ham and vegetables into 2 quarts water and boil four hours, then pass all through a sieve. When cooked to a purée, strain, put in 1 pint parboiled green peas, and a few slices of cucumber.

Purée of Celeriac.

1 quart celeriac cut in dice,
2 tablespoonfuls butter,
1 tablespoonful flour,
1 teaspoonful salt,
 $\frac{1}{2}$ cupful stock or cream.

Cook the celeriac thirty minutes in boiling water, rinse in cold water, then press through a purée sieve. Put the butter in a saucepan on the fire. When hot, add the flour and stir until smooth and frothy, then add the strained celeriac, and cook five minutes, stirring frequently. Add the salt and stock, or cream, and cook five minutes longer.—Maria Parloa.

Split-Pea Soup.

1 cupful split peas,
1 $\frac{1}{2}$ quarts stock,
1 teaspoonful salt,
2 tablespoonfuls minced onion,
3 tablespoonfuls chopped celery,
1 carrot.

Place a saucepan with split peas and stock over the fire; when it boils, add salt, onion, celery, and carrot; cover, and boil slowly until done; press the soup through the sieve; if too thick, add a little more water, season to taste with salt and pepper, and serve with small squares of fried bread.

Green-Pea Soup.

- 1 quart shelled peas,
- 3 pints water,
- 1 quart milk,
- 1 onion,
- 2 tablespoonfuls butter,
- 2 tablespoonfuls flour,
- 2 level teaspoonfuls salt,
- $\frac{1}{2}$ teaspoonful pepper.

Put the peas in a stewpan with the boiling water and onion, and cook until tender, which will be about half an hour. Pour off the water, saving for use later. Mash the peas fine, then add the water in which they were boiled, and rub through a purée sieve. Return to the saucepan, add flour and butter, beaten together, and the salt and pepper. Now gradually add the milk, which must be boiling hot. Beat well and cook ten minutes, stirring frequently.—*Maria Parloa.*

Winter Okra Soup (a New Orleans recipe).

- 1 can okra,
- 1 can tomatoes,
- 2 onions,
- 2 tablespoonfuls butter,
- 1 dozen oysters,
- 3 tablespoonfuls rice,
- 1 red pepper pod without the seeds.

Chop the onions and fry them in the butter. Wash the rice well, stew the onions, tomatoes, and pepper together in about 3 quarts water and 1 pint oyster water for about three hours, stirring frequently. Ten minutes before serving, add the okra and let it come to a boil. Then drop in the oysters, boil until the edges curl, and serve.

Oyster Bisque.

- 1 quart oysters,
- 1 quart milk,
- $\frac{1}{2}$ cupful bread crumbs,
- $\frac{1}{2}$ bay leaf,
- 1 sprig parsley,
- 1 slice onion,
- 1 quart thin cream,
- 2 tablespoonfuls butter,
- 4 yolks eggs,
- 2 tablespoonfuls flour.

Parboil oysters in their own liquor until the edges curl. Drain and separate the hard part from the soft, chop the hard parts fine. Put the chopped oysters into a double boiler with milk, bread crumbs, bay leaf, parsley, and onion, and let cook half an hour. Rub through a purée strainer and return to fire with cream. Cream together butter and flour, and add gradually some of the hot soup. Add the soft parts of the oysters, season with pepper and salt, and pour into the tureen over the well-beaten yolks of eggs. Serve with crisp crackers, browned.

Lobster Bisque.

- 2 pounds lobster,
- 2 cupfuls cold water,
- 4 cupfuls milk,
- $\frac{1}{4}$ cupful butter,
- $\frac{1}{4}$ cupful flour,
- $1\frac{1}{2}$ teaspoonfuls salt,
- Few grains cayenne.

Remove meat from lobster shell. Add cold water to body bones and tough end of claws, cut in pieces; bring slowly to boiling point, and cook twenty minutes. Drain, reserve liquor, and thicken with butter and flour cooked together. Scald milk with tail meat of lobster, finely chopped; strain and add to liquor. Season with salt and cayenne; then add tender claw meat, cut in dice, and body meat. When coral is found in lobster, wash, wipe, force through fine strainer, put in a mortar with butter, work until well blended, then add flour, and stir into soup. If a richer soup is desired, white stock may be used in place of water.—*Fannie Merritt Farmer.*

Corn Chowder.

- 1 can corn,
- 1 quart potato cubes (parboiled),
- 1 tablespoonful chopped fat pork,
- 1 sliced onion,
- 1 quart scalded milk,
- 3 tablespoonfuls butter,
- Salt and pepper.

Put the corn through a meat chopper, fry the onion and the pork a light brown, strain the fat into a stewpan, add the corn, potato cubes, the milk, seasoning, and butter, thicken with a little flour, and pour over split crackers.

Lobster Chowder.

- 1 pound lobster,
- 1 quart milk,
- 3 crackers,
- $\frac{1}{4}$ cupful butter,
- 1 teaspoonful salt,
- $\frac{1}{2}$ teaspoonful white pepper,
- $\frac{1}{4}$ teaspoonful cayenne pepper.

Boil 1 quart milk. Roll 3 crackers fine; mix with them $\frac{1}{4}$ cupful butter, and the green fat of the lobster. Season with 1 scant teaspoonful salt, $\frac{1}{2}$ teaspoonful white pepper, and $\frac{1}{4}$ teaspoonful cayenne pepper. Pour the boiling milk gradually over the paste. Put it back in the double boiler; add the lobster meat cut into dice; let it boil up once, and serve.—Mary J. Lincoln.

Sorrel Soup (French recipe).

- 3 pints boiling water,
- 3 tablespoonfuls butter,
- $\frac{1}{3}$ cupful shredded sorrel,
- 3 tablespoonfuls milk,
- 1 teaspoonful salt,
- Yolk 2 eggs,
- $\frac{1}{2}$ cupful bread cut in dice and dried in the oven or fried in butter.

Tear the tender green parts from the midribs of the cultivated sorrel; wash in cold water and shred very fine. Put half the butter in a stewpan and add the shredded sorrel. Place on the fire and cook five minutes, stirring frequently. Now add the boiling water and salt, and boil

ten minutes. Beat the yolks of eggs well, add the milk, pour into the soup tureen, and add the remaining half of the butter cut into bits. Gradually pour the boiling hot soup in the tureen, stirring all the while to combine the hot mixture with the egg yolk. Add the bread dice, and serve.—Maria Parloa.

Black-Bean Soup.

- 1 pint black beans,
- 2 quarts cold water,
- 1 small onion,
- 2 stalks celery or $\frac{1}{4}$ teaspoonful celery salt,
- $\frac{1}{2}$ tablespoonful salt,
- $\frac{1}{2}$ teaspoonful pepper,
- $\frac{1}{4}$ teaspoonful mustard,
- Few grains cayenne,
- 3 tablespoonfuls butter,
- $1\frac{1}{2}$ tablespoonfuls flour,
- 2 hard-boiled eggs,
- 1 lemon.

Soak beans over night; in the morning, drain and add cold water. Slice onion, and cook five minutes with half the butter, adding to the beans, with celery stalks broken in pieces. Simmer three or four hours, or until beans are soft; add more water as it boils away. Rub through a sieve, reheat to the boiling point, and add salt, pepper, mustard, and cayenne well mixed. Bind with remaining butter and flour cooked together. Cut eggs in thin slices, also lemon, removing seeds. Put in tureen, and strain the soup over them.—Fannie Merritt Farmer.

Chicken Chowder.

Take the remains of a stewed chicken, cut the meat off the bones and with a scissors clip it into small pieces; put the bones in a kettle with cold water, adding any left-over chicken gravy, and let them stew till all the good is out of the meat. Strain, add 1 quart milk to each quart chicken stock, a tablespoonful minced onion, fried with a tablespoonful salt pork, 2 cupfuls parboiled potato cubes, 2 tablespoonfuls butter, the cut-up chicken, and 3 tablespoonfuls flour; salt and pepper to taste.

Clam Soup.

$\frac{1}{2}$ peck clams in shells,
 Salt to taste,
 1 teaspoonful pepper,
 $\frac{1}{8}$ teaspoonful cayenne pepper,
 1 tablespoonful chopped onion,
 1 tablespoonful chopped parsley,
 1 tablespoonful butter,
 2 tablespoonfuls flour,
 2 cupfuls milk or cream.

Prepare the clams by boiling in the shells, and cutting as directed for clam chowder, keeping the soft part separate from the hard. Pour off 1 quart clam liquor after it settles, being careful not to take any of the sediment; put it on to boil, and remove the scum. Add 1 pint hot water, and season to taste with salt, pepper, cayenne, onion, and parsley. Put in the hard part of the clams. Simmer fifteen minutes, strain, and boil again, and when boiling thicken with flour cooked in the butter. Add the hot milk or cream and the soft part of the clams; serve at once.

Another method of preparing clam soup, if needed quickly, is to heat the clam broth to a boiling point, add the clams cut fine, season, and pour into the tureen over 2 eggs beaten up with boiling milk.—Mary J. Lincoln.

Onion Chowder.

3 quarts boiling water,
 2 cupfuls minced onion,
 1 quart potatoes cut in dice,
 3 teaspoonfuls salt,
 $\frac{1}{2}$ teaspoonful pepper,
 3 tablespoonfuls butter,
 1 tablespoonful fine herbs.

Cook the onion and butter together for half an hour, but slowly, so the onion will not brown. At the end of this time, add the boiling water, potatoes, salt, and pepper, and cook one hour longer, then add the fine herbs, and serve.—Maria Parloa.

Sportsman's Broth (English recipe).

Take grouse, partridge, or any other game you have; cut in small joints, put them into a pot with water and plenty of vegetables whole. Let it

stew slowly four or five hours; then take the best pieces you have saved out, season them and toss in a little flour; brown over a quick fire, and add to the strained stock with 12 small onions, 2 heads celery, sliced, and half a cabbage shredded fine, to stew slowly till tender. Half an hour before serving, add 6 potatoes cut in slices.

Clam Chowder.

$\frac{1}{2}$ peck clams in shells,
 1 quart potatoes sliced thin,
 A 2-inch cube fat salt pork,
 1 teaspoonful salt,
 $\frac{1}{2}$ teaspoonful white pepper,
 1 tablespoonful butter,
 1 quart milk,
 6 butter crackers.

Wash clams with a small brush, and put in a kettle with $\frac{1}{2}$ cupful water. When the clams at the top have opened, take them out with a skimmer, and when cool enough to handle, take the clams from the shells; remove the thin skin; cut off all the black end (cut the "leather straps" into small pieces), leaving the soft part whole. Let the clam liquor set, and pour it off carefully. Use half water and half clam liquor. Fry the pork and onion; add the potatoes, which have been soaked and scalded, and boiling water to cover. When the potatoes are soft, add the clam liquor, seasoning, and clams; when warmed through, add the hot milk, and turn into the tureen over broken crackers.—Mary J. Lincoln.

Old-Fashioned Bean Soup (New England recipe).

2 cupfuls white beans,
 3 pints cold water,
 4 ounces lean salt pork,
 $\frac{1}{2}$ cupful chopped celery,
 $\frac{1}{2}$ carrot,
 1 onion.

Soak beans for several hours in cold water; then drain and put them with the pork over the fire; wash and scald in boiling water; add to the beans as soon as they boil celery, carrot, and onion; cover and cook till

the beans are tender; then strain the soup, season to taste with salt, and serve with small pieces of toasted bread. This soup may be served without being strained — some people prefer to have the beans whole in the soup.

Mixed Vegetable Soup.

- 3 quarts water,
- 1 pint shredded cabbage,
- 1 pint sliced potato,
- $\frac{1}{2}$ pint minced carrot,
- $\frac{1}{2}$ pint minced turnip,
- $\frac{1}{2}$ pint minced onion,
- 1 leek,
- 2 tomatoes,
- 2 tablespoonfuls minced celery,
- 2 tablespoonfuls green pepper,
- 2 tablespoonfuls butter or drippings,
- 3 teaspoonfuls salt,
- $\frac{1}{2}$ teaspoonful pepper.

Have the water boiling hard in a stewpan and add all the vegetables except the potatoes and tomatoes. Boil rapidly for ten minutes, then draw back where it will boil gently for one hour. At the end of this time add the other ingredients and cook one hour longer. Have the cover partially off the stewpan during the entire cooking. This soup may be varied by using different kinds of vegetables.

Tomato Soup.

- 1 quart peeled and finely cut tomatoes,
- 1 quart cold water,
- 1 onion,
- 1 tablespoonful sugar,
- 2 teaspoonfuls salt,
- $\frac{1}{2}$ teaspoonful pepper,
- 2 tablespoonfuls butter,
- 4 tablespoonfuls cornstarch,
- 1 tablespoonful flour.

Mix the cornstarch with the water and put into a stewpan with all the other ingredients, except the butter and flour, the onion being left whole. Stir frequently until the soup boils, then cook half an hour, counting from the time it begins to boil. At the end of this time beat the butter

and flour together until light and smooth and stir into the soup. Cook ten minutes longer, then take out the onion and serve the soup with toasted or fried bread. If a smooth soup is desired strain through a fine sieve. This is the simplest kind of tomato soup. It may be varied by the addition of rice, macaroni, beans, peas, and other vegetables. Instead of the fried bread stale bread may be cut in small pieces and put in the bottom of the soup tureen.

Okra and Tomato Soup.

- 1 pint sliced okra,
- $1\frac{1}{2}$ pints tomatoes pared and cut fine,
- 2 quarts water,
- 3 tablespoonfuls rice,
- 3 tablespoonfuls minced onion,
- 1 green pepper, seeds removed and pepper cut fine,
- 3 teaspoonfuls salt,
- $\frac{1}{4}$ teaspoonful pepper.

Put all the ingredients into the soup pot and cook gently for two hours, then add two tablespoonfuls of butter or sweet drippings and serve. The bones from roast meat or broiled meat cooked with this soup add to the flavor.

Potato Soup.

- 8 medium-sized potatoes,
- $\frac{1}{2}$ pint chopped celery,
- 4 tablespoonfuls minced onion,
- 1 tablespoonful butter,
- 1 tablespoonful flour,
- $1\frac{1}{2}$ teaspoonfuls salt,
- $\frac{1}{2}$ teaspoonful pepper,
- 1 teaspoonful minced chervil or parsley,
- 1 quart milk.

Pare the potatoes and put in a stewpan with the celery and onion. Cover with boiling water and put over a hot fire. Cook thirty minutes, counting from the time the pan is put over the fire. Reserve half a cupful of the milk cold, and put the balance to heat in the double boiler. Mix the flour with the cold milk and stir into the boiling milk. When the potatoes, etc., have been cooking thirty minutes

pour off the water, saving it to use later. Mash and beat the vegetables until light and fine, then gradually beat in the water in which they were boiled, rub through the purée sieve and then put back on the fire. Add the salt and pepper. Beat with an egg whisk for three minutes, then gradually beat in the boiling milk. Add the butter and minced herbs and serve at once.

Cream of Leek Soup.

Make this soup as directed for leek soup, using only 3 pints of water. When it is cooked, rub through a sieve, return to the soup pot, and add 1 quart of hot milk. Beat with whisk until smooth. Half a cupful of the milk can be reserved cold and added to 2 well-beaten yolks of eggs. Stir this into the soup just as it is taken from the fire.

The yolks of the eggs make the soup very much richer.

Onion Chowder.

3 quarts boiling water,
1 pint minced onion,
1 quart potatoes cut in dice,
3 teaspoonfuls salt,
 $\frac{1}{2}$ teaspoonful pepper,
3 tablespoonfuls butter or sa-
vory drippings,
1 tablespoonful fine herbs.

Cook the onion and butter together for half an hour, but slowly, so that the onion will not brown. At the end of this time add the boiling water, potatoes, salt, and pepper and cook one hour longer, then add the fine herbs and serve.

Scotch Broth.

3 pounds mutton,
2 tablespoonfuls of pearl barley,
2 tablespoonfuls of minced onion,
2 tablespoonfuls of minced turnip,
2 tablespoonfuls of minced carrot,
2 tablespoonfuls of minced celery,
2 tablespoonfuls of salt,
1 teaspoonful of pepper,
1 tablespoonful of minced parsley,
3 quarts cold water.

Remove the bones and all the fat

from the mutton, cut the meat into small pieces and put it into a stew-pan with the water, chopped vegetables, barley, and all the seasoning excepting the parsley. It will be found convenient to tie the bones in a piece of thin white cloth before adding them to the other ingredients. Bring the stew to a boil, quickly skim it and allow it to simmer for three hours, thicken with the flour, and add the chopped parsley.

Split Pea Soup.

1 pint split peas,
4 quarts water,
 $\frac{1}{2}$ pound salt pork,
1 large onion,
2 tablespoonfuls celery,
2 tablespoonfuls flour,
2 tablespoonfuls butter,
1 teaspoonful pepper,
1 sprig parsley.

Pick the peas over, that there may be no blemished ones among them, then wash and soak in cold water over night. In the morning turn off the water and put them in the soup pot, with the cold water and salt pork. Simmer gently seven hours, being careful that the soup does not burn. When it has cooked six hours add the seasoning. Have a large wooden spoon to stir the soup. When done it should be thin enough to pour. By boiling it may become too thick; if so, add boiling water. When thoroughly cooked, the soup is smooth and rather mealy. If not cooked enough, after standing a few minutes the thick part will settle, and the top look watery. At the end of seven hours strain the soup through a sieve and return to a soup pot. Beat the flour and butter together until creamy, then stir into the soup and simmer half an hour longer. If the salt pork has not seasoned the soup sufficiently add a little salt. For some tastes the soup would be improved by the addition of a quart of hot milk.

Serve little squares of fried bread in a separate dish.

Cream of Bean Soup.

Make as above, but add only

enough of the water in which the beans were cooked to make the mixture like thin mush. Have this very hot and add boiling hot milk to make it like thick cream, about a quart of

milk to 3 pints of the bean purée. Boil up at once and serve. It spoils a cream soup to let it cook many minutes after the milk is added.

CHAPTER XXI

THE ART OF SALAD-MAKING

HINTS ON SALADS—MEAT SALADS—VEGETABLE SALADS—FRUIT AND NUT SALADS—MIXED SALADS—SPECIAL SALADS—FISH SALADS—POULTRY SALADS—POTATO SALADS—SALAD DRESSINGS—BOILED DRESSING—FRENCH DRESSING—FLAVORED DRESSINGS—CREAM DRESSING—MAYONNAISE—OIL MAYONNAISE.

Not many years ago salads were considered a luxury only to be found on the tables of the wealthy. To-day a wider knowledge of cookery has taught the housewife who has a small income that there is no more economical, wholesome, and nourishing dish than a well-made salad. She is beginning to realize, as the French do, that almost anything can be put into a salad, and that even cheap materials with a mayonnaise or a simple French dressing make a palatable as well as a cheap and most sightly dish.

There are four essentials to a good salad; everything that goes into it must be ice cold, the green vegetable used must be perfectly clean and crisp, the ingredients of the dressing must be properly proportioned and thoroughly blended, and the salad materials should be well mixed just before the dish is served. If these rules are followed, a simple head of lettuce with a plain French dressing is a perfect dish.

No nicer way can be found to serve a vegetable salad than to bring the materials to the table crisp, fresh, and green, and dress it at the time it is to be served. For this purpose a large salad bowl, accompanied by a wooden knife and fork, and a small tray containing a cruet of oil and vinegar with pepper and salt, are a necessity.

For nearly every salad, lettuce is used as a base, although other green plants such as romaine, chicory and endive are being used more and more. If a whole head of any green is not required at once, it may be kept fresh for several days. As soon as it comes from the market, sprinkle it and put it away tightly covered in the refrigerator. A good receptacle to keep for greens is a 5-pound lard pail with a tight lid. When required, clip off with shears the ragged, withered ends of the outside leaves, for often the portion nearest the stem is good enough to put into the base of the salad, to eke out quantity even if it is not to be eaten. Separate the rest of the leaves, wash thoroughly, and leave them for fifteen minutes to crisp in ice-cold water, or put in a cheese cloth bag in the refrigerator at least one hour before serving. Look over each leaf carefully for dirt or any of the insects that are to be found clinging to green stuff. Dry by shaking lightly in a wire basket taking care that none of the leaves become bruised or broken.

If the refrigerator is stored away and the cellar is warm from the heating plant there, an excellent way to keep lettuce crisp and tender, is to wrap each head separately in a piece of old linen, wet in cold water. Moisten the linen every day, and you can

keep lettuce for two weeks. The inner leaves will be yellow and crisp, and there will be no wasting of outer leaves.

Cold cooked vegetables or any left-over that is to be utilized in a salad, such as string beans, potatoes, or peas, are best if marinated for an hour or two before being used in a French dressing, leaving them in a cold place. If the salad is to be Macedoine, make a blend of various vegetables, marinate each one by itself, and only put together before sending to the table. Meat that is to go in a salad is much improved by standing for a short time in French dressing before using. Fish should be flaked or cut in neat cubes.

There is a strong prejudice among many people against oil. This is often due to the fact that one has tasted a mayonnaise made of strong rancid oil. Those who appreciate salads should become judges of good oil. Our California oils and various cottonseed and nut oils are now of the finest quality and are sold at a more moderate price than Italian oils. Good oil has a fresh, pleasant odor and a pale-green tinge. For people who really find the taste of oil obnoxious, there are various recipes for boiled dressings in which butter takes the place of oil and makes very good salad. A cook can make a blend of boiled dressing with a tablespoonful of oil mayonnaise in which it is almost impossible to detect any taste of oil. An excellent way is to make a pint of each dressing and keep it in the refrigerator tightly corked. Sometimes a few tablespoonfuls of cream, whipped stiff, add a certain deliciousness to a mayonnaise that nothing else can give. Such a dressing is especially good when sour apples or celery are blended. Do not use "any old vinegar" in a salad; the best is none too fine.

During the summer, when all sorts of fresh green vegetables are abundant, it is a good plan while cooking what is to be used for dinner to double the amount needed so as to have a surplus for the next day's salad. This applies to such vegetables as

green peas, string beans, cauliflower, turnips, carrots, new potatoes, spinach, asparagus, artichokes, beets, okra, or Brussels sprouts. In winter there need be no dearth of salads, for we have constantly with us cabbage, celery, and many of the canned vegetables, as well as fresh and canned fruits.

A salad must be handled gently. It cannot be stirred as one would do when cooking a dish. To break lettuce leaves makes them unsightly. Pour the dressing over what ingredients are to be served in salad fashion, and toss with two forks till each particle is coated with the mayonnaise or French dressing but without becoming mushy or broken.

A variety of flavorings is a boon to the housewife who has not a great number of materials within her reach. Day by day even a plain potato or lettuce salad may be made a different dish by the use of some small addition as a flavor, such as chives or tiny pickled onions strewn over it. Or to make a difference in the seasoning, use a mere hint of garlic one day, tarragon vinegar the next, or mint which can be added to a salad or two. The cook can make very cheaply for herself a number of flavored vinegars which will serve for a long time. To obtain any flavor, put the herb desired in a bottle, cover with white-wine vinegar, cork, set the bottle in cold water, and bring it to a boil. Tarragon, chervil, nasturtium, cucumber, sweet basil, chives, onion, celery, summer savory, garlic, or peppers can be used in this way.

Nearly all vegetables may be served in the form of salad. The salads made with the raw vegetables are more refreshing and perhaps more generally relished than those made with cooked vegetables. The most common green salad plant in the United States is undoubtedly lettuce, and perhaps celery, alone or mixed with other materials, next. Endive, chicory, blanched dandelion, and other plants should also be used, as they give a pleasant variety to the menu. Such salads are garnished like lettuce. In most of our gardens

the only sort of lettuce grown is some variety of the head lettuce. Roman lettuce, the "Salade Romaine" of Europe, which is fairly common in our city markets, is a delicious variety, which should be more generally used by American housekeepers.

Raw vegetables should be used only when they are young, tender, and fresh. When boiled green vegetables are used for a salad they should not be cooked so long that they lose crispness and flavor. Salad dressings are usually sharp or pungent sauce, with which the salad is moistened and seasoned, or "dressed." The most serviceable all-round salad dressing is what is known as French salad dressing. This is suitable for any vegetable salad, raw or cooked. Besides the dressing proper there are several herbs which are used as flavorers. In continental Europe some or all of these herbs are almost an invariable accompaniment of all lettuce salads and nearly all other green salads. These herbs are, in France, termed the *fourniture* of the salad, and it is a saying among the French that the *fourniture* is essential to all salads, while the use of garlic, hard-boiled eggs, etc., is optional. The herbs generally employed in the *fourniture* are chervil, tarragon, chives, or cibol. These flavor deliciously lettuce and other tender green salads. They are also a great acquisition to soups, sauces, omelets, etc., one or more being employed to give special flavor to a dish. They may be readily cultivated in the kitchen garden.

Lettuce Salad with French Dressing.

- 2 heads lettuce,
- 2 or 3 sprays tarragon,
- 6 or 8 branches chervil,
- 1 tablespoonful minced chives or cibol, if the flavor be liked,
- French dressing.

Remove all the green, tough leaves from the heads of lettuce. Break off the tender leaves one by one and rinse in cold water. Shake off the water and lay the leaves on a piece of cheese cloth and put the lettuce, wrapped lightly in the cheese cloth, on ice. At

-serving time, put the leaves in the salad bowl. Have the herbs torn into small bits and sprinkle over the lettuce. Sprinkle the dressing (a spoonful at a time) over the salad. Lift and turn the salad with the spoon and fork. Continue mixing in this manner until all the dressing has been used. The work must be done lightly and carefully that the lettuce shall not be crushed. Serve immediately. This is the French salad that so many travelers remember with great pleasure. The secret of its exquisite quality is that the lettuce is crisp and tender, delicate flavoring herbs are added to it, the vinegar is never strong, the oil is good, and, finally, the dressing is added just before the salad is served. In the heat of the summer, when head lettuce is not plenty, the tender young plants may be used. The flavor of the salad may be varied by the addition of other green salads and herbs, such as chicory, sorrel, borage, burnet, etc. When fresh tarragon is not available, tarragon vinegar may be employed.

RECIPES FOR SALADS

Water Cress and String-Bean Salad.

Arrange water cress on a flat dish; in the middle put a small heap of cream-cheese balls; around these lay in regular piles cooked and marinated string beans; cover all with French dressing.

Cucumber-and-Tomato Salad in Cucumbers.

Cut large cucumbers lengthwise; scoop out the centers in good-sized bits; mix with equal parts of peeled tomatoes cut into small bits, and refill the cucumber shells. Set on lettuce, and cover with French dressing.

Crab Salad.

- 1 dozen crabs,
- 1 cupful mayonnaise,
- 2 heads lettuce,
- 1 green pepper.

Put the crabs in boiling water, add a tablespoonful salt, and boil thirty minutes. When cold, pick out the

meat, marinate, and put it away until wanted. Wash and dry the lettuce carefully. Stand on the ice until wanted. When ready to serve, mix the crab meat, pepper cut into fine strips, and mayonnaise lightly together. Garnish the dish with lettuce leaves, place the mixture in the center, and serve.

Celery, Apple, and Nut Salad.

Clean the celery and lettuce and set it to crisp in a wet napkin on the ice. When ready to serve, cut the celery in thin, crescent-shaped pieces; cut the apples in eighths, remove core, skin and slice crosswise in thin pieces, then cut the pecans or walnuts in small pieces. Take equal parts celery and apple and $\frac{1}{4}$ part nuts. Mix with mayonnaise to hold together. Arrange the mixture on a platter in a mold with lettuce around the edge, cover with mayonnaise and garnish with thin rings or crescents of red-skinned apples and celery tips.

Ensalada (Mexican recipe).

Slice 2 Spanish onions in thin rings, cut 2 fresh chilis across in rings, removing the seeds, and slice 3 ripe, firm tomatoes. Put these in alternate layers in a shallow bowl, sprinkle parsley over the top, and cover with a dressing made of 3 parts oil to 1 vinegar, seasoned with salt. Serve ice cold.—May E. Sherwood.

Summer Salad.

- 2 stalks celery,
- 2 seeded green peppers,
- 2 tomatoes,
- 2 tablespoonfuls cream,
- 2 tablespoonfuls mayonnaise,
- Vinegar,
- Salt and pepper.

Finely slice the celery and peppers, add the tomatoes skinned and cut in quarters. Beat the cream until stiff, add to the mayonnaise, with seasonings to taste. Mix with the vegetables, and arrange on a bed of escarole.

No-name Salad.

Make a mayonnaise, a small amount of aspic, and a French dressing.

Flake any cold cooked fish, either of one kind or mixed, and lay for an hour in a deep plate sprinkled with French dressing. Line a plain, flat-topped mold with liquid aspic by pouring in a small quantity and tipping the mold in a bed of cracked ice till every part is thickly coated; then set on ice. Ornament the bottom (which will be the top) with a round of truffles in the center and a dozen shrimps radiating from it, decorate the sides with a ring of shrimps alternating with slices of truffle; set these with a little more aspic. Add to the mayonnaise its own bulk of the jelly and put in the mold a layer of the mixture, then a layer of fish just as you lift it from the marinade; strew with capers, add another layer of sauce, then fish, till the mold is full; chill, unmold and garnish with water cress seasoned with French dressing.—Anne Warner.

Salmon Salad.

Place on a bed of lettuce the contents of $\frac{1}{2}$ can salmon, freed from oil and bones, and flaked. Pour over the fish, boiled salad dressing or mayonnaise, then garnish with slices of hard-boiled eggs and lemon.

Garcia Salad (Spanish recipe).

Cut celery, apples, and fresh tomatoes in thin strips about two inches long; serve on lettuce leaves with French dressing. A slice of truffle on the top adds to the appearance and flavor.—Good Housekeeping.

Bavarian Salad.

Shred very fine 2 heads lettuce, chop 2 onions fine, and cut 1 cold beet into cubes. Make a bed of the lettuce, toss together the beets and onion and pile on lettuce. Marinate with a French dressing, pour over the top an oil mayonnaise, garnish with sliced olives.

Potato-and-Pepper Salad.

- 3 large cold potatoes,
- 1 green pepper,
- 4 tablespoonfuls vinegar, diluted with

2 tablespoonfuls ice water,
 ¼ teaspoonful powdered sugar,
 Dash pepper,
 ¼ teaspoonful salt,
 2 tablespoonfuls oil.

Cut the potatoes into half-inch dice. Remove the seeds from the pepper and chop fine. Mix the vinegar, water, sugar, salt, and pepper and oil. Put a layer of potatoes into the salad dish, then a layer of chopped pepper, and sprinkle over it a tablespoonful of the dressing. Put in another layer of potatoes and peppers, add another tablespoonful of dressing and pour over all the dressing. Set in the refrigerator for fifteen minutes to marinate.—Maria Willett Howard.

Olla Podrida Salad (a Spanish salad).

2 small apples,
 2 medium-sized onions,
 6 tomatoes,
 2 cold boiled potatoes,
 1 tablespoonful vinegar,
 3 tablespoonfuls oil,
 Little powdered sugar,
 Salt and pepper,
 2 hard-boiled eggs,
 Dash of cayenne or tabasco.

Peel the apples and onions, and chop fine. Peel and chop 3 tomatoes, mixing the pulp with the apples and onions. Rub a few bread crumbs on a clove garlic, and add them to the salad, also the potatoes, which have been sliced and chopped. Mix the vinegar, oil, sugar, salt, pepper, and tabasco and add to the salad. Mix thoroughly together, and let stand about an hour. Cut the remainder of the tomatoes in slices, also the eggs, arrange on top of the salad, then cover with mayonnaise.

Egg Salad.

Boil the eggs hard, remove the shells, cut in halves lengthwise, and take out the yolks. Mash the yolks, using a silver fork; season with minced chowchow, or chili sauce; add a little mustard sauce, a dash of tabasco sauce, melted butter, salt and pepper, and, if desired, minced olives. Return to the whites of eggs,

arrange on a bed of lettuce or cress, dress with French dressing or mayonnaise. If no olives have been used in filling the eggs, a few pimolas scattered over the salad add to its decoration.

Jardinière Salad.

Cut into fine strips new turnips, carrots, and potatoes, and put them with a few green peas into a saucepan to fry lightly in a little butter. Cover with chicken stock and cook till quite tender. Drain, cool, and put in a salad dish. Pour over them French dressing. Set aside for an hour; in serving, coat with mayonnaise.

Beet Salad in Cups.

Boil medium-sized beets with their skins on; peel them as soon as the beets are done. Cut a slice off the top and scoop out the center to form a cup. Chop or cut celery fine, cut cucumbers in dice, and use a portion of the diced beet. Mix and fill the beet cups. Put a spoonful mayonnaise on top. Place the cups on lettuce leaves, and serve ice cold.

Neufchâtel Salad.

2 rolls Neufchâtel cheese,
 2 tablespoonfuls finely chopped olives,
 1½ tablespoonfuls cream,
 Salt,
 Cayenne,
 1 teaspoonful capers, cut in halves,
 1 pimento cut finely.

Mash the cheese, add the olives, capers, and pimento; moisten with cream, season with salt and cayenne, form into small balls. Marinate with a French dressing. Serve on shredded lettuce, and garnish with pimentos cut in strips.

Cauliflower Salad.

Stand a firm white cauliflower in salt water for half an hour, then cook it in boiling water until tender but not soft. Drain, cool, cut into sprigs and arrange neatly in a salad bowl lined with lettuce leaves. Mash the yolks of 4 hard-boiled eggs and cut

the whites into petals; arrange these like daisies over the cauliflower, and pour over a plain French dressing. Serve very cold.—Mary Foster Snider.

Salad in Boats.

Select 6 fresh cucumbers all the same size. Pare, cut in halves lengthwise, scoop out the centers, and lay in water till wanted. Dry and fill with a mixture of cold, parboiled sweetbread and peas, dressed with mayonnaise. Set on a green lettuce leaf on individual plates.—Anne Warner.

Spinach Salad on Tongue.

Pick over, wash, and cook $\frac{1}{2}$ peck spinach. Drain and chop fine. Season with French dressing. Butter small tin molds slightly and pack solidly with the mixture. Chill, remove from mold, and arrange on thin slices of cold boiled tongue, cut in circular pieces. Garnish base of each with parsley, and serve on top of each one tablespoonful sauce tartare.—Stella A. Downing.

Sweetbread Salad.

- 1 cupful mayonnaise,
- 1 pair sweetbreads,
- 1 cupful celery,
- 1 head lettuce.

Soak the sweetbreads in cold water for twenty minutes, then parboil in salted water. Cool and cut in cubes, mix with 1 cupful celery cut in small pieces, cover with French dressing, and chill for half an hour. Serve in nests made of the inner leaves of lettuce, and garnish with mayonnaise.

Tomato Jelly with Celery Salad.

- 2 cups tomatoes,
- 1 slice onion,
- 1 teaspoonful salt,
- $\frac{1}{2}$ teaspoonful pepper,
- 4 pepper corns,
- Bit of bay leaf,
- 2 tablespoonfuls granulated gelatin,
- $\frac{1}{4}$ cupful cold water.

Cook the tomatoes with the onion, and seasonings twenty minutes, then

strain; add the gelatin, which has been soaked in cold water, and stir until dissolved; strain, pour into a border mold which has been previously dipped in cold water. Chill and serve with a garnish of white lettuce, and mayonnaise, and fill the center with celery salad.

Chicken Molded with Mayonnaise.

Stew a 4-pound chicken in 2 quarts cold water, add 4 slices carrot, 1 onion sliced, 2 stalks celery, bit bay leaf, $\frac{1}{2}$ teaspoonful peppercorn, 1 teaspoonful salt. Bring quickly to the boil till tender. Remove meat from bones and chop. There should be $2\frac{1}{2}$ cupfuls. Reduce stock to 1 cupful, cool, soak $1\frac{1}{2}$ teaspoonfuls granulated gelatin in 2 teaspoonfuls cold water and dissolve in stock which has been reheated; add to meat, season with salt, pepper, celery salt, and onion juice. Pack in buttered $\frac{1}{2}$ -pound baking-powder tins and chill. Remove from molds, cut in rounds, put on lettuce, and garnish with mayonnaise.—Fannie M. Farmer.

Tomato-and-Pea Salad.

Scoop out skinned tomatoes, fill with cold boiled peas and English walnuts marinated with French dressing or mayonnaise. Serve on lettuce.

Cucumber Salad.

Pare cucumbers and cut crosswise in quarter-inch slices. Let them stand in ice water an hour, then take a sharp knife and pare round and round the slices very thinly, just as an apple would be pared, until there is a long, thin-curved strip. Put these strips on ice to harden, then put each one on a single lettuce leaf and serve on small plates. Put a spoonful mayonnaise on each plate and pass French dressing to which horseradish has been added. Brown bread cut in long narrow strips and spread with soft cheese is delicious with this salad. Most soft cheeses must be thinned with cream to make them spread easily.

Grand Union Cabbage.

Select a small, heavy cabbage and roll back the outside leaves. Cut out

the center, leaving the shell entire. With a sharp knife slice the heart of the cabbage thin and soak in ice water till crisp. Drain and dry between towels. Add 2 green peppers cut in fine strips and mix with a French dressing. Pour over the cabbage and peppers, then refill the cabbage bowl.—Stella A. Downing.

English-Walnut-and-Chicken Salad.

For this salad there will be required 24 English walnuts, onion, parsley, chicken liquor, celery, cold cooked chicken, French dressing, and mayonnaise. Take 1 pint chicken and 1 pint celery cut into dice, and par-boil the English walnuts long enough to remove the skins. In boiling the nuts, add a slice onion, a sprig parsley, and a little chicken liquor, then drain, remove the brown skins, chill, and mix them with the celery and chicken. Pour over this a cupful French dressing and put in the refrigerator for an hour or more. At serving time stir $\frac{1}{2}$ pint mayonnaise into this. Make shells of crisp lettuce leaves, put a tablespoonful salad into each and a teaspoonful mayonnaise on top, and serve.—Ella E. Woodbridge.

Potato Salad (German recipe).

Cut cold boiled, rather waxy, potatoes into moderately thick slices, put in a bowl, and add to every pound a tablespoonful vinegar, 2 tablespoonfuls oil, $\frac{1}{2}$ teaspoonful salt, $\frac{1}{4}$ teaspoonful pepper, and a little minced parsley. Slices of beet root and onions are a great improvement to the salad.

Salad of Shad Roe and Cucumbers.

Cover a pair of shad roes, a sliced onion, and a bay leaf with boiling water to which has been added 1 tablespoonful lemon juice or vinegar, and cook for twenty minutes. Drain and dry the roes, cover them with a tablespoonful lemon juice, 3 tablespoonfuls oil, and a dash pepper and salt. When cold, cut into small cubes (if they are not too tender). Rub a salad bowl with a clove garlic. Cut a thoroughly chilled cucumber in dice.

Put a bed of lettuce into the bowl. Arrange the cucumber and lettuce, and over that the roe, well drained from the marinade. Garnish with a few delicate tips of lettuce and whole cucumber slices. Serve very cold.

Red-Apple Salad.

Select large red apples of uniform size, scoop into cups, and put in cold water in which there is a little lemon juice until time to fill them. Mix the chopped apple with celery, grapefruit, and mayonnaise dressing, and fill the apples. Garnish with broken walnuts, and lay on leaves of lettuce. Serve with wafers spread with cream cheese.

Potato-Salad Balls.

Add to 2 cupfuls left-over mashed potatoes French dressing to moisten, and 2 teaspoonfuls grated onion. Make into little balls by using butter-ball paddles. These may be served with croquettes or patties. Or they may be placed on a leaf of lettuce as a salad course with a spoonful mayonnaise.

Pepper-and-Chicken Salad.

1 cupful chopped green pepper,
1 cupful chopped celery,
2 cupfuls chicken,
2 hard-boiled eggs,
1 cucumber pickle, chopped,
Salt and pepper.

Chop the peppers fine, add the celery and chicken, mix well; add the eggs, cucumber pickle, salt, and pepper to taste. Set away to chill. When ready to serve, pour over it a mayonnaise. Garnish with parsley and olives.

Salad Provençal (French recipe).

1 cold carrot,
1 cold turnip,
1 cupful cold chicken meat,
12 mushrooms,
 $\frac{1}{2}$ cupful asparagus tips,
 $\frac{1}{2}$ cupful Brussels sprouts.

Cut the carrot, turnip, and chicken into inch strips. Mix lightly with a fork. Arrange in a nest of lettuce leaves on a flat dish. Moisten with

mayonnaise and mask the top with a few spoonfuls. Garnish with cluster of mushrooms, asparagus tips, and Brussels sprouts.

Chiffonade Salad (French recipe).

- 1 head lettuce,
- $\frac{1}{2}$ cupful cold beets,
- $\frac{1}{2}$ cupful cold carrots,
- $\frac{1}{2}$ cupful cold string beans,
- 1 tablespoonful chives.

Make a nest of lettuce and cut the vegetables into neat cubes. Chop the chives fine, scatter them on top, marinate with a French dressing.

Beet-and-Cabbage Salad.

- $\frac{1}{2}$ head raw cabbage,
- 6 cold beets,
- Pepper and salt.

Shred the cabbage finely, soak for half an hour in iced water, drain thoroughly. Mix with the beets cut into fine cubes. Sprinkle with salt, pepper, and minced onion. Serve with French dressing.

Moscow Salad (Russian recipe).

- 1 cupful cold red beets,
- 1 cupful cold potatoes,
- 2 onions,
- 1 cupful celery,
- 1 head chicory,
- 1 teaspoonful capers,
- 1 teaspoonful pickled nasturtium seeds,
- 6 olives.

Cut the beets and potatoes into fine cubes, slice the onions fine, cut the celery into inch-length pieces, shred chicory into fine strips, cut the olives into thin slices. Toss lightly together, add the capers and nasturtium seeds. Lay in lettuce leaves. Serve with French dressing or mayonnaise. Garnish with rings of hard-boiled eggs and sprinkle over the top a tablespoonful yolk of egg put through a potato ricer.—Helen Sas-morsky.

Aspic Salad (Russian recipe).

- 1 cupful green peas,
- $\frac{1}{2}$ cupful cold carrots,
- 1 tablespoonful capers,
- 1 cupful aspic jelly.

Cut the carrots into tiny cubes. Ornament the bottom of a mold with the peas, carrots, and capers, and fix them with aspic jelly. When hard fill the mold with jelly. Let it grow solid, then scoop out a small hollow with a hot spoon and fill with mayonnaise. Unmold on lettuce leaves and pour over 2 tablespoonfuls French dressing.

Cauliflower-and-Potato Salad.

- 2 cupfuls cold potatoes,
- $\frac{1}{2}$ cupful cold cauliflower.

Cut the potato into fine cubes and mince the cauliflower coarsely. Toss lightly, and serve with a French dressing. Garnish with slices of cucumber.

Summer Salad.

- 6 tomatoes,
- 3 cucumbers,
- 1 onion,
- 3 green peppers,
- 2 apples.

Slice the tomatoes, cucumbers, and apples; chop the onion and peppers fine. Blend with a French dressing.—May Irwin.

Baked-Bean Salad.

- 2 cupfuls cold baked beans,
- 3 ripe tomatoes,
- 2 tablespoonfuls vinegar,
- 6 tablespoonfuls oil,
- $\frac{1}{4}$ teaspoonful mustard,
- Dash of cayenne.
- 1 teaspoonful chopped onion.

Make a dressing from the vinegar, oil, and seasonings. Heap the beans on lettuce, garnish with sliced tomatoes and over all pour the dressing.

Tomato Salad (German recipe).

Peel medium-sized tomatoes, remove a thin slice from the top of each, take out the seeds and some of the pulp, sprinkle inside with salt, invert, and let stand thirty minutes. Shred $\frac{1}{2}$ head small cabbage. Let stand two hours in 1 quart cold water to which 2 tablespoonfuls salt have been added. Cook slowly for

thirty minutes $\frac{1}{2}$ cupful each cold water and vinegar, a bit bay leaf, $\frac{1}{2}$ teaspoonful peppercorns, $\frac{1}{4}$ teaspoonful mustard seed, and 6 cloves. Strain, and pour over the cabbage drained from salt water. Let stand for two hours, again drain, and refill the tomatoes.

Tomato-Pineapple Salad.

Peel medium-sized tomatoes, remove a thin slice from the top of each, take out the seeds and some of the pulp. Sprinkle inside with salt, invert, and let stand thirty minutes. Fill the tomatoes with fresh pineapple cut in small cubes and English walnut meats, using $\frac{3}{4}$ pineapple and $\frac{1}{2}$ nut meats, mixed with mayonnaise. Garnish with mayonnaise, halves of nut meats and slices cut from the tops of tomatoes. Serve on a bed of lettuce leaves.

Shaddock Salad.

- 2 green peppers,
- 1 head romaine,
- Pulp 1 large grape fruit,
- 3 tomatoes.

Cook the peppers in boiling water; cool, and shred. Shred the romaine; remove the pulp from the grape fruit; peel the tomatoes and cut in quarters lengthwise. Arrange in a salad bowl, and pour over French dressing.

Salmon Salad.

Separate cold boiled salmon, season with French dressing, and place portions on lettuce leaves. Set groups of cooked peas around the salmon. Serve with French dressing. Let stand in part of the dressing $\frac{1}{2}$ hour before serving.—Anna Kinsley.

Red Kidney Bean Salad.

- 1 can kidney beans,
- 4 medium-sized sour pickles,
- 3 hard-boiled eggs,
- 3 tablespoonfuls vinegar,
- 1 heaping tablespoonful sugar.

Put beans in a bowl from can, slice pickles fine, add vinegar and sugar, stir until sugar is dissolved. Then

shell eggs, slice and lay on top of salad. Serve with cooked or mayonnaise dressing.—Mrs. Frank LaFollette.

Cherry Salad.

One quart of dark red cherries, pit and fill with bits of English walnuts and lay on white lettuce leaves, covering with a French dressing. Serve with cream cheese and wafer.—Viola B. Maxson.

Potato Salad.

Cook enough potatoes to fill a quart measure when sliced. Cook with jackets, when cool pare and dice. Peel and dice 2 cucumbers, dice 1 tablespoonful of onion—put this in with the potatoes. Boil 4 eggs hard, when cool dice the whites. Keep yolks separate and mash up with fork and add $\frac{3}{4}$ tablespoonful salt, pepper to taste, $\frac{1}{2}$ teaspoonful mustard and 2 tablespoonfuls melted butter, mix well and add $\frac{1}{2}$ cupful vinegar with this, then pour over potatoes. Add 1 cupful sour cream or mayonnaise dressing. Sweet cream will answer for the sour if handy.—J. M. Kawczynski.

Pineapple and Cream Cheese Salad.

- 1 can pineapple, sliced,
- 1 cream cheese,
- 1 green pepper.

Drain and chill pineapple. Remove core, parboil pepper for five minutes; chop fine. Make cream cheese into tiny balls. Serve on lettuce 1 slice pineapple, one cheese ball in center, and $\frac{1}{2}$ teaspoonful chopped pepper, sprinkled over the salad. Serve with French or mayonnaise dressing.

Pear Salad.

- 4 pears, pared and cut in eighths,
- 1 pimento or green pepper, cut fine.

Arrange the sections of pear, on leaves of lettuce, like the petals of a flower; put the chopped pepper or pimento in the center. Serve with mayonnaise dressing.

Grape Fruit Salad.

- 2 grape fruit,
- 1 pimento.

Remove the pulp of the grape fruit, without breaking; cut pimento in dice or strips. Serve on lettuce with mayonnaise. Arrange the grape fruit like petals of a flower, with pimento in center, or in strips between the petals.

Orange and Grape Salad.

- $\frac{1}{2}$ pound white grapes, skinned and stoned,
- 3 shredded oranges.

Mix in bowl; chill. Serve with French dressing on lettuce leaves.

Pea Salad.

Pour the liquid from one can of peas or equal amount of fresh peas. Add one cup of shredded cabbage, one small onion cut fine, celery salt, and over all pour mayonnaise dressing. Serve chilled on lettuce leaf.

Cucumber Jelly.

This will serve twelve. Pare and slice five cucumbers. Place in the kettle with one cupful of cold water, one teaspoonful of salt, two sprigs of parsley, and cook until cucumbers are soft. Press through a sieve, reheat, and add one tablespoonful of granulated gelatine, which has been soaked in $\frac{1}{4}$ cupful of cold water, one tablespoonful of vinegar and $\frac{1}{4}$ teaspoonful of paprika. Strain through cheese cloth or very fine strainer, and color a delicate green, using spinach juice, or pure vegetable color. Turn into very small timbale molds, and when cold and firm, turn out on slices of tomatoes, which have been dressed with a French dressing. Garnish with lettuce leaves and mayonnaise. The jelly can be molded in one mold, and garnished with slices of tomato at serving time. Place a spoonful of mayonnaise on each slice.

Frozen Fruit Mayonnaise.

- 1 cupful mayonnaise,
- $\frac{3}{4}$ cupful whipped cream,
- $2\frac{1}{2}$ cupfuls mixed and candied fruits (maraschino cherries, candied pineapple, oranges,

- sliced peaches, stoned cherries),
- 1 teaspoonful powdered sugar,
- 1 teaspoonful gelatine.

Soak gelatine in cold water, and set over steam to melt. Beat into mayonnaise. Combine with whipped cream, stir into the fruit, pour into a mold which has been rinsed in cold water. Seal carefully, and bury in equal parts of ice and salt for four hours. Serve on lettuce heads.—Anna Kinsley.

DRESSINGS OR SAUCES FOR SALADS

In making mayonnaise, I find that using vinegar which has been poured over pickles, beets, or cucumbers, instead of fresh vinegar, adds a pleasant flavor to salads.

Oil Mayonnaise.

- Yolk 1 egg,
- 1 teaspoonful salt,
- $\frac{1}{2}$ teaspoonful powdered sugar,
- 1 tablespoonful lemon juice,
- 1 cupful olive oil,
- $\frac{1}{2}$ teaspoonful mustard,
- 1 tablespoonful vinegar.

Rub a bowl with the cut side of an onion, put in the dry ingredients and stir them together, then mix to a paste with a teaspoonful vinegar. Blend with the yolk of the egg, stirring till perfectly smooth. Now, begin to put in the oil, a few drops at a time, beating constantly with a Dover egg beater. Alternate the oil with a little vinegar and lemon juice, until all ingredients have been used. When finished, the mayonnaise ought to be like a thick jelly. Better success will be had if all the ingredients are the same temperature when starting.

Oil Dressing, Boiled.

- $1\frac{1}{2}$ teaspoonfuls mustard,
- 1 teaspoonful salt,
- 2 teaspoonfuls powdered sugar,
- Few grains cayenne,
- 2 tablespoonfuls oil,
- $\frac{1}{2}$ cupful vinegar, diluted with cold water to make $\frac{1}{2}$ cupful,
- 2 eggs slightly beaten.

Mix dry ingredients, add egg and oil gradually, stirring constantly until thoroughly blended; then add diluted vinegar. Cook over boiling water until mixture thickens; strain and cool.

Tomato Mayonnaise.

- 2 solid tomatoes,
- Yolks 2 hard-boiled eggs,
- Yolk 1 raw egg,
- $\frac{1}{2}$ cupful oil.
- Few grains cayenne,
- 3 drops onion juice.

Peel the tomatoes; cut them in halves and press out all the seeds, retaining the solid portion. Chop and press through a sieve. Mash the yolks of the hard-boiled eggs until very fine; add the yolk of the raw egg; when thoroughly mixed, add the oil a little at a time. When thick and smooth, add the dry pulp of the tomato (which has been draining while you are making the dressing). Add the tabasco and onion juice. This is a delicious dressing for cold beef or mutton.

Roqueforte Salad Dressing.

Cream 2 ounces ($\frac{1}{2}$ cup) Roquefort cheese, using wooden spoon. Beat in 6 tablespoonfuls olive oil, 2 tablespoonfuls vinegar, $\frac{1}{2}$ teaspoonful each of salt and paprika. Serve on head lettuce, etc.—Anna Kinsley.

French Dressing.

- 1 tablespoonful vinegar,
- 3 tablespoonfuls olive oil,
- $\frac{1}{2}$ teaspoonful salt,
- $\frac{1}{2}$ teaspoonful pepper.

Put the salt and pepper in the salad bowl, or in a small bowl if the sauce is to be served separately. Add a little oil and stir well, then gradually add the remainder of the oil, stirring all the while. Last of all stir in the vinegar, which should be diluted with water if very strong.

This sauce may be modified to suit different vegetables. As it is given it is right for lettuce, chicory, cooked asparagus, cauliflower, artichoke, etc.

Cream may be substituted for the oil, but the salad is not so rich.

French Dressing.

- 1 tablespoonful vinegar,
- 3 tablespoonfuls olive oil,
- $\frac{1}{2}$ teaspoonful salt,
- $\frac{1}{2}$ teaspoonful pepper.

Put the salt and pepper in the salad bowl, or in a small bowl if the sauce is to be served separately. Add a little oil, stir well, then gradually add the remainder of the oil, beating constantly. Last of all stir in the vinegar, which should be diluted with water if very strong. This dressing may be modified to suit different vegetables.

Cream Dressing.

- $\frac{1}{2}$ tablespoonful salt,
- $\frac{1}{2}$ tablespoonful mustard,
- $\frac{1}{2}$ tablespoonful sugar,
- 1 egg slightly beaten,
- 2 $\frac{1}{2}$ tablespoonfuls melted butter,
- $\frac{1}{2}$ cupful cream,
- $\frac{1}{2}$ cupful vinegar.

Mix dry ingredients, add vinegar very slowly. Cook over boiling water, stirring until the mixture thickens, strain, and cool.

Cream Salad Dressing.

- 1 cupful cream (sweet or sour),
- $\frac{1}{2}$ cupful tomato catsup,
- 2 tablespoonfuls olive oil,
- 2 tablespoonfuls vinegar,
- 2 tablespoonfuls sugar,
- 1 teaspoonful salt.

Mix the oil, salt, sugar, and vinegar together, then beat in the catsup and finally add the cream, beating it in gradually.

This dressing is very good for vegetables, or for fish salads.

Sour Cream Dressing.

- $\frac{1}{2}$ pint sour cream,
- 2 tablespoonfuls lemon juice,
- 2 tablespoonfuls vinegar,
- 1 scant tablespoonful sugar,
- 1 teaspoonful salt,
- $\frac{1}{2}$ teaspoonful pepper,
- 1 teaspoonful or more mixed mustard.

Beat the cream with an egg beater until smooth, thick, and light. Mix the other ingredients together and gradually add to the cream, beating all the while.

This dressing may be modified to suit different vegetables. Having beaten sour cream for a foundation the seasoning may be anything desired, as, for example, the mustard and lemon may be omitted and the dressing be seasoned highly with any kind of catsup.

A sweet cream may be substituted for the sour; it should be quite thick.

Sour-Cream Dressing.

- 1 cupful sour cream,
- 2 tablespoonfuls lemon juice,
- 2 tablespoonfuls vinegar,
- 2 scant tablespoonfuls sugar,
- 1 teaspoonful salt,
- $\frac{1}{4}$ teaspoonful pepper,
- 1 teaspoonful mustard.

Beat the cream with an egg beater until thick. Mix the other ingredients and gradually add the cream, beating all the while.

Cooked Dressing.

- 2 eggs,
- $\frac{1}{4}$ cupful vinegar,
- 1 cupful milk,
- 1 tablespoonful oil or butter,
- 1 teaspoonful salt,
- $\frac{1}{8}$ teaspoonful pepper.

Put the oil and dry ingredients in a bowl and mix well. Add the eggs, and beat thoroughly. Now add the milk, and vinegar slowly, place the bowl in a pan of boiling water, and cook till the sauce thickens like thin cream. Stir the sauce constantly while cooking, and bottle what you do not require for immediate use. If butter is substituted for oil, add it just before taking the dressing from the fire.

Cooked Dressing.

- 2 eggs,
- 1 gill vinegar,
- 2 gills milk,
- 2 tablespoonful oil or butter,
- 1 teaspoonful salt,

- 1 teaspoonful mustard,
- $\frac{1}{4}$ teaspoonful pepper.

Put the oil and dry ingredients into a bowl and mix well. Add the eggs and beat for five minutes, then add the vinegar and beat one minute. Now add the milk, place the bowl in a pan of boiling water, and cook until the sauce thickens like thin cream. It will take about ten minutes. Stir the sauce constantly while cooking. Cool and bottle what you do not require for immediate use. This sauce is good for nearly all kinds of cooked vegetables.

If butter is substituted for the oil, add it just before taking the sauce from the fire.

Buttermilk Cream Horseradish Dressing.

To buttermilk cream add a little grated horseradish and vinegar and salt. Serve on whole or sliced tomatoes.

Buttermilk Dressing.

- $\frac{1}{2}$ cupful of buttermilk cream,
- 1 tablespoonful of vinegar,
- $\frac{1}{4}$ teaspoonful of salt,
- Cayenne pepper.

This dressing is particularly suitable for serving with cucumbers.

Catsup Cream Dressing.

- 1 cupful cream,
- $\frac{1}{2}$ cupful tomato catsup,
- 2 tablespoonfuls olive oil,
- 2 tablespoonfuls vinegar,
- 1 tablespoonful sugar,
- 1 teaspoonful salt.

Mix the dry ingredients, oil, salt, and vinegar together, then add the catsup and cream, beating it in gradually.

Chicken-Salad Dressing.

- $\frac{1}{4}$ cupful rich chicken broth,
- $\frac{1}{4}$ cupful vinegar,
- Yolks 5 eggs,
- 2 tablespoonfuls mixed mustard,
- 1 teaspoonful salt,
- $\frac{1}{4}$ teaspoonful pepper,

Few grains cayenne,
 $\frac{1}{2}$ cupful thick cream,
 $\frac{1}{2}$ cupful melted butter.

Reduce stock in which a fowl has been cooked to $\frac{1}{2}$ cupful. Add vinegar, yolks of eggs slightly beaten, mustard, salt, pepper, and cayenne. Cook over boiling water, stirring constantly until mixture thickens. Strain, add cream and melted butter, then cool.—Fannie M. Farmer.

Sidney Smith's Salad Dressing.

1 boiled or baked potato,
 Yolk 2 raw eggs,
 $\frac{1}{2}$ teaspoonful salt,
 Dash tabasco sauce,
 6 tablespoonfuls oil,
 2 teaspoonfuls tarragon vinegar,
 1 teaspoonful lemon juice.

Press the freshly boiled or baked potato through a potato ricer; rub it down with a palette knife until perfectly smooth; drop in the yolk of an egg; rub thoroughly; then add the second yolk and rub again. Add the salt and pepper, oil, vinegar, and lemon juice. This dressing is improved by a suspicion of garlic or onion, and is excellent with celery or tomatoes.

Russian Dressing.

$\frac{1}{2}$ cupful mayonnaise,
 $\frac{1}{4}$ cupful olive oil,
 $\frac{1}{4}$ cupful chile sauce,
 1 teaspoonful vinegar,
 $\frac{1}{4}$ teaspoonful mustard,
 $\frac{1}{4}$ teaspoonful salt,
 $\frac{1}{2}$ teaspoonful paprika.

Mix oil, vinegar, mustard, salt, paprika, chile sauce. Beat into the mayonnaise.—Anna Kinsley.

Chiffonade Dressing.

Chop fine the white of 1 hard-boiled egg, add yolk pressed through sieve, 1 tablespoonful each of chopped chives, parsley, capers, and cooked beet, $\frac{1}{2}$ tablespoonful scraped onion pulp, $\frac{1}{2}$ teaspoonful salt and paprika, $\frac{1}{2}$ cup oil, and 3 or 4 tablespoonfuls vinegar. Mix all thoroughly.—Anna Kinsley.

Fruit-Salad Dressing.

$\frac{1}{2}$ cupful pineapple juice,
 $\frac{1}{2}$ cupful lemon juice,
 $\frac{3}{4}$ cupful sugar,
 2 eggs.

Mix well and cook in double boiler until thick, add 2 cupfuls whipped cream before serving.—Anna Kinsley.

CHAPTER XXII

YEAST BREADS, DOUGHS AND BATTERS

BREADMAKING, WHEAT BREAD, GRAHAM BREAD, RYE-, OAT- AND CORNMEAL-BREAD—SMALL BREADS MADE FROM YEAST—ROLLS, BATTER CAKES, DOUGHNUTS, COFFEE CAKE, ETC., ETC.

Of first importance in every household is good bread. Not hit-and-miss bread—fair at one baking, poor at another—but a sweet, wholesome, nutty-flavored loaf, beautiful chestnut brown all over, and so perfectly baked as to be palatable when ten days old.

The very best flour is the cheapest; it makes the finest bread, it contains the largest amount of nutrition, and it produces twice the quantity of wholesome bread that cheap flour does. In nearly every pantry you find two brands of flour; usually we call them bread flour and pastry flour. It is possible to make fair pastry and good cake from bread flour, but it is hard to make good bread from pastry flour. You can apply three tests to flour to discover whether it will make good bread; first, it should be of a creamy color; second, it will cake slightly when gathered up into the hand, falling apart in a gritty sort of way when the fingers are released; third, its wetting capacity is very different from poor flour, one quart of first-class bread flour absorbing about one and a half cupfuls of water. Before purchasing a barrel, or even a half-barrel, of flour, buy a bagful, try one sort after another, use the same yeast, and the same care with the mixing, raising, and baking. Presently you will discover with what flour you have the best success; then stick to that brand. As for yeast; none is

better than compressed yeast, which can be found fresh every day even in the smallest village. If it has been kept too long, it will begin to show dark streaks, have a strong odor, and it will not break clean.

Let us stop for a minute to study the properties of yeast and its action when mixed with flour and liquid, then it will be much easier to understand what is happening during the process of bread making. If you could look at a drop of yeast under a microscope, you would see a mass of tiny, rounded cells. You can imagine how tiny they are when I tell you there are fifty billion cells in a two-cent yeast cake. Each cell is a minute sac filled with watery matter, and while you watch, you may see new cells budding out of the old ones. Yeast is the same fungus which finds its way into cans of fruit that have not been hermetically sealed, and into maple sirup or any sweet liquid which is not properly protected from the air. Then, given a warm temperature and sugar for the creation of oxygen, it begins to "work," as every housewife knows to her sorrow. The same "working" process is what we invite when we set bread with yeast. It will not begin its work until it has been given sugar, heat, and moisture. It thrives best at 78° Fahrenheit. You can make it work more quickly by raising the temperature, but when it reaches 130° Fahrenheit it is blighted, just as a plant dies in an overheated

room. Now you know what happens when you set your bread near a hot stove or register—the “yeast has been killed.” It is almost impossible, however, to kill yeast with cold. I have thawed it very gradually more than once after it had been frozen and made excellent bread from it. You know how slowly bread rises after it has been chilled by a cold night. Still it will rise, for the growth of the yeast was simply brought to a standstill.

In chemistry a name which means sugar fungus has been given to yeast. It needs, you remember, air as well as moisture to make it grow, hence oxygen is required to raise every dough or batter; and when sugar is at hand, it will supply itself with some of the oxygen contained in that. So bread recipes frequently call for a tablespoonful of sugar. Sugar is not a necessity, however, because yeast changes the starch in flour into sugar. It is needed only when the yeast is none too lively and requires a bit of help.

Immediately when yeast goes into the batter,—which is the first step in bread making,—a chemical change, which we call fermentation, begins to take place. We help the yeast to begin work by hard beating of the batter, and then by kneading the dough. For both of these processes tend not only to mix the ingredients thoroughly, but also to inclose air; the longer the beating and kneading the more air is inclosed, and the spongier becomes the bread.

The first step in bread making, as in all cookery, is to get together everything necessary in utensils and materials. The utensils needed are a bread pan with a close-fitting, ventilated cover, a measuring cup, a wire spoon for beating the batter, a slitted wooden spoon to stir with, and a molding cloth.

The molding cloth is a square yard of heavy duck or sail cloth; this is much superior to the smooth surface of a wooden molding board, because considerable flour can be sifted into the rough surface of the fabric. It holds the flour and there is no stick-

ing of soft dough. As the flour works into the dough, sift in more, rubbing it into the cloth with your hand. When you have finished work, shake it, fold the cloth, and lay it away until needed again. It can be used a number of times before being washed; but when it has to go to the laundry, soak it for an hour in cold water, and rinse several times before putting it in the suds. Hot water would turn the flour into dough; then it would be no easy task to get it clean.

Sift into pan four or five quarts of flour, and, unless you are working in midsummer, set it either over the register or in a moderate oven to warm. Cold flour will always retard the raising of bread. Scald one pint of milk and pour it into the bread pan over two teaspoonfuls of salt. Add first a pint of cold water, then one yeast cake dissolved in half a cupful of lukewarm water. To this liquid add seven or eight cupfuls of warm flour, and beat the batter thoroughly with a wire spoon. Do not stop beating until the batter is a mass of bubbles. Then take the slitted spoon and begin adding more flour till you have a soft dough. When it becomes too stiff to stir, dust plenty of flour into the molding cloth, rubbing it into the fabric till it will hold no more. Gather the dough into a ball and drop it on the cloth. Now begin to knead, folding the edge of the dough farthest from you toward the center, pressing it away with the palms, gently yet quickly. The process of kneading has more to do with good bread than almost anything else. In a cooking school I have seen pieces of the same dough, raised in the same temperature, baked in the same oven, yield two entirely different qualities of bread. One loaf was molded by an energetic, strong-muscled girl whose kneading was so strenuous that all the life had been banged out of it. The other loaf was kneaded by a girl whose every movement was grace; who used her hands deftly, lightly, and briskly. Her bread was as fine as bread could be made, a spongy, delicious, well-shaped loaf. So remember that it is not brute force

that tells in kneading; it is steady, light, springy, dexterous movements, which distribute the yeast plant evenly through the dough and inclose all the air it is possible to get in. As you work you can see how the air is doing its duty, for the dough becomes full of little bubbles and blisters. When it is smooth as satin, elastic, does not stick, and is so spongy that it rises quickly when you dent it with your finger, it is ready to set to rise. Wash the bread pan and grease it well, even inside the lid; this makes the dough slip out clean after the next raising. Put on the cover and set the pan in a warm place.

As soon as the dough has doubled in bulk, turn it out on a slightly floured molding cloth and knead into loaves. This second kneading is a slight one, only enough to prepare it for the pans and get rid of any large air bubbles which, if left in, would mean holes in the bread. Have the pans greased, using a butter brush which penetrates to every corner. Always make small loaves; generally the right size can be guessed at by having each pan half full of dough. I like bread baked in the French or round bread pans. The crust of it is exceedingly good, the loaf cuts into neat slices, not a bit of the bread being wasted, and it bakes to a nicety without any danger of burning. In rectangular pans the dough in the corner does not have room fully to expand. When large brick-shaped loaves are made, it is almost impossible to bake them to the heart unless the crust gets very thick and hard. If heat does not penetrate to the center of a loaf, the undercooked dough gives good cause for serious indigestion.

After the bread is in the pans we have to find a place for it to rise. In the summer I set it in the window, which, of course, is closed, for a draught on rising bread hurts it. During the winter the bread goes on a shelf close to the kitchen chimney, behind the stove. The shelf is covered with white oilcloth and just wide enough for four pans. When set to

rise, the loaves are covered with cloths made from old table linen. These are kept laundered and never used except on baking days.

A question I am often asked is: "How do you know when bread is raised enough to be put in the oven?" This is one of the most important points about bread making. I might tell you to let it rise for an hour, only time depends so much upon temperature. I might suggest that it be allowed to become doubled in bulk, but even that is not a sure test. The only one I ever use is to keep "hefting" it, as a New England cook would say. The loaf will keep on for an hour or so being of quite good weight, then all of a sudden it feels light. Pop it into a hot oven. Strange as it may seem, a row of pans filled with bread at the same time, which have stood in the same temperature, will seldom "heft" light at the same minute. I have seen half an hour of difference between the time three or four pans were ready to go into the oven.

Nearly every cookbook gives a different test for the proper heat of the oven. It ought to register 360° Fahrenheit, but as few cooks use a thermometer, you may go by this test: Sprinkle a teaspoonful of flour on the oven bottom, and if it browns in five minutes the oven is just right for the bread. If it grows chestnut brown in that time, cool the oven or your bread will crust too quickly. When the loaves are in, watch them; if you see one throwing up an awkward ridge or hump anywhere, you may know that the oven is too hot and the bread is rising faster than it ought to do. Do not let one loaf touch another; the dough will run together if they do. Then when they are pulled apart, there is not only an unsightly loaf, but a heavy streak in the bread. If the oven is just right, it will stop rising and begin to brown after baking fifteen minutes. Then cool the oven slightly, and let the baking go on moderately till the bread has been in for an hour.

Take out the well-browned loaves, turn them immediately out of the

pans, brush over the crust with a buttered brush, and set them to cool on a wire stand. If loaves are set flat, the bottom will become moist; if they are wrapped in a cloth, there is a soft, steamy crust. In summer if the steam is not allowed to evaporate from bread, there is danger of it molding, so it must never be put away until perfectly cool. The best place to store it is in a small, shelved closet of japanned ware, with a door that closes tight. This is a better and handier receptacle than the wooden tub or stone jar used in some households. Never keep bread in a cellar; it is a horribly unwholesome custom.

LITTLE NOTES ABOUT BREAD MAKING

Some cooks prefer to set a sponge when making bread, allowing it to rise in the shape of a well-beaten batter before adding flour enough to do the kneading. "Sponging" makes a fine-grained bread, but it lengthens the time required for making, as two risings are needed after the sponge is light.

Bread may be made from water alone instead of "half and half," as milk and water bread is called. Water bread is tougher and sweeter and keeps better than that made from all milk.

A good test of whether bread has been kneaded enough is to leave it on the board or molding cloth for a few minutes. When you take it up again, if it does not stick it is ready to put in the bread pan.

If you want to make bread in a hurry, simply double the amount of yeast, that is, if you are using compressed yeast. It gives no yeasty flavor, although brewers' and home-made yeast do leave a slight taste when more than the prescribed quantity is used.

Should the oven be too hot, set a pan of cold water in it for a few minutes.

Don't use potatoes or potato water in bread. The liquid in which potatoes have been boiled contains a poi-

sonous alkaloid and it tends to darken the bread as well as giving it a peculiar flavor. Years ago, before milling had been brought to perfection, there might have been reason for adding mashed potatoes to bread; now, with our fine flour, there is no necessity for it.

The best way to care for a bread box is to wash it in hot water, then close it, and dry it on the cool end of a stove. This ought to be done between each baking to keep it fresh and sweet.

Milk bread browns more quickly than water bread; so do not imagine because your loaf is a nice chestnut brown that it is baked. Give it time enough, which is from fifty to sixty minutes for brick loaves four inches thick.

If you are detained from getting bread into the pans when it has risen sufficiently, take a knife and cut down the dough till you are ready to attend to it. This allows the gas to escape and there is no danger of souring if you cannot return to it for half an hour.

When kneading light bread if you cut dough with a carving knife it will break the bubbles and cause the bread to be of finer grain. Then, too, it will not take so long to work it.

It is best to have your fire in such condition that it will need no replenishing while bread baking is in progress.

Yeast may be kept perfectly fresh for at least a week or ten days by immersing the cake in cold water. The particles of yeast settle at the bottom and water acts as a seal from the air. Cover the glass in which yeast is dissolved and keep it in a cellar or refrigerator. Occasionally pour off the water that covers it and add fresh water.

If you do not own a covered bread pan, raise the dough in a large, clean bowl or basin, kept well covered with a towel. A paper tightly tied down is better still, for it prevents air from entering.

When a recipe calls for one compressed yeast cake and nothing can

be obtained but liquid yeast, use one cupful of it instead.

If you don't have a wire stand for cooling bread, simply turn up a couple of bread tins and stand the loaves against their edges. The idea is to let the steam escape, so that the bread will neither be heavy nor moist.

If you want to hurry bread slightly, add one tablespoonful of sugar to four quarts of flour. The yeast plant begins to grow quicker when there is sugar to feed on. When there is no sugar, the yeast has to change some of the starch to sugar, and, of course, this takes time.

Pricking the top of a loaf with a fork before it is put in the oven tends to make it rise and bake evenly.

Do not try setting bread over night either in midsummer or midwinter. In cold weather bread is likely to be chilled, in summer it may sour. There is plenty of time to raise and bake bread in the daytime, when one can watch it and give the careful consideration it requires above any other cooking.

If you live in a region where the water is very hard, boil it, and let it grow lukewarm before mixing with flour, for soft water is better than hard in the bread-making process.

Flour is almost as sensitive to odors as is milk; therefore it should be kept in a perfectly clean, wholesome, dry place. Always raise the barrel off the flour, either on two strips of wood or on one of the handy little contrivances which will swing it out and into a cupboard. Never use flour for anything without sifting it first—it may be perfectly free from any foreign substance and it may not.

Water Bread.

- 4 cupfuls boiling water,
- 4 tablespoonfuls lard,
- 1 tablespoonful sugar,
- 1½ teaspoonfuls salt,
- 1 yeast cake softened in ½ cupful lukewarm water,
- 3 quarts sifted flour.

Put the lard, sugar, and salt in a bread raiser; pour on boiling water;

when lukewarm, add softened yeast cake and 5 cupfuls flour; then stir until thoroughly mixed. Add remaining flour, mix, and knead. Return to bowl; let rise over night. In the morning cut down, knead, shape into loaves or biscuits, place in greased pans, having pans nearly half full. Cover, let raise again, and bake.

Bread.

- 3 cupfuls sifted flour,
- 1 cupful lukewarm water,
- ¼ cupful yeast, or one-sixth yeast cake.
- 1 teaspoonful salt,
- 1 teaspoonful shortening,
- ½ teaspoonful sugar.

Soften the yeast cake in one-fourth cupful of the water with the sugar, mix flour and salt together in a mixing bowl. Make a hole in the center of the flour, pour in the yeast, stir with a wooden spoon, add the rest of the water, more if required. It must be just stiff enough to knead with the hand. Knead either in the bowl or on a floured board. Use as little flour as possible in kneading, but do not let the dough stick to the hands or board. When smooth and elastic put it back in the bowl, cover with a clean cloth and a tin cover, and set in warm place (about 80° Fahrenheit). It will take four or five hours in summer and all night in winter. When double its bulk, knead it lightly and make into loaves or biscuit. Let them rise till double their size in a warm place. Bake in a hot oven, loaves forty to sixty minutes, biscuits from ten to twenty minutes. When done cover the loaves with a cloth and rest them up on end till cold.

Breakfast Buns.

When putting bread into loaves save out one large cupful of dough. Place it in a granite pan and let rise until it is three times the size of the original. Pour over it one cupful of cold water, one-half cupful of sugar, butter the size of an egg, and mix in flour enough to make a stiff dough.

Mix well. Cover and let rise five hours. Make into small biscuits leaving plenty of space for each one in the pan. Let rise in buttered pans until morning. Bake ten minutes. This will make two dozen buns.—Mrs. F. E. Draegert.

Entire-Wheat Bread.

4 cupfuls scalded milk,
 $\frac{3}{4}$ cupful brown sugar,
 $1\frac{1}{2}$ teaspoonfuls salt,
 1 yeast cake,
 9 cupfuls entire-wheat flour.

Put sugar and salt in a bread raiser and pour the hot milk over them; when cool, add the flour and yeast cake, beat hard with a wooden spoon for five minutes, cover the pan and set in a warm place till the batter doubles its bulk. Beat it down, turn into greased bread pans, having each half full. Let the batter rise nearly to the top, then bake.

Caraway Bread (German recipe).

Follow the recipe for entire-wheat bread, substituting rye flour for entire-wheat flour and adding 2 tablespoonfuls sugar. Make the bread as directed at the first kneading, working in a tablespoonful of caraway seeds. Shape into loaves, raise, and bake.

Graham Bread.

1 quart Graham flour,
 1 quart white flour,
 1 yeast cake,
 $1\frac{1}{2}$ teaspoonfuls salt,
 $\frac{3}{4}$ cupful brown sugar,
 1 quart milk.

Scald the milk and pour it over the sugar and salt; when lukewarm, stir in the flour and the yeast, which has been softened in warm water. Beat hard and let it rise in the pan till spongy. This is a dough which is not stiff enough to knead; it simply requires a thorough stirring and beating. Put it into greased pans, raise, and bake in an oven which is hot at first, but cool during the later part of the baking process. This dough

may be used to drop into greased gem pans and bake as muffins.

Graham Bread.

Set your sponge with white flour just exactly as if you were going to make white bread. For $\frac{3}{4}$ of a gallon of light sponge which is the amount you should have for 5 medium sized loaves, take 8 cups of white flour, 4 cups of graham flour, 1 cup white sugar and 1 tablespoon of salt. Mix these dry ingredients thoroughly together, then pour in the sponge and mix. The dough should not be quite as stiff as for white bread. When thoroughly kneaded, grease the dough with lard and set in a warm place to rise. In three hours the dough should have doubled in bulk and be ready to mold into loaves. Have the baking pans well greased, put in the loaves and turn so that each loaf will be thoroughly greased. Set in a warm place to rise again and in $1\frac{1}{2}$ hours it should be light enough to bake. Test it by shaking the pan and if the dough shakes easily consider it light. Place in a moderately hot oven and bake 1 hour and 20 minutes.

Graham flour varies greatly in color, and the proportion of $\frac{1}{3}$ graham and $\frac{2}{3}$ white flour should be used with the medium grade. If the graham is light in color, more should be used, and if darker, less. Do not use coarse graham—the finer the graham the better the bread. Whole wheat flour may be used instead of the graham.—Lois Percy.

Rye Bread.

2 quarts rye flour,
 1 quart wheat flour,
 1 yeast cake,
 3 pints warm water,
 2 teaspoonfuls salt,
 3 tablespoonfuls sugar.

Sift the flour with the sugar and salt, stir in the warm water and softened yeast. When thoroughly mixed, begin to work it with your hands; it will be sticky, but the dough must be kept very soft. When thoroughly beaten, pour it into well-buttered pans and set it in a warm place.

Let it rise to twice its bulk and bake an hour in an oven which is a little slower than for white bread. Rub the crust over with butter to soften it as soon as it is taken from the oven.

Cornmeal Bread.

2 cupfuls flour,
 $\frac{3}{4}$ cupful cornmeal,
 2 cupfuls milk,
 2 cupfuls water,
 1 teaspoonful salt,
 1 yeast cake.

Put the milk and water in a double boiler, and let it get scalding hot; then stir in the cornmeal and allow it to cook slowly for half an hour. Pour it into a bread raiser and when lukewarm add the salt and yeast. Gradually beat in the flour. Put on a cover and set in a warm place to raise. When it doubles its bulk, add more flour if necessary and work with a wooden spoon until it can be handled. Turn out on a floured molding board and knead thoroughly. Mold into loaves, put into greased bread pans, and set it to rise in a warm place. When light bake in a moderate oven for three quarters of an hour.

Squash Bread (German recipe).

2 cupfuls squash,
 $\frac{1}{4}$ cupful sugar,
 3 cupfuls scalded milk,
 2 tablespoonfuls butter,
 $\frac{1}{2}$ teaspoonful salt,
 1 yeast cake,
 Flour enough to knead.

Press the stewed squash through a potato ricer, stir it with the sugar, salt, and butter into the hot milk; when cool, pour in the softened yeast and as much flour as will make a dough that can be handled. Turn out on a molding board and knead for fifteen minutes. Return to the bread raiser and let it double its bulk. Knead again, shape into loaves, raise, and bake.

Oatmeal Bread.

$\frac{1}{2}$ cupful rolled oats,
 $1\frac{1}{2}$ cupfuls flour,

2 cupfuls boiling water,
 1 yeast cake,
 $\frac{1}{2}$ tablespoonful salt,
 1 tablespoonful butter,
 $\frac{1}{2}$ cupful molasses.

Put the oatmeal into a bread raiser, pour the boiling water over and let stand until lukewarm; then add salt, butter, softened yeast cake, and molasses; stir in the flour, beat thoroughly, and set it to raise in buttered bread pans. When it has almost doubled its bulk, bake.

Nut Bread.

1 cupful entire-wheat flour,
 1 cupful white flour,
 $\frac{1}{2}$ cake yeast,
 1 cupful milk,
 2 tablespoonfuls brown sugar,
 1 teaspoonful salt,
 $\frac{1}{4}$ pound shelled hickory nuts.

Set a sponge of the wheat flour, white flour, yeast, and milk; when light, add sugar, salt, hickory nuts, and enough entire-wheat flour to make as stiff as can be stirred with spoon. Put in the pan, raise, and bake one hour.

Rye and Indian Bread.

2 cupfuls yellow cornmeal,
 $\frac{1}{2}$ cupful yeast,
 $\frac{1}{2}$ cupful molasses,
 1 teaspoonful salt,
 $\frac{1}{2}$ teaspoonful soda,
 2 cupfuls rye meal.

Put the cornmeal into a mixing bowl and scald with boiling water; after ten minutes mix to a soft batter with cold water. When lukewarm, add the yeast, molasses, salt, soda, and 2 cupfuls rye meal. Beat thoroughly, cover with a pan, and set in a warm place to rise over night. When the surface cracks open, stir it down, then grease and flour a pan, turn in the dough, smooth over the top, and sprinkle evenly with flour to prevent crust from forming. Let it rise again until cracks appear, then bake it in a moderate oven from two to three hours, covering with a tin lid after the first hour.

Fruit Bread.

2 cupfuls sweet milk,
2 cakes yeast,
 $\frac{1}{2}$ teaspoonful salt,
4 tablespoonfuls lard,
4 tablespoonfuls sugar,
 $1\frac{1}{2}$ cupfuls fruit, cut fine,
Flour.

Scald milk and cool to lukewarm; strain in the yeast softened in one quarter cupful lukewarm water. Sift salt with three cupfuls of flour, beat vigorously into liquid, and let sponge rise. Cream the lard, butter, and sugar; dredge the fruit with flour and add to the sponge. Add sufficient flour to make a soft dough. Knead thoroughly and set to rise. When light, divide, form into loaves, put in bread pans, and when ready, bake in slightly cooler oven than is required for plain bread. For the fruit in this bread, use either raisins, currants, citron, dates, figs, or prunelles.

Bread Made with Dry Yeast.

2 quarts flour,
 $2\frac{1}{2}$ cupfuls warm water,
2 tablespoonfuls lard,
1 yeast cake,
1 tablespoonful sugar,
1 teaspoonful salt.

Sift the flour in the bread pan; break up the yeast cake and put in a quart bowl; then add a gill of water, and mash with a spoon until the yeast and water are well mixed. Beat in 1 gill of flour. Cover the bowl and set in a warm place for two hours. At the end of that time the batter should be a perfect sponge. Add to the sponge a pint of warm water, half the lard, also salt and sugar. Stir this mixture into the flour and mix with a spoon. Sprinkle the board with flour, turn out the dough, knead twenty minutes, using as little flour as possible. At the end of this time the ball of dough should be soft, smooth, and elastic. Place the dough in the bowl and rub the second spoonful of butter or lard over it. Cover with a towel, then a tin cover. Set the bowl in a warm place and

let it raise over night. In the morning the dough will have increased to three times its original volume and be a perfect sponge. Knead it in the bowl for five minutes—do not use flour—then shape into three small loaves. Put these in deep pans, and with a sharp knife cut lengthwise through the center of each loaf. Put the pans in a warm place and cover with a towel. Let the loaves rise to twice their size, then bake fifty minutes.

Sweet-Potato Bread.

1 cake yeast,
 $\frac{1}{4}$ cupful lukewarm water,
1 cupful scalded milk,
1 tablespoonful salt,
 $\frac{1}{2}$ cupful sugar,
1 cupful sweet mashed potatoes,
3 tablespoonfuls melted butter.

Soften the yeast in the lukewarm water, add the milk, salt, sugar, and potatoes (roasted, scraped from the skins, and worked to a cream with the melted butter), then allow to cool. Beat all together until light, then stir in with a wooden spoon enough flour to make a soft dough. Throw a cloth over the bread bowl and set in a warm place until well raised. Make into small loaves; let them rise for an hour and bake in a brisk oven.

Salt-Rising Bread.

2 cupfuls hot water,
 $1\frac{1}{2}$ teaspoonfuls salt,
1 pint lukewarm milk,
Flour.

Dissolve $\frac{1}{2}$ teaspoonful salt in hot water, and beat in gradually enough flour to make a very soft dough. Beat for ten minutes, cover, and set in a warm place for eight hours or until light and spongy. Stir the salt into the milk and add enough flour to make a stiff batter before working it into the raised dough; mix thoroughly, cover, and set again in a warm place to rise until very light. Knead in enough flour to make the batter of the consistency of ordinary bread dough. Make into loaves and set them to rise; when light, bake. There

is always an element of chance in Salt-Rising Bread. Sometimes the sponge will rise and sometimes it will not.

To insure success with salt-rising bread in cold weather, keep the night yeast in a box of hay. A small wooden box with a close-fitting lid is best for this purpose. Put hay into the bottom of the box and around the sides. In the middle of this set your yeast, then cover with hay. This will keep the yeast from a chill. Good bread will be the result.

SMALL BREADS MADE FROM YEAST

Stockholm Bread (Swedish recipe).

- 6½ cupfuls flour,
- 1 yeast cake,
- 2½ cupfuls scalded milk,
- ½ cupful melted butter,
- 1 egg,
- ⅔ cupful sugar,
- ½ teaspoonful salt,
- 1 teaspoonful cinnamon.

Scald 1 cupful milk; when lukewarm, soften the yeast cake in it. Beat in 1 cupful flour and let the sponge rise till light; add the rest of the milk with 4 cupfuls flour, beat again and allow it to rise. Then add the butter, sugar, cinnamon, salt, and the egg beaten to a froth, also the remainder of the flour. Mix and knead on a floured molding board. Cover and raise. Roll the dough into coils about an inch and a half thick and twelve inches long. Braid them, pinch the ends together, set in a greased pan to rise, and bake in a moderate oven. Cool slightly, then brush with powdered sugar moistened with boiling water and slightly flavored with cinnamon.

Federal Bread.

- 1 quart milk,
- 1 teaspoonful salt,
- 1 yeast cake,
- 1 tablespoonful melted butter,
- 3 eggs.

Scald the milk and add to it the butter and salt; when cool, pour in

the yeast cake softened in 2 tablespoonfuls of lukewarm water and beat in enough flour to make a dough that is softer than for bread. Pour into a shallow pan and raise over night; bake in the morning. When taken from the oven, split it shortcake fashion, butter generously, and serve hot. This is an excellent hot bread to make for breakfast, because, unless the weather is unusually warm, the cook will find it just in proper condition to bake when breakfast is required.

Rice Bread.

- ½ pound boiled rice,
- 2 quarts flour,
- ½ yeast cake,
- 2 cupfuls milk,
- 1 teaspoonful salt,
- 3 teaspoonfuls sugar.

Mash the rice while hot and rub it into the flour with the tips of the fingers. Add the salt and sugar, warm milk, and softened yeast. Make it into a dough just soft enough to handle, knead well, and place in a well greased shallow pan. Let it double its bulk, and bake in a hot oven.

Parker House Rolls.

- 7 cupfuls flour,
- 1 teaspoonful salt,
- 1 tablespoonful sugar,
- 3 tablespoonfuls butter,
- 1 pint milk,
- 1 yeast cake.

Put 4 cupfuls flour into a mixing bowl with the salt, sugar, and butter; pour on the milk, scalding hot, and beat thoroughly; allow it to cool, then add the yeast softened in 2 tablespoonfuls of lukewarm water and let the sponge raise till frothy; put in the rest of the flour, mix thoroughly, and knead. Raise again, then turn out on a molding board and shape into Parker House rolls. The way to make these rolls is to cut off a small ball of dough and roll it flat and thin. Brush over the top with melted butter, cut across the middle, but not quite through the dough, with

the back of a silver knife. Fold over and lay nearly double, then press down to make the dough adhere; allow them to rise. Bake fifteen minutes in a hot oven, and brush with melted butter.

Swiss Rolls.

- 2 cupfuls milk,
- 2 tablespoonfuls sugar,
- $\frac{1}{4}$ cupful butter.
- 1 cake yeast,
- $1\frac{1}{2}$ quarts flour,
- 1 teaspoonful salt.

Scald the milk and melt the sugar and butter; when lukewarm, add the softened yeast. Stir in the flour and set in a warm place to raise. Turn out on a floured bread board, roll till an inch thick, brush the top over with melted butter, and roll up the sheet of dough like a rolled jelly cake. Press it lightly into shape and cut from the end slices about an inch thick; put the slices, cut side up, into a greased pan and let rise until they have doubled in height. Bake in a hot oven twenty minutes, and brush over with melted butter.

Hot Cross Buns.

- 1 pint milk,
- $\frac{1}{2}$ cupful butter,
- $\frac{1}{2}$ cupful sugar,
- 3 eggs,
- $\frac{1}{2}$ teaspoonful salt,
- 1 yeast cake,
- Flour.

Scald the milk and pour it over the butter and salt; when lukewarm, add the yeast softened in 2 tablespoonfuls of lukewarm water and eggs well beaten, then sift in flour enough to make a thin batter, and beat with a wire whisk ten minutes; when full of bubbles, add flour enough to make a dough; knead well and raise. When it has doubled its bulk, turn it out, knead it and cut into buns. Place them in a greased pan to rise, brush them over when ready to go into the oven with a sirup made of 1 tablespoonful cream and 2 tablespoonfuls sugar boiled together for a minute. Dust with cinnamon and just before

putting in the oven cut two gashes in the top with a sharp knife. By adding raisins or currants to this recipe you can have very nice fruit buns. If you wish to transform them into prune kringles, chop 6 or 8 meaty prunes, which have been cooked and sweetened, add to the dough, let rise, and, instead of baking them bun shape, cut into sticks.

Yorkshire Sally Lunn (English recipe).

- 2 quarts flour,
- 1 yeast cake,
- 2 eggs,
- 1 cupful butter,
- 1 tablespoonful sugar,
- $\frac{1}{2}$ teaspoonful salt,
- 2 cupfuls milk.

Warm the flour, add the milk lukewarm, the melted butter, beaten eggs, sugar and salt, then the softened yeast cake. Beat thoroughly. This makes a very soft dough, but it must be kneaded; therefore, add a little more flour, as it is difficult to handle. Cut into small balls; drop each one into a greased muffin pan, raise, brush over with white of egg, and bake till delicately brown. When taken from the oven, brush with a sirup made from milk and sugar. Serve hot.

Apple Cake (Dutch recipe).

- 1 cupful milk,
- $\frac{1}{3}$ cupful sugar,
- $\frac{1}{3}$ cupful butter,
- $\frac{1}{2}$ teaspoonful salt,
- 1 yeast cake,
- 2 eggs,
- Flour,
- 5 apples,
- 4 tablespoonfuls sugar,
- $\frac{1}{2}$ tablespoonful cinnamon.

Scald the milk, pour it over the butter, sugar, and salt; when lukewarm, add the eggs, softened yeast cake, and enough flour to make a soft dough. Beat it thoroughly and set in a warm place to raise. Beat again and let it rise a second time. Then pour into a shallow greased pan, spread the dough out thin with a palette knife, and brush over the top

with melted butter. Pare the apples, core, and cut into eighths. Lay them thickly on top of the dough in straight rows. Dust sugar and cinnamon over them, cover with a towel, set in a warm place, and let the dough raise until doubled. Bake in a moderate oven half an hour, cut into squares and serve hot, with whipped, sweetened cream.

Entire-Buckwheat Cakes.

- 2 cupfuls warm milk,
- $\frac{1}{2}$ cake yeast,
- 1 teaspoonful salt,
- Buckwheat flour,
- 1 teaspoonful soda,
- $\frac{1}{2}$ cupful boiling water,
- 1 tablespoonful molasses.

The general idea is that you have to mix buckwheat with white flour to make good cakes, but they are excellent made with buckwheat alone. Pour the milk into a mixing bowl, add the softened yeast, and stir in as much buckwheat flour as will make a medium batter, then add the salt and molasses, and let the batter stand over night. In the morning, when ready to bake, dissolve the soda in boiling water, stir it in, beat for a few minutes, then make your cakes. Turn them just once.

Luncheon Rolls.

- 2 cupfuls sifted flour,
- $\frac{1}{2}$ cupful milk,
- 1 tablespoonful butter,
- 1 teaspoonful salt,
- 2 teaspoonfuls sugar,
- 1 cake yeast.

Soften the yeast in lukewarm milk, add sugar and salt, then add the butter, melted. Stir milk into flour gradually. Knead the dough thoroughly, adding sufficient flour to make a soft dough. Cut and form into rolls, place in buttered biscuit pans, set in a warm place to rise, when doubled bake in a brisk oven.

Buckwheat Cakes.

- 1 cake yeast,
- 2 cupfuls lukewarm milk,
- 1 tablespoonful wheat flour,

- 1 tablespoonful molasses,
- $\frac{1}{2}$ teaspoonful salt,
- 1 quart buckwheat flour.

Soften the yeast in the milk. Rub together the flour, molasses, and salt; add to this the milk containing the yeast, and rub until perfectly smooth, then stir in two cupfuls lukewarm milk or water. To this add sufficient buckwheat flour to make a thin batter, which should be rubbed perfectly smooth. Set the batter in a moderately warm place to rise over night. In the morning thin, if necessary, and fry on well-greased griddle.

Raised Batter Cakes.

- 1 cake yeast,
- 2 cupfuls milk,
- 2 cupfuls flour,
- 4 tablespoonfuls melted lard,
- 4 tablespoonfuls sirup,
- Dash salt.

Soften the yeast in lukewarm milk. Put into mixing bowl the melted lard, sirup, salt, milk and flour. Add the softened yeast, and mix until a smooth batter is produced. Set in a moderately warm place, cover with a cloth, and let it rise over night. In the morning beat well, and fry on well-greased griddle.

English Bath Buns.

- 4 cupfuls flour,
- $\frac{1}{2}$ cupful butter,
- 4 eggs,
- 5 tablespoonfuls granulated sugar,
- $\frac{1}{2}$ cupful milk,
- 1 cake yeast.

Put flour in bowl, make well in center, break eggs in whole, then add butter, milk, and, last, the yeast, which has been previously softened in a little warm water. Mix thoroughly and raise. If it is put in a moderately warm place, it will be light in an hour. Turn it out on a well-floured board, and with the tips of the fingers lightly work in 5 tablespoonfuls sugar and add the flavoring. Drop by tablespoonfuls on a buttered baking pan, raise for ten

minutes or until double in bulk, and bake twenty minutes in a hot oven. Sultanas or chopped almonds may be added.

Lancashire Tea Cakes.

- 6 cupfuls flour,
- $\frac{1}{2}$ cupful butter,
- 2 cupfuls milk,
- 1 yeast cake,
- 1 cupful currants,
- 2 ounces candied lemon,
- 2 eggs,
- 2 tablespoonfuls sugar,
- A little grated nutmeg.

Put the sugar and the currants with the flour; melt the butter in the milk; when cool, mix with the beaten eggs and yeast. Add the dry ingredients, beating well, and set to raise. When light, put in cake pans to double its bulk. Bake in a moderately hot oven. These are delicious when fresh, and equally good split and toasted the second day.

Swedish Rolls.

- 1 yeast cake,
- 2 cupfuls milk, scalded,
- $\frac{1}{2}$ cupful butter,
- $\frac{1}{4}$ cupful sugar,
- 1 scant teaspoonful salt,
- Whites of 2 eggs,
- 7 or 8 cupfuls flour.

Melt the butter, dissolve the sugar and salt in the hot milk; when lukewarm, add the yeast and beaten whites. Mix in flour to make a drop batter. In the morning add enough more flour to knead and knead twenty minutes. Put into a slightly greased bowl and let rise till light. Turn on a floured board and roll half an inch thick. Have the edges as straight as possible. Spread all over with a thin layer of soft butter, sprinkling of sugar, cinnamon, grated lemon rind, and currants. Roll like a jelly roll, cut off slices an inch wide, lay them with the cut side down on greased pans, and when raised bake in a hot oven fifteen or twenty minutes. Glaze with sugar dissolved in milk.

Currant Squares.

- 1 cupful cream,
- $\frac{1}{2}$ cupful melted butter,
- 3 eggs,
- 1 cupful sugar,
- $\frac{1}{2}$ cake yeast,
- 2 tablespoonfuls water,
- 4 cupfuls flour,
- 1 teaspoonful powdered mace,
- 1 teaspoonful powdered cinnamon,
- 1 cupful currants.

Heat the cream in a double boiler, then stir in the butter and sugar. Cool until lukewarm and add the well beaten eggs and the yeast softened in 1 tablespoonful lukewarm water, the flour sifted with the spices and the currants dredged with flour. Beat hard for fifteen minutes. Pour into a shallow baking pan and raise until it is almost doubled in bulk. Bake in a quick oven; when done, sprinkle with powdered sugar and cinnamon. Let the cake cool slightly, then cut into squares with a sharp knife.

Breakfast Gems.

- 3 eggs,
- 1 teaspoonful sugar,
- 1 cupful sweet milk,
- 1 cupful warm water,
- 4 tablespoonfuls yeast,
- Flour enough to make a stiff batter.

Beat yolks of eggs and sugar, stir in milk, water, and yeast. Beat well and set in a warm place to rise. When light, beat whites of eggs stiff and stir into batter, with a pinch of salt. Bake in greased gem pans. If wanted for breakfast, mix batter night before.—Mrs. Henry B. Quinby.

Raised Wheat Muffins.

- 2 cupfuls flour,
- 1 cupful milk,
- 1 tablespoonful butter,
- $\frac{1}{2}$ tablespoonful sugar,
- $\frac{1}{2}$ teaspoonful salt,
- 1 egg,
- $\frac{1}{2}$ yeast cake.

Put the flour, salt, and sugar in a bowl; scald the milk and add the but-

ter to it and cool until lukewarm. Soften the yeast in a little lukewarm water, add to the lukewarm milk and butter, pour onto the flour mixture and beat well. Cover the bowl and set in a cool place over night. In the morning the batter will be a light sponge. Beat the egg and add to this sponge. Half fill buttered muffin pans with the batter; cover, and let the muffins raise in a warm place. When nearly doubled bake for half an hour in a moderately quick oven.

Broiché (French recipe).

4 cupfuls flour,
 $\frac{1}{2}$ yeast cake,
 1 teaspoonful salt,
 2 tablespoonfuls sugar,
 7 eggs,
 1 cupful butter,
 Warm water.

Sift the flour; into 1 cupful of it pour the soaked yeast with just enough warm water to make a batter. Set it to raise. When it has doubled its bulk, put in the salt, sugar, melted butter, and 4 eggs. Beat five minutes, add another egg, beat again, and so on until all have been used; keep beating until the paste leaves the side of the bowl, then set in a warm place for four hours. Turn it out on a floured board, roll in a long piece half an inch thick, spread with softened butter, and fold one end over the center, then the other end over that, until you have three layers. Cut off pieces about an inch wide, lay them on the board to raise, and cover with a towel. When puffy, take each strip between the fingers and thumbs, twist in different directions, coil pyramid shape, letting one point come on top. Set to raise on a greased pan, bake twenty minutes, and brush over with powdered sugar, moisten with water, and flavor with cinnamon.

Kreuznach Horns (German recipe).

4 cupfuls flour,
 1 yeast cake,
 2 tablespoonfuls sugar,
 2 eggs,
 $\frac{1}{3}$ cupful water,

1 cupful milk,
 $\frac{1}{2}$ teaspoonful salt.

Set a sponge with 2 cupfuls flour with the yeast cake and milk. When it rises, make into a dough with the rest of the flour, adding the butter, sugar, eggs, and salt. Let it rise again. Roll it out into pieces six inches square and quite thin. Cut each square into four triangles, brush with melted butter, dust lightly with flour, roll up from the wide side, letting the point of the triangle come on top and bend around in the form of a horseshoe. Put them to rise in a greased pan when ready to bake, brush over with milk, and bake in a hot oven.

Raised Doughnuts.

2 cupfuls bread dough,
 1 cupful sugar,
 1 tablespoonful melted butter,
 $\frac{1}{2}$ teaspoonful nutmeg,
 2 eggs,
 Flour.

When the dough for a baking of bread rises the last time in the pan and is kneaded out on the board, cut off a piece large enough to fill a pint measure, put in a bowl, add all the ingredients called for in the recipe and work them into the spongy mass, sifting in flour as needed to make it of a consistency that can be rolled. When thoroughly blended, turn it out on the board, dredge with flour, and roll about three quarters of an inch thick. Cut into fingers or rings with a doughnut cutter and spread them out on the board to rise. When puffy, fry in hot fat, turning so they will be browned all over. Drain from the kettle and toss immediately in powdered sugar. A favorite breakfast in New England is the bread dough, taken without any addition of sugar, eggs, or spices, cut into strips, raised, and fried like doughnuts, then eaten hot with maple sirup.

German Coffee Cake.

1 egg,
 1 cupful milk,

2 tablespoonfuls butter,
 3 tablespoonfuls sugar,
 $\frac{1}{4}$ yeast cake,
 $\frac{1}{4}$ teaspoonful salt,
 $\frac{1}{2}$ teaspoonful cinnamon,
 $\frac{1}{2}$ cupful raisins,
 $\frac{1}{4}$ cupful shaved citron,
 Flour.

Scald the milk, pour it over the butter, sugar, and salt. When lukewarm, add the softened yeast and enough flour to make a soft dough; beat the mixture hard; let it rise over night. In the morning add the beaten egg and the fruit, also a little more flour if necessary, and knead for a few minutes. Shape the dough into a ring, put in a greased pie plate, and set to rise. Before putting into the oven, brush the top with melted but-

ter, and sprinkle with cinnamon and sugar. Bake half an hour.

Raised Wheat Waffles.

2 cupfuls flour,
 1 $\frac{1}{2}$ cupfuls milk,
 $\frac{1}{2}$ yeast cake,
 1 tablespoonful sugar,
 2 tablespoonfuls butter,
 $\frac{1}{2}$ teaspoonful salt,
 1 egg.

Scald the milk and, after adding the butter to it, cool the mixture. Put the flour, sugar, and salt in a bowl, soften the yeast in 2 tablespoonfuls of the cooled milk and add with the rest of the milk to the flour. Beat well. Raise the batter over night. In the morning add the well-beaten egg. Have the waffle irons hot and greased. Cook the cakes quickly.

CHAPTER XXIII

BAKING-POWDER BREADS, DOUGHS AND BATTERS

BISCUIT, SHORTCAKE, WAFFLES, GEMS, MUFFINS, NUT BREAD,
GRIDDLE CAKES, POPOVERS, BREADS MADE FROM SOUR
MILK, BROWN BREAD, CORN BREAD, JOHNNY CAKE

Baking-Powder Biscuits.

2 cupfuls flour,
2 tablespoonfuls lard,
1 cupful milk,
 $\frac{1}{2}$ teaspoonful salt,
4 teaspoonfuls baking powder.

Sift the salt, baking powder, and flour together, rub in the lard, add the milk, and beat to a soft dough. Turn out on a floured molding board, roll out about an inch thick, and cut into biscuits. Lay in a baking pan, brush the tops with milk, and bake in a quick oven.

Drop Biscuits.

3 cupfuls flour,
2 tablespoonfuls butter,
6 teaspoonfuls baking powder,
 $\frac{1}{2}$ teaspoonful salt,
 $1\frac{1}{2}$ cupfuls milk.

Sift the baking powder, salt, and flour together, rub in the butter with the tips of the fingers, then add the milk, and beat to a soft dough. Grease a baking pan, lift a level tablespoonful of the dough and drop it into the pan, having each biscuit an inch apart, and bake in a hot oven. This is an excellent recipe to use when one is in a hurry and there is not time to make a biscuit which has to be rolled out and cut.

Fruit Biscuit.

2 cups flour,
1 teaspoonful salt,
4 teaspoonfuls baking powder,

3 tablespoonfuls lard,
 $\frac{3}{4}$ cup water.

Sift the dry ingredients together. With a knife cut in the lard, then add the water. With the knife mix to a dough. Toss on a board which has been lightly dredged with flour. Pat with a rolling pin in a sheet $\frac{1}{2}$ in. thick. Sprinkle with cinnamon, currants, citron and a little sugar. Cut in strips and roll it up, and bake about 15 minutes.—Mabel Dahl.

Flannel Cakes.

1 tablespoonful butter,
2 cupfuls milk,
2 eggs,
1 teaspoonful salt,
3 teaspoonfuls baking powder.

Warm the butter in the milk, pour over the well-beaten yolks of the eggs, add sufficient flour to make it pour, then the salt and baking powder. Beat the whole thoroughly, fold in the whipped whites of the eggs, and bake on a hot griddle.

Batter Bread.

2 eggs,
1 cupful cornmeal,
1 cupful milk,
1 tablespoonful butter, melted,
 $\frac{1}{2}$ cupful white flour,
 $\frac{1}{2}$ teaspoonful salt,
2 teaspoonfuls baking powder.

Melt the butter over hot water; separate the eggs; beat the yolks

slightly; add the milk, butter, cornmeal, flour, and salt. Beat thoroughly, add the baking powder, beat again, and fold in, carefully, the whites of the eggs beaten to a stiff froth. Bake in greased shallow baking pan in a moderate oven thirty-five minutes. Cut into squares, and serve warm.

Shortcake.

2 cupfuls flour,
 $\frac{1}{2}$ teaspoonful salt,
 2 tablespoonfuls sugar,
 4 teaspoonfuls baking powder,
 4 tablespoonfuls butter,
 1 cupful milk.

Sift together all the dry ingredients, rub in the butter with the tips of the fingers, then wet with the milk to a soft dough. Drop it on a floured molding board and, handling it just as little as possible, roll and pat into two round cakes, which will fill a deep pie plate. Drop in one cake of the dough, brush with melted butter, and lay the other one on top of it. Bake until crisp, brown, and puffy. Split and between the cake and on top spread any fruit which is in season. Strawberries, of course, make a most delicious shortcake. Besides this, peaches can be used, red raspberries, cherries, fresh apricots, oranges, or a blend of oranges and bananas, while a shortcake filled with stewed prunes or well-seasoned apple sauce is not to be despised. Chipped pineapple mixed with bananas and oranges makes a delicious filling. In every case, have it juicy by letting the fruit stand covered with sugar for an hour in a cool place before it is served.

Strawberry Shortcake.

2 cups flour,
 2 teaspoonfuls baking powder,
 $\frac{1}{2}$ teaspoonful sugar,
 1 tablespoonful shortening,
 Milk to moisten.

Sift dry materials; cut in shortening. Add milk; roll in two rounds. Spread with butter and bake. Wash, drain berries, cut in halves or quar-

ter, sweeten, and spread between cakes and on top. Serve hot.

Rhubarb Shortcake.

Cook together 2 cups stewed rhubarb, 1 cup stoned dates and $\frac{1}{2}$ cup chopped raisins.

Make rich shortcake, split, and butter. Put in a layer of filling while hot, cover with whipped cream. Then add top layer. Serve at once with whipped cream.—Anna Kinsley.

Graham Biscuits.

2 tablespoonfuls butter,
 2 cupfuls Graham flour,
 1 cupful white flour,
 1 teaspoonful salt,
 1 teaspoonful sugar,
 6 teaspoonfuls baking powder,
 2 cupfuls milk.

Sift together all the dry ingredients and chop into the mixture 2 tablespoonfuls butter. Add the milk, and if the mixture is then too stiff to handle, add enough water to make it a soft dough. Turn upon a floured board, roll out and cut into biscuits, handling as little and as lightly as possible. Bake in a moderate oven.

Waffles.

2 eggs,
 1 cupful milk,
 $1\frac{3}{4}$ cupfuls flour,
 1 tablespoonful melted butter,
 $\frac{1}{2}$ teaspoonful salt,
 3 teaspoonfuls baking powder.

Beat the yolks of the eggs light; add alternately, and beating in well, the milk and flour. When these ingredients are mixed, add the butter, baking powder, salt, and whipped whites of the eggs. Cook on a hot greased waffle iron.

Waffles.

$\frac{2}{3}$ cups flour,
 $\frac{1}{3}$ teaspoonful baking powder,
 Little salt,
 1 egg,
 1 scant $\frac{1}{2}$ cup of milk,
 1 teaspoonful melted butter.

Mix the dry ingredients and add beaten yolk of egg to milk and this to flour. Add the butter melted, and beaten white last. Bake in hot waffle iron. This is a small quantity.—Mrs. A. J. Mielke.

Bran Gems.

As bran is excellent, where a laxative is needed, the following recipe is good for medicinal purposes. It is not to be used as a food on the table.

- 2 cupfuls bran,
- 1 cupful whole wheat flour,
- 1½ cupfuls milk,
- 2 eggs, beaten separately,
- 2 teaspoonfuls baking powder,
- 2 tablespoonfuls molasses,
- 1 teaspoonful salt,

Mix and bake in gem tins. Add butter, when eating.—Mrs. K. A. Krotke.

Hygienic Gems.

- 1½ cups flour,
- 1 cup milk,
- 2 eggs, separate whites and yolks.

Beat yolks of eggs until creamy, add this and a part of milk to flour, then remainder of milk, beat well, then fold in beaten whites. Bake in a hot oven.—Mrs. A. J. Mielke.

Graham Gems.

- 1 cup graham flour,
- ½ cup white flour,
- 1 cup milk,
- 1 egg,
- 2 level teaspoonfuls of baking powder,
- 1 tablespoonful melted butter,
- ¼ teaspoonful salt,
- ½ cupful sugar.

Mix dry materials; beat egg slightly, add to milk. Combine mixtures quickly, and bake in hot buttered gem pans, twenty minutes.—Mrs. A. J. Mielke.

1 Dozen Graham Gems.

- 1 cupful wheat flour,
- 1 cupful graham flour,

- ½ cupful sugar,
- ¼ teaspoonful salt,
- 1 egg beaten,
- 2 tablespoonfuls melted butter,
- 1½ cupfuls sour milk.
- 1 teaspoonful milk.

Put wheat and graham flour together in bowl. Beat egg and sugar together; add flour, mixed with soda, and sour milk. Lastly melted butter. Pour into buttered tins and bake from twenty to twenty-five minutes in a hot oven.—Mrs. A. J. Mielke.

Sally Lunn.

- 2 tablespoonfuls butter,
- 2 cupfuls sweet milk,
- 3 eggs,
- 6 cupfuls flour,
- 8 teaspoonfuls baking powder,
- 1 teaspoonful salt,
- 1 tablespoonful sugar.

Warm the butter in the milk; pour over the eggs, beaten light; then stir in a little at a time, and beating continuously, the flour, with which has been sifted the baking powder, salt, and sugar. Turn into a greased cake mold, and bake in a moderate oven.

Egg Biscuits.

- 3 cupfuls flour,
- 1 teaspoonful salt,
- 2 eggs,
- 1 tablespoonful lard,
- 1 cupful sweet milk,
- 5 teaspoonfuls baking powder.

Sift the flour and baking powder together, add the salt, sugar, eggs (beaten well), lard, and milk. Work to a smooth dough, roll half an inch thick, cut in large biscuits, rub over with sweet milk, lay on buttered tins, and bake brown in a quick oven.

Breakfast Cake.

- 1½ tablespoonfuls butter (creamed),
- ½ cup sugar,
- 1 egg white and yolk beaten separately,
- 1 cupful milk,
- 2 cupfuls flour,
- 2 teaspoonfuls baking powder.

Strew sugar and cinnamon on top and grate nutmeg over that, then put small pieces of butter over that. Bake 20 minutes.—Mrs. A. J. Mielke.

Corn Cakes.

- 2 cupfuls cornmeal,
- 1 teaspoonful salt,
- 3 eggs,
- 1 cupful sweet milk,
- 3 teaspoonfuls baking powder.

Put the meal in a bowl, mix with salt, and pour over it enough boiling water to moisten the mass; cover for five minutes or an hour, as convenient. Beat the eggs separately, add a cup of sweet milk to the yolks, and pour over the scalded meal; mix well, add the baking powder and the beaten whites of the eggs. Grease a griddle with bacon drippings, and fry.

Vienna Biscuits.

- 4 teaspoonfuls baking powder.
- $\frac{1}{2}$ teaspoonful salt,
- 4 cupfuls flour,
- 1 tablespoonful butter,
- 1 tablespoonful lard,
- $1\frac{1}{2}$ cupfuls milk.

Sift the baking powder and salt with the flour; mix thoroughly with the butter and lard; wet with the milk; turn out on a floured bread board, and knead smooth; roll into a sheet half an inch thick, and cut with a biscuit cutter. Bake at once in a quick oven.

Ground-Rice Muffins.

- 4 cupfuls ground rice,
- 2 tablespoonfuls butter,
- 1 teaspoonful sugar,
- Dash salt,
- 3 eggs,
- 1 tablespoonful baking powder.

Cream together the butter and sugar. Pour on enough boiling water to moisten the rice, stirring all the time. Cool and add the yolks of the eggs, well beaten, creamed butter and sugar; then enough sweet milk to form a batter, beating thoroughly; add the baking powder and salt, and, last, fold in the whites of the eggs, well

beaten. Bake in gem pans in a quick oven.

Twin-Mountain Muffins.

- $\frac{1}{4}$ cupful butter,
- $\frac{1}{4}$ cupful sugar,
- 1 egg,
- $\frac{3}{4}$ cupful milk,
- 2 cupfuls flour,
- 3 teaspoonfuls baking powder.

Cream the butter; add the sugar and egg, well beaten; sift baking powder with flour, and add to the first mixture, alternating with milk. Bake in buttered gem pans twenty-five minutes.

Rye Gems.

- $1\frac{3}{4}$ cupfuls rye flour,
- $1\frac{1}{2}$ cupfuls white flour,
- 4 teaspoonfuls baking powder.
- 1 teaspoonful salt,
- 2 eggs,
- $\frac{1}{4}$ cupful molasses,
- $1\frac{1}{2}$ cupfuls milk,
- 3 tablespoonfuls melted butter.

Sift the dry ingredients, add molasses, milk, eggs, well beaten, and butter. Bake in hot oven in buttered gem pan twenty-five minutes.

Nut Biscuits.

- 2 cupfuls flour,
- $\frac{1}{2}$ teaspoonful salt,
- 1 cupful chopped nuts,
- 2 tablespoonfuls butter,
- 4 teaspoonfuls baking powder,
- 2 tablespoonfuls sugar,
- $\frac{3}{4}$ cupful milk.

Sift together the flour, salt, and baking powder; rub in the butter, add the nuts — English walnuts, hickory nuts, or almonds — and sugar; mix to a soft dough with milk. Mold with the hands into small balls, place well apart on greased pans, brush each with milk, put a pinch of chopped nuts on top, and bake in a hot oven.

Quick Nut Loaf.

Mix and sift 2 cupfuls of bread flour, $\frac{1}{2}$ cupful of sugar, 4 teaspoonfuls of butter, 2 tablespoonfuls of

lard, using tips of fingers, then add one whole egg and one egg yolk, well beaten, 1 cupful of milk, and $\frac{1}{2}$ cupful of English walnut meats broken in pieces. Beat thoroughly, turn into a buttered bread pan, let stand twenty minutes, and bake forty minutes.

Nut Bread.

- $\frac{1}{2}$ cupful sugar,
- 1 egg,
- 1 cupful milk, sweet,
- 1 cup English walnuts,
- 3 level teaspoonfuls baking powder,
- $2\frac{1}{2}$ cupfuls white flour,
- A pinch of salt,

Mix the sugar, milk and egg beaten, add the baking powder and salt to the flour, last add the nuts. Bake in loaf one hour in moderate oven.—Mrs. J. L. Stitt.

Nut Bread Without Yeast.

- 1 egg beaten,
- $\frac{1}{2}$ cupful sugar,
- 1 cupful milk,
- 1 teaspoonful salt,
- 4 teaspoonfuls baking powder,
- 3 cupfuls flour,
- 1 cupful nuts, cut in small pieces.

Mix together and put in some warm place to raise. Let it raise twenty minutes and bake forty minutes in a slow oven.—Mrs. G. H. Wilson.

Nut and Raisin Bread.

- 2 cupfuls pastry flour,
- 1 cupful graham flour,
- 1 teaspoonful salt,
- 5 teaspoonfuls baking powder,
- $\frac{1}{2}$ teaspoonful soda.

Sift all these together.

- $\frac{1}{2}$ cupful molasses,
- 1 cupful thick sour milk,
- $\frac{1}{2}$ cupful nuts,
- $\frac{1}{2}$ cupful chopped raisins.

Mix together the sour milk, molasses and beaten egg, and stir into dry ingredients. Stir in raisins and nuts and let stand fifteen minutes.

Bake forty-five minutes.—Anna Kinsley.

Corn Muffins.

- 2 cupfuls cornmeal,
- 2 cupfuls flour,
- 1 tablespoonful sugar,
- 1 teaspoonful salt,
- 5 teaspoonfuls baking powder,
- 1 tablespoonful butter or lard,
- 2 eggs,
- 2 cupfuls milk.

Sift together cornmeal, flour, sugar, salt, and powder; rub in the shortening, add eggs, beaten, and milk; mix into batter of consistency of cup cake; fill muffin pans, well greased, two-thirds full. Bake in a hot oven.

Berry Muffins.

- 2 cupfuls flour,
- 1 teaspoonful salt,
- 2 tablespoonfuls melted butter,
- $\frac{1}{2}$ cupful sugar,
- 3 teaspoonfuls baking powder,
- 1 egg,
- 1 cupful milk,
- 1 cupful berries.

Mix as for plain muffins; add berries last, dusting them with a little flour. Bake in muffin pans in a hot oven.

Graham Muffins.

- 1 quart Graham flour,
- 1 tablespoonful brown sugar,
- 1 teaspoonful salt,
- 5 teaspoonfuls baking powder,
- 1 egg,
- 2 cupfuls milk.

Sift together Graham flour, sugar, salt, and powder; add beaten egg and milk; mix into batter. Bake in a hot oven fifteen minutes in greased muffin pans.

Slappers.

- 2 cupfuls Indian cornmeal,
- $\frac{1}{2}$ teaspoonful salt,
- 2 tablespoonfuls butter,
- 3 eggs,
- 1 cupful milk,
- 1 cupful wheat flour,
- 3 teaspoonfuls baking powder.

Mix together meal, salt, and butter; pour on slowly sufficient boiling water to thoroughly moisten the meal. Cover; let stand over night. Add the eggs, well beaten, milk, flour — the first half-cupful of flour being mixed with the baking powder — to make a very thick drop batter. Drop by spoonfuls on a hot greased griddle, cook slowly till brown, turn and brown on other side.

No-Egg Wheat Cakes.

- 3 cupfuls flour,
- 6 teaspoonfuls baking powder,
- $\frac{1}{2}$ teaspoonful salt,
- 2 cupfuls milk.

Sift dry ingredients; add milk to make a soft batter, and beat hard. Bake immediately on hot griddle. Serve with butter and maple sirup.

Jam Griddle Cakes.

- 3 cupfuls flour,
- 4 tablespoonfuls sugar,
- $\frac{1}{2}$ teaspoonful salt,
- 1 $\frac{1}{2}$ teaspoonfuls baking powder,
- 2 eggs,
- 2 tablespoonfuls butter,
- 2 cupfuls milk.

Rub butter and sugar to a cream; add yolks of eggs, one at a time. Sift flour, salt, and powder together; add to butter with milk and whites of eggs whipped to dry froth; mix to a batter. Bake in small cakes; as fast as browned, lay each cake on a plate and spread raspberry jam over it, then bake more, lay on other already done; repeat this until you have used jam twice, then bake another batch.

Blueberry Griddlecakes.

- 1 cupful blueberries,
- 2 cupfuls flour,
- 1 teaspoonful salt,
- 1 tablespoonful brown sugar,
- 2 teaspoonfuls baking powder,
- 2 eggs,
- 2 cupfuls milk.

Sift together flour, sugar, salt, and baking powder; add beaten eggs, milk, and berries. Mix into a batter.

Have griddle hot enough to form a crust as soon as the batter touches it. In order to confine the juice of berries, turn quickly to form a crust on the other side.

Griddled Muffins.

- 1 cupful flour,
- 1 teaspoonful butter,
- 1 egg,
- 2 teaspoonfuls baking powder,
- $\frac{1}{2}$ cupful milk.

Mix the flour, butter, baking powder, and egg with the milk. Place small muffin rings on a hot griddle, bake over a moderate fire till light put a little fat into each ring, fill them half full with the batter, and brown. Turn with a pancake turner, and bake the same on the other side.

French Pancakes.

- 3 eggs,
- 2 cupfuls milk,
- 2 teaspoonfuls baking powder,
- A pinch of salt,
- 2 cupfuls flour.

Beat the yolks of the eggs light; pour over them the milk; add gradually the baking powder, salt, and flour; fold in lightly the whipped whites of the eggs. Bake by large spoonfuls on a hot griddle. Spread each cake as soon as baked with jam, and shape into a roll.

Bannocks (Irish recipe).

- 4 cupfuls flour,
- $\frac{1}{2}$ cupful butter,
- 1 $\frac{1}{2}$ cupfuls milk,
- $\frac{1}{2}$ teaspoonful salt,
- 6 teaspoonfuls baking powder.

Mix the ingredients to a soft dough; roll an inch thick, shape into cakes, six inches across, with a large cooky cutter, and bake on a hot griddle. Before taking from the fire, be sure they are baked to the heart. Split in two, butter, and serve hot.

One-Egg Griddlecakes.

- 3 cupfuls flour,
- 4 teaspoonfuls baking powder,

- 1 teaspoonful salt,
- 1 egg,
- 2 tablespoonfuls melted butter,
- 2 cupfuls milk.

Sift the dry ingredients, separate the egg, and add to flour the milk and beaten yolk. Beat thoroughly, add the melted butter and white of egg, beaten to a stiff froth. Bake at once.

Whole-Wheat Griddlecakes.

- 1½ cupfuls white flour,
- ¾ cupful whole-wheat flour,
- ½ teaspoonful salt,
- 4 tablespoonfuls sugar,
- 4 teaspoonfuls baking powder,
- 1½ cupfuls milk,
- 2 tablespoonfuls melted butter.

Sift the flour, baking powder, salt, and sugar; stir into a batter with the milk, the beaten egg and butter. Bake at once.

Indian Griddlecakes.

- 1 cupful Indian meal,
- 1 cupful flour,
- 2 eggs,
- 1 teaspoonful butter,
- ½ teaspoonful salt,
- 3 teaspoonfuls baking powder,
- Milk.

Put Indian meal into a mixing bowl and pour over it enough scalding milk to make a thick mush. When it cools, add the flour and enough cold milk to make a thick batter, add the eggs, well beaten, the butter, melted, the salt, and baking powder. Beat till full of bubbles, then bake on a hot griddle.

Excellent Fried Cakes.

Cream 1 cupful sugar and 2 tablespoonfuls cold lard, add 2 eggs, ½ teaspoonful grated nutmeg, 2 cupfuls sweet milk, ¼ teaspoonful salt, 1 level teaspoonful soda, 2 level teaspoonfuls cream tartar, flour enough to make soft dough. Fry golden brown in deep smoking fat, sugar when cold (will make about 50).—Mrs. A. J. Mielce.

Hominy Gems.

- 2 cupfuls cold hominy,
- 3 eggs,
- 2 cupfuls milk,
- 1 cupful cornmeal,
- 1 teaspoonful salt,
- 1 tablespoonful sugar,
- 4 teaspoonfuls baking powder,
- 1 tablespoonful melted butter.

Put the cornmeal in a mixing bowl, pour over it the scalded milk, beat thoroughly, and when cool add the hominy. Stir in the eggs, whip to a froth, add salt, sugar, baking powder, and butter, beat hard, pour into greased gem pans, and bake in a hot oven. This recipe when thinned with more milk makes delicious griddlecakes.

Graham Griddlecakes.

- 1½ cupfuls Graham flour,
- ½ cupful white flour,
- 3 teaspoonfuls baking powder,
- 2 cupfuls milk,
- 1 egg,
- 1 tablespoonful melted butter.

Sift the dry ingredients, then beat into batter with egg, milk, and butter; bake on a griddle.

Egg Biscuits.

- 4 cupfuls flour,
- 5 teaspoonfuls baking powder,
- ¼ cupful butter,
- 2 eggs,
- 1½ cupfuls milk,
- 2 teaspoonfuls sugar,
- ½ teaspoonful salt.

Sift the dry ingredients, rub in the butter, and make into a dough with the beaten egg and milk. Turn out on a molding board, roll into a sheet and mold into biscuits, as directed for Parker House rolls. Bake fifteen minutes in a quick oven.

Pitcaithley Scones (Scotch recipe).

- 4 cupfuls flour,
- 6 teaspoonfuls baking powder,
- 2 tablespoonfuls butter,
- 1½ cupfuls milk,
- ½ teaspoonful salt.

Sift together the dry ingredients, rub in the butter, and mix to a soft dough with the milk. Turn out on a floured baking board and roll into rounds. Dust the griddle thinly with flour, slip on the round of dough, and cut into quarters. Bake slowly and do not turn until the top is beginning to show bubbles. Scones ought to be turned only once. Serve hot.

Maryland Biscuits.

- 1 quart flour,
- 1 cupful milk and water mixed,
- 1 tablespoonful shortening,
- 1 teaspoonful salt.

Rub the shortening into the flour and add the salt; mix the milk and water, and add them slowly to the flour, stirring all the while, until you have a hard, almost dry, dough. Put the dough out on a floured board and knead continuously for fifteen minutes, until it is soft and elastic. Then beat it, constantly folding, for twenty minutes longer. Roll out, cut in biscuits; prick the tops with a fork, stand in a pan so that they will not touch each other, and bake in a moderate oven for thirty minutes. The sides of these biscuits should be white but cooked, the tops, and bottoms brown.—Mrs. Sarah Tyson Rorer.

Popovers.

- 1 cupful sifted flour,
- $\frac{1}{2}$ teaspoonful salt,
- 1 cupful milk,
- 1 egg.

Sift together the flour and salt, then gradually beat in the milk and egg. Beat two minutes with a Dover beater and bake about half an hour in buttered gem pans, in a fast oven.

Oat Cakes (Scotch recipe).

- 2 cupfuls Canadian oatmeal,
- 1 teaspoonful lard,
- $\frac{1}{2}$ teaspoonful salt,
- Water.

Put oatmeal in a mixing bowl; rub in the salt and shortening, add enough water to make a stiff dough,

dust the bread board with oatmeal and roll out thin; cut the cake into a round big enough to fit a griddle and slip it carefully on to the hot iron. Before it begins to bake, cut the round into quarters. Bake until crisp and delicately brown, and if they do not seem quite hard enough, set the cakes in the oven until thoroughly dried out.

BREADS MADE FROM SOUR MILK

Milk or cream used for baking is best when it sours quickly and does not separate, but remains thick and smooth. The usual measurement to use in every recipe where lightness is desired is 1 level teaspoonful soda to 2 cupfuls sour milk or 1 cupful molasses. Sometimes the milk is sour, but not loppered; then use it in gingerbread or brown bread, where there is molasses enough to complete the acidity, or let it stand for a few hours in a warm place to lopper. The more acid the milk is, the more soda it will require. Never use milk which has turned bitter or moldy. If you are lucky enough to possess sour cream, cut down in each recipe 2 tablespoonfuls butter to 1 cupful sour milk, else the mixture will be too rich.

Woodlawn Brown Bread.

- 2 cupfuls sour milk,
- 1 egg,
- 3 cupfuls Graham flour,
- 1 teaspoonful soda,
- $\frac{1}{2}$ cupful molasses,
- $\frac{1}{2}$ teaspoonful salt.

If the Graham flour is very coarse, sift it and throw away the bran. Add the salt, pour in the molasses, milk, beaten egg, and the soda dissolved in a little water. If you desire bread that is not very dark or sweet, use 2 tablespoonfuls molasses and 1 teaspoonful sugar. Steam for two and a half-hours in pound baking-powder can. Give it three hours if steamed in a quart pail.

Boston Brown Bread.

- 3 cupfuls corn meal,
- 3 cupfuls graham flour,

3 level teaspoonfuls salt,
 1½ cupfuls molasses,
 ¾ teaspoonful soda,
 3 cupfuls sweet milk,
 3 teaspoonfuls baking powder,
 As many raisins as desired.

Sift the dry ingredients, add the molasses and milk and mix well. Steam in tin cans for about 2 hours, being sure to have cans well greased. When done remove lids and put in the oven and brown. This fills 3 medium-sized cans.—Mrs. I. B. Forney.

Brown Bread.

1 cupful graham flour,
 1 cupful white flour,
 ½ cupful molasses,
 1 cupful sour milk,
 ½ cupful chopped nuts,
 1 teaspoonful soda,
 ½ teaspoonful salt.

Bake in moderate oven.—Mrs. Albert Kruse.

Sunday-Morning Loaf.

2 cupfuls Graham flour,
 1 cupful wheat flour,
 1 cupful Indian meal,
 1 teaspoonful salt,
 1 cupful molasses,
 1½ teaspoonfuls soda,
 ¼ cupful cold water,
 1 tablespoonful melted lard,
 1 cupful sour milk,
 1½ cupfuls sweet milk.

Sift the dry materials together, add the molasses, lard, soda dissolved in water, and milk. Beat thoroughly; pour into a buttered mold, and steam for three hours. This makes two medium-sized loaves. In New England these are called Sunday-Morning loaves, because they are generally made Saturday night and put in the oven for half an hour next morning to serve with the traditional baked beans. They keep for one or two weeks and may be heated for use at any time.

Steamed Graham Loaf.

3 cupfuls of Graham flour,
 1 cupful wheat flour,

1 teaspoonful soda,
 1 teaspoonful salt,
 1 cupful molasses,
 2½ cupfuls sour milk.

Sift dry ingredients, add molasses and milk, beat well and turn into a buttered mold. Steam three and a half hours. This mixture, cooked in pound baking-powder cans, will make four loaves, which can be reheated when required. Place the can on a frame in a kettle containing boiling water.

Economy Muffins.

1 cupful milk,
 2 cupfuls flour,
 ½ cupful sugar,
 1 egg,
 2½ teaspoonfuls baking powder,
 4 level tablespoonfuls butter.

Cream the butter, add egg beaten light, sift the sugar, baking powder, and flour together, mix, and beat until smooth. Bake in buttered patty pans. Water may be used if milk cannot be procured, and lard is a good substitute for butter.—Amy Beddow.

Muffins (12).

1 tablespoonful butter,
 1 tablespoonful sugar,
 2 eggs (beaten),
 1 cupful milk and
 2 cupfuls flour sifted with
 2 teaspoonfuls baking powder.

Mix in the order given and bake in quick oven.—Mrs. J. Baungartner.

Muffins.

2 eggs,
 2 tablespoons of sugar,
 1½ cups of milk,
 3 cups of flour,
 4 teaspoons of baking powder,
 2 teaspoons of melted butter,
 added the last thing. The secret of these fine muffins is the adding of the melted butter the last thing. Do not mix stiff at all.

Whole-Wheat Muffins.

1 cupful whole-wheat meal,
 1 cupful flour,

2 tablespoonfuls sugar,
 $\frac{1}{2}$ teaspoonful salt,
 $\frac{1}{4}$ teaspoonful soda,
 $1\frac{1}{4}$ cupfuls sour milk,
 2 tablespoonfuls melted butter,
 1 egg.

Sift the dry ingredients together, mix with the beaten egg, milk, and butter. Bake in hot gem pans.

Spider Corn Cake.

$\frac{3}{4}$ cupful cornmeal,
 $\frac{1}{4}$ cupful flour,
 1 tablespoonful sugar,
 $\frac{1}{2}$ teaspoonful salt,
 $\frac{1}{2}$ teaspoonful soda,
 1 egg,
 $\frac{1}{2}$ cupful sour milk,
 $\frac{1}{2}$ cupful sweet milk.

Sift the dry ingredients together and mix them with the well-beaten egg and milk. Beat thoroughly. Melt 2 tablespoonfuls butter in an iron spider and pour the mixture into it. Pour another $\frac{1}{2}$ cupful sweet milk over the top of the batter and set it very carefully into a hot oven. Bake for twenty minutes.

Rice or Hominy Griddlecakes or Muffins.

1 cupful sour milk,
 1 cupful cold rice or fine hominy,
 $\frac{1}{2}$ teaspoonful salt,
 $\frac{1}{4}$ teaspoonful soda,
 1 egg,
 1 teaspoonful melted butter,
 Flour to make a batter.

Heat the rice or hominy over hot water and moisten gradually with the milk till free from lumps. Add salt and soda, stir in the beaten egg yolk, then the melted butter, then flour to make a soft batter, lastly the white of egg beaten stiff. This is for griddlecakes. For muffins, use flour enough to make a stiff batter.

Corn Bread.

2 cupfuls sour milk,
 3 eggs,
 2 cupfuls Indian meal (white),
 1 teaspoonful soda,
 1 teaspoonful sugar.

Beat the eggs separately, sift the soda twice through the meal, and add the salt. Beat the ingredients well together, adding the whites last of all. Bake in a moderate oven in muffin rings, with a large spoonful of the batter to each, until golden brown.

Batter Cakes.

$1\frac{1}{2}$ teaspoonfuls soda,
 3 cupfuls sour milk,
 3 eggs,
 $3\frac{1}{2}$ cupfuls flour.

Beat thoroughly the soda with the sour milk. Beat the yolks of three eggs and add to the milk then stir in the flour and a little salt, making the batter of the consistency of cake. Then beat the whites to a stiff froth, fold in, and bake.

Biscuits.

1 quart flour,
 4 tablespoonfuls lard,
 1 teaspoonful salt,
 1 teaspoonful soda.

Sift the flour, add the lard, salt, soda, and enough sour milk to make soft dough; roll thin, cut into biscuits, and bake in a very quick oven.

Entire-Wheat Gems.

2 cupfuls sour milk,
 2 tablespoonfuls brown sugar,
 1 saltspoonful salt,
 1 teaspoonful soda.

Stir them all together, add sufficient flour to make a batter that will drop without spreading. Bake in gem pans.

Spoon Biscuit.

4 cupfuls sour milk,
 2 teaspoonfuls soda,
 1 saltspoonful salt,
 2 tablespoonfuls melted butter.

To the sour milk add the soda, salt, butter, and sifted flour to form a batter that will drop from a spoon. Drop into a hot greased pan, and bake in a quick oven.

Sour-Milk Graham Bread.

- 1 egg,
- 2 tablespoonfuls sugar,
- 2 tablespoonfuls melted butter,
- 1 teaspoonful soda,
- 2 cupfuls sour milk,
- 1½ cupfuls Graham flour,
- 1½ cupfuls white flour.

Beat the egg with the sugar, put in the melted butter; dissolve the soda in 2 spoonfuls hot water, and add the sour milk. Stir up with the flour and bake slowly one hour.

Griddlecakes.

- 1 pint sour milk,
- 2 cupfuls flour,
- ½ teaspoonful salt,
- 1 egg,
- 1 teaspoonful soda.

Mix thoroughly the flour, salt, and beaten eggs; add more flour if needed to make a good batter. Last of all add 1 teaspoonful soda dissolved in 1 tablespoonful hot water. Bake at once on a hot griddle.

Sour-Milk Doughnuts.

- 2 cupfuls flour,
- ¾ teaspoonful salt,
- 1 scant teaspoonful soda,
- 1 scant teaspoonful cream of tartar,
- Grating of nutmeg,
- ½ tablespoonful butter,
- 1 egg,
- ½ cupful sugar,
- ½ cupful sour milk.

Sift together the dry ingredients, rub the butter into the flour with the finger tips, add the sugar, well-beaten egg, and milk; beat thoroughly and toss the dough on a floured board. It ought to be a soft dough and it is not easy to handle. Use a knife in turning it over if you have any difficulty. Knead lightly and roll into a sheet. Cut the doughnuts with a ring cutter and fry in hot fat, putting only about four in the kettle at once. If more are fried at a time, the fat will cool and the doughnuts become greasy.

RECIPES FOR CORN BREAD

Indian corn is a native of the new world and is one of the chief sources of national wealth. It is so commonly used as an article of food, both in an unripe state, as green corn, and as a dry grain, crushed or ground as hominy, or as corn meal, and cooked in various forms that it may almost be regarded as the national food of America. In addition to corn meal mush, the well known "hasty pudding" of our grandmothers, it forms the basis of many of the appetizing modern breakfast foods. In New England it takes the form best known as the Rhode Island Johnny Cake. In the South it forms the celebrated Hoe Cake or Corn Pone. In all parts of the country corn meal bread muffins, and batter cakes are cooked and served according to a great variety of recipes. The following have been selected as typical of the various corn meal breads in use in different parts of the United States as recorded by the foremost writers on cookery.

Rhode Island Johnny Cake.

Any kind of corn meal can be substituted in the following recipes, but the flavor of the true Rhode Island Johnny Cake cannot be realized without meal made from well seasoned white (not yellow) corn ground nearly as fine as flour. This is known to the trade as bolted white Indian meal. It is packed in small cloth bags by certain manufacturers and can be obtained from grocers in most parts of the United States if specially requested. The process of making Johnny Cakes is most simple. Measure in a mixing bowl a quantity of meal sufficient for the needs of the family, which can be determined only by experience, and add boiling water in a thin stream, stirring vigorously until the dough is nearly, but not quite, soft enough to pour. It should be very wet but firm. Stir in salt to taste and fry with butter, or any suitable fat, on a hot griddle until a crisp brown crust is formed on both sides. The cakes are usually formed of a single mixing spoonful

of dough and flattened so as to be about three or four inches across and an inch or less in thickness. They are best relished by most persons when the crust is firm and brittle and the interior soft and moist. A little experience will enable any one to make Johnny Cake dough of the right consistency. Some cooks prefer to use no more hot water than is necessary to thoroughly scald the meal and then thin the dough to the desired consistency with fresh or skimmed milk. Made by either recipe Rhode Island Johnny Cakes are most wholesome and delicious.

Southern Johnny Cake.

Stir together 3 cupfuls of Indian meal, 1 of flour, $\frac{1}{2}$ of molasses and a little salt, with enough sour or buttermilk to make a stiff batter. Stir in 1 teaspoonful of soda and bake in a hot oven.—Wm. H. Lee.

Mrs. Jake's Hoe Cakes.

Take 1 pint of white corn meal, $\frac{1}{2}$ teaspoonful salt, and 1 teaspoonful of sugar. Mix well and add sufficient boiling milk or water to scald. (Add 2 eggs, or not, as desired.) The batter should be thick enough not to spread when put on the griddle. Grease the griddle, with bacon-fat or lard, and drop the batter upon it from spoon. Flatten the cakes until about $\frac{1}{2}$ inch in thickness. Cook slowly but do not burn. When of a brown color on underside turn over and brown other side. Spread a little butter on each cake. Serve immediately when done.—Wm. H. Lee.

Southern Corn Pone.

Sift a quart of white corn meal, add a teaspoonful of salt. Pour on enough cold water to make a mixture which will squeeze easily through the fingers. Work it to a soft dough. Mold it into oblong cakes an inch thick at the ends and a little thicker in the center. Slap them down on the pan and press them a little. These cakes they say must show the marks of the fingers. The pan must be hot and sprinkled with the bran

sifted from the meal. Bake in a hot oven for about 20 minutes.—Mary Roland.

Southern Hoe Cake No. 1.

Make the same mixture as for pone. Spread it on the greased hoe, or a griddle, making a round cake $\frac{1}{4}$ of an inch thick. Bake it on the top of the range, turning and baking it brown on both sides.—Mary Roland.

Southern Hoe Cake No. 2.

Use for these cakes if possible coarse water-ground white meal. Add to a quart of meal a teaspoonful of salt; pour over it enough boiling water to make a soft dough. Add also a little milk to make it brown better. Let it stand an hour or longer then work it together with the hand. Form it into little cakes an inch thick and bake on a greased griddle till brown on both sides. Serve very hot. They are split and spread with butter when eaten.—Mary Roland.

Genuine Johnny Cake.

Eight heaping tablespoonfuls fine sifted corn meal, 1 teaspoonful sugar. Stir in enough sweet milk to make a thin batter. Bake in smoking hot iron gem pan, in very hot oven, until "golden brown."—Mary Lewis.

Aunt Anne's Hoe Cake.

Take a large cupful of corn meal, sift it in a bowl, with a pinch of salt. Mix it with a little boiling water. Let it get cold. Make some small round cakes, pinch them on top. Put in a pan to bake in the oven.—Celestine Eustis.

Corn Pone.

Corn pone is highly recommended as a breakfast dish. Take a heaping coffee-cupful of boiled hominy, heat it and thin in a tablespoonful of butter, 3 eggs and nearly 1 pint of sweet milk. As much corn meal may be added as will serve to thicken this till it is like the batter for "Johnny Cakes." Bake in a quick oven and serve.—Celestine Eustis.

White House Corn Bread.

Two cups of sifted meal, half a cup of flour, 2 cups of sour milk, 2 well-beaten eggs, $\frac{1}{2}$ cup of molasses or sugar, a teaspoonful of salt, 2 tablespoonfuls of melted butter. Mix the meal and flour smoothly and gradually with the milk, then the butter, molasses and salt, then the beaten eggs, and lastly dissolve a level teaspoonful of baking soda in a little milk and beat thoroughly together. Bake nearly an hour in well-buttered tins, not very shallow.—Hugo Ziemann and Mrs. F. L. Gillette.

Favorite Corn Bread.

Scald 1 quart of Indian meal with one quart of boiling water; when cooked, add one pint of Graham flour, 1 pint of wheat flour, half cupful of yeast, half cupful of molasses, 1 teaspoonful of salt, 1 tablespoonful of shortening. Dissolve and fill the cup half full with warm water. Make it as thick as can be stirred with a spoon. Bake in a milk pan or deep dish, letting it rise first.—Mrs. Grace Townsend.

Gold Medal Corn Bread.

One pint yellow meal, $\frac{1}{2}$ pint flour, 1 teaspoonful salt, 2 teaspoonfuls baking-powder, all sifted together; 1 tablespoonful sugar, 3 tablespoonfuls melted butter, 3 eggs, 1 pint sweet milk. Beat long and hard and bake

in a large round loaf. The oven must not be too hot.

Economical Corn Bread.

Take 1 quart of sweet milk, corn meal enough to thicken, 3 eggs, half a cup of butter, 2 tablespoonfuls of brown sugar, 1 teaspoonful of soda and 2 of cream of tartar. Bake in a moderate oven.—Mrs. Jane Warren.

Boston Corn Bread.

$1\frac{1}{2}$ cupfuls Graham flour,
1 cupful Indian meal,
 $\frac{1}{2}$ tablespoonful soda,
1 saltspoonful salt,
 $\frac{1}{2}$ cupful molasses,
 $1\frac{3}{4}$ cupfuls milk.

Fannie Merritt Farmer.

Southern Batter Bread or Egg Bread.

Beat two eggs light; stir half a cupful of cold boiled rice into a pint of milk and add to the eggs, rice and milk a tablespoonful of melted butter. Sift a teaspoonful of salt into two cups of Indian meal; stir all together and bake in shallow pans. Eat hot.—Marion Harland.

Corn Meal Loaf.

1 pint milk,
1 level teaspoon salt,
1 pint white flour,
1 pint water,
1 compressed yeast cake,
Corn meal.

Sarah Tyson Rorer.

CHAPTER XXIV

STALE BREAD AND HOW TO UTILIZE IT

USES OF STALE BREAD, BREWIS, CRUMBS, STEAMED BREAD, TOAST, ROULETTES, CROQUETTES, ETC., ETC.

A careful housewife plans to keep in stock the smallest amount possible of stale bread, and of that stock not a morsel is consigned to the garbage pail. There is economy in adopting the English fashion of bread cutting, placing the loaf on a wooden trencher with a keen knife, and cutting at the table each slice as it is required.

Look carefully to the stale-bread remains of each day. Keep a wire basket, set in a tin pan in the pantry, to receive all scraps left on plates, toast crusts, or morsels from the bread jar. Never put them in a covered pail or jar; they will mold. Save all soft inside parts of a loaf to be used as soon as possible for croutons or croustades, slices or cubes for toast and toast points, soft scraps for meat and fish dressings, puddings, omelets, scalloped dishes, gridlecakes, soufflés, croquettes, and the numerous dishes for which stale bread may be utilized.

To preserve bread crumbs put them in a paper bag and hang where the fresh air can get to them. They will not mold as they do in a jar.

For stuffing for poultry, fish, spareribs, veal, or game it is often possible to use dry "heels" and crusts by soaking and adding to them a portion of dry crumbs. The scraps which can be used in no other way may be saved for crumbing. When the basket becomes full, put the bread in a pan and set in a moderate oven with the door open. The

browner the crumbs are, which are used as a covering for croquettes, etc., the less frying they will stand. Before a croquette rolled in very brown crumbs is heated to the heart, it will appear almost burned. Hence, never allow these crusts to grow more than a golden brown. When the scraps of bread are thoroughly dry, roll them on a board or put through the meat chopper, using the finest knife.

If there are children in the family who like "rusk," the old-fashioned New England name for browned crumbs sprinkled into cold milk, reserve the coarser crumbs for this purpose. Sift through a fine sieve, and reserve the fine crumbs, no larger than cornmeal, to be put away for crumbing purposes. Save the rusk in the same way, keeping it always uncovered. If the air is not allowed free circulation into the can, the crumbs will spoil. When rusk is used, heat it slightly in the oven. After croquettes have been crumbed, scrape together all the fine crumbs left on the board and sift, returning what is dry to the can.

Bread crumbs are always preferable to cracker crumbs in covering anything which has been dipped in egg. Cracker crumbs do not brown well. In the recipes following, stale bread and crumbs are spoken of in a distinctive fashion. Dried bread crumbs are those which are rolled and sifted, suitable for crumbing, but not for use in puddings or scallops, for they would absorb too much

moisture. Stale crumbs are made from odds and ends of stale bread, rubbed on a grater or crumbled fine. They must be used at once or they will mold.

Stale bread that is broken and unsightly can be used for brewis, bread puddings, or in scallops. Toast or steam all that can possibly be used in such a way. Remove crusts before toasting. It makes a dish more sightly, and the crusts can be dried for crumbs or worked into a dressing. Slices of bread too ragged to be toasted may be trimmed into diamonds, fingers, oblongs, rounds, or triangles for canapés. Cut smaller pieces in dice, narrow strips, or squares for croutons. Fry forty seconds in hot fat, or butter lightly and brown in the oven. They are an attractive accompaniment for thick soups.

Toast that will cut into vandykes or long points can be utilized for surrounding dishes of spinach, Brussels sprouts, asparagus, or green vegetables served in a mold. Dishes *au gratin* will use any of the dry bread crumbs.

Brewis, steamed bread, and toasts in a large variety are some of the changes to ring in the daily menu, and they can be made so appetizing that a family has no suspicion it is aiding to keep the bread jar in good condition.

Buttered Crumbs.

Instead of dotting crusts or bread crumbs with morsels of butter, melt the butter in an omelet pan, 2 tablespoonfuls butter to $\frac{1}{2}$ cupful crumbs, and toss lightly with a fork till every morsel is buttered.

Brown-Bread Brewis.

- 2 cupfuls stale brown bread,
- 1 cupful stale white bread,
- 1 tablespoonful butter,
- 2 $\frac{1}{2}$ cupfuls milk.

For this dish use the smallest odds and ends of the bread, crumbling the larger portions into inch pieces. Put the butter in a spider. Allow it to melt, but not brown, and put in the

bread. Pour the milk over it and simmer, stirring occasionally to keep the bread from sticking to the pan. Season with a dash of salt and white pepper. Serve hot.

Steamed Bread.

Into the middle of a large steamer with a close-fitting lid set a cup or bowl inverted and around it arrange slices of stale bread you wish to steam. Do not allow them to touch the side of the steamer or they will become water-soaked. Fit the steamer tightly into the mouth of a kettle of boiling water. The bread will be ready in a few minutes. In taking it out, turn the lid over instantly to prevent water dripping on the bread. Butter each slice and arrange on a hot plate with a napkin over them. Stale biscuit or rolls may be steamed in the same fashion, or sprinkled with cold water and set for a few minutes into a hot oven.

Toasted Sandwiches.

Often after a picnic or entertainment a housewife has a number of bread-and-butter sandwiches left, too stale to serve. They may form the basis of a bread pudding or they make an attractive dish for breakfast, luncheon, or supper in the shape of toasted sandwiches. Do not take them apart, lay them between the wires of a toaster, and hold over a clear, red fire. The butter will melt and the inside be left soft, warm, and buttered, with the outside a crisp, golden brown.

Toast.

Trim the crust from stale slices you wish to toast and move it carefully over a clear, red fire for two minutes. Then turn it over and let all the moisture be drawn out of the bread. Butter and serve immediately. Toast may be utilized, especially for breakfast, in all sorts of ways. Plain toast is a favorite in most households; then there are milk toast, cream toast, dropped eggs on toast, water toast, and the excellent dish of bread soaked in egg and milk which has all sorts of names, French,

Spanish, German, and Scotch toast, but more properly egged toast. At the luncheon and dinner table toast appears in all forms — under chicken and with such vegetables as asparagus and spinach; under minced meats, fricassees, and creamed mixtures, or in the delicate canapé.

Dry Toast.

Cut stale bread into slices $\frac{1}{2}$ inch thick, put in toast rack, place where heat is sufficient to dry out bread. Turn occasionally. When dried out, increase the heat sufficiently to turn the surface a golden brown. — Mrs. A. J. Mielke.

Spider Browned Toast.

Take several slices of stale bread cut rather thick, cut off the crust and butter them on both sides. Lay them in a dry, hot spider over a rather slow fire and cover with a tight lid. When one side has browned delicately, turn and brown the other. They will be crisp outside, yet soft inside.

Sandwiches in Cream Sauce.

Sandwiches left over are not usually inviting, but they may be made so by this method. Toast them delicately in the oven, and to every four sandwiches made from chicken, veal, or tongue make a white sauce with 1 tablespoonful flour, $\frac{1}{2}$ teaspoonful salt, a dash of pepper, and 1 cupful milk cooked until thick. Then add the yolk of 1 egg, well beaten. Pour this over the sandwiches and serve at once.

White-Bread Brewis.

Heat a pint of milk in a double boiler. Stir into it enough bits of stale wheat bread to absorb all the milk. Season with a little butter and salt. It should not be pasty or sloppy, but should be a light, dry porridge. It is a favorite with children, especially if served on a small, pretty saucer and dotted with bits of bright jelly. Serve hot.

Bread-Crumb Buckwheat Cakes.

- $\frac{1}{2}$ cupful stale bread crumbs,
- $\frac{2}{2}$ cupfuls milk,

- $\frac{1}{2}$ teaspoonful salt,
- $\frac{1}{4}$ cake yeast,
- $\frac{3}{4}$ cupfuls buckwheat flour,
- 1 tablespoonful molasses,
- $\frac{1}{4}$ teaspoonful soda.

Scald the milk and soak the crumbs for half an hour. Add the salt, yeast, and buckwheat flour, and let it stand over night. In the morning stir in the molasses and soda melted in a spoonful of warm water. Beat briskly for a few minutes and bake on a hot, greased griddle.

Brown-Bread Cream Toast with Cheese.

- 2 tablespoonfuls butter,
- 1 tablespoonful flour,
- 1 cupful milk,
- $\frac{3}{4}$ cupful grated cheese,
- 1 egg,
- 1 cupful cheese.

Make a white sauce from the milk, butter, and flour; when it boils, add the grated cheese and well-beaten egg. Cook slowly until mixed, then add a cupful of cheese, cut into small cubes. Season with salt and cayenne, and pour over slices of toasted brown bread.

Fried Bread.

- 3 slices stale bread,
- 1 egg,
- 6 tablespoonfuls milk,
- 2 tablespoonfuls oil (olive).

Cut the bread into fingers three inches wide and the length of the slice. Beat the egg slightly, add the milk. Dip the bread in the mixture. Put the oil in a spider and allow it to grow hot. Drop the bread in and sauté till brown. Drain on soft paper. Arrange log-cabin fashion, and serve with a sweet liquid sauce or maple sirup.

Milk Toast.

- 6 slices stale bread,
- 2 cupfuls milk,
- 2 teaspoonfuls cornstarch,
- 2 tablespoonfuls butter.

Dry the bread thoroughly in the oven, then toast over a clear fire to a

golden brown. Heat the milk in the double boiler, add the butter, and when scalding hot, the cornstarch moistened in cold milk. Cook 10 minutes. Lay the toast on a hot platter and baste each slice with the sauce. Serve very hot.

Three teaspoonfuls of flour may be substituted for the cornstarch and will give a less pasty sauce.

Brown-Bread Sauté.

Cut the crusts off around slices of Boston brown bread with a large cooky cutter. Fry bacon in a spider and put it on a hot platter when crisp. Then lay the bread in the bacon fat, and sauté on both sides. Serve a crisp curled slice of bacon on each brown round.

Tomato Toast.

- 1½ cupfuls strained tomato,
- ½ cupful scalded milk,
- ¼ teaspoonful soda,
- 3 tablespoonfuls butter,
- 3 tablespoonfuls flour,
- ½ teaspoonful salt,
- 6 slices toast.

Make a tomato sauce from the butter, flour, and tomato, add the soda and salt, then the milk. Pour the sauce over the toast and serve at once.

Bread Griddlecakes.

- 1½ cupfuls scalded milk,
- 1½ cupfuls stale bread crumbs,
- 2 tablespoonfuls butter,
- 2 eggs,
- ½ cupful flour,
- ½ teaspoonful salt,
- 3½ teaspoonfuls baking powder.

Pour the hot milk and the melted butter over the crumbs and soak until they are soft. Add the well-beaten eggs, flour, salt, and baking powder. Cook on a griddle like cakes.

Bread Roulettes.

- 1 cupful stale bread crumbs,
- ½ cupful milk,

- 1 egg,
- Dash salt.

Soak the bread crumbs in the milk. Mix with the egg and seasonings. Form into tiny balls, flour, egg, crumbs, and fry in hot fat.

Bread Sauce.

- ½ cupful stale bread crumbs,
- 1½ cupfuls scalded milk,
- 1 tablespoonful butter,
- Pepper and salt,
- ½ cupful browned crumbs.

Pour the hot milk over the stale crumbs and cook in a double boiler for twenty minutes. Add the butter, pepper and salt. Put 1 tablespoonful butter in an omelet pan and in it brown ½ cupful dry crumbs. Pour the sauce about game, timbales, or anything you wish to serve with it, and on top sprinkle browned hot crumbs.

Bread Croquettes.

- 2 cupfuls stale bread crumbs,
- 1 cupful hot milk,
- Grated rind 1 lemon,
- ½ cupful currants,
- ½ teaspoonful cinnamon,
- Yolks 2 eggs.

Boil the bread crumbs for two minutes in the hot milk. Add the lemon, currants, cinnamon, and remove from the fire. Beat in the yolks of the eggs. Cool, form into croquettes, crumb, and fry in hot fat.

Beignets of Buns.

- 2 stale buns,
- 1 egg,
- ½ gill milk,
- 1½ tablespoonfuls flour,
- Dash salt.

Soak the buns five minutes in the milk. Mix the yolk of the egg with milk, add the flour, salt, and beaten white. Dip the buns into batter, fry in half lard and half butter, light brown on both sides. Dust with sugar, and serve with jelly or preserved fruit.

CHAPTER XXV

SANDWICHES FOR PICNICS, RECEPTIONS AND OTHER ENTERTAINMENTS

THE MODERN SANDWICH — BREAD FOR SANDWICHES — CHEESE SANDWICHES — MEAT SANDWICHES — FRUIT AND VEGETABLE SANDWICHES — SWEET SANDWICHES, ETC., ETC.

The old-fashioned sandwich—two thick wedges of bread, erratically buttered, hard of crust, exuding mustard, and with frills of ham or corned beef appearing about the edge—has been relegated to the past by the arrival of the meat chopper. Formerly sandwiches were of a half-dozen varieties only. The filling of a modern sandwich is limited only by what you have on hand. Fish, flesh, fowl, vegetables, eggs, nuts, olives, fruit, cheese, pickles and many other things are utilized alone, or combined, and the result, when prepared by a skillful cook, is a dainty and delicious morsel.

If many sandwiches are required, as for a reception or picnic, bake the bread specially for them; there is less waste and the work is much easier. Keep on hand plenty of baking-powder cans, pound and half-pound sizes, also a few oblong tins which have held one pound of cocoa and use them instead of the ordinary bread tins. Nothing can excel these as molds for baking bread for picnic sandwiches. Such bread is tender, almost crustless, needs no trimming to make two slices accord in size, and bakes or steams much more quickly than that baked in larger tins.

Make the bread twenty-four hours before it is required and have it fine grained. Fill the cans half full of dough and set to raise. When almost at the top of the tins, put to bake with the lids off. Fill three quarters

full of brown-bread mixture; it does not raise so much as bread which has yeast in it. Slip the small loaves out of the tins as soon as taken from the oven or steamer and set on a wire stand to cool; then wrap in towels and put away in the bread box until required.

The next consideration is butter. Put a pound of butter (if you have many sandwiches to make) in a mixing bowl and with a wooden spoon beat it to a fine, light cream, exactly as for cake making. The butter is much easier to spread, it is more economical, and it is ready to divide into portions and blend with anything to make what is called a flavored butter, the most delicious of all fillings.

Before preparing sandwiches, if they are to be used at a luncheon or entertainment where other dishes accompany them, be careful that the flavoring is different from the salad with which they are served. It is really in better taste to offer nothing with a salad or cold meat except plain bread and butter sandwiches. Fish, lobster, or shrimp salads are most appetizing with sandwiches of Boston brown bread holding a tender lettuce leaf or a sprig of watercress dipped in mayonnaise. Serve sandwiches of mild cheese, flavored by mustard or tarragon, with green salads. White-bread sandwiches holding tender young nasturtium leaves between the buttered folds go well with salads of meat or fish. Gar-

nish a plateful of this variety with a few nasturtium leaves and blossoms. Finely cut peppergrass, chives, endive or celery are all fitting accompaniments to sandwiches which are offered with a meat or chicken salad. Crisp cucumbers and tomatoes thinly sliced and spread with mayonnaise make a delicious bite between buttered bread. Cut with a small cooky cutter rounds of bread slightly larger than a slice of tomato or cucumber, and put the vegetable between them. These, as well as herb sandwiches, must not be made until immediately before serving.

Cheese may be spread between folds of white, Graham, or entire-wheat bread, or delicate crackers. Roquefort, fromage de Brie, or any of the stronger cheeses should be flavored with finely chopped olives or parsley and creamed butter. Combine with a milder cheese chopped olives, walnut meats, anchovy essence, a dash of mustard, tabasco sauce, and salt. Grate hard cheese or mash soft cheese with a spoon, afterwards rub to a paste with mayonnaise or butter and flavoring. The delicious little cream or Neufchâtel cheeses may be blended with chopped walnuts, and given a bit of seasoning by Parmesan cheese, also a hint of lemon juice and paprika.

Under the head of savory sandwiches is a long list of possibilities. They include meat, fish, and egg, as well as fillings obtained from chopped olives and pickles, or some strong seasoning, such as curry, caviare, or anchovy.

For all sorts of meat, use a chopper, grinding with the finest knife. It provides a paste which, blended with mayonnaise, is as easy to spread on bread as butter. Scores of recipes might be offered to direct this blending process, but the clever cook, with her own palate as criterion, can easily adapt a few suggestions to the materials on hand. Chicken combines well with chopped celery, chopped nuts, and olives. The most delicate chicken sandwich is seasoned with celery salt and moistened with thick seasoned whipped cream in-

stead of mayonnaise. Ham paste is blended with mayonnaise, mustard, chopped olives, and gherkins. Veal paste may be seasoned like chicken — indeed one can scarcely tell the difference between the two fillings. Roast beef, corn beef, lamb, and poultry paste make good sandwiches. If you have not enough of one meat, add to it another which harmonizes in flavor; for instance, veal goes well with any sort of poultry, while tongue and ham make a good mixture. If remains of roast beef, lamb, or corn beef are small, chop and blend each separately; nothing seems to assimilate well with red-blooded meats. Use mustard, a few drops of onion juice, and chopped pickles as flavoring. They are better moistened with creamed butter than with mayonnaise. Put lobster, shrimp, or crab meat through the chopper. Cold fish or canned salmon is better delicately picked to flakes with a fork. Sardines, anchovies, and salt fish make tasty picnic sandwiches. Pound to a paste, and give a touch of acidity by lemon juice or chopped pickle. Eggs should be hard-boiled. Allow them to become thoroughly cold, then put them through a chopper, mixed with mayonnaise or butter, and season well.

In making peanut butter, I mix the ground peanuts with cream or milk instead of olive oil, if I only desire a small quantity. It is delicious, although it does not keep longer than a few days.

When one comes to sweet sandwiches, the variety is almost unlimited. Figs, dates, prunes, raisins, nuts, preserved ginger, and candied peel may be chopped, sweetened, moistened with whipped cream, lemon, orange, or pineapple juice and spread between folds of white bread.

When preparing sandwiches for an entertainment cut heart, diamond, or club shaped, and on top of each lay something which suggests the filling — an English walnut meat, a shred of green citron peel, or half a Maraschino cherry, dipped in icing to make them stick. When you wish to roll sandwiches, use fresh moist bread,

spread very lightly with the filling, and pin into shape with a toothpick.

It is easy to keep sandwiches fresh some hours before they are required. Wring a napkin as dry as possible from hot water—a good plan is to put it through the wringer—wrap the sandwiches in it, then cover in a stone jar or something which will exclude air. Paraffin paper is often used for the same purpose.

Lamb Sandwiches.

Mince cold roast lamb, season with salt, pepper, and a dash of tabasco sauce or cayenne. Add minced olives and a chopped pimento, then make into a paste with mayonnaise dressing. Spread between slices of white bread.

Sweetbread Sandwiches.

Cut cold boiled sweetbreads in a meat chopper, moisten with whipped cream, season with salt, cayenne, and lemon juice. Spread between thin slices of buttered bread.

Hot-Ham Sandwiches.

Butter thin slices of bread. Broil thin slices of ham, put between slices of white bread, and eat hot. Bacon may be served in the same fashion.

Chicken and Celery Sandwiches.

- 1 cupful cold chicken,
- 1 cupful celery,
- 4 tablespoonfuls mayonnaise.

Put chicken through the finest knife of a meat chopper, add celery cut fine and mayonnaise. Butter white bread and spread with the chicken mixture.

Tongue Sandwiches.

Make a dressing of one part mustard and six parts butter, add salt, pepper, and a dash of tabasco sauce or cayenne. Butter the bread with this mixture and lay between thin slices of cold tongue.

Oak-Hill Sandwiches.

- $\frac{1}{2}$ cupful butter,
- 1 cupful finely chopped cold boiled ham,

- 1 cupful cold chicken,
- Dash of salt and paprika.

Cream butter, add ham and chicken, then salt and paprika. Spread the mixture between thin slices of buttered white bread.

Rare-Beef Sandwiches.

Chop rare cold roast beef fine, Sprinkle with salt, pepper, a dash of horse-radish, and a few drops of tabasco sauce or cayenne. Make into sandwiches with thinly sliced buttered Graham bread.

Club Sandwich.

Toast a slice of bread and butter it. On one half put, first, a thin slice of hot bacon which has been broiled till dry and tender, next a slice of the white meat of either turkey or chicken. Over one half of this place a circle cut from a ripe peeled tomato and over the other half a tender leaf of lettuce. Cover with a generous layer of mayonnaise, and complete this delicious "whole-meal" sandwich with the remaining piece of toast.

Lobster Sandwiches.

Blend with the chopped lobster meat a dash of tabasco sauce, lemon juice, salt, pepper, and oil. Spread the mixture between slices of thinly buttered bread.

Crab Sandwich.

- 1 hard-boiled egg,
- 1 tablespoonful softened butter,
- $\frac{1}{2}$ can deviled crab,
- 1 tablespoonful lemon juice.

Moisten the sifted yolk of egg with butter, add chopped crab, and lemon juice mixed to a paste. Spread it between thin slices of buttered bread, put two together, press with a bread knife, and cut into fingers, triangles, or small squares.

Salmon Sandwiches.

- 1 can salmon,
- Yolks 6 hard-boiled eggs,
- Dash tabasco sauce or cayenne,
- 2 tablespoonfuls lemon juice,

- 2 tablespoonfuls parsley,
- $\frac{1}{2}$ cupful boiled salad dressing,
- $\frac{1}{2}$ teaspoonful salt.

Drain the oil from salmon, remove the skin and bones, and wash fish fine. Add chopped or mashed eggs, then salt, lemon juice, chopped parsley, tabasco, and salad dressing. Spread between folds of white or entire-wheat bread.

Mock-Crab Sandwiches.

- $\frac{1}{2}$ cupful grated cheese,
- 4 tablespoonfuls creamed butter,
- $\frac{1}{2}$ teaspoonful salt,
- $\frac{1}{4}$ teaspoonful paprika,
- $\frac{1}{4}$ teaspoonful mustard,
- 1 teaspoonful anchovy paste,
- 1 teaspoonful vinegar,
- 2 tablespoonfuls chopped olives.

To cheese add butter, salt, paprika, mustard, paste, vinegar, and chopped olives. Spread between rounds of white bread.—Stella A. Downing.

Cheese and Ham Sandwiches.

- 1 cream cheese,
- 2 cupfuls minced ham,
- 1 small bunch watercress,

Cream the cheese and ham, add the watercress leaves, and spread between rye or white bread. Salad dressing may be added to the filling.

Cheese Sandwiches.

- $\frac{1}{2}$ cupful grated cheese,
- $\frac{1}{2}$ cupful Roquefort cheese,
- $\frac{1}{4}$ cupful cream,
- Dash cayenne.

To the grated cheese, add Roquefort cheese rubbed to a paste; add sauce and cream. Beat till smooth and spread between slices of Graham bread.

Nut and Bacon Sandwiches.

Fry breakfast bacon crisp, chop fine, use twice as many nuts as you have bacon. Mix with cooked salad dressing. Cut bread thin, spread with mayonnaise, then crisp lettuce

leaf, and finally add the above mixture.—Helen Starkweather.

Walnut-and-Cheese Sandwiches.

- $\frac{1}{2}$ cupful walnut meats,
- $\frac{1}{2}$ cupful Neufchâtel cheese,
- Dash pepper and salt.

Chop walnuts fine and mix with cheese; add pepper and salt. Spread between slices of white bread. If desired, this sandwich may be further improved by putting between the folds a crisp lettuce leaf.

Anchovy-Cheese Sandwiches.

- 1 cottage cheese,
- 1 teaspoonful anchovy essence,
- 1 teaspoonful paprika,
- 1 tablespoonful chopped parsley.

To the cheese add anchovy essence, paprika, and parsley. Spread between slices of buttered entire-wheat bread.

Boston Sandwiches.

Slice Boston brown bread thin, butter lightly, and spread with seasoned Neufchâtel or cottage cheese. Dip crisp lettuce leaves in French dressing, then lay on the brown bread. Press another slice of buttered brown bread on top, and serve immediately.

Cheese-and-Olive Sandwiches.

Work a cream cheese until smooth and creamy; add half the quantity of olives finely chopped; moisten with mayonnaise dressing. The mixture may be slightly moistened with cream and seasoned with salt and cayenne. Spread between crackers.

Peanut Sandwiches.

Skin freshly roasted peanuts and reduce them to a powder in a meat chopper. Add salt, and mix the crushed nuts with fresh cream cheese. Spread the paste between slices of unbuttered Graham bread.

Water-Cress Sandwiches.

Chop cress coarsely and season with salt, pepper, and a few drops

of vinegar. Blend with cottage cheese and spread between slices of white bread.

Onion Sandwiches.

Cut bread very thin, removing the crust. Spread between each slice Bermuda or Spanish onions, chopped fine and mixed with a mayonnaise dressing.

Cucumber Sandwiches.

Chop 2 cucumbers fine, drain off the liquor, add a little onion juice, a dash of red pepper, and mix with a well-seasoned mayonnaise. Spread between white bread.

Pimento Sandwiches.

Cut bread thin, spread sparingly with thick mayonnaise dressing. Place on it a slice of scarlet pimento, then more salad dressing, and cover with the upper piece of bread. Serve with a leaf of lettuce. Trim neatly either round, long, or square, cutting through lettuce and all.

Nut, Olive and Pimento Sandwiches.

Chop English walnuts, mix with equal amount of chopped olives stuffed with pimentos, add mayonnaise dressing to make thick paste. Spread on white or whole wheat bread.—Anna Kinsley.

Date Sandwiches.

- 2 cupfuls pitted dates,
- 2 level tablespoonfuls peanut butter,
- 1 cake cream cheese.

Grind dates fine, mix with peanut butter and cream cheese; add salt to suit; spread on thin slices of brown or graham bread.

Do not use butter.

Put two slices together and cut across to form triangles.—Mrs. George E. McGee.

Raisin Sandwiches.

- 1 cupful chopped seeded raisins,
- 1 cupful chopped nuts.

Mix with whipped cream, spread between very thin slices of bread.—Anna Kinsley.

Nut Sandwiches.

- 1 cupful chopped nuts,
- 4 tablespoonfuls butter,
- 1 teaspoonful mixed mustard,
- 1 saltspoonful salt, and dash of pepper,
- Juice of 1 lemon.

Mix all together and spread on thin slices of Boston brown bread.—Mrs. Ida Husted.

Anchovy Canapés.

Scrape $\frac{1}{2}$ dozen anchovy fillets to a smooth paste. Then pound in a wooden bowl. Add 1 or 2 hard-boiled egg yolks and $\frac{1}{4}$ cup butter and pound again. Season with $\frac{1}{4}$ teaspoon paprika and press through a sieve. Spread buttered rounds of toast with the mixture. Set a coiled fillet of anchovy in the center and press fine-chopped olives in the paste.—Anna Kinsley.

Lobster Canapés.

Chop 1 small onion, fry in 1 teaspoonful butter, add 1 tablespoonful cress chopped fine, $\frac{1}{2}$ pint cream. Stir, season with salt, pepper, pinch curry powder. Add 1 pint lobster minced. Spread on rounds of buttered toast. Sprinkle with cayenne. Brown in very hot oven.—Anna Kinsley.

CHAPTER XXVI

CEREALS, FLOUR PASTE AND CEREAL LEFT-OVERS

BREAKFAST CEREALS — OATMEAL — HOMINY — RICE — SPAGHETTI — MACARONI — CEREAL LEFT-OVERS — RICE DISHES AND BREADS — HOW TO UTILIZE COLD CEREAL DISHES

Cereals include the grain foods from cultivated grasses, containing every variety from oatmeal to macaroni, which is a paste made of wheat flour rich in gluten. Among them are most valuable foods — rice, for instance, which is the staff of life for certain nations. In what are called breakfast cereals we have a number of foods that are unusually rich in nitrogenous matter and mineral substances, and therefore make an excellent morning meal with no further addition than milk or cream, for all cereals are lacking in fat. Unless cereals can be subjected to the long, slow cooking which is necessary, they would better not be eaten, for nothing is so indigestible as half-raw oatmeal. Twenty years ago, when most of our oatmeal was the old-fashioned steel-cut oats, it needed interminable cooking — ten hours was none too long. To-day most of the cereals put up in packages, so the directions say, can be cooked in half an hour. That is not possible; few of them, except the fine-grained wheat foods, are fit to eat till they have had at least one hour's cooking in a double boiler. If they can have longer, they are so much the better.

Always add the proper amount of salt to a cereal — 1 teaspoonful to a quart of water — and let it dissolve before the grains are put in, so it will flavor the whole mass. The best way to cook any rough-grained cereal is to drop it slowly into water which is boiling briskly in the upper part of a double boiler. After cook-

ing for a few minutes on the stove, set it over the water and allow the grains to swell slowly so the food will be stiff enough to be chewed.

Cornmeal demands a long time for cooking — at least six hours — and it swells so much that it should have six times the same measurement of water. Granular cereals, farina, for instance, should be mixed with a little cold water and stirred smooth before being added to the necessary amount of boiling water; this prevents them from becoming lumpy. Quantity of water depends upon the nature of the grain.

Flaky cereals require twice their bulk of water, granular four times as much water as cereals, and finely ground, such as cornmeal, three times their bulk of water. Never stir any cereal after it has been put to cook, until just before it is turned out, then stir with a fork. Too much stirring makes oatmeal pasty and sticky. Store cereals in glass cans with tight-fitting lids instead of in the pasteboard boxes in which they are sold. Glass keeps them fresher and safe from the invasion of moths or mice.

Cereal with Fruit.

- $\frac{2}{3}$ cupful wheat germ,
- $\frac{2}{3}$ cupful cold water,
- 2 cupfuls boiling water,
- 1 teaspoonful salt,
- $\frac{1}{2}$ pound dates, stoned and cut in pieces.

Mix cereal, salt, and cold water; add to boiling water in a saucepan.

Boil five minutes, steam in double boiler thirty minutes; stir in dates, and serve with cream. Serve for breakfast or as a simple dessert.—
Fannie M. Farmer.

Hasty Pudding.

- 1 cupful cornmeal,
- 2 tablespoonfuls flour,
- 1 teaspoonful salt,
- 1 cupful milk,
- 2 cupfuls boiling water.

Mix the meal, flour, and salt with the milk; when smooth, stir in the boiling water. Cook in a double boiler one hour or more; or over direct heat one-half hour. Serve with cream and sugar, or turn into tins previously wet with cold water to cool if wanted for sautéing. Cut into slices, dip in flour, and sauté in drippings or butter.

Hominy Mush.

- $\frac{1}{2}$ cupful fine hominy,
- $\frac{1}{2}$ teaspoonful salt,
- 3 cupfuls boiling water.

Put all together in a double boiler, and cook three hours. Add more water if mush seems stiff; all preparations of corn absorb a great deal of water in cooking, and hominy usually needs a little more than four times its bulk.

Oatmeal Porridge.

- 1 cupful granulated oatmeal,
- 1 teaspoonful salt,
- 1 scant quart boiling water.

Put the oatmeal and salt in a double boiler, pour on the boiling water, and cook three or four hours. Remove the cover just before serving and stir with a fork to let the steam escape. If the water in the boiler be strongly salted, the oatmeal will cook more quickly.

Rolled Oats.

- 1 cupful rolled oats,
- $2\frac{1}{2}$ cupfuls boiling water,
- $\frac{1}{2}$ teaspoonful salt.

Mix ingredients, and cook in double boiler one hour.

Steamed Rice.

- 1 cupful rice,
- 1 teaspoonful salt,
- 3 cupfuls boiling water.

Pick over the rice and wash in three or four waters. Put it with the salt and boiling water in upper part of double boiler. Cook over boiling water. Do not stir while cooking. Steam until the grains are tender.

Boiled Rice.

- $\frac{1}{4}$ cupful rice,
- 1 teaspoonful salt,
- 4 cupfuls boiling water.

Wash rice thoroughly and gradually add to boiling water, care being taken that the water does not stop boiling. Cover and cook twenty minutes, or until grains are soft. Turn into a strainer and drain, put in oven a few moments to dry, with oven door open.

Turkish Pilaf.

- $\frac{1}{2}$ cupful rice,
- $\frac{3}{4}$ cupful tomatoes, stewed and strained,
- 1 cupful brown stock, lightly seasoned,
- 3 tablespoonfuls butter.

Add tomato to stock, and heat to boiling point; add rice, and steam till soft; stir in butter with a fork, and keep uncovered that steam may escape. Serve in place of a vegetable, or as a border for curried or fricasseed meat.—Fannie M. Farmer.

Rice Timbales.

- 1 cupful rice,
- $\frac{1}{2}$ teaspoonful salt,
- 1 egg,
- 1 teaspoonful butter.

Place the rice in the upper part of a double boiler over the fire, cover with cold water, boil over direct fire five minutes, then drain it on a sieve, rinse off with cold water, return to saucepan again, cover with one pint water, add the salt and boil till tender; add the egg and butter to the

mixture, fill the rice in small timbale forms, set them in a pan of water so the water reaches halfway up the forms, place the pan in a moderate oven, and bake ten minutes. Unmold and set the timbales in a circle.

Rice à la Creole (Southern recipe).

- 1 onion,
- 1 slice cooked ham,
- 1 tablespoonful butter,
- 1 cupful cooked rice,
- 1 can tomatoes,
- 1 teaspoonful salt,
- Dash of tabasco sauce.

Chop the onion and ham fine; put in a saucepan with the butter; add the rice and tomatoes, salt, paprika. The tomatoes should be stewed until thick before mixing. Mix and heat thoroughly. Then put in a baking dish, cover with bread crumbs, and put in the oven for fifteen minutes.

Manana Land (Mexican recipe).

- 1 tablespoonful olive oil,
- 1 sliced onion,
- 8 green peppers,
- 1 cupful uncooked rice,
- $\frac{1}{2}$ can tomatoes.

Fry in the olive oil the onion and green peppers, chopped fine; to this add the uncooked rice, and stir constantly until the rice is nicely browned; then put in the tomatoes, fill up the skillet with rich soup stock, and cook slowly, without stirring for an hour.—May E. Southworth.

Rice with Cheese.

Cover bottom of buttered baking dish with rice. Dot over with butter. Sprinkle with cheese and paprika. Repeat process. Add milk to half cover and cover with buttered crumbs. Bake until cheese melts.

Macaroni.

Measured $\frac{1}{2}$ cup macaroni, after being cut into $\frac{1}{2}$ inch pieces. Cook in boiling salted water until tender (thirty minutes). Drain, pour cold water through it, and serve plain,

seasoned with butter, salt and pepper, or with white sauce, or with tomato sauce.

Cheese Straws.

- $1\frac{1}{2}$ cups flour,
- 2 tablespoonfuls melted butter,
- 2 tablespoonfuls sweet cream,
- Dash cayenne pepper,
- 3 oz. grated cheese.

Put flour into a bowl, make a hole in the center, and put ingredients into it. Work with the hands until it can be rolled out. Cut in strips and bake in quick oven.

Scalloped Cheese.

- 1 cup grated cheese,
- 2 cups milk,
- 3 eggs,
- 4 slices buttered bread cubed,
- 1 teaspoonful salt,
- $\frac{1}{2}$ teaspoonful mustard,
- Speck cayenne.

Beat eggs. Add milk and seasoning; arrange bread and cheese in alternate layers in an earthen dish; cover with the milk; let stand ten to fifteen minutes, bake twenty to thirty minutes.

Cheese Balls.

- 1 cup grated cheese,
- Whites of 3 eggs well beaten,
- Dash of red pepper,
- $\frac{1}{2}$ teaspoonful salt.

Let stand fifteen minutes after mixing. Make into balls the size of a walnut. Fry in deep fat until a golden brown.—Mrs. F. E. Draegert.

Rice Milanais Fashion.

- 1 cupful rice,
- 2 tablespoonfuls butter,
- 1 onion,
- 1 quart stock,
- 1 teaspoon salt,
- 2 tablespoonfuls butter,
- $\frac{1}{2}$ cupful grated cheese.

Cook the rice in a quart of cold water, stir until the boiling point is reached, and let boil three or four minutes, then drain and rinse in cold

water and turn on a cloth to dry for a few minutes. Put the first quantity of butter into a stewpan; cook in it until softened and slightly yellowed, a slice of onion chopped fine; then add the rice and stock and salt; cook until the rice is tender and the liquid absorbed; add the butter and grated cheese. Lift the rice with two forks to mix the butter and cheese evenly. Vary the dish occasionally by adding a cup of strained tomato with the broth and two tablespoonfuls chopped green pepper with onion.

Spaghetti à la Italien (Neapolitan recipe).

- ½ cupful dried mushrooms,
- 1 tablespoonful butter,
- 1 onion,
- 1 clove garlic,
- 1 pound chuck steak,
- 2 slices bacon,
- 1 cupful tomatoes,
- Salt,
- Paprika,
- Pepper,
- 1 package spaghetti.

Soak the mushrooms fifteen minutes in a cupful of tepid water; put the butter into a frying pan; when melted, add the onion and garlic, cut fine. Let this cook to a straw color, then add the meat and bacon, cut into finger lengths. Let this cook about five minutes, add the tomatoes and simmer slowly for about fifteen minutes. Then add the mushrooms, together with the water in which they have been soaked. Season very lightly with salt, pepper, and paprika. Let this simmer slowly for an hour and a half. During this time cook the spaghetti in about 2 quarts boiling water to which 2 tablespoonfuls salt have been added. Cook twenty minutes, then pour in a colander and blanch with warm water. When the sauce has cooked sufficiently, take a large platter, spread half of the spaghetti upon it, and pour over it some of the sauce. Now sprinkle upon this grated cheese. Add the remainder of the spaghetti, finish with sauce and cheese, and serve.

Macaroni Siciliana (Italian recipe).

- 1 onion,
- 1 carrot,
- 1 tablespoonful butter,
- 2 pounds beef,
- 1 quart tomatoes,
- Bay leaf,
- 3 cloves,
- 1 pound macaroni,
- 1 pound grated Swiss cheese.

Slice very thin the onion and carrot; put in a pot with the butter and let it fry, then put in the beef that has been cut in thick slices. Stir until it has browned nicely, add the tomatoes, bay leaf, cloves, salt, and pepper to taste. Stew slowly for two hours or more, till the sauce gets thick. Strain through a sieve until the sauce is free from the meat. Take the macaroni and boil for twenty minutes, or until tender, salt to taste. Drain off the water, and put it in a large, deep dish; pour over it the sauce and put in grated cheese. Mix all thoroughly, and serve hot.

Creamed Macaroni and Dried Beef.

Cook 1 cup macaroni, broken in inch pieces, in boiling, salted water until tender. Drain, rinse with cold water. Cover ½ pound dried beef with boiling water, let heat, and drain from water. Melt 3 tablespoonfuls butter, add 3 tablespoonfuls flour, ½ teaspoonful salt, a little pepper, and 1½ cupfuls milk. Stir until smooth and thick, add macaroni and beef. Serve very hot.—Anna Kinsley.

Macaroni.

- 1 cupful macaroni broken,
- ½ cupful grated cheese,
- 1 cupful sweet milk,
- Butter, size of an egg,
- 1 egg.

Boil macaroni in salted water until tender, then drain dry. Put cheese, butter, and half the milk into saucepan and stir over the fire until melted. Then mix the egg with the rest of the milk, salt and pepper to taste, and bake quickly after mixing all together.—Mrs. A. J. Mielke.

Spaghetti with Tomato Sauce.

Break half a pound of spaghetti in even lengths, cook in salted water until tender, then drain off water, make a sauce of 2 cupfuls of stewed tomatoes, one small onion and a bit of bay leaf. Cook for ten minutes, rub through a sieve, melt $1\frac{1}{2}$ tablespoonfuls of butter, mix with 2 tablespoonfuls of flour to a smooth paste, add tomatoes, season with salt and pepper. Cook until thickened, pour over spaghetti.—Mrs. H. C. Kamholz.

Macaroni Ravioli (Italian recipe).

- $\frac{1}{2}$ package macaroni,
- $\frac{3}{4}$ Parmesan cheese,
- 2 tablespoonfuls butter,
- 12 chicken livers (parboil),
- 2 stalks celery,
- 1 onion,
- $\frac{1}{2}$ carrot,
- $\frac{1}{2}$ turnip,
- Pepper and salt.

Mince the livers and vegetables fine, and put them in a saucepan to cook in a little butter. Blanch the macaroni; add pepper and salt and let it drain. Lay some macaroni in a baking dish, then a layer of the liver and vegetables, then the cheese, and so on till the dish is full enough. End with a layer of cheese. Set the dish in the oven and let it cook for a few minutes. Brown on top and serve very hot.

Macaroni à la Napolitaine (Italian recipe).

- 1 pound macaroni,
- 1 tablespoonful butter,
- 1 onion,
- 4 tablespoonfuls grated Parmesan cheese,
- Pepper and salt,
- 1 cupful cream.

Put the macaroni into boiling water, add butter, salt, and onion stuck with cloves. Boil for three quarters of an hour; then drain the macaroni and put into a saucepan with cheese, nutmeg, salt, and cream. Let stew gently a few minutes, and serve very hot.

Macaroni with Tomatoes.

Break half a pound of macaroni into inch lengths and boil in salted water until tender. Drain, and put a layer of the macaroni in the bottom of a greased pudding dish, sprinkle with pepper, salt, onion juice, and grated cheese. Cover all with a layer of stewed and strained tomatoes that have been previously seasoned to taste. On these goes another layer of macaroni, and so on till the dish is full. The topmost layer must be of tomatoes sprinkled with buttered crumbs. Set in hot oven, covered, for twenty minutes, then bake, uncovered, until the crumbs are brown.—Marion Harland.

Spaghetti with Cheese.

- $\frac{1}{2}$ pound spaghetti,
- $\frac{1}{2}$ cupful Swiss cheese,
- 3 tablespoonfuls melted butter,
- Dash tabasco sauce.

Break the spaghetti into bits and boil in salted water. Grate the cheese and turn into a saucepan with the butter. Stir well, add the hot spaghetti; cook over a low flame just long enough to melt the cheese; add tabasco, and serve very hot.

Spaghetti with Chicken.

- $\frac{1}{2}$ package spaghetti, broken into half-inch pieces,
- 2 cupfuls chicken stock,
- 1 tablespoonful flour,
- 1 tablespoonful butter,
- 1 cupful cold chicken,
- 1 egg.

Boil the spaghetti until tender; drain, drop in cold water, and drain again. Thicken the stock with flour and butter. Stir in the chicken chopped fine and macaroni. Beat in the egg, whipped, remove from the fire, season to taste, turn into a buttered dish, sprinkle buttered crumbs over the top, and bake half an hour.

Spaghetti Piquante.

- $\frac{1}{2}$ pound spaghetti,
- 1 teaspoonful butter,
- 1 teaspoon flour,
- 2 cupfuls beef stock,

4 tablespoonfuls tomato catsup,
6 drops tabasco sauce,
1 teaspoonful kitchen bouquet,
Pinch salt,
Dash paprika.

Break spaghetti into small bits. Boil until tender, in salted water. Drain and keep hot while you make the following sauce: Cook together the butter and flour; when blended pour the stock and stir until smooth, then add the catsup, tabasco, kitchen bouquet, salt, and paprika. Turn the spaghetti into this sauce, stir and pour the mixture into a dish. Sprinkle buttered crumbs and grated cheese over the top, and bake till brown.

Entrades (Mexican recipe).

$\frac{1}{4}$ cupful olive oil,
2 tablespoonfuls butter,
2 green onions,
1 spray parsley,
1 stalk celery,
1 leek,
 $\frac{1}{2}$ garlic,
1 green pepper,
1 teaspoonful salt,
1 tablespoonful Spanish sausage,
 $\frac{1}{2}$ cupful stock,
 $\frac{1}{2}$ package macaroni,
Edam cheese.

Make a sauce of olive oil and butter heated together; in this fry the onion, parsley, celery, leek, garlic, pepper, all chopped fine. Season with salt and the sausage. After it is well cooked down, add the stock. Boil the macaroni until tender, then plunge in cold water to blanch. Place on a large platter, strain the hot sauce over it, and cover the top with grated cheese.—May E. Southworth.

Baked Macaroni.

$\frac{1}{2}$ pound macaroni,
1 quart stock,
1 tablespoonful butter.

Break the macaroni into inch lengths. Boil till tender in stock. Drain, put the macaroni in a dish; pour over it $\frac{1}{2}$ cupful stock in which

it was cooked, add the butter, in small pieces, here and there through it. Sift over it fine bread crumbs and grated cheese. Dot with bits of butter and brown.

Oatmeal.

$\frac{1}{2}$ teaspoonful salt,
1 cupful oatmeal,
4 cupfuls boiling water.

Put the boiling water in a saucepan, salt it, then scatter in the oatmeal. Allow it to cook six minutes, stirring steadily. Into the fireless cooker saucepan set the oatmeal dish, cover with a plate, and pour in boiling water to surround it till it almost reaches the top of dish. Cover, set on the stove and let the water boil five minutes, then place in the fireless cooker and leave there for five hours, or if required for breakfast, till morning. If it is not quite hot enough, set the cooker saucepan on the stove and let the water in the other vessel boil for a few minutes; then serve.

When fireless cooker is not used.—Put the boiling water in the upper part of a double-boiler, salt it, then add the cereal gradually so that the water does not cease boiling. Cook over the direct flame for a few minutes, stirring with a fork, then place over boiling water to cook slowly for an hour or more, covered and without stirring.

Quaker Oats.

$2\frac{1}{2}$ cupfuls boiling water,
1 teaspoonful salt,
1 cupful Quaker oats.

Cook in exactly the same way as oatmeal.

Cream of Wheat.

$2\frac{1}{4}$ cupfuls water,
 $\frac{1}{2}$ teaspoonful salt,
 $\frac{1}{2}$ cupful cream of wheat.

Cook as for oatmeal.

Cracked Wheat.

4 cupfuls cold water,
1 cupful cracked wheat,
1 teaspoonful salt.

Pour the cold water over the wheat and let it stand six hours. Put it in a saucepan as used for oatmeal and set it on an asbestos mat over the fire, allowing it cook and swell for two hours, stirring occasionally. Cover closely, set into the fireless-cooker saucepan, pour boiling water around it, let it boil up, then put into the cooker and allow it to stand over night.

Indian Meal.

3½ cupfuls water,
1 teaspoonful salt,
1 cupful cornmeal.

Bring the water to a boil, stir the meal slowly into it, being careful that it does not lump. Boil half an hour, stirring frequently, set into the saucepan of cooker with water around it and leave it over night.

Fine Hominy.

4 cupfuls water,
1 cupful hominy,
1 teaspoonful salt.

Treat this cereal in the same fashion as others, leaving in the cooker over night.

Cream of Wheat with Dates.

6 cupfuls boiling water,
1 cupful cream of wheat,
1 teaspoonful of salt,
½ cupful dates.

Add cream of wheat slowly to boiling water and cook directly over the flame or very hot fire for ten minutes, stirring constantly with a fork. Then cook in a double boiler for at least ¾ of an hour. Ten minutes before cereal is to be taken from the fire add dates, which have been washed, stoned, and cut into small pieces. Serve with cream and sugar.—Lela Cooper.

CEREAL LEFT-OVERS

The appetizing dishes which may be evolved from a small left-over of any cereal are many. Even a few spoonfuls of well-cooked cereal can be utilized in gems or griddlecakes, or can be fried in butter and eaten

hot with maple sirup. Set it away carefully, covering tightly. An excellent plan is to keep three baking-powder tins—a quarter, half, and pound size for this purpose. The variety in size will fit the amount of the left-over. Brush the can inside with butter, or rinse with cold water, pack in the cereal while hot, and cover. When needed, slip it out of the can, cut in half-inch slices, and roll in flour to dry. Dip in egg and crumbs and fry in smoking hot fat. Eat with maple sirup. Cream of wheat, mush, hominy, wheatena, Quaker oats, flaked rice, farina, Pettijohn, Ralston's food, wheatlet—indeed, any of the large variety of cooked breakfast foods can be made palatable in this way.

If the left-over only amounts to a cupful, combine it with flour as given in oatmeal muffins and you will have a most satisfactory hot breakfast bread. Served with bacon these second-day preparations of cereals form a very nice relish.

The uses of cold rice cannot be enumerated. There are so many methods of transforming it into attractive dishes that many housewives while preparing hot rice for the table, cook a double portion and reserve it for various uses. A cupful of rice is a pleasant addition to many hot breakfast breads. It may be made into delicious puddings, fritters, pancakes. Mixed with a cupful of cold tomato or even left-over tomato soup, well seasoned, sprinkled with cheese and buttered bread crumbs and baked till brown, it appears as a palatable entrée. It can be utilized for croquettes, drop cakes, for a thickening to soup and stews. Or it may be curried, worked into left-over meat dishes, or even changed into ice cream. Macaroni and spaghetti left-overs make good *réchauffés*. With the addition of a few spoonfuls of milk and water, cold macaroni cooked in white sauce or spaghetti,—which made its first appearance in tomato sauce,—may be reheated in the double boiler, a spoonful of each put in a ramequin dish, covered with grated cheese, and baked.

Spanish Rice.

- 1 pint cooked rice,
- 1 cupful tomatoes,
- 2 green peppers, finely chopped,
- 1 onion, finely chopped,
- 1 teaspoonful salt,
- $\frac{1}{2}$ teaspoonful pepper,
- 2 tablespoonfuls butter.

Cook onion and peppers in the butter, being careful not to brown. Stir in the rice.—Mrs. A. W. Cooper.

Rice with Cheese.

Cover bottom buttered baking dish with cooked rice. Dot over with butter. Sprinkle with cheese and paprika. Repeat process. Add milk to cover half. Cover with buttered crumbs. Bake until cheese melts.—Lelah R. Cheney.

Rice with Cheese Crust.

- 2 cupfuls boiled rice,
- 1 cupful milk,
- 2 eggs,
- Pepper,
- Salt,
- 1 cupful grated cheese,
- 1 tablespoonful butter.

Put the rice in a double boiler and cook it in the milk till smooth and soft. If there are any lumps in the rice, beat with a wire whisk. Add the well-beaten eggs and the salt and pepper. Pour into a shallow baking pan, sprinkle the cheese lightly over the top, dot with morsels of butter, and bake till the top is delicately brown. This makes a nice entrée.

Rice with Cheese.

- 3 cupfuls cold rice,
- 1 tablespoonful butter,
- Dash cayenne and salt,
- 1 cupful grated cheese,
- 1 cupful milk,
- $\frac{1}{2}$ cupful buttered cracker crumbs.

Reheat the rice in a double boiler. Butter a pudding dish and cover the bottom of it with rice; dot with bits of butter; sprinkle with grated cheese, cayenne, and salt, and repeat

until the rice and the cheese are used up. Add the milk, cover with buttered cracker crumbs, and bake twenty minutes.

Rice Griddlecakes.

- $\frac{1}{2}$ cupful cold rice,
- 2 cupfuls flour,
- $3\frac{1}{2}$ teaspoonfuls baking powder,
- $\frac{1}{2}$ teaspoonful salt,
- 4 tablespoonfuls sugar,
- $1\frac{1}{2}$ cupfuls milk,
- 1 egg,
- 2 tablespoonfuls melted butter.

Sift together the dry ingredients; work in the rice with the tips of the fingers. Add the well-beaten egg, milk, and butter; beat well; cook on a griddle.

Rice with Date Sauce.

Take cold rice, put in a double boiler with a little milk, and let steam till the milk is absorbed. Sweeten to taste and add a dash of nutmeg. Press the rice into buttered cups. Turn out and serve hot, individually, with a lemon sauce in which cut dates have been stewed for a few minutes. This makes a nice dessert.

Rice Gems.

- 1 egg,
- 1 cupful milk,
- 1 tablespoonful melted butter,
- 1 cupful cold rice,
- 1 cupful flour,
- 3 teaspoonfuls baking powder,
- $\frac{1}{2}$ teaspoonful salt.

Beat the egg till light, add the milk and butter. Beat the rice with this until smooth, then sift in the salt, flour, and baking powder. Bake twenty minutes in hot gem pans.

Rice Bread.

- 2 eggs,
- 1 tablespoonful melted butter,
- 1 cupful cold rice,
- 1 cupful cornmeal,
- $\frac{1}{2}$ cupful flour,
- 2 teaspoonfuls baking powder,
- $\frac{1}{2}$ teaspoonful salt,
- $1\frac{1}{2}$ cupfuls milk.

To the yolks of the eggs, beaten well, add the milk and butter, rice, cornmeal, and flour. Whip thoroughly, add the salt and baking powder, and last the whites of the eggs beaten to a stiff froth. Pour into shallow pans; allow the batter to spread only an inch thick. Bake in a moderate oven for half an hour. Cut into squares when baked, and serve hot.

Rice and Cornmeal Muffins.

$\frac{1}{2}$ cupful white cornmeal,
 $\frac{1}{2}$ cupful flour,
 1 teaspoonful salt,
 3 teaspoonfuls baking powder,
 1 cupful cold rice,
 $1\frac{1}{2}$ cupfuls milk,
 2 eggs,
 2 tablespoonfuls butter.

Sift the dry ingredients together, rub the rice in lightly with the tips of the fingers till every grain is separated. Beat the yolks of eggs till thick, mix with the milk, pour over the dry ingredients, and beat well. Add the melted butter, and last the whites of the eggs beaten to a dry froth. Bake in hot oven.

Cream Rice Pudding.

2 tablespoonfuls cold boiled rice,
 3 tablespoonfuls sugar,
 Yolk 1 egg,
 3 tablespoonfuls cornstarch,
 2 cupfuls milk,
 $\frac{1}{2}$ teaspoonful vanilla.

Put the milk with the cold rice in a double boiler, add the sugar and salt. When it boils, add the cornstarch wet in three tablespoonfuls cold milk. Just before it is ready to take from the fire, add the egg and flavoring. Eat cold with whipped cream.

Rice Croquettes.

$1\frac{1}{2}$ cupfuls cold rice,
 $\frac{1}{2}$ teaspoonful salt,
 Yolks 2 eggs,
 1 tablespoonful butter.

Put the rice in a double boiler with a little milk and let it cook until the

rice has absorbed the milk. Remove from the fire, add the beaten egg yolks and butter, and spread on a plate. Shape into balls, roll in crumbs, then dent with the finger till the croquette is like a small nest. Dip in egg, then in crumbs again, fry in deep fat, and drain. Serve hot with a cube of jelly in each nest.

Oatmeal Muffins.

$\frac{3}{4}$ cupful scalded milk,
 4 tablespoonfuls sugar,
 $\frac{1}{2}$ teaspoonful salt,
 $\frac{1}{4}$ yeast cake softened in
 $\frac{1}{2}$ cupful warm water,
 1 cupful cold oatmeal,
 $2\frac{1}{2}$ cupfuls flour.

Scald the milk and add it to the sugar and salt; as soon as it grows lukewarm, add the yeast. Work the flour into the oatmeal with the tips of the fingers and add to the milk. Beat thoroughly, cover, and allow it to raise over night. In the morning pour into greased iron gem pans and set in a warm place to raise. Bake half an hour.

Farina Muffins.

1 cupful cold farina,
 2 cupfuls flour,
 3 eggs,
 $\frac{1}{2}$ teaspoonful salt,
 1 teaspoonful sugar,
 2 tablespoonfuls melted butter,
 4 teaspoonfuls baking powder,
 $\frac{1}{2}$ cupfuls milk.

Sift the dry ingredients together and work in the farina. Add the butter, milk, and yolks of the eggs; at the last minute the beaten whites of the eggs. Pour into greased gem pans. Bake twenty minutes in a hot oven.

Fried Mush and Bacon.

Cook slices of bacon in the spider. Lift them out and lay on a hot platter. Cut cold mush in neat slices, dip in flour, egg, and crumbs. Fry in hot fat till brown and crisp on both sides. Drain on soft paper and serve with the bacon. This makes a delicious breakfast dish.

Fried Mush.

If there is any cornmeal mush left from breakfast, do not scrape it in cold spoonfuls into a bowl; reheat and allow it to become smooth, then pour into a square cake tin; calculate the amount of mush to the size of the tin, so it will make a cake two inches in depth. Cover when it cools and set in the refrigerator. When it is needed for breakfast or supper, cut into squares about four inches in size and roll them in flour until dry. Drop into smoking hot fat and fry brown. Drain, and serve hot with maple sirup.

Corn meal mush will brown very quickly when fried, if a little sugar is put in the water while boiling. It may also be improved by frying in olive oil instead of butter.

Raised Hominy Muffins.

- 1 cupful cold hominy,
- 4 tablespoonfuls butter,
- 1 cupful scalded milk,
- 3 tablespoonfuls sugar,
- $\frac{1}{2}$ teaspoonful salt,
- $\frac{1}{2}$ yeast cake softened in
- $\frac{1}{4}$ cupful lukewarm water.

Warm the hominy in a double boiler and break it into grains in a mixing bowl. Add the butter, milk, sugar, and salt. When it is lukewarm, stir in the yeast and enough flour to make a thick batter. Let it stand over night. In the morning fill gem pans two-thirds full, set to raise in a warm place, and bake in a moderate oven.

Hominy in Cream Sauce.

- 2 cupfuls cream sauce,
- 2 cupfuls cold hominy.

Make a cream sauce and into it stir the hominy. Reheat in a double boiler and serve very hot instead of potato.

Hominy Griddlecakes.

- $\frac{1}{2}$ cupful cold hominy,
- 2 eggs,
- 2 cupfuls sour milk,
- 1 $\frac{1}{4}$ teaspoonfuls soda,
- 2 cupfuls flour,
- $\frac{1}{2}$ teaspoonful salt.

Warm the hominy and mix with it the well-beaten eggs. Sift in the flour and salt, alternating with $\frac{1}{2}$ cupful milk till the mixture is ready to beat; at last stir in the soda dissolved in a tablespoonful warm water. Bake on a hot greased griddle. Eat with maple sirup.

Macaroni and Celery.

- 1 cupful boiled macaroni,
- 1 cupful celery,
- 1 cupful white sauce,
- $\frac{1}{2}$ cupful buttered bread crumbs,
- Salt and pepper,
- $\frac{1}{2}$ cupful grated cheese.

Cut the celery into inch pieces and boil for ten minutes in salted water. Drain and lay in a dish with the macaroni stirred lightly through it. Over it pour the white sauce; season with salt and pepper. Sprinkle over the top buttered crumbs and grated cheese. Bake till the top is delicate brown.

Savory Macaroni.

- 2 cupfuls cold macaroni,
- 2 tablespoonfuls butter,
- Pepper,
- Salt,
- Paprika.

Melt the butter in an omelet pan. Put in the macaroni, dust with pepper, salt, and paprika. Let it brown slightly, tossing it with a fork while it cooks. Serve very hot as a side dish; sprinkle with grated cheese.

Creamed Macaroni on Toast.

- 1 $\frac{1}{2}$ tablespoonfuls butter,
- 1 tablespoonful flour,
- 1 cupful milk or cream,
- Salt and pepper,
- 1 cupful cold macaroni,
- $\frac{1}{2}$ cupful grated cheese.
- 6 slices toast.

Make a white sauce from the butter, flour, and milk. Chop coarsely the macaroni, add to it the white sauce, and allow it to cook for ten minutes. Pour over the buttered toast, and dust liberally with grated cheese. Set on the top shelf of the oven for a few minutes, and serve very hot.

Macaroni and Chicken.

- 1½ cupfuls cold chicken,
- 1½ cupfuls macaroni,
- 1½ cupfuls cold tomato sauce,
- ½ cupful buttered crumbs.

Butter a baking dish, put in a layer of macaroni, then a layer of cold chicken cut in small strips, then a few spoonfuls of tomato sauce. Repeat in the same order till the dish is full, making the top layer macaroni. Cover with crumbs and bake till the top is brown and crusty. No seasoning is given in this recipe, because usually tomato sauce is well flavored.

Macaroni Croquettes.

- 2 tablespoonfuls butter,
- 4 tablespoonfuls flour,
- 1 cupful milk,
- Yolk 1 egg,
- 2 cupfuls chopped macaroni,
- 2 tablespoonfuls cheese,
- Pepper and salt.

If the macaroni is the remainder of a dish of tomato and macaroni or a well-seasoned cheese dish, it will be the more tasty. Make a thick sauce from the flour, butter, and milk, beat in the egg and cheese. Mix thoroughly, spread to cool, shape into croquettes, flour, egg, crumb, and fry. Serve very hot with tomato sauce.

CHAPTER XXVII

CAKE AND CAKE-MAKING

PROCESS OF CAKE-MAKING—SPONGE CAKES—BUTTER CAKES—FRUIT AND SPICE CAKES—RAISED CAKES—ANGEL CAKE—DEVIL'S FOOD—PORK CAKES—NUT CAKES—GINGER-BREAD—CAKES RAISED BY YEAST—RECIPES FOR CAKES OF EVERY DESCRIPTION—CAKE FILLINGS AND ICINGS

IF one has mastered the art of measuring, mixing, and baking cake, there are only four cakes one has to know: sponge, butter, fruit, and raised cake.

Every other cake among a hundred recipes belongs to one of these classes; there is only a slight variation in its being richer or plainer, differently flavored, or differently named.

One of the most important things to learn about cake making is to have all the utensils and ingredients on hand before beginning to work. The cake process will not wait, if you have to search for things. A half-beaten batter will fall flat before you are ready to attend to it again. Make up the fire so the oven will carry you through the baking process for at least an hour. Have the flour sifted, pans greased and floured, eggs separated, and everything ready to work with. Let us think of the utensils which to-day an up-to-date cooking school demands for cake making.

First there is a bowl for beating the batter. I prefer the white enamel bowl to one made of earthenware; it is light enough to handle easily, is unbreakable, and can be kept beautifully clean. This bowl must be deep and narrow enough at the bottom to allow the spoon to turn over the ingredients and do its work thoroughly. The ideal cake-

mixing spoon is a wooden one with a slitted bowl. The old-fashioned spoon collects butter and sugar in a lump, while a slitted spoon constantly drives the creamed mass through it, and that, of course, makes it lighter. The slitted spoon beats without any noise, and leaves no black marks on the bowl. Then for the other utensils, one needs a good flour sifter, cake pans, two glass measuring cups, a small bowl, a Dover egg beater with which to beat the yolks of eggs, a large pliable Teller knife, and a wire cake cooler, with feet which raise it high enough for the air to circulate around the cake and carry off the steam.

The only way always to have a good cake is always to use level measurements, as taught to-day in all the leading cooking schools. Flour, sugar, butter, indeed every ingredient, is leveled off perfectly flat with the Teller knife. Grease your cake tin with melted fat, using a butter brush, then sprinkle flour inside the tin. Jar the pan lightly on the table, tipping it around so the flour will adhere to the greased surface. Paper is frequently used with a fruit cake, because that cake burns more readily than any other.

Before we begin the process of cake mixing, let us see what makes a cake light. As compared with the making of bread, cake raising is a

swift process. It is brought about partly by blending an acid salt with an alkali. By this means bubbles of gas are created that make the mixture frothy before it is poured into the pans; the heat then expands the bubbles and later sets them. Eggs thoroughly well beaten add further to the lightness of cake, for air is entangled liberally when the albumen is whipped and thus air bubbles are formed.

According to what other ingredients are used in a cake, we add baking powder, soda, and cream of tartar, or soda alone in the raising process. Baking powder is simply a scientific mixture of cream of tartar and soda with the addition of some filler to keep it dry. It must always be used with sweet milk. The same combination, of course, is made with cream of tartar and soda, the formula generally given in older cookbooks. Soda alone is used when there is some powerful acid in the liquid, such as sour milk or molasses.

On making cake when fresh milk, buttermilk, molasses, and sour milk, are lacking, use a cup of apple sauce into which has been stirred some baking soda, the amount depending on the sourness of the apple sauce. Besides being an excellent substitute, the sauce makes a delicious spice cake, and without eggs, too.

It is never economy to use poor ingredients in cake. Strong butter and eggs that are not absolutely fresh cannot have their flavor concealed by the most liberal addition of vanilla. Also, when you possibly can, use pastry flour. You can easily tell the difference between it and the flour with which we make bread, by gathering up a handful. It will stick together in a lump within your hand, while bread flour falls apart. Bread flour may be used in an emergency, but after measuring it, take out $\frac{2}{3}$ level tablespoonfuls from each cupful as otherwise your batter is likely to be too thick, and the cake may crack as soon as it begins to crust.

When a recipe calls for sugar and flour, instead of moistening the flour with water or milk, stir flour and

sugar together in the dry state. Then no lumps will be seen.

Now for a good sponge cake. Separate the eggs, drop the yolks into a mixing bowl, and the whites into a large bowl separately. If the eggs have been kept in a refrigerator or cold pantry, they will froth much more quickly. With a wire beater beat the yolks steadily till they begin to grow thick and lemon-colored, adding gradually 1 cupful sugar. Put in 1 tablespoonful lemon juice and the grated rind of $\frac{1}{2}$ lemon, then 1 cupful sifted flour. Beat the batter thoroughly, till it is bubbly and well mixed. If an assistant, meantime, has been whipping the whites of eggs for you, so much the better. A Dover egg beater does not begin to achieve the amount of frothy white you can get by whipping with a wire beater. Swing the arm upward and downward; and turn over the mass of froth, which will grow larger every second, lifting it lightly, until it is thoroughly blended and looks like delicate foam. Beat until the eggs stay in the bowl when it is turned upside down. Then cut into the yolk mixture. Scrape every particle of cake batter with the knife cleanly from the bowl into a cake pan, preferably a deep one. Let the mixture rise a little higher on the sides than in the middle, then set to bake in a slow oven.

The first process in baking is to get a cake thoroughly heated through, during which time it ought to rise steadily without crusting. When it has been half an hour in the oven, the rising process should have finished and a delicate crust should have begun to form on top. The last half hour is given to its becoming solid, light brown, and crusty.

Fudge Cake.

(An original recipe from the Copper Kettle Lunch Room at Smith College.)

1 cupful sugar,
 $\frac{1}{2}$ cupful butter,
 2 eggs,
 $\frac{1}{2}$ cupful milk,

- 1½ cupfuls flour,
- 2½ teaspoonfuls baking powder,
- 2 ounces melted chocolate.

Cream together the butter and sugar, add the beaten yolks of eggs, then the milk and flour sifted with the baking powder. Beat well, add chocolate and the whites of eggs whipped to a stiff froth. Bake in a shallow pan in a moderate oven. When cool, pour over it a fudge frosting and mark in squares before the frosting has hardened.

Fudge Frosting.

- 2 cupfuls sugar,
- ½ cupful milk,
- 1 tablespoonful butter,
- ¾ cupful chocolate, grated,
- 1 teaspoonful vanilla,
- 1 cupful chopped walnuts.

Put the sugar, milk, butter, and chocolate into a granite saucepan and stir occasionally till the mixture reaches the boiling point. Boil without stirring eight minutes, then take from the fire and beat till creamy. At this point add the nuts and vanilla, then pour over the cake. This recipe makes a delicious fudge.

Feather Cake.

- 4 tablespoonfuls butter,
- 1 cupful sugar,
- 1½ cupfuls flour,
- 2½ teaspoonfuls baking powder,
- 2 eggs,
- ½ cupful milk,
- 1 teaspoonful vanilla.

Put butter in mixing bowl, work it with a spoon till creamy, add sugar gradually, and continue creaming. Sift flour and baking powder together; separate yolks of eggs from whites, beat yolks till light-colored and thick, then add milk and egg mixture to creamed-butter and sugar, alternately with flour. Add flavoring, stir and beat well; lastly add whites of eggs beaten stiff. Put in a shallow greased and floured pan, or one lined with buttered paper. Bake about thirty minutes or till cake shrinks from the pan, and does not stick when tried with a straw. The

feather cake may be varied and made into a number of different kinds, for instance:

Spice Cake.—Before adding the beaten whites, put in ¾ cupful seeded raisins that have been washed, dried, cut in halves, and rolled in a little of the flour reserved for the purpose. Flavor with ¼ teaspoonful ground cloves, ½ teaspoonful cinnamon, and a grating nutmeg instead of vanilla.

Marble Cake.—Color half the feather-cake mixture with ½ tablespoonful Chocolate melted. Mix the white and dark part when putting it in the pan, so they will be well mingled though distinct.

Ribbon Cake.—To one third the feather-cake mixture add ½ teaspoonful mixed spices and ½ cupful seeded raisins cut in pieces. Bake in a shallow pan, and the remainder in two other shallow pans. When done, put the fruit cake between the others with a layer of jelly or frosting between.

Layer Cake.—Bake feather-cake mixture in round tins and put a cream, chocolate, or other filling between.

Nursery Cake.

- 3 tablespoonfuls butter,
- 1 cupful sugar,
- 1 egg,
- 1 cupful cold water,
- 2 cupfuls flour,
- 4 teaspoonfuls baking powder,
- 1 teaspoonful vanilla.

Cream the butter, add half the sugar, and continue creaming. Beat egg till light and add with the water and rest of the sugar to the creamed butter. Add flour mixed with baking powder. Flavor, beat well, and bake in a shallow pan about half an hour. Note that this cake will not keep long.

Surprise Cake.

- 4 tablespoonfuls butter,
- 1 cupful sugar,
- 1 egg,
- 1 cupful milk,
- 2 cupfuls flour,
- 4 teaspoonfuls baking powder,
- 1 teaspoonful vanilla.

Mix carefully, and bake like nursery cake.

Plain Wedding Cake.

$\frac{1}{2}$ cupful butter,
 $1\frac{1}{2}$ cupfuls sugar,
 Yolks 3 eggs,
 $\frac{1}{2}$ cupful milk,
 $2\frac{1}{2}$ cupfuls flour,
 $3\frac{1}{2}$ teaspoonfuls baking powder,
 1 teaspoonful cinnamon,
 $\frac{1}{2}$ teaspoonful ground cloves,
 $\frac{1}{2}$ teaspoonful grated nutmeg,
 $\frac{1}{2}$ teaspoonful powdered mace,
 $\frac{1}{2}$ cupful seeded raisins washed,
 dried, and cut in pieces,
 $\frac{3}{4}$ cupful currants washed, and
 dried,
 $\frac{1}{2}$ pound citron cut in small, thin
 pieces,
 Whites 3 eggs.

Roll fruit in $\frac{1}{2}$ cupful flour, and sift the rest with baking powder and spices. Mix like feather cake, adding the floured fruit just before the stiffly beaten whites of eggs. Bake in a thick loaf, in a moderate oven. Cover with a plain, white icing.

Lemon Sponge Cake.

Yolks 2 eggs,
 1 cupful sugar,
 $\frac{3}{8}$ cupful hot water,
 1 teaspoonful lemon juice,
 Grated rind 1 lemon,
 1 cupful flour,
 $1\frac{1}{2}$ teaspoonfuls baking powder,
 $\frac{1}{2}$ teaspoonful salt,
 Whites 2 eggs.

Beat yolks till light-colored and thick, add half the sugar gradually, and continue beating; then the hot water, the rest of the sugar, the lemon juice and rind. Beat well, add flour, mixed with baking powder and salt; lastly cut and fold in the stiffly beaten whites of eggs. Put in shallow greased and floured pan, and bake in a moderately hot oven twenty-five minutes.

Chocolate Cake.

1 cupful sugar,
 $\frac{1}{2}$ cupful butter,
 2 eggs,
 $\frac{1}{2}$ cupful milk,

$1\frac{1}{2}$ cupfuls flour,
 $2\frac{1}{2}$ teaspoonfuls baking powder,
 2 squares chocolate,
 $\frac{1}{2}$ teaspoonful vanilla,
 Dash salt.

Beat the butter and sugar together to a cream, add the yolks of eggs which have been well beaten, then the milk, the flour sifted with the baking powder and salt. Beat till light and frothy, add the vanilla and melted chocolate, last the whites of eggs whipped stiff. Bake in a long narrow pan, and when cool, cover with a white frosting.

Chocolate Layer Cake.

$\frac{3}{4}$ cupfuls sugar,
 2 tablespoonfuls butter,
 1 egg,
 $\frac{1}{2}$ cupful milk,
 $1\frac{1}{2}$ cupfuls flour,
 2 teaspoonfuls baking powder,
 Dash salt,
 $\frac{1}{2}$ teaspoonful Mexican vanilla.

Cream the butter and sugar together, add the egg beaten to a froth, then the milk, flour sifted with baking powder, and vanilla. Bake in one deep layer cake tin; when the cake is cool, split in two, shortcake fashion, and cover the smooth top of each layer with a chocolate frosting.

Cocoa Sponge.

$\frac{1}{2}$ cupful butter,
 1 cupful sugar,
 3 eggs,
 $\frac{1}{2}$ cupful cocoa,
 1 teaspoonful cinnamon,
 $\frac{1}{2}$ teaspoonful cloves,
 $\frac{1}{2}$ cupful milk,
 2 cupfuls flour,
 3 teaspoonfuls baking powder.

Cream the butter and sugar, beat in the cocoa, the yolks of eggs well beaten, and milk, then the flour sifted with the baking powder and spices; last add the whites of eggs whipped to a stiff froth. Bake in a moderate oven.

Devil's Food.

2 cupfuls sugar,
 $\frac{1}{2}$ cupful butter,

4 eggs,
1 cupful milk,
 $2\frac{1}{2}$ cupfuls flour,
4 teaspoonfuls baking powder,
2 squares chocolate,
 $\frac{1}{2}$ teaspoonful vanilla.

Beat the butter and sugar to a cream, add the well-beaten yolks of eggs, then alternately mix with milk and flour sifted with the baking powder, stir in the melted chocolate and vanilla, then the whites of eggs, whip to a dry froth. Bake fifty minutes in a long narrow pan. Cover with a boiled white icing.

Chocolate Marshmallow Cake.

Use the recipe given either for chocolate cake, devil's food, or cocoa sponge, and bake in a shallow pan, letting the batter half fill. It ought to rise to the top of the pan. As soon as the hot cake is taken from the oven, turn it out and cover the top with marshmallows, which have been pulled apart; the soft inside of the sweetmeats will run together into a sort of frosting. When cool, pour over them a frosting made of sweet chocolate melted over hot water.

Spanish Cake.

1 cupful sugar,
 $\frac{1}{2}$ cupful butter,
2 eggs,
 $\frac{1}{2}$ cupful milk,
 $1\frac{1}{2}$ cupfuls flour,
2 teaspoonfuls baking powder,
Dash salt,
1 teaspoonful cinnamon.

Cream the butter and sugar, beat in the yolks of eggs, then the flour, with which has been sifted cinnamon, salt, and baking powder, alternating with it the milk; the whites of eggs whipped to a stiff froth may be added the last thing. Bake in a large shallow pan and cover the top with caramel frosting.

Coffee Cake.

2 cupfuls sugar,
1 cupful butter,
2 tablespoonfuls molasses,
 $1\frac{1}{2}$ cupfuls cold coffee,

$3\frac{3}{4}$ cupfuls flour,
1 teaspoonful cinnamon,
 $\frac{1}{2}$ teaspoonful cloves,
 $\frac{1}{2}$ teaspoonful nutmeg,
 $\frac{1}{2}$ teaspoonful allspice,
5 teaspoonfuls baking powder,
 $\frac{3}{4}$ cupful raisins,
 $\frac{3}{4}$ cupful currants,
 $\frac{1}{4}$ cupful citron,
5 eggs.

Cream the butter and sugar, add the molasses and well-beaten yolks of eggs, then sift together the flour, spices, and baking powder. Beat in alternately with the coffee. Dredge the fruit with flour, stir it in, then the whites of eggs. Pour into deep cake tins and bake slowly in a moderate oven.

Pound Cake.

2 cupfuls butter,
2 cupfuls sugar,
10 eggs,
4 cupfuls flour,
 $\frac{1}{2}$ teaspoonful mace,
2 tablespoonfuls milk.

Cream the butter and sugar, add the yolks of eggs beaten till thick, then the milk, flour, and whites of eggs. Pour into a square tin and bake an hour.

Angel Cake.

1 cupful whites of eggs,
1 cupful sugar,
 $\frac{1}{2}$ teaspoonful almond extract,
1 teaspoonful vanilla,
1 cupful flour,
1 teaspoonful cream of tartar.

Beat the whites of eggs until they become frothy only, then beat in sugar gradually. Sift the flour and cream of tartar three times and add to the egg mixture, cutting and folding into mixture so as to keep it very frothy. Add the flavoring, pour into an un-buttered pan with a center tube, and bake fifty minutes in a moderate oven. Do not move the cake until it is set, as it is very easy to make it fall. Invert the pan on a cake cooler and do not remove until it is cold.

Sunshine Cake.

Yolks 5 eggs,
 1 cupful sugar,
 Dash salt,
 $\frac{3}{4}$ cupful flour,
 $\frac{1}{2}$ teaspoonful cream of tartar,
 Whites 7 eggs,
 $\frac{1}{2}$ teaspoonful grated rind lemon,
 1 teaspoonful lemon juice,
 1 tablespoonful orange juice.

Beat the yolks of eggs till thick and lemon-colored, and add the sugar and flour, sifted with the cream of tartar and salt. Rub the lump of sugar over the rind of lemon, then dissolve it in the fruit juice; this constitutes the flavoring which may be stirred in and followed by the whites of eggs whipped to a dry froth. Bake the cake in a deep pan.

New England Raspberry Cake.

$\frac{1}{2}$ cupful butter,
 1 cupful sugar,
 Yolks 2 eggs,
 $\frac{3}{4}$ cupful milk,
 2 cupfuls flour,
 1 teaspoonful baking powder.

This old-fashioned, delicious cake is baked in layers. Mix the butter and sugar to a cream, add the yolks of eggs well beaten and the milk; then stir in the flour, in which has been sifted the baking powder. Bake in jelly-cake pans. For the filling, crush slightly 1 quart raspberries, add whites 2 eggs, 1 cupful powdered sugar, and a few drops lemon juice. Whip until thick; spread between layers and over the top. To be eaten with cream.

Lady Baltimore Cake.

1 cupful butter,
 2 cupfuls powdered sugar,
 1 cupful milk,
 Juice 1 lemon,
 Whites 6 eggs,
 4 cupfuls flour,
 2 teaspoonfuls baking powder.

Rub the butter and sugar to a cream, and add the milk; when well mixed, stir in the juice of the lemon and whip very light; stir in alter-

nately the stiffened whites of eggs and flour, sifted with the baking powder. Bake in jelly-tins. When cold, put together with this filling, and frost the top: Boil 3 cupfuls granulated sugar with a cupful water until a drop hanging from the tip of a spoon threads in the air. Pour while hot over the whites 3 eggs whipped to a standing froth. Whip until you have a thick cream and stir in gradually a cupful each minced raisins and chopped pecans with 5 figs that have been soaked soft in lukewarm water, then dried and minced.

Cocoanut Cake.

1 cupful sugar,
 $\frac{1}{2}$ cupful butter,
 $\frac{3}{4}$ cupful milk,
 3 eggs,
 $2\frac{1}{2}$ cupfuls flour,
 2 teaspoonfuls baking powder,
 1 cupful grated cocoanut.

Cream the sugar and butter; take the milk of the cocoanut and, if not enough, add sweet milk to make $\frac{3}{4}$ cupful. Add the beaten yolks, then flour and baking powder sifted, then beaten whites, and lastly the grated cocoanut. This is to be baked in a deep tin.

Orange Cake.

2 cupfuls sugar,
 $\frac{1}{2}$ cupful butter,
 $\frac{1}{2}$ cupful cold water,
 Yolks 5 eggs,
 $2\frac{1}{2}$ cupfuls flour,
 2 teaspoonfuls baking powder,
 Juice and rind 1 orange,
 Whites 3 eggs.

Bake in layers; use boiled icing flavored with orange juice.

Quick Cake.

$\frac{1}{2}$ cupful soft butter,
 $1\frac{1}{2}$ cupfuls brown sugar,
 2 eggs,
 $\frac{1}{2}$ cupful milk,
 $1\frac{3}{4}$ cupfuls flour,
 3 teaspoonfuls baking powder,
 $\frac{1}{2}$ teaspoonful cinnamon,
 $\frac{1}{2}$ teaspoonful grated nutmeg,
 $\frac{1}{2}$ pound dates stoned and cut in pieces.

Put ingredients in a bowl and beat all together for three minutes, using a wooden cake spoon. Bake in a buttered and floured cake pan thirty-five to forty minutes. If directions are followed, this makes a most satisfactory cake; but if the ingredients are added separately, it will not prove a success.—Fannie M. Farmer.

Black Angel Cake.

For custard part.

- 1 cupful chocolate grated,
- $\frac{1}{2}$ cupful milk,
- 1 cupful brown sugar,
- Yolk 1 egg,
- 1 teaspoonful vanilla.

For solid part.

- 1 cupful brown sugar,
- $\frac{1}{2}$ cupful butter,
- 2 cupfuls flour,
- 2 eggs,
- 2 teaspoonfuls baking powder,
- $\frac{1}{4}$ teaspoonful soda.

Stir together in a saucepan the grated chocolate, milk, 1 cupful sugar, yolk 1 egg, and teaspoonful vanilla; cook slowly over hot water and cool. Take 1 cupful sugar, the butter, flour, milk, 2 eggs—cream butter and sugar with yolks of eggs; add milk, sifted flour, whites of eggs beaten stiff, beat together, then stir in the custard, lastly add the soda dissolved in warm water. This cake will keep a long time.

Another way is to bake in layers with the following filling: One cupful brown sugar, 1 cupful white sugar, 1 cupful water, 1 tablespoonful vinegar. Boil until like candy, then stir in beaten whites 2 eggs and $\frac{1}{4}$ pound marshmallows, boil again and place on cake, letting each layer cool before adding another.

Pork Cake.

- 1 pound salt pork,
- 2 cupful boiling water,
- 2 cupfuls dark-brown sugar,
- 1 cupful molasses,
- 1 teaspoonful soda,
- 1 pound raisins,
- 1 pound chopped dates,
- $\frac{1}{4}$ pound citron shaved fine,

- 4 cupfuls flour,
- 1 teaspoonful cinnamon,
- 1 teaspoonful cloves,
- 1 teaspoonful allspice,
- 1 teaspoonful nutmeg.

Chop the pork so fine as to look almost like lard, pour on it the boiling water, add the sugar, molasses, and soda, stir in the raisins, dates, and citron. Add the flour with the spices, pour the batter in loaf-cake pan, and bake in a moderate oven.

Banana Cake.

- $\frac{1}{2}$ cupful butter,
- 1 cupful sugar,
- $\frac{1}{2}$ cupful milk,
- 2 scant cupfuls flour,
- 1 $\frac{1}{2}$ teaspoonfuls baking powder,
- Whites 4 eggs,
- $\frac{1}{2}$ teaspoonful vanilla.

Sift flour and baking powder. Cream butter and sugar, add milk and flour alternately, then vanilla and beaten whites. Bake in 3 layer tins. To boiled icing add $\frac{1}{2}$ cupful finely sliced bananas and use as filling. Dust top with powdered sugar.

Geranium Cake.

- $\frac{1}{2}$ cupful butter,
- 1 cupful sugar,
- $\frac{3}{4}$ cupful water,
- $\frac{1}{4}$ teaspoonful salt,
- 2 cupfuls flour,
- 1 teaspoonful baking powder,
- Whites 4 eggs.

Mix flour, salt, and baking powder. Cream butter and sugar, add alternately the water and flour, then whites of eggs, and whip hard five minutes. Line loaf pan with buttered paper, and rose-geranium leaves. Bake in a moderate oven. The leaves can be pulled off with the paper.

Lemon Queen Cake.

- 2 cupfuls sugar,
- 2 cupfuls flour,
- 1 cupful butter,
- 8 eggs,
- 2 lemons,
- $\frac{1}{2}$ teaspoonful soda,
- $\frac{1}{2}$ teaspoonful salt.

Mix salt and soda with flour. Beat butter to a light cream, and add lemon rind. Beat half the sugar into it. Beat yolks of eggs, then whites, then both together. Add sugar to the eggs and beat well. Put in lemon juice last. Bake in small cake tins.

White Fruit Cake.

$\frac{3}{4}$ cupful butter,
 $1\frac{1}{2}$ cupfuls sugar,
 3 eggs,
 $2\frac{1}{2}$ cupfuls flour,
 2 teaspoonfuls baking powder,
 $\frac{1}{2}$ cupful sweet cream,
 $1\frac{1}{2}$ pounds raisins,
 1 pound currants,
 $\frac{1}{2}$ cupful citron,
 $\frac{1}{2}$ cupful orange peel,
 $\frac{1}{2}$ teaspoonful nutmeg,
 Dash salt.

Cream the butter and sugar, add the beaten egg yolks, then alternately the cream and flour sifted with baking powder. Stir in the fruit, which has been dredged with flour, also the nutmeg, last of all the whites of eggs beaten to a stiff froth. Bake in deep pans lined with paraffin paper.

Walnut Mocha Cake.

$\frac{1}{2}$ cupful butter,
 1 cupful sugar,
 $\frac{1}{2}$ cupful cold coffee,
 $1\frac{1}{4}$ cupfuls flour,
 $2\frac{1}{2}$ teaspoonfuls baking powder,
 Whites 3 eggs,
 1 cupful broken walnut meats.

Cream the butter and sugar, mix alternately the cold coffee and flour sifted with the baking powder, then stir in the walnut meats and whites of eggs beaten stiff. Bake in a deep pan and cover with White-Mountain Frosting, garnished with half walnuts.

Cider Cake.

2 cupfuls sugar,
 1 cupful butter,
 3 eggs,
 $\frac{3}{4}$ cupful cider,
 4 cupfuls flour,
 1 teaspoonful cloves,
 1 teaspoonful soda.

Cream the butter and sugar, beat in the yolks of eggs, sift together the flour, soda, and spice, and mix alternately with the cider; last add the whites of eggs whipped to a stiff froth.

Neapolitan Cake.

2 cupfuls sugar,
 3 eggs,
 1 cupful milk,
 3 cupfuls flour,
 $1\frac{1}{2}$ teaspoonfuls baking powder.

Make this cake exactly after the directions given for other cakes, then divide the batter into 3 equal parts. Color one third brown with a square of chocolate melted, another part pink with a morsel of pink coloring paste dissolved in $\frac{1}{2}$ teaspoonful vanilla, leave the third part uncolored; pour each portion into a layer-cake tin and bake in a moderate oven. Lay on a platter first the white cake, then the chocolate, then the pink, putting each one together with White-Mountain Frosting; cover the top thickly with the same icing.

Citron Cake.

$\frac{1}{2}$ cupful butter,
 1 cupful sugar,
 3 eggs,
 $\frac{1}{2}$ cupful milk,
 3 cupfuls flour,
 1 cupful citron,
 $1\frac{1}{2}$ teaspoonfuls baking powder.

Cream the butter and sugar, add the beaten egg yolks, then the flour sifted with the baking powder, alternately with the milk. Whip the whites of eggs to a dry froth, blend into the cake batter, add the finely shaved citron, and bake an hour in a moderate oven.

Huckleberry Cake.

$\frac{1}{2}$ cupful butter,
 1 cupful sugar,
 3 eggs,
 $\frac{3}{4}$ cupful milk,
 2 teaspoonfuls baking powder,
 2 cupfuls flour,
 1 cupful huckleberries.

Cream the butter and sugar, add the beaten eggs, milk and flour sifted with the baking powder. Stir in a cupful huckleberries dredged with flour, and bake in a moderate oven in a deep cake pan. This cake may be eaten cut in slices or served hot as a dessert with vanilla sauce.

Cocoonut-and-Citron Cake.

$\frac{1}{4}$ cupful butter,
1 cupful sugar,
2 eggs,
 $1\frac{1}{2}$ cupfuls flour,
2 teaspoonfuls baking powder,
 $\frac{1}{2}$ cupful milk.

Cream the butter and sugar, add the beaten egg yolks, then the milk with the flour and baking powder; last of all stir in the whites of eggs whipped to a stiff froth. Bake the cake in two layers. Prepare the frosting after this fashion: Whip $\frac{1}{2}$ pint double cream till stiff, blend with $\frac{1}{2}$ cupful powdered sugar and stir in 2 cupfuls finely grated cocoonut. Spread between the cake, also on top, scattering it with shaved citron. This cake must be eaten soon after it is made, else it becomes sour and soggy.

Gold Cake.

$\frac{1}{2}$ cupful butter,
 $\frac{1}{2}$ cupful sugar,
Yolks 5 eggs,
1 teaspoonful orange extract,
 $\frac{3}{8}$ cupful flour,
 $1\frac{1}{2}$ teaspoonfuls baking powder,
 $\frac{1}{2}$ cupful milk.

Cream the butter, add sugar slowly, and continue beating. Add the yolks of eggs beaten until thick and lemon-colored, and the orange extract. Mix and sift the flour with the baking powder, and add alternately with milk to the first mixture. Bake in a buttered and floured tin.

Hickory Cake.

1 cupful butter,
2 cupfuls sugar,
1 cupful cold water,
Yolks 4 eggs,
1 teaspoonful ground mace and cinnamon mixed,

2 tablespoonfuls baking powder,
3 cupfuls flour,
2 cupfuls hickory-nut kernels.

Cream the butter with the sugar, add the cold water, well beaten yolks of eggs, mace, and cinnamon, baking powder and flour, stirred in alternately with the stiffened whites of eggs. Add the nuts, thoroughly dredged with flour. Stir in quickly, and turn into a loaf tin. Bake in a steady oven, covering the cake with brown paper for the first half hour it is in the oven. When cold, turn out, and cover with a plain icing. Arrange half kernels of hickory nuts at regular intervals on top of the icing.

Ground-Rice Cake.

Yolks 12 eggs,
Whites 6 eggs,
Grated peel 2 lemons,
2 cupfuls ground rice,
2 cupfuls flour,
2 cupfuls sugar.

Beat the yolks and whites of eggs with the lemon, mix in the rice, flour, sugar; beat up with the eggs, using a wooden spoon; butter a pan, and bake in a moderate oven half an hour.

Jelly Roll.

4 eggs,
1 cupful sugar,
3 tablespoonfuls water,
1 teaspoonful baking powder,
 $\frac{1}{4}$ teaspoonful salt,
1 cupful flour,
1 teaspoonful vanilla or
 $\frac{1}{2}$ teaspoonful lemon.

Beat yolks of eggs until light, add sugar gradually, water, flour mixed and sifted with baking powder and salt, then whites beaten stiff. Line the bottom of a dripping pan with paper; butter paper and sides of pan. Cover bottom of pan with mixture, and spread evenly. Bake twelve minutes in a moderate oven. Take from oven and turn on a paper sprinkled with powdered sugar. Quickly remove paper, and cut off a thin strip from sides and ends of cake. Spread with jelly or jam which has been beaten to consistency to

spread easily, and roll. After cake has been rolled, wrap paper around cake that it may better keep in shape. The work must be done quickly, or cake will crack in rolling.

Homemade Wedding Cake.

- 2 cupfuls butter,
- 2 cupfuls light-brown sugar,
- 12 eggs,
- 1 cupful molasses,
- 4 cupfuls flour,
- 1½ teaspoonfuls mace,
- 4 teaspoonfuls allspice,
- 4 teaspoonfuls cinnamon,
- 1 grated nutmeg,
- ½ teaspoonful soda,
- 3 pounds raisins,
- 1½ pounds citron,
- 2 pounds sultana raisins,
- 1 pound currants,
- ½ candied orange peel,
- ½ candied orange peel,
- 4 squares chocolate,
- 1 tablespoonful hot water,
- 1 cupful milk.

Before beginning to make the cake, prepare the fruit required, seed the raisins and cut them into halves with a scissors. Shave the citron, orange, and lemon peel into thin strips. Dredge them with flour, and set the chocolate to melt over boiling water. Sift together the flour, spices, and soda, and separate the eggs. Cream the butter and sugar very light, add the yolks of eggs beaten till stiff and lemon-colored, stir in the molasses, then the milk. Sift in the flour and spices and soda, beat thoroughly, add the fruit, melted chocolate, whites of eggs whipped to a stiff froth. Pour into a large round pan, which has been lined with paraffin paper and steam four hours. An excellent method to thoroughly cook such a large, rich cake as this to the heart is to steam it for an hour, then set into the fireless cooker, and leave it there over night. When the steaming process is finished, the cake needs drying. Take off the lid, and leave it uncovered an hour or two in an oven which is merely warm. Turn out on a cake cooler, and when cold, ice with White-Mountain Frosting.

Easy Sponge Cake.

To 3 eggs beaten one minute, add 1½ cups of sugar. Beat five minutes. Add 1 cup of flour and beat one minute. Add ½ cup of cold water, and another cup of flour, sifted with two teaspoonfuls of baking powder. Beat one minute and bake in a slow oven.—Mrs. O. R. Spence.

Sponge Cake.

- 2 cups sugar,
- 4 eggs,
- 2 cups flour,
- 1 cup hot water,
- 3 teaspoonfuls baking powder.

Beat eggs and sugar together until very light. Add water and lightly stir in the flour, sifted with the baking powder.—Mrs. A. J. Mielke.

Cream Sponge Cake.

- 2 eggs,
- ½ cup cream,
- ⅛ teaspoonful salt,
- ½ teaspoonful vanilla,
- 1 cup sugar,
- 1½ cups flour,
- 2 teaspoonfuls baking powder.

Beat eggs until light, add sugar and continue beating. Then add cream, and lightly stir in flour, sifted with salt, baking powder, and flavoring.—Mrs. A. J. Mielke.

Sponge Cake.

- 4 eggs,
- 1 cup sugar,
- 4 tablespoonfuls water,
- 1 cup flour with 1 teaspoonful baking powder.

Beat eggs and sugar well, and lightly stir in water, then flour sifted with baking powder.—Mrs. A. J. Mielke.

Delicious Bread Sponge Cake.

- 1 cup raisins,
- 1 cup sugar,
- 1 cup lard,
- 1 egg,
- 1 teaspoonful cinnamon,
- 1 cup flour,
- 1 teaspoonful soda,
- 1 cup bread sponge.

Boil the raisins 10 minutes in enough water to cover them. Cream together sugar and lard and then add the raisins and water in which they were cooked. Then add the egg well beaten. Sift cinnamon, flour, and soda together twice and add to the other ingredients. Lastly, add the cup of light bread sponge and a little salt. Bake at once in a medium oven in a deep cake pan.—Zilda Southard.

Mock Angel Food.

Scald 1 cup of milk. Into a sifter put 1 cup flour, 1 cup of sugar, 3 teaspoonfuls of baking powder, a pinch of salt, and sift together four times. Into this pour the cupful of scalded milk and stir smooth. Then put in the well beaten whites of 2 eggs. Do not stir or beat eggs into mixture. Fold them in carefully, drawing the spoon through the mixture toward you, then shoving it back with the back of the spoon; next draw the spoon from right to left and shove mixture back with the back of the spoon. Repeat this until the whites are evenly folded into the batter. Do not grease tin nor flavor cake. Bake in a moderate oven.—Mrs. James E. Shafer.

Pearl Cake

Whites of 5 eggs,
 $\frac{3}{4}$ cup butter,
 2 cups sugar,
 $\frac{3}{4}$ cup milk,
 1 cup cornstarch,
 2 cups flour,
 2 teaspoonfuls baking powder.

Flavor with lemon.—Mrs. Chas. Downey.

White Cake.

1 cup sugar,
 $\frac{1}{2}$ cup butter,
 Whites of 4 eggs,
 $\frac{1}{2}$ cup milk,
 2 cups flour,
 2 teaspoonfuls baking powder.

Flavor with lemon.—Mrs. Chas. Matthews.

Silver Cake.

Whites of 6 eggs,
 1 cup of milk,
 2 cups of sugar,
 $\frac{3}{4}$ cup of butter,
 4 cups flour,
 Pinch of salt,
 2 teaspoonfuls of baking powder,
 1 teaspoonful flavoring.

Cream butter and sugar, add alternately milk and flour, and sift. Add the well beaten eggs.—Edna Adams.

Silver Cake.

1 cup sugar,
 $\frac{1}{2}$ cup butter,
 $1\frac{1}{2}$ cups flour,
 1 cup sweet milk,
 $1\frac{1}{2}$ teaspoonfuls baking powder,
 1 teaspoonful vanilla,
 Whites 4 eggs.

Cream butter and sugar, add milk, sift flour and baking powder together, then add extract, and lastly fold in whites of the eggs well beaten. Bake in a loaf.—Miss Edith Jones.

White Cake.

1 cup sugar,
 $\frac{1}{2}$ cup butter,
 $\frac{1}{2}$ cup sweet milk,
 2 cups flour,
 Whites 4 eggs,
 1 teaspoonful baking powder,
 1 teaspoonful vanilla.

This cake may be varied by dividing dough into halves, adding one tablespoonful red sugar, beating until thoroughly dissolved, and then dropping into the pan first a spoonful of white, and then one of pink.—Mrs. B. H. Baker.

One-Egg Cake.

$1\frac{1}{2}$ cups sugar,
 2 tablespoonfuls butter,
 1 egg,
 1 cup milk or water,
 3 cups flour,
 1 cup nuts,
 2 teaspoonfuls baking powder.—
 Gertrude B. Day.

One-Egg Cake.

- 1 egg,
 - 1 cup sugar,
 - 1 cup milk,
 - $\frac{1}{2}$ cup butter,
 - $2\frac{1}{2}$ cups flour,
 - 4 teaspoonfuls baking powder.
- Flavoring.

Mix well the sugar and butter, add the egg well beaten, then the milk. Mix all well together, then add the flour, in which the baking powder has been sifted, and lastly the flavoring.—Miss Alta M. Nish.

One-Egg Layer Cake.

(Made in 3 minutes.)

- $1\frac{1}{2}$ cups flour,
- 1 cup sugar,
- 1 teaspoonful soda,
- 2 teaspoonfuls cream tartar.

Sift together then break 1 egg into $\frac{3}{4}$ cup sweet milk and add to the mixture. Then add 2 tablespoonfuls melted butter, and flavor with lemon extract to taste. Beat well and bake in layers in moderate oven. Fill with jelly and cover with white frosting.—Mrs. K. O. Taylor.

Potato Cake.

- $\frac{3}{4}$ cupful butter,
- 2 cupfuls sugar,
- Yolks 4 eggs,
- 1 cupful hot mashed potato,
- 2 squares chocolate,
- $\frac{1}{2}$ cupful milk,
- 2 cupfuls flour,
- $3\frac{1}{2}$ teaspoonfuls baking powder,
- 1 teaspoonful each cinnamon and nutmeg,
- $\frac{1}{2}$ teaspoonful ground cloves,
- 1 cupful chopped walnut meats,
- Whites 4 eggs.

Cream together butter and 1 cupful sugar, beat to a froth yolks of eggs with remainder of sugar, then blend both mixtures thoroughly together. Add potatoes, chocolate melted over hot water, and alternately milk with flour, which has been sifted with baking powder and spices. Last, add whites of eggs whipped to a stiff froth and walnut meats. Bake in

layers or a loaf cake as desired, and cover with a chocolate or a white frosting.—Mrs. Samuel G. Cosgrove.

One-Egg Cake.

- 1 cup sugar,
 - 2 tablespoonfuls butter or lard,
 - 1 egg,
 - 1 cup sweet milk or water,
 - 2 cups flour,
 - 3 teaspoonfuls baking powder,
- Flavor to taste.

Cream well together sugar and butter. Add egg, well beaten, and milk or water. Then add the flour in which the baking powder has been sifted and flavor. Bake in layers.—Miss Zilda Southard.

Eggless, Butterless and Milkless Cake.

- 1 cup brown sugar,
- 1 cup water,
- $\frac{1}{2}$ cup lard,
- $1\frac{1}{2}$ cups raisins (or mixed raisins and currants),
- 1 teaspoonful cinnamon,
- $\frac{3}{4}$ teaspoonful nutmeg,
- $\frac{1}{8}$ teaspoonful cloves,
- $\frac{1}{8}$ teaspoonful allspice.

Put in pan and boil three minutes. When ready to take from stove, add 1 teaspoonful soda dissolved in $\frac{1}{2}$ cup warm water. Let mixture cool, then add 2 cups flour in which has been sifted $1\frac{1}{2}$ teaspoonfuls baking powder. One cup English walnuts may be added if desired. Bake in loaf pan in slow oven till nearly done, when heat can be increased.—Mrs. Ross Perry.

Ice Cream Cake.

- $1\frac{1}{2}$ cups sugar,
- $\frac{3}{4}$ cup butter,
- 1 cup sweet milk,
- 3 eggs,
- 3 cups flour,
- 2 teaspoonfuls baking powder,
- 1 teaspoonful vanilla.

Cream the butter and sugar, add the milk and well beaten eggs. Sift the baking powder and flour together and beat well.

Cream Cake.

Boil 1 cup water and $\frac{1}{2}$ cup butter. Add 1 cup flour all at once. Beat hard. When mixture separates from the pan take off the stove. Add 4 unbeaten eggs, one at a time, beating until smooth each time. Drop by spoonfuls on buttered pans. Bake $\frac{1}{2}$ hour. Open, and fill with whipped cream just before serving.—Anna Kinsley.

White Fruit Cake.

Cream 1 cup butter. Add 2 cups sugar and 3 cups flour in which 2 teaspoonfuls of baking powder have been sifted. Then add the stiffly beaten whites of 6 eggs. Bake in jelly tins and while still hot put between the layers the following filling:

Chop fine $\frac{1}{2}$ pound each of figs, seeded raisins, citron, blanched almonds and stir in three whites of eggs stiffly beaten, 1 cup sugar and the juice of a lemon. Put this between the layers and frost.—Alice L. Lansing.

Fruit Cake.

6 eggs,
1 lb. brown sugar,
1 cup lard,
1 cup molasses,
1 cup strong coffee,
1 pt. brandy,
1 lb. chopped nuts,
1 lb. cocoanut,
2 lb. currants,
1 lb. raisins,
1 lb. dates,
 $\frac{1}{2}$ lb. citron,
1 lb. figs,
 $\frac{1}{2}$ lb. lemon peel,
2 teaspoonfuls cinnamon,
2 teaspoonfuls allspice,
2 teaspoonfuls nutmeg,
4 teaspoonfuls baking powder,
Enough flour to make stiff.

Citron, lemon, etc., can be run through the meat chopper, some grated chocolate will help give a rich dark color. This makes two good size cakes or 1 large and 1 small,

which will improve with age.—Mrs. Chas. Matthews.

Pork Cake.

13 oz. or 1 pt. fat pork.
 $3\frac{1}{2}$ cups sugar dissolved in
1 pt. boiling water,
6 cups flour,
 $1\frac{1}{2}$ cups raisins,
 $1\frac{1}{2}$ cups currants,
 $1\frac{1}{2}$ cups citron,
1 tablespoonful cinnamon,
1 tablespoonful cloves,
1 tablespoonful soda.

Put in vessel over fire, first the sugar, spices, soda, and fat pork. Heat slowly until thoroughly dissolved. Grind fruit and dredge with flour. Mix well and bake in a slow oven for 1 hour.—Mrs. Ivy Beckett.

Pork Fruit Cake.

This cake is cheap and equal to the best fruit cake.

Chop or grind $\frac{1}{2}$ lb. salt pork, add 1 cup boiling water and let cool. When cold add

1 cup good molasses,
1 lb. brown sugar,
1 lb. raisins,
 $\frac{1}{2}$ lb. citron,
 $\frac{1}{4}$ lb. lemon and orange rind mixed,
1 cup hickory nut meats (which may be omitted),
1 teaspoonful of soda dissolved in a little hot water,
1 teaspoonful cinnamon,
 $\frac{1}{2}$ teaspoonful ginger,
 $\frac{1}{2}$ teaspoonful nutmeg,
 $\frac{1}{2}$ teaspoonful allspice,
3 cups flour.

Roll fruit in part of flour. Bake 1 hour in moderate oven.—Mrs. H. C. Penning.

Devil's Food Cake.

2 tablespoonfuls butter,
1 cup brown sugar,
Yolk of 1 egg,
2 squares of chocolate melted in
 $\frac{1}{2}$ cupful of hot water,
1 level teaspoonful soda in $\frac{1}{2}$
cupful hot water.
1 level teaspoonful baking powder, sifted with $\frac{1}{2}$ cupful flour.

The cake should be mixed in the order given. Bake in a loaf pan in a moderate oven.—Mrs. Samuel Kirkpatrick.

Apple Sauce Cake.

1 cup sugar,
 $\frac{1}{2}$ cup butter,
 1 egg,
 $1\frac{1}{2}$ cups apple sauce,
 1 teaspoonful cinnamon,
 $\frac{1}{2}$ teaspoonful cloves,
 1 cup chopped raisins,
 1 cup English walnuts,
 1 teaspoonful soda sifted with
 2 cups flour.

Cream butter and sugar, add well-beaten egg. Then the apple sauce which has been sweetened to taste, and cinnamon and cloves. Then add the flour and lastly the raisins and nuts. Bake in loaf cake.—Mrs. Gale Newman.

Apple Cake (Danish).

Cook apples until soft and then sweeten to taste, adding a little nutmeg. Grind dry bread and brown in the oven mixed with butter.

Then in a loaf cake tin put one layer of bread crumbs and then a layer of apples and then bread crumbs and so on until the pan is full, the last layer being of the crumbs. Spread with butter and bake in a moderate oven for forty minutes. Serve warm with whipped cream.

Cream Cake.

Whites of 2 eggs well beaten,
 $\frac{1}{2}$ cup butter,
 1 cup of sugar,
 $1\frac{1}{2}$ cups of flour,
 1 teaspoonful baking powder,
 1 teaspoonful vanilla,
 $\frac{3}{4}$ cup of milk.

This makes excellent devil's food by adding 2 oz. chocolate melted over hot water.

Prune Cake.

Gradually cream $\frac{1}{2}$ cup butter. Beat in 1 cup sugar, the beaten yolks of 2 eggs, $\frac{1}{2}$ cup nut meats, 1 cup cooked prunes cut in bits, and alternately 1 cup of liquid in which prunes

were cooked and $2\frac{1}{2}$ cups sifted flour, sifted again with 1 teaspoonful soda. Lastly beat in whites of 2 eggs beaten dry. Bake in pan 7 x 11 for one hour. Cover with boiled frosting.—Anna Kinsley.

Fig Cake.

$1\frac{1}{2}$ cups sugar,
 $\frac{3}{4}$ cup butter,
 $\frac{3}{4}$ cup sweet milk,
 3 cups flour,
 Beaten whites of 6 eggs,
 3 teaspoonfuls baking powder.

ICING

1 lb. chopped figs,
 1 cup sugar,
 $\frac{1}{2}$ cup water.

Place on the stove, let boil fifteen minutes, and put between layers and on top.

Cream butter, add sugar gradually, then flour, sifted with baking powder, alternately with the milk. Add beaten whites at the end, just before putting into pans. This amount will make three layers.—Mrs. A. J. Mielke.

Date Loaf Cake.

Stone 1 lb. of dates and open 1 lb. of English walnuts, leaving date and nut meats whole. Sift over these $1\frac{1}{2}$ cups flour through which has been sifted 2 teaspoonfuls of baking powder and $\frac{1}{2}$ teaspoonful of salt. Mix thoroughly, add 1 cup sugar and mix again. Beat the whites of 4 eggs stiff and the yolks until light in color. Mix the yolks through the cake mixture, then the whites. Flavor with lemon or otherwise as desired. Bake in a pan in a moderate oven one hour.—Mrs. Chas. Matthews.

Date Cake.

1 cup brown sugar,
 1 cup butter,
 $\frac{3}{4}$ cup warm water,
 2 cups rolled oats,
 $\frac{1}{2}$ cup flour,
 1 teaspoonful soda.

FILLING

Stone 1 pound of dates and cook with one half cup water and one cup

sugar until soft. Spread dough in thin layer on bottom of pan, then spread with the date mixture, and cover with another thin layer of the dough. When baked cut in three-inch squares.—Mrs. O. R. Spence.

Five-Egg Orange Cake.

5 eggs,
 $\frac{1}{2}$ cupful butter,
 1 cupful sugar,
 $\frac{3}{4}$ cupful milk,
 3 cupfuls flour,
 $1\frac{1}{2}$ teaspoonfuls vanilla,
 $1\frac{1}{2}$ teaspoonfuls baking powder.

Beat sugar and butter to a cream, drop in yolks of eggs, thoroughly beaten, add 1 cupful flour, milk, then another cupful flour, beating.

Cream together butter and sugar, add eggs well beaten, molasses, then sour milk, and, last, flour with which has been sifted spices, salt, and soda. Bake in moderate oven.—Mrs. Reed Smoot.

Orange Cake.

1 cup of sugar.
 $\frac{1}{2}$ cup butter,
 $\frac{1}{2}$ cup sweet milk,
 2 cups flour,
 3 eggs,
 $1\frac{1}{2}$ teaspoonfuls baking powder,

Bake in jelly tins.

Frosting

Grate off the outside of 1 orange, mix with juice; add sugar until quite stiff, and make like jelly cake. Make four layers out of this cake.—Mrs. Frank LaFollette.

Pound Cake.

1 lb. sifted flour,
 1 lb. fine sugar,
 1 lb. eggs,
 1 scant lb. butter,
 $\frac{1}{2}$ cup brandy,
 $\frac{1}{2}$ teaspoonful ground mace.

Cream sugar and butter together. Beat whites and yolks separately. Just before mixing whip brandy and spice into creamed butter and sugar, then add yolks, and stir hard for two minutes. Do not stir much after

whites are added.—Mrs. Chas. Matthews.

Apple Sauce Cake.

$1\frac{1}{2}$ cups hot apple sauce sweetened as for the table,
 $\frac{1}{2}$ cup shortening (lard may be used) stirred into the hot sauce,
 1 cup sugar,
 2 level teaspoonfuls soda sifted with $2\frac{3}{4}$ cups of flour,
 1 cup raisins,
 $\frac{1}{2}$ cup nut meats,
 Spice with $\frac{1}{4}$ teaspoonful cloves and
 1 teaspoonful cinnamon.

Serve with whipped cream.—Mrs. Frank L. Henderson.

Apple Sauce Cake without Eggs.

1 cup sugar,
 2 tablespoonfuls butter,
 1 cup sour apple sauce,
 1 cup raisins,
 $\frac{1}{2}$ teaspoonful soda,
 1 teaspoonful cinnamon,
 $\frac{1}{2}$ teaspoonful cloves,
 $1\frac{3}{4}$ cups flour,
 Nutmeg if desired.—Harriet Lewis.

Apple Sauce Cake.

$1\frac{1}{2}$ cups apple sauce,
 $\frac{1}{2}$ cup lard melted,
 $\frac{1}{2}$ teaspoonful salt in the lard,
 $\frac{3}{4}$ teaspoonful soda,
 1 teaspoonful cinnamon,
 $\frac{1}{2}$ teaspoonful cloves,
 $2\frac{1}{2}$ cups flour,
 $\frac{1}{2}$ cup raisins and currants.—Mrs. Minnie Lyon.

German Christmas Cakes or Almond Bread.

1 lb. sugar,
 6 eggs,
 1 lb. almonds—halved,
 1 lb. sifted flour,
 2 teaspoonfuls baking powder,
 1 tablespoonful brandy,
 1 tablespoonful ground spices.

Beat yolks of eggs until light, gradually add the sugar, sifted; add other ingredients, and last of all the beaten whites of eggs. Bake in loaf, in slow oven. While still warm slice

in thin slices, place in oven and brown as you would toast. These cakes should be made several weeks before using as time adds to their good qualities.—Mrs. R. S. Hall.

Coffee Cake.

1 cup New Orleans molasses,
2 cups brown sugar,
1 cup butter,
1 cup coffee,
4 eggs,
1 pound raisins,
1 pound currants,
1 teaspoonful cinnamon,
1 teaspoonful cloves,
1 teaspoonful nutmeg,
1 teaspoonful soda,
4 cups flour,
1 extra cup flour over the fruit.
—Gertrude B. Day.

Coffee Cake.

1½ cups brown sugar,
1 cup butter,
4 eggs,
1 cup molasses,
1 cup coffee,
2 teaspoonfuls cinnamon,
2 teaspoonfuls cloves,
1 teaspoonful nutmeg,
2 teaspoonfuls soda,
4 cups flour,
1 cup raisins,
1 cup currants.

Will make two loaves.—Mrs. A. J. Mielke.

German Bread Cake.

6 eggs,
1 cup pulverized sugar,
½ cup chopped almonds,
½ cup toasted bread crumbs.

Beat yolks light, add sugar beating until very light, add nuts, then bread crumbs toasted and rolled fine. Add beaten whites and bake as you would sponge cake. The batter will seem thin but it will bake satisfactorily. Double if you wish a large cake.

German Coffee Cake.

1 pt. of milk warmed slightly with two inch slice of butter from a pound print,

1 cup sugar,
2 eggs,
1 cup of good yeast.
Flour to make a stiff dough.

Beat thoroughly. Let rise over night, add raisins or currants, when raised ready for oven wet with milk and sprinkle with sugar and cinnamon.—Mrs. Chas. Matthews.

Chocolate Nut Cake.

Shell 1 lb. of English walnuts; save out 2 or 3 dozen unbroken kernels, and chop the remainder fine. Beat 1 cup sugar and ½ cup butter to a cream; add 2 eggs, one at a time, beating thoroughly; next, stir in alternately ½ cup of milk and 1½ cups of flour sifted with 1 tablespoonful of baking powder. Flavor slightly with vanilla and bake in two layers.

When cake has become partially cool, spread with an icing made as follows: Put into a granite vessel, a teaspoonful of butter and as it softens, brush the sides of the dish. Add 2 ounces of grated chocolate, unsweetened; ¾ pound of light brown sugar and ½ cup sweet milk. Cook until a little dropped into cold water makes a soft ball when rubbed between thumb and forefinger. Add 1 tablespoonful of butter; remove from fire and add 1 teaspoonful of vanilla. To a third of the icing, add chopped nut meats. Stir until cool enough to spread, then put between layers. Spread remaining icing over the sides and tops, arranging at regular intervals the whole kernels.—Elsie Major.

Marble Cake.

White Part

1 cup sugar,
½ cup butter,
½ cup milk,
1½ cups flour,
1 teaspoonful baking powder,
Whites 4 eggs.

Yellow Part

¾ cup sugar,
1 tablespoonful butter,
Yolks of 4 eggs,
¼ cup milk,

1 cup flour,
1 teaspoonful of baking powder.

Dark Part

1 cup chocolate,
 $\frac{3}{4}$ cup hot milk,
1 tablespoonful sugar.

Put batters in tins by tablespoonfuls alternately.—Mrs. Dennis Houghton.

Chocolate Caramel Cake.

Put over the fire in a double boiler 1 cup milk and $\frac{1}{2}$ cake grated bitter chocolate. When dissolved stir in 1 cup sugar and beaten yolk of 1 egg. When cold flavor with vanilla. While this mixture is cooling beat up 1 cup sugar with $\frac{1}{2}$ cup butter, 2 eggs, and $\frac{1}{2}$ cup milk, add 1 teaspoonful soda, and 3 cups flour. Stir well and add to the cold custard. Bake in four jelly tins and ice with white boiled frosting.—Verna Banta.

Chocolate Marble Cake.

$\frac{1}{2}$ cup butter,
1 cup milk,
1 cup sugar,
 $1\frac{3}{4}$ cups flour,
2 eggs,
3 teaspoonfuls baking powder,
1 teaspoonful vanilla.

Mix about half of this dough with 1 square of chocolate, grated, 3 tablespoonfuls hot milk, and half cup sugar. Put in tins a layer light, then dark dough, alternately.

Chocolate Layer Cake.

Whites of 3 eggs, or 2 whole eggs,
2 cups sugar,
1 cup sweet milk,
2 tablespoonfuls butter melted,
3 cups flour,
2 teaspoonfuls baking powder,

Sift the sugar, baking powder and flour. Beat the eggs in a separate dish, add the milk to the eggs and combine the two mixtures. Add last the melted butter. Bake $\frac{1}{2}$ the batter in two pans. Add to the remainder $\frac{1}{2}$ cup grated chocolate. Then bake this also in two pans.

Use chocolate filling.—Mrs. E. L. Miller.

Marble Chocolate Cake.

2 cups sugar,
1 cup butter,
3 cups flour,
4 eggs,
1 cup sweet milk,
2 teaspoonfuls baking powder.

When mixed take out $\frac{1}{4}$ or $\frac{1}{2}$, mix in it some grated chocolate until it is brown, put it in a tin one spoon of each, light and dark. For the icing beat 1 egg and put in some grated chocolate with the sugar.—Mrs. A. J. Mielke.

Caramel Cake.

$\frac{1}{2}$ cup butter,
1 cup sugar,
3 egg yolks,
1 cup water,
3 teaspoonfuls caramel sirup,
2 cups sifted flour,
2 teaspoonfuls baking powder,
2 egg whites.

Mix cake in usual manner. Make plain boiled frosting, add 2 tablespoonfuls caramel sirup, 1 teaspoonful vanilla.—Anna Kinsley.

Molasses Cake.

1 cup molasses,
2 eggs well beaten,
1 cup boiling water,
2 tablespoonfuls cottolene or butter (melted)
1 teaspoonful soda,
2 teaspoonfuls ginger, cinnamon,
1 teaspoonful cloves and nutmeg,
Pinch salt,
3 cups flour.

Sift together spices, soda, salt and flour. Add moist ingredients. Stir until smooth, and bake in moderate oven.—Mrs. J. E. Anderson.

Minnehaha Cake.

$\frac{1}{2}$ cup butter,
 $1\frac{1}{2}$ cups sugar,
Whites of 6 eggs,
1 cupful milk,
 $2\frac{1}{2}$ cups flour,
2 teaspoonfuls baking powder.

Bake in 3 layers.

Filling

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

Boil until it spins a thread. Stir it into the beaten white of 1 egg. Quickly add $\frac{1}{2}$ cup raisins seeded and chopped fine and $\frac{1}{2}$ cup chopped hickory nut meats. Beat until thick enough to spread.—Mrs. Charles Downey.

Hurry Cake.

Three-fourths cup sugar, 1 tablespoonful butter, 1 egg. Stir together and add 1 cup buttermilk, pinch salt, 3 cups flour, 2 teaspoonfuls baking powder. Mix well and spread in a large dripping pan. Put small pieces of butter over the top and sprinkle with sugar and cinnamon.—Mrs. Chas. Downey.

Puff Cake.

$\frac{1}{2}$ cup butter,
 1 cup sugar,
 2 eggs,
 $\frac{1}{2}$ cup milk,
 1 $\frac{1}{2}$ cups flour,
 1 teaspoonful cream tartar,
 $\frac{1}{2}$ teaspoonful soda,
 1 teaspoonful lemon extract.

Beat to a cream the butter, sugar, the yolks of eggs. Then add milk and soda and stir in the flour and cream of tartar sifted together. Stir well, then add the whites of eggs beaten stiff and lastly add flavoring.—Mrs. Fred. H. Fowler.

Lady Baltimore Cake.

1 cup butter,
 2 cups sugar,
 3 $\frac{1}{2}$ cups flour,
 1 cup sweet milk,
 Whites of 6 eggs,
 2 teaspoonfuls baking powder,
 1 teaspoonful rosewater.

Cream butter, add sugar gradually, beating continuously, then the milk and flavoring, next the flour into which the baking powder has been sifted. Lastly the stiffly beaten whites of egg. Whites should be

folded lightly into the dough. Bake in 3 layers.

Filling

Dissolve 3 cups sugar in 1 cup boiling water, cook until it threads, then pour it over the stiffly beaten whites of 3 eggs, stirring constantly. To this add 1 cup chopped raisins, 1 cup chopped nut meats (pecans preferred) and 5 figs cut into very thin strips.—Mrs. A. J. Palmer.

Golden Cake.

1 $\frac{1}{4}$ cups white sugar,
 $\frac{1}{2}$ cup butter,
 2 cups flour,
 $\frac{1}{2}$ cup sweet milk,
 3 eggs,
 2 teaspoonfuls baking powder.

Cream butter and sugar, beat in the yolks of egg, then the milk. Add whites of egg beaten to stiff froth, lastly add the flour sifted with baking powder. Bake in deep tins in moderate oven. Bake in layers.—Mrs. Wilma Jones.

Hot Water Cake.

3 eggs,
 1 $\frac{1}{2}$ cups sugar,
 $\frac{1}{2}$ teaspoonful vanilla,
 1 $\frac{1}{2}$ cups flour,
 Scant cup hot water,
 1 teaspoonful baking powder.

Stir together eggs and sugar until they cream, add the vanilla flavoring, stir in the baking powder, sifted with flour, and lastly add the hot water. Stir well and bake in a loaf in a moderate oven.—Zexa Parch.

Watermelon Cake.*White Part*

2 cups pulverized sugar,
 $\frac{2}{3}$ cup butter,
 $\frac{2}{3}$ cup sweet milk,
 3 cups flour,
 Whites of 5 eggs,
 1 tablespoonful baking powder.

Red Part

1 cup red sugar,
 $\frac{1}{2}$ cup sweet milk,
 2 cups flour,

1 tablespoonful baking powder,
Yolks 5 eggs,
 $\frac{1}{4}$ pound raisins,
 $\frac{1}{4}$ pound currants.

Put red part in center of pan and white part outside.—Mrs. Chas. Downey.

Cheap Layer Cake.

4 tablespoonfuls sweet cream,
1 cup sugar,
2 eggs,
2 cups flour,
2 teaspoonfuls baking powder,
1 cup hot water,
Vanilla to flavor.

Mix cream and sugar, add beaten eggs, then flour and baking powder sifted together and last the hot water. Flavor and bake in layers.—Mrs. J. Grubb.

Soft Ginger Bread.

1 cup dark brown sugar,
1 cup molasses,
1 cup coffee,
1 tablespoonful soda sifted with flour,
 $\frac{1}{2}$ cup water,
 $\frac{3}{4}$ cup of lard,
1 tablespoonful ginger,
5 cups sifted flour.

Cream sugar and lard together, add first the molasses and coffee, then the ginger and flour and beat thoroughly. Bake in a moderate oven about forty minutes. Serve hot with butter.—Emily Elliott.

Sponge Ginger Bread.

1 cup molasses,
2 cups flour,
1 teaspoonful soda,
1 scant teaspoonful ginger,
1 teaspoonful cinnamon,
1 saltspoonful salt.

Add 1 cup boiling water just before putting the batter in the oven.—Mary K. Edick.

New England Ginger Bread.

$\frac{1}{2}$ cup butter,
 $\frac{1}{2}$ cup sugar,
1 cup molasses,
2 eggs,

2 teaspoonfuls ginger,
1 teaspoonful cinnamon,
 $\frac{1}{2}$ teaspoonful cloves,
1 teaspoonful salt,
2 teaspoonfuls soda,
1 cup boiling water,
 $2\frac{1}{2}$ cups flour.

Mix thoroughly butter, sugar, spices and salt. Add molasses and part of flour and mix well. Sift soda in remaining flour, and add hot water and flour to mixture, also the beaten eggs. Mix well and bake thirty minutes in moderate oven.

Serve hot with hard sauce as a dessert in cold weather.—Mrs. O. H. Mahon.

Soft Gingerbread Without Eggs.

1 cup black molasses,
1 cup brown sugar,
5 cups flour,
2 teaspoonfuls soda in
 $\frac{1}{2}$ cup boiling water,
1 cup buttermilk,
2 tablespoonfuls of lard,
1 teaspoonful each ginger and cloves,
Pinch of salt.

Chocolate Snow Cake.

$\frac{1}{4}$ cupful butter,
1 cupful sugar,
 $\frac{1}{2}$ cupful milk,
1 $\frac{3}{4}$ cupfuls flour,
2 $\frac{1}{2}$ teaspoonfuls baking powder,
Whites 2 eggs,
 $\frac{1}{2}$ teaspoonful vanilla.

Cream the butter and sugar, add the milk alternately with the flour and baking powder sifted together. Flavor with vanilla, and cut in the whites of eggs beaten to a stiff froth. Bake in layer tins. Fill with chocolate filling, and cover with chocolate frosting.

CAKES MADE FROM SOUR MILK

Sour-Cream Cake.

1 cupful sugar,
2 eggs,
1 cupful sour cream,
 $\frac{1}{2}$ teaspoonful soda,
2 cupfuls flour,
1 $\frac{1}{2}$ teaspoonfuls baking powder,
1 teaspoonful lemon extract.

Beat sugar, egg yolks, and cream very light; sift in flour, soda, and baking powder. Flavor, add whites of eggs beaten stiff in a loaf cake.

Cocoa Cake.

- $\frac{1}{2}$ cupful butter,
- 2 cupfuls sugar,
- 2 eggs,
- 1 cupful sour milk,
- $\frac{1}{2}$ teaspoonful baking soda,
- 2 cupfuls flour,
- $\frac{1}{2}$ cupful cocoa.

Beat the butter and sugar to a cream, then add the other ingredients, sifting soda, flour and cocoa together. Bake in a moderate oven. Cover with chocolate icing.

Dried-Apple Cake.

- 2 cupfuls molasses,
- 3 cupfuls dried apples,
- 1 cupful butter,
- 1 cupful sugar,
- 1 cupful sour milk,
- 1 teaspoonful soda,
- 4 eggs,
- 4 cupfuls flour,
- 1 cupful currants,
- 1 cupful raisins,
- 1 teaspoonful cloves,
- 1 teaspoonful cinnamon,
- 1 nutmeg.

Soak apples in as little water as possible over night; in the morning chop fine and boil half an hour in molasses. When cold, add butter, sugar and milk, eggs, flour, soda and spices sifted together, and fruit. Bake in a slow oven.

Spice Cake.

- 1 cupful sugar,
- 2 eggs,
- 4 tablespoonfuls butter,
- $\frac{1}{2}$ cupful sour milk,
- $\frac{1}{2}$ cupful strong coffee,
- $\frac{1}{2}$ teaspoonful soda,
- 1 teaspoonful baking powder,
- $2\frac{1}{2}$ cupfuls flour,
- 1 teaspoonful cinnamon,
- 1 teaspoonful nutmeg.

Cream sugar and butter, and add the milk, coffee, and soda, baking

powder, flour, spice, cinnamon, and nutmeg sifted together. Bake in a medium-sized pan, and frost with powdered sugar mixed with cream.

Devil's Cake.

- 2 cupfuls dark-brown sugar,
- $\frac{1}{2}$ cupful butter,
- $\frac{1}{2}$ cupful sour milk,
- $\frac{1}{2}$ teaspoonful soda,
- 3 cupfuls flour,
- 1 teaspoonful baking powder,
- 2 eggs,
- $\frac{1}{2}$ cupful chocolate melted over hot water.

Beat the butter and sugar until smooth. Add the milk, soda sifted with flour and baking powder. Add the eggs well beaten. Stir thoroughly and add the chocolate. This makes three good-sized layers. Filling—2 cupfuls brown sugar, $\frac{1}{2}$ cupful butter, $\frac{1}{2}$ cupful sweet milk. Boil until it will thread, and spread between layers. If a very large cake is desired, two white layers may be added flavored with orange.

Training-Day Ginger Cake.

- $\frac{1}{2}$ cupful butter,
- 1 cupful granulated sugar,
- 1 egg,
- 1 cupful New Orleans molasses,
- 1 cupful sour milk,
- 1 teaspoonful soda,
- 3 cupfuls pastry flour,
- 1 tablespoonful ginger.

Beat the butter to a cream, add the sugar and egg well beaten, the molasses, then the sour milk. Sift the soda, flour and ginger, add to mixture, beat thoroughly, and turn into a shallow baking pan. Bake in a moderate oven; when it is well done, remove from the oven and spread with a thick layer of raw molasses. Return to the oven for a short time till the coating of the molasses has set, when the cake may be cut into squares.

Crumb Gingerbread.

- $\frac{1}{2}$ teaspoonful soda,
- 4 cupfuls flour,
- 1 cupful butter,

- 2 cupfuls sugar,
- 1 cupful sour milk,
- 2 eggs,
- $\frac{1}{2}$ grated nutmeg,
- $\frac{1}{2}$ teaspoonful cinnamon,
- 1 teaspoonful ginger.

Rub the flour and butter together until they are reduced to crumbs, as flour and lard are worked together for pie crust; then add the sugar and stir this in till the mixture is once more crumbly. Measure out 2 cupfuls crumbs, and set away in a cold place until the batter is made. Into what remains of the crumbs stir in two well-beaten eggs, and add the sour milk. Add to the batter the nutmeg, cinnamon, and ginger and soda sifted with the flour. Butter a dripping pan and measure out 1 cupful crumbs that was set aside; spread evenly on the bottom of the pan, pour the batter over them as evenly as possible; spread the rest of the crumbs on top, and bake in a moderately hot oven; when done, cut into squares, and keep in a closely covered jar.

Aunt Dinah's Cake.

- $\frac{1}{2}$ cupful butter,
- $\frac{1}{2}$ cupful sugar,
- $\frac{1}{2}$ cupful molasses,
- 2 cupfuls flour,
- $\frac{1}{2}$ cupful sour milk,
- $\frac{1}{2}$ teaspoonful ginger,
- $\frac{1}{2}$ teaspoonful salt,
- 1 teaspoonful cinnamon,
- $\frac{1}{2}$ teaspoonful soda,
- $\frac{1}{4}$ nutmeg grated,
- Juice and rind $\frac{1}{2}$ lemon,
- 1 egg.

Beat the butter and sugar to a cream, add lemon, and molasses, then the egg well beaten, then the flour, with soda and spices sifted with it, and beat briskly. Pour into a well-buttered pan, and bake in a moderate oven fifty minutes. This cake will keep moist some time. One half cupful stoned raisins and $\frac{1}{2}$ cupful currants may be stirred lightly into the batter just before it is put in the pan, if you wish a fruit cake.

Blackberry-Jam Cake.

- $\frac{1}{2}$ cupful butter,
- $\frac{3}{4}$ cupful sugar,
- 1 cupful flour,
- $\frac{3}{4}$ cupful stoned raisins,
- $\frac{3}{4}$ cupful blackberry jam,
- 2 tablespoonfuls sour cream or milk,
- $\frac{1}{2}$ teaspoonful soda,
- $\frac{1}{2}$ nutmeg grated,
- 2 eggs.

Beat the butter to a cream, then beat in the sugar. When very light, beat in the jam and nutmeg. Dissolve the soda in 1 tablespoonful cold water, and add it to the sour cream. Add this and the egg well beaten to the other ingredients. Now add the flour and beat for half a minute. Sprinkle a tablespoonful flour over the raisins, and stir them in lightly. Pour the batter into a well-buttered pan, and bake fifty minutes. This makes one small loaf. This cake may be put away to be used as a pudding when convenient. Steam it an hour, and serve with a wine sauce. It is almost as good as a plum pudding.

Maple-Sugar Gingerbread.

- 1 egg,
- 1 cupful thick maple sirup,
- 2 cupfuls flour,
- $\frac{1}{2}$ cupful sour milk,
- $\frac{1}{4}$ cupful butter,
- $\frac{1}{2}$ teaspoonful ginger,
- $\frac{1}{2}$ teaspoonful soda,
- $\frac{1}{4}$ teaspoonful salt,
- Rind and juice $\frac{1}{2}$ lemon.

Beat the butter to a cream, and add the sirup and flavoring. Dissolve the soda in 1 tablespoonful cold water and stir into the sour milk. Add this and the egg well beaten to the other ingredients, then the flour. Beat well; pour into a buttered pan. This quantity will make one small loaf, or a thin sheet. If baked in a loaf, leave in oven fifty minutes; if in a sheet, twenty-five minutes.—Miss Parloa.

Marble Layer Cake.

- $\frac{1}{2}$ cake chocolate,
- 1 teaspoonful baking soda,

$\frac{1}{2}$ cupful warm water,
 2 cupfuls maple sugar,
 2 eggs,
 $\frac{3}{4}$ cupful butter,
 1 cupful sour milk,
 $2\frac{1}{2}$ cupfuls flour.

Melt the chocolate over hot water, dissolve the soda in the warm water; beat the butter to a cream. Add the eggs beaten without separating, and beat in gradually the sugar—beat for at least ten minutes. Pour the soda and water in the sour milk; add this with the melted chocolate to the egg mixture; now stir in the flour. Beat and bake in three layers. When cold, put together with maple or caramel filling.

Eggless Cake.

1 cup sugar,
 1 cup sour milk,
 1 cup raisins chopped,
 $\frac{1}{2}$ cup butter,
 1 teaspoonful soda dissolved in
 1 teaspoonful water added to
 milk,
 1 teaspoonful cinnamon,
 $\frac{1}{2}$ teaspoonful grated nutmeg,
 4 teaspoonfuls cloves,
 2 cups flour.—Mrs. A. J. Mielke.

Eggless Cake.

1 cup sugar,
 1 cup sour milk,
 $\frac{1}{2}$ cup lard or butter,
 1 cup raisins,
 2 cups flour,
 1 teaspoonful each of soda and
 cinnamon,
 $\frac{1}{2}$ teaspoonful nutmeg,
 $\frac{1}{2}$ cup nuts.

This is also very good without the nuts.—Mrs. James E. Shafer.

Eggless Cake.

1 cup of sugar,
 1 teaspoonful of cloves,
 1 teaspoonful of cinnamon,
 2 cups of flour,
 1 cup of raisins,
 $\frac{1}{2}$ cup lard and butter mixed together,
 1 cup of sour milk,
 1 teaspoonful of soda sifted with
 flour.

Cream the butter, lard and sugar together, then add the cinnamon and cloves, and then the raisins, rolled in a little flour. Finally add the remaining ingredients.—Mrs. O. R. Spence.

Cream Cake.

Whites of 3 eggs,
 Yolk of 1 egg,
 1 cup sugar,
 1 cup sweet cream,
 2 cups flour,
 3 teaspoonfuls baking powder.

Filling

1 cup sour cream,
 $1\frac{1}{2}$ cups sugar.

Boil until thick and stir until quite cool. Mix in chopped raisins and nuts if desired.—Miss Elizabeth Turmo.

Prune Cake.

$1\frac{1}{2}$ cups sugar,
 $\frac{1}{2}$ cup butter,
 3 eggs,
 1 teaspoonful each, cloves, cinna-
 mon, and allspice,
 1 pound cooked prunes pitted,
 1 teaspoonful soda,
 3 cups flour,
 1 cup sour milk.—Miss Mar-
 garete Leight.

Spice Cake without Eggs.

1 cup of sugar,
 1 cup sour milk,
 $\frac{1}{2}$ cup butter,
 $2\frac{1}{4}$ cups flour,
 1 cup raisins,
 1 teaspoonful baking powder,
 1 teaspoonful cinnamon,
 1 teaspoonful nutmeg,
 1 teaspoonful allspice.

Cream the butter and sugar, add the sour milk, then the flour in which has been sifted the baking powder, cinnamon, cloves, soda, nutmeg and allspice. Lastly add the raisins after washing, draining and rolling in flour. Bake in a loaf in a moderate oven.—Jennie M. Woods.

Cinnamon Cake.

$\frac{1}{2}$ cup butter,
 $\frac{1}{2}$ cup sugar,
 $\frac{1}{2}$ cup molasses,
 $\frac{1}{2}$ cup sour milk,
 1 teaspoonful cinnamon,
 $\frac{1}{2}$ teaspoonful cloves,
 $\frac{1}{2}$ teaspoonful soda,
 2 eggs,
 2 cups flour.

Cream butter, add sugar and spices, and mix well. Add egg yolks and molasses, stir in one cup of flour, sift soda in remaining flour, add sour milk, flour and beaten whites of eggs. Mix well and bake in moderate oven. May be baked in a loaf or in layers.—Mrs. O. H. Mahon.

Devils' Food.

$\frac{1}{2}$ cup butter,
 2 cups brown sugar,
 1 cup sour milk,
 $\frac{1}{2}$ cup walnut meats,
 $\frac{1}{2}$ cup raisins,
 2 eggs,
 1 teaspoonful soda sifted with flour,
 2 oz. chocolate dissolved in
 $\frac{1}{2}$ cupful hot coffee,
 2 cups flour.

Cream butter, add sugar, break in eggs and beat to a cream. Add the chocolate, then the sour milk. Add walnut meats and raisins dusted with flour. Add flour last. Bake in a slow oven.—Mrs. Albert Kruse.

Devils' Food.

2 cups brown sugar,
 $\frac{1}{2}$ cup butter,
 2 eggs beaten (separate and add whites last),
 2 squares chocolate melted over boiling water,
 $\frac{1}{2}$ cup sour milk or cream,
 1 teaspoonful soda,
 2 cups flour.—Mrs. A. O. Wensberg.

Devils' Food.

2 cups sugar,
 $\frac{1}{2}$ cup butter,
 $\frac{1}{2}$ cup sour milk,
 2 squares chocolate melted in

$\frac{1}{2}$ cup hot water,
 2 eggs,
 1 teaspoonful soda sifted with
 2 $\frac{1}{2}$ cups flour.—Mrs. James E. Shafer.

Chocolate Cake without Eggs.

$1\frac{1}{2}$ cups dark brown sugar,
 $\frac{1}{2}$ cup butter,
 $\frac{1}{2}$ cup sour milk,
 2 cups flour,
 1 teaspoonful baking powder,
 2 squares unsweetened chocolate,
 $\frac{1}{2}$ cup boiling water,
 1 teaspoonful soda.

Grate the chocolate into a dish, add the water and soda; let stand until the other ingredients are mixed. Put the sugar, and butter in a crock and mix together, and sour milk, then flour sifted with baking powder. Then add the chocolate mixture, beat well and bake in layers in a moderately hot oven.—Edna Chaddock.

Blackberry Cake.

1 cup brown sugar,
 $\frac{1}{2}$ cup butter or lard,
 3 eggs,
 $1\frac{1}{2}$ cups flour,
 $\frac{1}{2}$ cup sour milk,
 1 teaspoonful soda,
 1 teaspoonful allspice,
 1 teaspoonful cinnamon,
 1 cup blackberries or jam, added last.

Bake in layers, using white icing between layers and on top. When putting in the eggs save one white of egg for the icing. The berries can be omitted, using raisins or other fruit instead.

Icing.

Boil 1 cup of sugar with a little water until it threads. Beat the white of 1 egg until stiff, then add sirup, beating continually until it is cool enough to ice the cake.—Mrs. D. C. Yeutzer.

Soft Ginger Bread.

3 eggs,
 1 cup sugar,
 $\frac{1}{2}$ cup molasses,

- 1 teaspoonful soda,
- 1 cup sour milk,
- 2 cups flour,
- 1 teaspoonful each of ginger, cinnamon and nutmeg,
- 2 tablespoonfuls lard.—Mrs. G. M. McKittrick.

Ginger Bread.

- $\frac{1}{2}$ cup butter,
- $\frac{1}{4}$ cup brown sugar (light)
- $\frac{3}{4}$ cup molasses,
- 2 cups flour,
- $\frac{1}{2}$ cup milk (sweet or sour),
- $\frac{1}{2}$ teaspoonful soda.

Sift with flour $\frac{1}{2}$ tablespoonful ginger, $\frac{1}{2}$ teaspoonful each of allspice, cinnamon, cloves and soda. Bake in loaf or two layers. Raisins may be added if desired.—Mrs. James E. Shafer.

Soft Ginger Bread.

- 1 cup brown or white sugar,
- 1 cup butter or lard,
- 2 eggs,
- 1 scant cup sour milk,
- 1 cup black molasses,
- 1 small teaspoonful ginger (other spices may be added),
- 1 teaspoonful soda,
- 3 even cups sifted flour.

Cream together the sugar and shortening. Add the eggs well beaten and the milk and molasses. Then add soda, flour and spices sifted together twice. Put in a well-greased pan and bake in a slow oven 40 minutes or more.—Zilda Southard.

CAKES RAISED BY YEAST**Old-Fashioned Raised Cake.**

- $\frac{1}{2}$ pound currants,
- 6 cupfuls flour,
- 2 cupfuls warm milk,
- $\frac{1}{2}$ yeast cake,
- 1 teaspoonful salt,
- $\frac{1}{2}$ cupful butter,
- 2 cupfuls sifted brown sugar,
- 4 eggs,
- 1 tablespoonful mixed spice,
- 1 cupful raisins.

Mix salt with half the flour; add gradually warm milk, beating to a

batter, add yeast softened in 1 table-spoonful luke warm water and set to rise over night. In the morning cream the butter and sugar, add also spice and beaten eggs to the risen batter, put in the remainder of the flour, gradually mixing thoroughly with the hand. Add fruit last. Let it rise until perfectly light. Scrape down and stir; fill pans two thirds full; let stand in a warm place. It will not rise perceptibly in the pans, but the process will have begun afresh in them and will complete in the baking. Bake an hour or more.

Loaf Cake without Eggs.

- 2 cupfuls warm milk,
- 3 cupfuls sugar,
- 1 cake yeast,
- 1 cupful butter,
- 1 cupful lard,
- Raisins,
- Spices,
- 1 teaspoonful baking powder,
- Flour.

Soften the yeast in a cupful water, add to the milk and 1 cupful sugar; make a stiff batter and let it rise over night; then add the rest of the sugar, butter, and lard; also raisins and spices and the baking powder. Let it rise again before baking.

Long Meadow Loaf Cake.

- 5 cupfuls sugar,
- $1\frac{1}{2}$ cupfuls butter,
- 1 cupful lard,
- 4 cupfuls warm milk,
- 1 yeast cake,
- Whites 4 eggs,
- Flour,
- 1 teaspoonful nutmeg,
- 1 teaspoonful soda,
- $1\frac{1}{2}$ pounds raisins,
- $\frac{1}{2}$ pound citron.

Cream the sugar, butter, and lard. Mix thoroughly, separate into unequal portions, and to the smaller part of this mixture add the warm milk, yeast softened in the milk, and flour enough to make a batter which will be hard to stir with a spoon. Let it rise over night in a warm place. In the morning add the rest of the

sugar and shortening, the whites of eggs, nutmeg, and soda. Let it rise again till light—it may take four hours—then add the raisins and citron. When risen the last time, bake slowly an hour.—Mrs. E. Brewer.

English Whigs.

$\frac{1}{2}$ cupful butter,
6 cupfuls flour,
3 eggs,
 $\frac{1}{2}$ yeast cake,
2 cupfuls milk,
1 cupful sugar,
 $\frac{1}{2}$ pound currants.

Rub the butter into the flour, beat the eggs with the yeast softened in 1 tablespoonful luke warm water, into the batter, and add the milk; beat all until smooth, cover the batter and let it stand three hours; then stir in the sugar and currants. Allow it to stand an hour, then pour in small tins, fill half full, and stand till risen. A quarter of an hour in a quick oven is sufficient to bake them.

Yorkshire Cake.

3 pounds flour,
 $1\frac{1}{2}$ pints warm milk,
5 ounces butter,
1 yeast cake,
3 eggs.

Beat the flour, milk, yeast cake, and eggs well together, and let it rise; then form the cakes round; place them on the baking tins and let them rise again before putting them in the oven, which must be of a moderate heat. The butter may be warmed with the milk and added.

Old-Fashioned Pound Cake.

1 pound butter,
1 pound sugar,
10 eggs,
1 pound flour.

Butter and sugar are first creamed, then yolks of eggs added, then flour. The rule is to beat for an hour, but sometimes you get tired before hour is up. Last, fold in whites of eggs

beaten to a stiff froth; bake slowly an hour.

Drop Cakes.

$1\frac{1}{2}$ cupfuls brown sugar,
1 cupful butter,
 $1\frac{1}{2}$ cupfuls sweet milk,
3 eggs,
1 teaspoonful each, cinnamon,
cloves, allspice, and nutmeg,
1 cupful chopped raisins,
1 cupful broken English walnuts,
2 teaspoonfuls baking powder.

Cream sugar and butter, add well-beaten eggs, then milk. Sift spices and baking powder with enough flour to make a batter that will drop from a spoon, add mixture, stir in nuts and raisins, beat well, then drop by teaspoonfuls on a greased pan and bake in hot oven.

CAKE FILLINGS AND ICINGS

Whipped-Cream Filling.

Pour a cupful double cream into a bowl and whip with a Dover egg beater till stiff. Stop as soon as it begins to be thick or it will change to butter. Sweeten with 2 tablespoonfuls powdered sugar and flavor with $\frac{1}{2}$ teaspoonful vanilla. This may be spread between layers of cake, then the top ornamented with a little of the cream squeezed through a pastry bag.

Chocolate-Cream Filling.

1 cupful sugar,
 $\frac{1}{2}$ cupful flour,
Dash salt,
2 eggs,
1 teaspoonful vanilla,
 $\frac{1}{4}$ square chocolate,
2 cupfuls milk.

Put into a bowl the sugar, flour, and salt, blend thoroughly, then mix with the eggs well beaten. Scald the milk in a double boiler and add it to the egg mixture, return to double boiler and cook, beating steadily till it thickens. As soon as it is taken from the fire, stir in the melted chocolate and vanilla. Pour between layers of a cake when it has cooled.

Caramel Filling.

1 tablespoonful butter,
 $\frac{1}{2}$ cupful sugar,
 $\frac{3}{4}$ cupful cream,
 $\frac{1}{2}$ cupful caramel,
 1 teaspoonful vanilla.

Boil together the butter, sugar, and cream until it spins a thread. Then add the caramel and vanilla, beat until cool, and pour between the cake.

Cream Filling.

1 $\frac{1}{2}$ cupfuls milk,
 1 teaspoonful butter,
 Dash salt,
 2 eggs,
 $\frac{1}{2}$ cupful sugar,
 3 tablespoonfuls cornstarch,
 1 teaspoonful vanilla.

Scald the milk with the butter, sugar, and salt; add to the eggs beaten together with the cornstarch. Cook over hot water, stirring constantly. As soon as the mixture becomes creamy, beat it thoroughly, cool, and add the vanilla. To make a coffee filling, use this recipe exactly as given, only adding $\frac{1}{2}$ cupful very strong black coffee and leaving out $\frac{1}{2}$ cupful hot milk.

Cream Filling for Cake.

1 egg,
 1 cupful sugar,
 $\frac{1}{2}$ cupful flour,
 $\frac{1}{2}$ pint milk,
 Flavor.

Beat egg well and add sugar and flour. Moisten with a little milk and pour on milk which has reached boiling point. Cook over hot water until thick enough for filling, flavor and spread to taste.—Zilda Southard.

Cream Filling.

1 cupful milk or cream,
 1 $\frac{1}{2}$ cupfuls sugar,
 1 teaspoonful vanilla.

Put milk, sugar, and 1 tablespoonful of butter (if cream is used butter is not necessary) in a pan on the stove. Boil without stirring until it

hairs. Remove from the fire. Beat until creamy, add vanilla and spread on cake before it cools.—Amy Beddow.

Butter Milk Filling for Cake.

2 cupfuls sugar, white or brown,
 $\frac{1}{2}$ cupful butter,
 $\frac{1}{2}$ cupful buttermilk,

Cook till it will thread from a spoon. Remove from fire and beat till creamy.—LaVerna McRay.

Brown Frosting for Cake.

1 $\frac{1}{2}$ cupfuls sugar,
 1 pint sweet cream.

Melt and brown the sugar and then quickly stir in the cream and let simmer until thick, stirring constantly so that it does not burn. Spread on top of cake. If desired flavoring may be added.

Fondant Icing.

2 cupfuls sugar,
 $\frac{1}{2}$ teaspoonful cream of tartar,
 1 cupful boiling water,
 1 tablespoonful vanilla.

Mix the sugar and cream of tartar together, pour the water over it, and boil till it forms a little soft ball when dropped into cold water. Pour it out on an oiled platter, cool, beat and knead till of the consistency of lard. When ready to use, soften it over boiling water, stirring with a fork till it is creamy. Add the flavoring, and pour over the cake. By first using this icing on a cake, then covering when hard and smooth with sweet chocolate melted, you have what is called a chocolate-cream icing. *Decorating Icing.*—Beat the whites of 2 eggs to a very stiff froth, then add slowly powdered sugar until the mixture is so stiff that every point and thread left by the beater will hold its place. It requires beating a long time. It is the same as meringue mixture, except that it is made hard with sugar instead of by drying, and takes about $\frac{1}{2}$ cupful sugar to each egg.—Mary Ronald.

Cake Icing.

To make smooth, rich icing take the juice of oranges, lemons or strawberries and thicken with powdered sugar to required thickness.—Miss M. Kutuewrky.

Marshmallow Icing.

1 cupful sugar,
 $\frac{1}{2}$ cupful water,
 Whites of 2 eggs,
 $\frac{1}{2}$ pound marshmallows,
 Vanilla flavoring.

Boil the sugar and water until it forms a soft ball in cold water. Then beat into the beaten whites of the eggs. Add the marshmallows having first cut them into pieces with scissors and heated them in a double boiler. Finally beat all together.—Mrs. J. Baumgartner.

Golden Frosting.

Mix the yolks of 2 eggs with enough powdered sugar to make a stiff paste, flavor with lemon or vanilla as preferred.—Mrs. Chas. Matthews.

Orange Icing.

This is one of the daintiest and most delicious icings and is easily made. Put the yolk of 1 egg into a bowl and beat until light colored. Then add the strained juice from one orange and mix thoroughly. Add gradually, beating continuously, enough fine powdered sugar to make an icing stiff enough to spread nicely. It will require 1 pound. This icing will stand if it cannot be used at once. Keep covered until needed.—Mrs. A. J. Mielke.

Boiled Icing.

Boil one cup of granulated sugar with $\frac{1}{2}$ cup of water until it drops from a spoon in threads. Beat white of one egg, pour the hot sirup slowly into it, beating rapidly all the time. Spread on the cake while warm. This frosts one cake.—Mrs. Chas. Matthews.

Nut Tutti-Frutti Cake Icing.

Blanch three-quarters of a cup of English walnuts or almonds, chop

them quite fine, chop one-half cup of raisins (seeded) and one cup of sugar, and three tablespoonfuls of water. Boil until it spins a thread. Then take it from the stove, and beat until the desired consistency for spreading is obtained.—Ruby G. Adams.

Cold Icing.

$1\frac{1}{2}$ cupfuls pulverized sugar,
 1 tablespoonful cream,
 2 tablespoonfuls cocoa,
 1 teaspoonful coffee,
 1 teaspoonful coffee infusion,
 1 teaspoonful vanilla.

Put sugar and cocoa together. Beat sugar and cream, then the coffee and vanilla. Melt one tablespoonful of butter and add.

Caramel Filling.

1 pint of brown sugar to which add 1 cupful sweet milk. Beat well before placing on fire. Add $\frac{1}{2}$ cupful of butter and cream, then the coffee and vanilla. Melt one tablespoonful of butter and add.

Chocolate Frosting.

$\frac{1}{2}$ cupful butter,
 $\frac{1}{4}$ cake chocolate,
 1 cupful hot water,
 2 cupfuls sugar.

Cook until thick, stir until cool, place between and on top of cake.—Mrs. Chas. Matthews.

Quick Chocolate Frosting.

Shave or grate 1 square of chocolate; add a heaping teaspoonful of butter and 2 tablespoonfuls of coffee. Put all in a small bowl and place over the boiling teakettle or in hot water till all is melted; add one cup of powdered sugar with a little more coffee, if needed, and 1 tablespoonful of vanilla. Stir well and spread over cake.—Mrs. Chas. Matthews.

Filling for Chocolate Cake Without Eggs.

2 cupfuls dark brown sugar,
 $\frac{1}{2}$ cupful milk,
 1 tablespoonful butter.

Boil until it forms soft ball in water, remove from fire and beat till cool. Then pour between layers and over the cake.—Edna Chaddock.

Frosting for Chocolate Cookies.

- 5 tablespoonfuls cream,
- 3 cupfuls powdered sugar,
- 1 whole egg,
- 2 squares melted chocolate,

Mix sugar and cream, add beaten egg, and chocolate. Spread cookies very thick, and let harden.

White-Mountain Icing.

- 1 cupful granulated sugar,
- 1 teaspoonful vanilla,
- $\frac{1}{2}$ cupful water,
- White 1 egg.

Stir sugar and water together, then let boil without stirring until it will thread when lifted on the tip of a spoon. Heat egg white and pour sirup, stirring constantly, over eggs. Beat the mixture till it is soft and creamy, add the flavoring and pour over the cake, spreading it smooth with a palette knife dipped in cold water.

Chocolate Frosting.

- $\frac{1}{2}$ cupful cream,
- $1\frac{1}{2}$ squares chocolate,
- 1 egg,
- $\frac{1}{2}$ teaspoonful butter,
- $\frac{1}{2}$ teaspoonful vanilla,
- Confectioner's sugar.

Put the chocolate in a bowl to melt over hot water, scald the cream and pour over it, add the beaten yolk of egg and butter. Beat with a fork and sift in enough confectioner's sugar to make it of the proper consistency; last of all put in the vanilla, and spread over the cake. This frosting used on layers of white cake with chocolate filling between makes a delicious combination.

Orange Frosting.

- Rind 1 orange,
- 3 tablespoonfuls orange juice,
- 1 teaspoonful lemon juice,
- Confectioner's sugar.

Sift into the orange juice and rind enough confectioner's sugar to make this frosting spread.

Coffee Frosting.

Use the recipe given for White-Mountain frosting, only substitute $\frac{1}{2}$ cupful strong coffee for boiling water, and leave out any flavoring.

Caramel Frosting.

- $\frac{1}{2}$ cupful cream,
- Dash salt,
- 2 tablespoonfuls caramel,
- 1 cupful light-brown sugar.

Boil together the brown sugar and cream for five minutes, then add the caramel and salt. Beat till cool and creamy, and pour while warm over the cake.

Maple-Sugar Frosting.

- 4 tablespoonfuls boiling water,
- $\frac{1}{2}$ pound maple sugar,
- White 1 egg.

Boil the sugar and water together till it spins a thread. Pour over the white of egg beaten till stiff, and whip till thick enough to spread.

Orange Filling.

- Juice and grated rind 1 orange,
- 1 teaspoonful lemon juice,
- 1 teaspoonful orange extract,
- Whites 2 eggs,
- $\frac{1}{2}$ cupful powdered sugar,
- 1 teaspoonful gelatin,
- 2 tablespoonfuls cold water.

Put the gelatin to soak in the cold water, then set it into a bowl of boiling water until it dissolves, and add to the juice of the fruit. As soon as it begins to thicken, beat with a fork till fluffy, and mix with the powdered sugar and whites of eggs beaten to a stiff froth.

Peach Filling.

- 1 cupful whipped cream,
- $\frac{1}{2}$ cupful powdered sugar,
- 1 cupful peach pulp.

Cut up 2 or 3 very ripe, juicy peaches and squeeze them through a potato ricer. Add to the pulp the

sugar and cream beaten to a stiff froth. Blend thoroughly and put between layer cake. All recipes where whipped cream is added to a filling ought to be eaten as soon as possible after being made. The liquor soaks into a cake if it stands any time.

Red-Raspberry Filling.

$\frac{1}{2}$ cupful red raspberries,
White 1 egg,
 $\frac{1}{3}$ cupful powdered sugar,
1 cupful thick cream.

Whip the cream to a stiff froth, also the white of egg. Put the two together and with a fork stir the sugar in, blending it perfectly. At the last, just before spreading the cake, stir in the raspberries thoroughly mashed. Strawberries may be used in the same way or the pulp of fresh apricots.

Tutti-Frutti Filling.

1 cupful whipped cream,
 $\frac{1}{2}$ cupful powdered sugar,

1 cupful combination chopped walnuts, almonds, dates, raisins, and shaved citron.

Whip the cream very stiff, beat in the sugar, then add the nuts and fruit, blending it thoroughly with a fork.

Plain Icing.

Pour 2 tablespoonfuls whipped cream into a bowl and sift over it sufficient confectioner's sugar to make an icing thick enough to spread. Flavor with any extract or fruit juice you desire to use.

Egg Icing.

White 1 egg,
1 cupful confectioner's sugar,
1 teaspoonful lemon juice.

Whip the white of egg until frothy, beat in the lemon juice, then the sugar, until the icing is of a consistency that will spread.

CHAPTER XXVIII

COOKIES, CAKES, AND DOUGHNUTS

SUGAR COOKIES—JUMBLES—CREAM COOKIES—MOLASSES COOKIES—GINGER SNAPS—LEMON SNAPS—SPICE, NUT AND FRUIT COOKIES—OATMEAL COOKIES—CREAM PUFFS AND ÉCLAIRS—MACAROONS—MARGUERITES—RUSSIAN ROCKS—SMALL CAKES OF EVERY SORT—CAKES MADE FROM SOUR MILK.

Maple Hermits.

$\frac{3}{4}$ cupful maple sugar,
 $\frac{1}{2}$ cupful butter,
 $2\frac{1}{2}$ cupfuls flour,
1 egg,
1 tablespoonful milk,
 $\frac{1}{4}$ teaspoonful cloves,
1 teaspoonful cinnamon,
 $\frac{1}{2}$ teaspoonful soda,
 $\frac{1}{2}$ cupful currants.

Beat the butter to a cream, and gradually beat in the sugar and spices. Add the milk and butter, the egg well beaten, and finally the flour in which the soda has been sifted and the currants. Roll out an inch thick, and cut in squares. Bake in a quick oven twelve minutes.

Crisp Molasses Cookies.

$\frac{3}{4}$ cup molasses,
 $1\frac{1}{2}$ tablespoonfuls butter,
 $1\frac{1}{2}$ tablespoonfuls lard,
 $\frac{1}{4}$ cup sugar,
1 scant cup sweet milk,
 2 cups flour,
 $\frac{3}{4}$ teaspoonfuls soda,
1 teaspoonful baking powder,
 $\frac{1}{2}$ teaspoonful each cinnamon and allspice,
1 teaspoonful vanilla,
1 egg.

Heat the molasses to the boiling point and add butter, lard, sugar and

milk. Mix and sift together the flour and other ingredients. Add to first mixture and chill thoroughly. Toss one-fourth of the mixture at a time on a floured board and roll as thinly as possible. Sprinkle sugar over top and bake in a moderate oven.—Frances Owsley.

Molasses Cookies.

1 cup molasses,
1 tablespoonful ginger,
1 teaspoonful soda,
 2 tablespoonfuls warm water or milk,
 $\frac{1}{2}$ cupful shortening, softened,
1 saltspoonful salt,
Flour to mix soft.

Mix in order given, sifting soda with flour. Roll one-third inch thick, cut in rounds. Bake in a moderate oven.

Ginger Snaps.

$\frac{1}{2}$ cup molasses,
 $\frac{1}{2}$ cup brown sugar,
 $\frac{1}{2}$ cup lard,
 $\frac{1}{4}$ cup cold coffee,
 $\frac{3}{4}$ teaspoonful ginger,
 $\frac{1}{2}$ teaspoonful cinnamon,
 $\frac{1}{2}$ teaspoonful soda,
 4 cups flour.

Heat molasses and lard. To them add sugar, coffee, spices and soda

mixed with the flour. Chill before rolling out, adding more flour if needed.—Mrs. A. J. Mielke.

Ginger Snaps.

1 cup Orleans molasses,
1 cup sugar,
1 scant cup lard.

Boil all together and when nearly cool add $\frac{1}{2}$ cup water in which 1 teaspoonful soda has been dissolved and add

1 teaspoonful ginger,
1 teaspoonful cinnamon,
Salt and flour enough to roll.
—Mrs. R. S. Hall.

Ginger Snaps.

2 cupfuls molasses,
1 cupful sugar,
1 cupful butter,
5 cupfuls flour,
1 teaspoonful ground ginger,
1 teaspoonful allspice.

Stir molasses, sugar, and butter together in a bowl set in hot water till very light. Mix in spices and flour, and roll in a thin sheet. Cut into small cakes, and bake quickly.

Chocolate Dominoes.

$\frac{1}{2}$ cupful pecan meat,
 $\frac{1}{2}$ cupful English-walnut meat,
 $\frac{1}{2}$ cupful figs,
 $\frac{1}{2}$ cupful dates,
Grated rind 1 orange,
1 tablespoonful orange juice,
1 square chocolate.

Mix the nuts, dates, and figs, and put them through a food chopper. Wet with the orange juice, mix in the grated rind, and roll in a ball. Lay it on the baking board, which has been covered with sifted confectioner's sugar, and roll half an inch thick. Cut into shapes the size of a domino, and spread with melted chocolate. On top lay little rounds cut from blanched almonds to imitate dominoes.

Drop Cookies.

2 cupfuls sugar,
3 eggs,

$\frac{2}{3}$ cupful cottolene,
1 cupful raisins,
1 cupful sour milk,
 $\frac{1}{2}$ teaspoonful soda,
1 teaspoonful cloves and cinnamon,
1 cupful nut meats,
4 cupfuls flour.

Cream sugar and cottolene, add eggs, sour milk, spices, raisins dredged in flour, nuts, flour and soda. Drop on buttered tin by spoonfuls.—Mrs. J. E. Anderson.

Sugar Cookies.

2 cupfuls sugar,
1 cupful butter,
3 eggs,
3 cupfuls flour,
1 teaspoonful baking powder,
1 teaspoonful nutmeg,
 $\frac{1}{2}$ teaspoonful cloves.

Cream butter and sugar, beat in the beaten eggs and spices, add the flour gradually, working it in until the dough is stiff enough to roll. Sprinkle flour over a pastry board. Make a ball of the dough, and lay it on the board. Rub the rolling-pin with flour and roll out the dough into a sheet quarter of an inch thick. Cut in round cakes, sift granulated sugar over each, and bake quickly.

Sugar Cookies.

2 cupfuls white sugar,
1 cupful butter,
1 cupful sweet milk,
2 eggs,
4 teaspoonfuls baking powder,
Enough flour to make a soft dough,
Flavor with nutmeg.

Put sugar, butter, and eggs in a mixing bowl and beat them thoroughly. Then add milk. Sift baking powder into flour. Roll rather thin and sprinkle sugar over the top. Pass rolling pin over sugar lightly.—Mrs. Sarah J. Donovan.

Sugar Cookies.

1 $\frac{1}{2}$ cups butter, or other shortening,
2 cups sugar,

$\frac{1}{2}$ cup milk,
 4 eggs, whites beaten separately
 and added last,
 1 heaping teaspoonful salt,
 6 level teaspoonfuls baking pow-
 der,
 2 teaspoonfuls vanilla,
 Sufficient flour to make dough
 soft as can be handled easily.

Roll rather thin, sprinkle with sugar
 and bake in rather quick oven.—Mrs.
 A. F. Corrington.

Sugar Cookies.

$\frac{1}{2}$ cup butter,
 1 cup sugar,
 1 tablespoonful milk,
 2 eggs,
 2 teaspoonfuls baking powder,
 Flour to roll out.

Cream butter, add sugar, milk, eggs
 beaten lightly, and baking powder
 mixed with two cups flour, then
 enough more flour to roll out. Roll,
 cut, and bake about ten minutes.

Sugar Cookies.

1 cup lard,
 2 cups sugar,
 $\frac{1}{2}$ cup sweet milk,
 3 eggs,
 3 teaspoonfuls baking powder,
 1 teaspoonful soda,
 Pinch of salt,
 Nutmeg or any spice or flavoring
 to taste,
 Flour to make stiff dough.

Bake in hot oven.—Mrs. B. H.
 Baker.

Crisp Sugar Cookies.

2 cups sugar,
 1 cup butter,
 $\frac{1}{2}$ cup sweet milk,
 1 teaspoonful soda,
 2 eggs,
 Any kind of flavoring,
 Flour to roll stiff.

Bake in quick oven.

Jumbles.

1 cup butter,
 2 cups sugar,
 1 cup sour milk,

3 eggs,
 $\frac{1}{4}$ teaspoonful nutmeg,
 1 teaspoonful soda dissolved in
 sour milk.

Mix ingredients with flour to roll
 very soft. Sprinkle cookies with
 sugar.

Sour Cream Cookies.

1 tablespoonful butter,
 1 cup sugar,
 1 cup sour cream,
 1 egg,
 $\frac{1}{2}$ teaspoonful soda,
 1 teaspoonful vanilla,
 Pinch of salt,
 Flour enough to make soft dough.

Mix butter and egg to a cream.
 Add flour, salt, and soda sifted to-
 gether, then vanilla. Roll very thin,
 sprinkle with sugar, and bake in a
 quick oven.

Sour Cream Cookies.

2 cups sugar,
 2 eggs,
 1 cup sour cream,
 1 cup butter,
 1 teaspoonful soda,
 1 teaspoonful lemon extract or
 nutmeg,
 Flour enough to make a soft
 dough.

Roll out and bake.—Mrs. D. C.
 Yeutzer.

Sour Cream Cookies.

2 cups sour cream,
 $1\frac{1}{2}$ cups sugar,
 1 egg,
 1 teaspoonful soda,
 Then flour enough to make dough
 thick.

Bake in quick oven.—Mrs. A. J.
 Mielke.

Spice Cookies.

2 cupfuls sugar,
 1 cupful butter,
 3 eggs,
 $\frac{1}{2}$ cupful milk,
 3 cupfuls flour,
 3 teaspoonfuls baking powder,
 1 teaspoonful cloves,
 $\frac{1}{2}$ teaspoonful cinnamon.

Cream butter, add sugar gradually, beat in the whipped eggs, milk and spices, add the flour and baking powder sifted together, working it in until the dough is stiff enough to roll. Sprinkle flour over a pastry board. Make a ball of the dough, and lay it on the board. Rub the rolling pin with flour and roll out the dough into a sheet a quarter of an inch thick. Cut in any shape desired, sift sugar and cinnamon over each, and bake on buttered tins in a moderately hot oven.—Mrs. Elizabeth Pastor.

Currant Cookies.

2 eggs,
 $\frac{3}{4}$ cupful butter,
 $1\frac{1}{2}$ cupfuls sugar,
 3 cupfuls flour,
 1 cupful currants,
 $\frac{3}{4}$ cupful water,
 1 teaspoonful soda,
 $\frac{1}{4}$ teaspoonful nutmeg or 2 teaspoonfuls vanilla.

Cream the butter, add sugar gradually, add the eggs well beaten; then the water. Next add the flour and soda sifted together, add flavoring and the currants. Drop the batter by teaspoonfuls in a well-greased pan, being careful to leave room for cakes to spread. Bake in a moderate oven until the cookies are brown.—Mrs. W. M. Parrett.

Lemon Snaps.

1 scant cupful butter,
 2 cupfuls granulated sugar,
 3 eggs (well beaten),
 1 lemon (rind and juice),
 $3\frac{1}{2}$ cupfuls flour,
 1 teaspoonful soda in flour,
 1 tablespoonful milk.

Roll very thin. They keep crisp indefinitely.—Mrs. James E. Shafer.

Thick Rolled Ginger Cookies.

2 cupfuls molasses,
 1 cupful lard,
 1 cupful brown sugar,
 2 eggs,
 $\frac{3}{8}$ cupful sour milk,

In flour sift 2 teaspoonfuls soda and one tablespoonful ginger. Add enough

flour to roll out. Cut thick and with a soft piece of paper apply the unbeaten white of egg on top of each and sprinkle with brown sugar. Bake in quick oven.—Mrs. James E. Shafer.

Brownies.

$1\frac{1}{2}$ cupfuls light brown sugar,
 1 scant cupful butter,
 2 cupfuls flour,
 $\frac{1}{2}$ teaspoonful soda,
 2 eggs beaten very light,
 2 tablespoonfuls buttermilk,
 3 teaspoonfuls cinnamon,
 1 cupful raisins or dates,
 $\frac{1}{2}$ cupful nuts.

Have ready a large greased baking pan and drop the batter upon this, a tablespoonful for each cake. When baked and cooled, but still tender, frost with brown sugar icing.

Oatmeal Cookies.

1 cupful sugar,
 $\frac{1}{2}$ cupful butter,
 2 eggs,
 2 cupfuls oatmeal,
 1 cupful flour,
 1 teaspoonful each of cloves and cinnamon,
 $\frac{1}{2}$ teaspoonful soda,
 1 teaspoonful baking powder,
 1 cupful chopped raisins.

Cream sugar and butter, add eggs, oatmeal, flour, spice, soda and baking powder. Mix this thoroughly then add raisins and drop in spoonfuls on well-buttered tins and bake in rather hot oven.—Lizzie Sorensen.

Oatmeal Cookies.

$\frac{1}{2}$ cupful butter,
 1 cupful molasses,
 $\frac{1}{2}$ cupful sugar,
 $\frac{1}{2}$ cupful sour milk or hot water,
 2 cupfuls rolled oats (dry),
 2 cupfuls flour,
 1 teaspoonful ginger,
 1 teaspoonful soda,
 1 teaspoonful salt,
 $\frac{1}{2}$ teaspoonful cinnamon,
 1 egg.

Mix butter, sugar, molasses and sour milk; then stir in the rolled oats,

flour, soda, egg and spices. Have baking pans well greased. Drop $\frac{1}{2}$ spoonful for each cookie. Spread with spoon or knife in shape. Bake in a moderate oven until nicely browned.—Mrs. W. M. Parrett.

Oatmeal Cookies.

- 1 cup shortening,
- 1 cup sugar,
- $\frac{1}{2}$ cup sour milk,
- 2 eggs,
- 1 cup chopped raisins,
- 2 cups dry rolled oats,
- 1 teaspoonful cinnamon,
- $\frac{1}{2}$ teaspoonful salt,
- $\frac{1}{2}$ tablespoonful soda,
- 2 cups white flour.

Mix sugar and shortening well together, then add the eggs beaten, mix well and add the sour milk. Chop raisins and rolled oats together, sift salt, soda, cinnamon with flour, mix this well with the oats and raisins, then mix this with the above. Take out in small spoonfuls and put on cooky pan. Bake in a hot oven.—J. M. Kawczynski.

Oatmeal Cookies.

- 1 cup of sugar,
- $\frac{1}{2}$ cup of butter,
- 2 eggs,
- 2 cups of oatmeal,
- 1 cup of flour,
- 1 teaspoonful each of cloves and cinnamon,
- $\frac{1}{2}$ teaspoonful of soda,
- 1 teaspoonful of baking powder,
- 1 cup of chopped raisins.

Cream sugar, and butter, add eggs, oatmeal, flour, spice, soda and baking powder. Mix this thoroughly, then add raisins and drop in spoonfuls on well buttered tins and bake in rather hot oven.

Oatmeal Drop Cookies.

- 1 cup lard,
- 2 cups sugar,
- 3 eggs,
- 1 cup sweet milk,
- 4 cups oatmeal,
- 2 $\frac{3}{4}$ cups flour,
- 1 package raisins,

- 1 teaspoonful soda,
 - 1 teaspoonful cinnamon,
- Mrs. James E. Shafer.

Oatmeal Cookies.

- $\frac{3}{4}$ cup of brown sugar,
- $\frac{3}{4}$ cup butter,
- 1 egg,
- 1 cup flour,
- 1 cup rolled oats,
- 1 teaspoonful baking powder.

Cream butter and sugar, add other ingredients in order, roll moderately thin and bake in hot oven.—Mrs. B. E. Salisbury.

Oatmeal Cookies.

- $\frac{1}{2}$ cupful sugar,
- $\frac{1}{2}$ cupful cream,
- $\frac{1}{2}$ cupful milk,
- 1 egg,
- 2 cupfuls fine oatmeal,
- 2 level teaspoonfuls baking powder,
- 1 teaspoonful salt.

Beat the egg until light, add the sugar, cream and milk. Add the oatmeal, flour, baking powder and salt sifted together thoroughly. Place on a floured board, roll thin, cut into shape and bake in a moderate oven.—Miss Bessie Copeland.

Oatmeal Drop Cookies.

- 1 cupful lard,
- 2 cupfuls sugar,
- 3 eggs,
- 1 cupful sweet milk,
- 4 cupfuls oatmeal,
- 2 $\frac{3}{4}$ cupfuls flour,
- 1 package raisins,
- 1 level teaspoonful soda,
- 1 teaspoonful cinnamon.

Drop in spoonfuls on well-buttered tins and bake in a moderately hot oven.—Mrs. James E. Shafer.

Oatmeal Crackers.

- 1 cupful sugar,
- 1 cupful butter and lard mixed,
- 1 cupful sour milk,
- 3 cupfuls flour,
- 3 cupfuls oatmeal,
- 1 teaspoonful soda dissolved in 1 tablespoonful boiling water.

Roll out very thin, cut in squares and bake in a hot oven.

Sour-Cream Cookies.

- 1 cupful sour cream,
- 1 teaspoonful soda,
- 1 cupful sugar,
- $\frac{1}{16}$ teaspoonful salt,
- Flour,
- $\frac{1}{2}$ teaspoonful nutmeg.

Mix the ingredients with enough flour to roll. Roll thin, and bake a delicate brown.

Oklahoma Rocks.

- 2 cupfuls brown sugar,
- $\frac{1}{2}$ cupful butter,
- 3 eggs,
- $\frac{1}{2}$ teaspoonful salt,
- 1 pound chopped nuts,
- 1 pound raisins,
- 1 teaspoonful soda in $\frac{1}{2}$ cupful boiling water,
- 1 teaspoonful cinnamon,
- $\frac{1}{2}$ teaspoonful cloves,
- Flour to make stiff.

Mix the ingredients as given, and drop in spoonfuls on a greased baking pan.

Egg Cookies.

- 1 cupful sour cream,
- 1 cupful sugar,
- 1 teaspoonful soda,
- $\frac{1}{16}$ teaspoonful salt,
- 1 teaspoonful vanilla,
- Flour enough to make soft dough.

Mix the cream, sugar, and soda with flour, a dash salt and a little vanilla, then flour enough to roll thin easily without sticking.

Boston Cookies.

- 1 cupful butter,
- $1\frac{1}{2}$ cupfuls sugar,
- 3 eggs,
- 1 teaspoonful soda,
- $1\frac{1}{2}$ teaspoonfuls hot water,
- $3\frac{1}{4}$ cupfuls flour,
- $\frac{1}{2}$ teaspoonful salt,
- 1 teaspoonful cinnamon,
- 1 cupful chopped walnuts,
- $\frac{1}{2}$ cupful currants,
- $\frac{1}{2}$ cupful seeded chopped raisins.

Cream the butter, add the sugar gradually and eggs well beaten. Add soda dissolved in water, half the flour mixed and sifted with salt and cinnamon, then add nut meats, fruit, and remaining flour. Drop by spoonfuls an inch apart on a buttered sheet, and bake in a moderate oven.—Fannie M. Farmer.

Christmas Fruit Cookies.

- $\frac{1}{2}$ cupful lard,
- $\frac{1}{2}$ cupful butter,
- 1 cupful sugar,
- 2 beaten eggs,
- $\frac{1}{2}$ cupful milk,
- 2 cupfuls flour,
- $\frac{1}{4}$ teaspoonful soda,
- $\frac{1}{4}$ cupful currants,
- $\frac{1}{4}$ cupful raisins,
- 2 cupfuls uncooked rolled oats.

Cream the butter and lard, add the sugar, eggs, milk, flour, soda, currants, raisins, and rolled oats. Mix thoroughly, drop a teaspoonful at a time in unbuttered pans, and bake in a slow oven.

Chocolate Hearts.

- 3 ounces chocolate,
- 1 pound powdered sugar,
- Whites 3 eggs,
- 1 teaspoonful vanilla.

Melt the chocolate by standing over hot water; add the sugar slowly, and mix thoroughly; work to a stiff paste with the unbeaten whites of eggs, then add the vanilla. If the paste seems too soft, add more sugar. Break off in small pieces and roll a quarter of an inch thick, sprinkling the board and paste with granulated sugar instead of flour. Cut with a heart-shaped cake cutter, and place on pans greased just enough to prevent sticking. Bake in a moderate oven. When done, they will feel firm to the touch, a solid crust having formed over the top. They should be very light, and will loosen easily from the pan after being allowed to stand a moment to cool.

Chocolate Cookies.

- 1 cupful butter,
- 1 cupful brown sugar,

- 2 eggs,
- 1 teaspoonful cinnamon,
- $\frac{1}{2}$ teaspoonful cloves,
- 1 cupful almonds cut fine, with-
out blanching,
- 1 cupful currants cleaned and
dried,
- 2 ounces chocolate,
- $\frac{1}{2}$ cupful milk,
- 2 teaspoonfuls baking powder,
Flour.

Mix butter, sugar, eggs, cinnamon, cloves, almonds, currants, the chocolate dissolved in $\frac{1}{2}$ cupful milk, and flour enough to roll; before adding the flour, put in baking powder. Mix in the order given; roll out about an eighth of an inch thick; shape with cake cutter, and bake in a moderate oven. Make a thick sirup of $\frac{1}{2}$ cupful each granulated sugar and water boiled together, and brush the cakes with this sirup as soon as they are taken from the oven.

One, Two, Three, Four Cookies.

- 1 cupful butter,
- 2 cupfuls sugar,
- 3 cupfuls flour,
- 4 eggs,
- $1\frac{1}{2}$ teaspoonfuls baking powder,
- $\frac{1}{2}$ teaspoonful salt,
- 2 tablespoonfuls caraway seed.

Cream the butter and add half the sugar. Beat the yolks, add the remaining half of the sugar, and beat with the butter, then add the beaten whites. Mix the soda, cream of tartar, spice, and salt with the flour, and stir into the butter mixture. Take a teaspoonful dough, make into a ball with floured hands, place the balls in a pan, press or flatten into a round cake, and bake ten minutes, or cut the dough into cookies after rolling out in the usual manner.

Cream Puffs.

- 1 cupful hot water,
- $\frac{1}{2}$ teaspoonful salt,
- $\frac{1}{2}$ cupful butter,
- $1\frac{1}{2}$ cupfuls flour,
- 5 eggs, yolks and whites beaten
separately.

Boil the water, salt, and butter. When boiling, add the flour, and stir

well five minutes; when cool, add the eggs whole, 1 at a time. Beat in each egg thoroughly. When well mixed, drop from a tablespoonful on a buttered baking pan, some distance apart. Bake twenty to thirty minutes in moderate oven or until beads of fat disappear from the puff. Open when cool, and fill with cream. *Éclairs*.—Bake the cream-puff mixture in pieces four inches long and one and a half wide. When cool, split and fill with cream. Ice with chocolate or vanilla frosting.

Cream or Cream Cakes and Éclairs.

- 1 pint milk, scalded,
- 2 tablespoonfuls cornstarch,
- 3 eggs well beaten,
- $\frac{3}{4}$ cupful sugar,
- 1 saltspoonful salt or 1 teaspoon-
ful butter.

Wet the cornstarch in cold milk, and cook in the scalded milk ten minutes. Beat the eggs, and add to them the sugar and the thickened milk. Cook in a double boiler five minutes. Add the salt or butter, and when cool, flavor with lemon, vanilla, or almond.

Chocolate Fingers.

- 3 eggs,
- 1 cupful sugar,
- $\frac{1}{4}$ cupful boiling water,
- 1 cupful flour.

(For Icing.)

- 3 cupfuls granulated sugar,
- 1 cupful water,
- 3 ounces chocolate,
- $\frac{1}{2}$ teaspoonful vanilla.

Beat the yolks of eggs and sugar until light, add in succession the flour, water, and whites beaten until stiff. Bake in moderate oven, in an oblong sheet, about half an inch thick; cut, when done, into strips about three and a half inches wide.

To make the icing, boil the sugar and water until it spins a thread, then pour in a thin stream over the chocolate, which should be melted by standing over hot water; mix well and flavor with vanilla. Let the mixture cool slightly, beat with a wooden spoon until it grains, then stand in a

pan of boiling water and stir constantly until it melts. Keep in hot water while coating the cakes. Dip each cake in the melted mixture, then in a saucer containing granulated sugar. Place, without touching each other, on a clean plate. If the chocolate mixture gets too thick, add from time to time a few drops hot water, keeping it melted during the process.

Nun's Gems.

1 cupful sugar,
1 cupful butter,
5 eggs,
 $\frac{3}{4}$ teaspoonful cinnamon,
1 teaspoonful vanilla,
Grated rind 1 lemon,
2 cupfuls flour,
1 teaspoonful baking powder,
1 cupful grated cocoanut.

Cream the butter and sugar, mix the beaten yolks of eggs, and add the lemon, cinnamon, and vanilla. Sift the flour and baking powder, mix with the batter, then fold in the cocoanut, and the whites of eggs beaten stiff. Bake half an hour in gem pans; when cool, dip each cake in white or chocolate frosting.

Macaroons.

$1\frac{1}{2}$ cupfuls almond paste,
Whites 2 eggs,
1 cupful powdered sugar.

Mix the paste and sugar, then stir in the whites of eggs, which have been beaten stiff. Work with a spoon until the mixture is thoroughly blended, drop small teaspoonful paste into a pan which has been lined with buttered paper, put half a peanut in the center of each, and bake in a moderate oven until delicately brown. Lift the pan from the oven, take out the paper with the macaroons, lay for a minute on a damp towel, then with a palette knife you can slip each one off.

Cinnamon Strips.

2 cupfuls brown sugar,
4 eggs,
 $\frac{1}{2}$ cupful shredded almonds,
Grated peel 1 lemon,

1 tablespoonful cinnamon,
1 teaspoonful cloves,
4 cupfuls flour.

Cream the sugar and eggs till they are a light froth, add the shredded almonds, lemon peel, and spices, sift in the flour, mix to a stiff batter, roll out on a floured baking board, cut into long strips, and bake until brown.

Russian Rocks.

1 cup sugar,
1 cup butter,
2 cups raisins,
2 pounds walnuts, chopped fine,
 $\frac{1}{2}$ teaspoonful soda,
1 teaspoonful cinnamon,
 $\frac{1}{2}$ teaspoonful nutmeg,
3 tablespoonfuls brandy.

Beat eggs separately. Mix well, drop on tins not greased, bake in hot oven.—Helen Starkweather.

Rocks.

3 eggs,
 $1\frac{1}{2}$ cups sugar,
 $\frac{2}{3}$ cup butter,
 $\frac{1}{2}$ cup sour milk,
1 teaspoonful soda,
1 teaspoonful cinnamon,
1 teaspoonful allspice,
 $\frac{1}{2}$ teaspoonful cloves,
1 cup of raisins cut in halves,
1 cup of English walnuts cut in large pieces,
3 cups flour.

Drop with teaspoon a little apart on a well greased tin.—Mrs. C. E. Borland.

Rocks.

$1\frac{1}{2}$ cups sugar,
1 cup butter,
2 cups raisins (chopped),
1 cup walnuts (chopped),
3 eggs, not beaten,
1 teaspoonful soda,
1 cup sour milk or water,
1 teaspoonful cinnamon,
1 teaspoonful cloves,
3 cups flour, more if needed.

Drop from teaspoon on buttered tin. I have better success when I use

water cold. If they flatten out, use more flour. Be careful not to get too much flour.—Mrs. A. J. Mielke.

Cocoanut Puffs.

Beat the whites of 2 eggs dry. Gradually beat in $1\frac{1}{2}$ cups sugar, then add $1\frac{1}{2}$ cups desiccated or fresh grated cocoanut. Add 1 or 2 drops vanilla. Drop by rounding teaspoonfuls on buttered tins. Bake in moderate oven.—Anna Kinsley.

Cream Puffs.

Melt $\frac{1}{2}$ cup butter in 1 cup hot water. Put to boil. While boiling stir in 1 cup flour. Take off at once and let get cold. Then beat in 3 eggs, one at a time. Drop on buttered tins, and bake 30 or 40 minutes in moderate oven. When done remove. Make an opening with a sharp knife and fill with whipped cream.—Mrs. Clarence Peck.

Marguerites.

Make a boiled frosting by boiling one cup of sugar till it spins a thread, then pour slowly into the beaten white of an egg. Spread thickly on reception flakes, or small soda crackers, sprinkle with a liberal amount of chopped English walnuts or hickory nut meats. Put into oven for a few minutes until they are light brown.

Hermit Raisin Cookies.

1 cup melted butter,
 $1\frac{1}{2}$ cups sugar,
 1 cup chopped raisins,
 3 eggs,
 1 teaspoonful cloves,
 1 teaspoonful cinnamon,
 1 teaspoonful nutmeg,
 $\frac{1}{2}$ teaspoonful soda,
 1 teaspoonful cream of tartar,
 3 cups flour, or more if needed
 —Mrs. A. J. Mielke.

Fruit Cookies.

1 cup butter,
 2 cups brown sugar,
 3 eggs,
 $\frac{1}{2}$ teaspoonful soda,
 1 teaspoonful cinnamon,
 1 teaspoonful cloves,
 1 teaspoonful allspice,

$\frac{1}{2}$ teaspoonful nutmeg,
 1 cup raisins, chopped,
 1 cup walnut meats, cut in pieces,
 3 cups flour.

Cream butter, add sugar gradually and eggs well beaten. Mix flour, spices, and soda. Add to first mixture with the fruit. Let mixture stand until thoroughly cool. Add more flour to handle lightly on board. Roll out to one-fourth inch in thickness. Cut, and bake in a moderate oven.—Mrs. A. J. Mielke.

Honey Cakes.

1 pound of brown sugar,
 1 quart of strained honey,
 5c. worth candied orange peel—
 chopped fine,
 5c. worth candied lemon peel—
 chopped fine,
 1 pound of chopped almonds,
 2 tablespoonfuls brandy,
 1 teaspoonful cinnamon,
 1 teaspoonful allspice,
 1 teaspoonful soda,
 2 pounds flour.

Mix ingredients as given. Roll $\frac{1}{2}$ inch thick, cut in 3 inch squares, and bake in slow oven.—Mrs. R. S. Hall.

Pretzels.

$\frac{3}{4}$ pound white sugar,
 $\frac{1}{4}$ pound butter,
 3 eggs,
 1 pound flour,
 $\frac{1}{2}$ pound chopped almonds,
 1 teaspoonful brandy,
 1 teaspoonful ground spice,
 1 teaspoonful soda.

Cream sugar and butter, add the beaten yolks of eggs, then the other ingredients and lastly the beaten whites of eggs. Roll about $\frac{1}{4}$ inch thick, cut in thin strips and arrange pretzel shape. Bake in slow oven.—Mrs. R. S. Hall.

Chocolate Cookies.

1 cup brown sugar,
 $\frac{1}{2}$ cup melted butter,
 1 large egg,
 $\frac{1}{2}$ cup milk,
 2 squares chocolate melted over
 hot water,

1½ cups flour,
1 cup chopped nuts,
½ teaspoonful soda, sifted with
flour.

Drop in tins, bake in moderate oven.
— Anna Kinsley.

Chocolate Cookies.

1 cup butter,
1½ cups brown sugar,
2 eggs,
1 tablespoonful sweet milk,
½ teaspoonful soda,
½ cup grated chocolate,
Flour enough to roll soft.

When baked put white frosting on
top.— Mrs. A. J. Mielke.

Brownies.

½ cup butter,
1 cup sugar,
½ cup flour,
1 cup chopped English walnuts,
2 eggs,
2 squares chocolate.

Cream butter and sugar, then add
the eggs, the chocolate, melted over
water, the chopped nuts, and finally
the flour. Bake from 15 to 20 min-
utes in a moderate oven.— Ruth Maria
Gabriel.

Nut Cookies.

1 cup raisins,
3 eggs,
2½ cups brown sugar,
1 cup nut meats,
1 cup lard,
1 cup sour cream,
1 teaspoonful soda,
2 teaspoonfuls baking powder.

Sift the baking powder into enough
flour to make the dough roll well, beat
the sugar, lard and eggs together, add
the cream with the soda dissolved in
it, and finally the flour and baking
powder. Do not make dough too
stiff. Sift a little flour over nuts and
raisins.— Mrs. Dennis Houghton.

Bran Nut Cookies.

1 cup bran,
1 cup sugar,

½ cup sour milk, buttermilk pre-
ferred,
2 tablespoonfuls molasses,
10 tablespoonfuls melted butter,
2 eggs,
Pinch of salt,
½ teaspoonful soda,
1 cup English walnuts, chopped.

Add white flour enough to roll
easily. Mix the bran, sugar, sour
milk, molasses and melted butter,
beat eggs light and add to mixture,
put soda in the flour, and lastly add
the nuts. Roll thin and bake quickly.
— Mrs. J. L. Stitt.

Peanut Cookies.

½ cup butter, creamed.
½ cup sugar,
2 eggs,
1¾ cups flour,
½ cup milk,
1 teaspoonful baking powder,
Salt to taste,
¾ cup chopped peanuts.

Cream butter and sugar, and add 2
eggs beaten separately. Sift baking
powder into the flour, add milk and
flour alternately. Add nuts and salt.
Drop by teaspoonfuls on buttered tins.
Bake in moderate oven.— Anna Kins-
ley.

Peanut Cookies.

1 cup sugar,
¾ cup each lard and butter,
2 eggs well beaten,
3 tablespoonfuls milk,
1 teaspoonful soda,
2 teaspoonfuls cream of tartar,
1 cup flour,
1 quart peanuts (before shell-
ing).

Cream well together sugar, lard
and butter. Add the eggs well
beaten, the milk (in which the soda
has been dissolved) and the cream
of tartar and flour which have been
sifted together. Lastly, add peanuts
which have been shelled and chopped
fine. Roll out very thin. Sprinkle
with sugar and bake in a very hot
oven until a delicate brown, being
careful not to burn them as they are

burned very easily. These cookies are very rich but delicious.—Zilda Southard.

Chocolate Strips.

- $\frac{1}{2}$ cupful butter,
- 1 cupful sugar,
- 2 eggs,
- $1\frac{1}{2}$ squares chocolate, melted over hot water,
- 1 teaspoonful vanilla,
- $1\frac{1}{4}$ cupfuls flour.

Cream the butter, sugar, and eggs, add the chocolate and vanilla, then the flour, beat thoroughly, pour into a shallow pan in a thin layer. Bake quickly, brush with white of egg, and dust with powdered sugar; while hot, cut into narrow strips.

Doughnuts.

- 1 egg,
- 1 cupful sugar,
- $\frac{1}{2}$ tablespoonful butter, melted,
- 1 cupful milk,
- $\frac{1}{2}$ teaspoonful salt,
- $\frac{1}{2}$ teaspoonful soda,
- 1 teaspoonful cream of tartar,
- Flour to roll out well.

Mix in the order given, sifting the dry materials. Roll about one-half inch thick. Cut with cutter. Fry in hot fat.

Doughnuts.

- 2 cupfuls hot mashed potatoes,
- 4 tablespoonfuls shortening,
- 3 cupfuls sugar.

Stir well, then add:

- Beaten yolks of 4 eggs,
- 3 cupfuls milk, sweet,
- 5 teaspoonfuls baking powder,
- Salt and nutmeg to suit taste,
- Beaten whites of 4 eggs, and,
- Flour enough to stiffen well.

When you wish to freshen them place in hot oven for about 2 minutes.—Mrs. R. S. Hall.

Doughnuts.

- $\frac{1}{2}$ cupful sugar,
- 2 eggs,

- 3 tablespoonfuls sour cream,
- 10 tablespoonfuls sour milk,
- 1 teaspoonful soda,
- Flour enough to roll,
- $\frac{1}{2}$ teaspoonful cinnamon.

Roll out on dough board one-fourth inch thick, cut out with doughnut cutter. Have skillet half full hot lard, drop doughnuts in and let fry till golden brown. Roll in sugar while hot.—Mrs. Frank LaFollette.

Potato Doughnuts.

- 1 cupful mashed potato,
- 2 cupfuls granulated sugar,
- 1 cupful sweet milk,
- 2 tablespoonfuls butter,
- $\frac{1}{2}$ teaspoonful nutmeg,
- 3 eggs, well beaten,
- 4 teaspoonfuls baking powder, sifted with the salt, nutmeg and $1\frac{1}{2}$ cupfuls flour.

Add enough more flour to make dough which can be handled on the board. Fry doughnuts in deep fat. This recipe makes about four dozen doughnuts.

Jelly Doughnuts.

Sift $2\frac{1}{2}$ cupfuls pastry flour, $\frac{1}{2}$ teaspoonful each of salt and soda, 1 slightly rounding teaspoonful of cream of tartar. Add grated rind of orange, $\frac{1}{4}$ teaspoonful ground mace. Beat 1 egg and the yolk of another. Add $\frac{1}{2}$ cupful sugar and $\frac{1}{2}$ cupful milk. Stir the liquid into the dry ingredients to form a dough. Take a little of the dough on a board, dredge lightly with flour, turn with a knife. Knead into a smooth mass and roll into a thin sheet about $\frac{1}{4}$ inch thick. Cut out in small rounds. Set small $\frac{1}{2}$ teaspoonful of fruit jelly or orange marmalade in the center, and brush the edges with cold water. With a spatula lift other rounds over the jelly rounds and press close together on the edges. Lift with the spatula and fry as doughnuts. Turn as soon as they rise to the top, and turn several times while frying. Drain and dredge with sifted confectioner's sugar.—Anna Kinsley.

Chocolate Crullers.

2 eggs,
1 cupful sugar,
1 tablespoonful melted butter,
1 level teaspoonful salt,
3 cupfuls flour,
1 level teaspoonful cinnamon,
1 tablespoonful melted unsweet-
ened chocolate,
2 teaspoonfuls baking powder,
1 cupful milk.

Beat the eggs until creamy and thick, add the sugar, butter, salt, cinnamon, and unsweetened chocolate. Mix well, then add milk and flour sifted with the baking-powder; roll out one-fourth inch thick on a floured board, cut and drop into smoking hot fat. Cook a golden brown, drain, and shake each one in a bag with a little sugar in it.—Lily Haxworth Wallace.

CHAPTER XXIX

PUFF PASTE, PIECRUST, AND PASTRIES

NOTES ABOUT PUFF PASTE—PUFF PASTE DAINTRIES—PIE-CRUST AND RECIPES FOR PIES OF EVERY DESCRIPTION—MINCEMEAT

If you have a marble slab to work on when making puff paste, your work will be easier. A rolling-pin with movable handles makes the touch lighter. Scald an earthen bowl, fill with ice water; and wash your hands first in hot water, then in cold. Work 1 pound butter in a bowl cold water until it is waxy and all the salt is washed out of it. Take out the butter, pat and squeeze till no water flies. Measure from it 2 tablespoonfuls, mold the rest into an oblong cake, and set it where it will grow hard and cold. Sift 1 pound flour with $\frac{1}{2}$ teaspoonful salt into the bowl. Cut in the 2 tablespoonfuls butter. Mix with ice water, till you have a soft dough. Turn out on a marble slab, which has been dusted with flour. Knead very slightly; then cover with a bowl, and set away to "ripen" five minutes.

When the dough is ripened, you may begin work on it. Put the paste on the slab and, with the lightest possible pats from the rolling-pin, shape it about half as wide as it is long, keeping the corners square. At center of lower half lay the hardened piece of butter. Over this fold upper half of the dough. Tuck lightly around the edges, enclosing all the air possible, fold right side of paste over and left side under the enclosed butter. Turn half way round. With light taps from the rolling-pin break up the butter, spreading it and rolling the paste into a longer strip. Be careful to keep the sides and ends of

the paste even, and to break as few air bubbles as possible. When the strip is almost as long as the slab, fold ends toward center, making three layers. Turn half way round again, patting, rolling, folding, and turning until the process has been repeated six times. If the paste shows the least symptom of being soft, or the butter of breaking through, set it away to chill before you finish the process. Roll always in one direction, from you, with a long, sweeping motion. After seventh rolling fold ends toward center making four layers; chill. During the winter a batch of puff paste, wrapped and covered, may be kept for several weeks in a very cold place. Use it as desired, baking *patés*, *vol au vents*, or tarts as required. These will keep five or six days after making, being reheated before they are filled.

The oven for baking puff paste should be hot, with the greatest heat underneath, so the *paté* can rise to its full height before browning. As heat touches the pastry the bubbles expand, lifting the thin layers higher and higher. When it has reached its height, and is baked delicately brown, you have what is properly called puff paste.

NOTES ABOUT PUFF PASTE

When using a cutter, always dip in flour between each cutting; it will insure neat edges.

If the work has to be done in a

warm room, chill the paste between three pans, the upper one filled with broken ice, the second one set into another large pan, also filled with ice. Puff paste is always in good condition if it slips easily on the slab.

Should you wish to use it for a pie, bake it *vol-au-vent* fashion over the bottom of a pie-plate first, and fill after baking, or use ordinary pie paste for the bottom when the filling is to be baked.

Build up the sides with puff paste; rich pastry never makes a good undercrust — it soaks.

When baking small pieces such as *paté* tops or cheese straws, do not put them in a pan with the larger pieces; they bake in less than half the time required by the others.

If you wish pastry to have a glazed appearance, brush over with beaten egg before putting it in the oven.

Utilize trimmings for smaller things; never add them to the larger pieces of paste.

Use the sharpest knife for cutting pastry; if it is dragged ever so slightly in the cutting it will not rise well as it breaks the layers. Also, in making two layers of pastry adhere, never press it together or you will have a heavy spot.

Always have puff paste ice cold when it is put in the oven. Let the heat be greatest at the bottom when the paste is put in; it must rise before it begins to brown.

PUFF-PASTE DAINTIES.

Vol au Vent.

Lay a mold upon a round of puff paste, rolled about half an inch thick, and cut out a circle as big as you think will be required to cover it. Set the mold upside down and tuck down the paste, handling carefully. Do not cover scantily anywhere or it will crack. Prick all over with a fork and set away in a cold place to chill thoroughly. Find a plate or saucer which fits the top of the mold and cover with puff paste. Cut from the trimmings stars, hearts, crescents, or any forms you can produce with a paste jagger. Brush the paste on the

saucer lightly with cold water, and stick on the ornaments in any style desired. Chill the *vol au vent* and lid for half an hour, then bake in an oven which is very hot at first, but cooled slightly when the pastry has risen and is beginning to brown. Watch the baking with great care, as the paste will burn or become unshapely if not turned occasionally. A *vol au vent* may be filled with any cream mixture or with a cooked, chilled fruit and rich sirup.

Patés.

Roll out the paste half an inch thick; shape two rounds with a *paté* cutter. From one round cut a smaller piece. Use the ring left to lay on the other round, brushing with water to make it stick. Bake and fill with a creamed mixture, using the small round as a lid.

Cream Horns.

Cream horns are made on fine-pointed tubes which are called lady-lock irons. Cut the paste into ribbons with a knife or jagger and begin to wind at the small end, the edges scarcely touching. Bake delicately brown. They may be filled with cream and chicken or oysters and served as an *entrée*, or with whipped cream as a dessert.

Cheese Straws.

Season some grated cheese with paprika and salt, then dust it over a piece of puff paste. Fold the paste and roll two or three times. Cut out in rings with a doughnut cutter or in straws with a jagger. The straws may be braided or baked singly.

PIE CRUST AND RECIPES FOR PIES

Flaky Pie Crust.

3 cupfuls flour,
 $\frac{1}{2}$ cupful butter,
 Ice water to moisten,
 $\frac{1}{2}$ cupful lard,
 $\frac{1}{2}$ teaspoonful salt.

Sift the flour into a chopping bowl, add the butter and lard, and chop with a knife until like coarse meal.

Sprinkle the water here and there through the flour, and mix with a fork into a soft dough. Drop on a floured board, dust lightly with flour, press down with the rolling-pin, and roll back and forth until the paste becomes an oblong sheet not more than half an inch in thickness. Slip a broad-bladed knife under each end of this sheet, and fold over toward the center, thus forming three layers of the paste. Lift, with the knife, from the board, dust with fresh flour; lay the paste down again, dust with flour, roll, and again fold over as before. Repeat the operation, and the paste is ready to use. When ice water is added to the flour and shortening, the shortening becomes distributed through the flour in small balls and is not packed together in a mass, and when the dough is drawn together and lightly pressed with the rolling-pin these balls flatten into flakes, which, by repeated foldings, are piled one upon another, and by gently rolling become thinner and more delicate. Three rollings and foldings are as much as these flakes will bear. Rolling and folding a great number of times causes them to become broken and packed, so that the paste will not rise and puff up, as it should, in baking. It is well to let the paste lie on ice, or in a cold place, for an hour before rolling it out for pies, as its quality is improved by so doing; and if the weather is warm it may advantageously be placed on ice ten minutes between each rolling out. If a teaspoonful baking powder be sifted with the flour, less shortening can be used, but the pastry will not be as crisp and delicate.—Emma P. Ewing.

Apple Pie.

Roll pie crust to the thickness desired. Place upon a pie pan, shaping it carefully, and cut round the edges with a sharp knife. Cover the bottom of the crust with a thin layer of sugar, dust with flour, then fill the crust with quarters of pared and cored apples. Add sweetening—if the apples are very tart—roll an upper crust, make an opening in the

center for steam to pass out and lay over them, trim around the edges, press the upper and lower crusts together, bake until the apples are soft and the top and bottom crusts are nicely browned.

Raspberry Pie.

To 2 cupfuls raspberries add 1 cupful ripe currants and 1 cupful granulated sugar, with which a tablespoonful flour has been mixed; stir together. Line a plate with flaky pie crust, put in the fruit, cover with sheet of paste, make several incisions for the escape of steam, and bake till the crusts are nicely browned. Serve cool.

Cherry Pie.

2 cupfuls sour cherries,
1 cupful granulated sugar,
1 tablespoonful flour.

Pick over and wash the cherries, add sugar and flour, mix together. Line a pan with paste, fill with the cherries, and cover with a sheet of paste, rolled twice as thick as ordinary pie crust. Make incisions near the center for the escape of steam, and bake till brown. If the cherries are sweet, use less sugar.

Pumpkin Pie.

2 cupfuls stewed pumpkin,
1 cupful rich milk,
 $\frac{1}{2}$ cupful molasses,
 $\frac{1}{2}$ cupful granulated sugar,
1 tablespoonful melted butter,
1 tablespoonful ginger,
1 teaspoonful salt,
2 eggs.

Stir well together, line a deep tin pie pan with paste rolled moderately thick, sift a little flour evenly over the bottom, and fill three quarters full with the prepared mixture. Bake until the pie is brown in the center. In preparing the pumpkin, use very little water. Cover the kettle in which it is cooking, and stew until the pumpkin is perfectly soft, then remove the cover and continue the stewing, stirring frequently till the moisture evaporates and the pumpkin becomes a

smooth paste. Rub through a fine sieve.

Pumpkin Pie.

- 2 cups stewed pumpkin,
- 1 cup rich milk,
- $\frac{1}{2}$ cup granulated sugar,
- 1 teaspoonful cinnamon,
- Pinch of salt,
- Yolks of 2 eggs, beaten.

Stir this together, put in a pan with pie dough, and bake.—Edna Adams.

Pumpkin Pie.

- 1 can pumpkin,
- 1 large cup sugar,
- $\frac{1}{2}$ teaspoonful salt,
- 1 large teaspoonful ginger,
- 5 eggs,
- 1 quart milk,

Beat pumpkin, sugar, salt, and ginger together, add first the eggs, and last the milk. Make 2 large pies.—Mrs. J. E. Anderson.

Pumpkin Pie.

Steam one small pumpkin until tender, then put through colander. For each pie allow:

- 1 cup pumpkin,
- 1 well-beaten egg,
- $\frac{1}{4}$ teaspoonful salt,
- $\frac{1}{2}$ cup brown sugar,
- 1 cup milk,
- 1 teaspoonful cinnamon,
- $\frac{1}{4}$ teaspoonful ginger.

If pastry is considered unwholesome, those who are fond of pumpkin or squash pies can provide a good substitute by baking them as custards. I use the same recipe as for a filling for a pie, only add a little more milk, and then bake it in custard cups set in a pan of water. The result is a creamy, delicious dessert.—Mrs. A. J. Mielke.

Lemon Cream Pie.

- 1 tablespoonful cornstarch,
- 1 tablespoonful flour,
- 1 lemon (juice of),
- 1 egg (yolk),
- 1 cup sugar,
- 1 cup milk.

Mix cornstarch, flour, lemon juice, egg and sugar together, add milk and cook over water until very thick. Stir constantly. Pour at once into a ready baked pie shell. Cover with the well beaten white of one egg to which has been added 2 tablespoonfuls of sugar. Slip in oven to brown.—Frances Owsley.

Lemon Pie.

- $\frac{1}{2}$ cup sugar,
- 1 cup water,
- 2 tablespoonfuls cornstarch,
- 1 teaspoonful butter,
- Yolks of 2 eggs,
- Juice and rind of 1 lemon.

Mix sugar and cornstarch. Pour on slowly, stirring all the time, 1 cup boiling water. Cook until transparent. Add butter and lemon juice. Pour mixture over the slightly beaten yolks of eggs. Fill crust and bake. Make a meringue of whites and 2 tablespoonfuls powdered sugar. Cover pie and brown in very moderate oven.

Chocolate Pie.

Mix 1 cup sugar, $\frac{1}{2}$ cup grated chocolate, 2 tablespoonfuls flour, beaten yolks 3 eggs, stir into 1 pint scalded milk and cook over hot water till thickened. Add 1 teaspoonful vanilla. Cool, and put into baked crust. Beat the whites stiff, add 3 tablespoonfuls sugar, spread over top and brown in very moderate oven.—Gertrude B. Day.

Elderberry Pie.

- 1 cup elderberries,
- $\frac{1}{2}$ cup sugar,
- 1 tablespoonful vinegar,
- 1 tablespoonful water,
- 1 tablespoonful butter.

Sprinkle with flour and bake in double crust.—Frances Owsley.

Banana Pie.

- 3 small bananas,
- 1 pint milk,
- 2 eggs,
- 1 cup sugar,
- 2 tablespoonfuls cornstarch,
- $\frac{1}{2}$ teaspoonful vanilla.

Line a large pie pan with puff paste, and bake. When done slice the bananas in the crust. Scald the milk. Mix the cornstarch in a little cold milk, add the yolks of the eggs, the sugar and vanilla, stir well together, add to the scalded milk and mix. Pour over the bananas and bake. Cover with a meringue made of the whites of the eggs and a little sugar. Brown slightly in the oven.—Mrs. Merritt Wayman.

Pineapple Pie.

Line a pie plate with a rich crust and fill with grated or crushed pineapple mixed with a cupful of sugar, a tablespoonful of softened butter, the well beaten yolks of two eggs mixed with a teaspoonful of cornstarch. After the pie is baked, whip the whites of the eggs stiff with 2 tablespoons of sugar. Pile lightly over the top and set in a cool oven to puff and let color to a golden brown.—J. M. Kawczynski.

Cranberry Pie.

1 cup cranberries cut in two,
1 scant cup sugar,
1 tablespoonful cornstarch or 2
tablespoonful flour,
 $\frac{1}{2}$ cup water.

Mix berries, sugar and cornstarch or flour with the water. Bake between two crusts.—Mrs. R. H. Friend.

Ripe Currant Pie.

1 cup of ripe currants mashed
fine.
1 cup sugar,
1 tablespoon flour,
2 eggs beaten.

Mix together the currants, sugar and flour and stir in the eggs. Bake with one crust. Save white of one egg and make a meringue. Brown in oven.—Mrs. Paul Stetson.

Mock Cherry Pie.

Mix 3 cups of cranberries and 1 cup of seeded raisins together. Stir 2 tablespoons flour with 2 cups of sugar, add 2 cups of boiling water, then the fruit, a pinch of salt and a

teaspoonful of vanilla. Bake in two crusts.—Mrs. Chas. A. Matthews.

Sweet-Potato Pie.

2 cupfuls boiled sweet potato,
2 tablespoonfuls butter,
2 tablespoonfuls lemon juice,
1 cupful sugar,
Grated rind $\frac{1}{2}$ lemon,
1 tablespoonful ginger,
1 tablespoonful cinnamon,
1 teaspoonful salt,
 $\frac{1}{2}$ grated nutmeg,
2 cupfuls milk,
Yolks 3 eggs.

Rub potatoes through a sieve, add butter, lemon juice, sugar in which have been mixed the grated rind of lemon, ginger, cinnamon, salt, and grated nutmeg. Stir well together, add milk and the beaten yolks of eggs, and last the whites of eggs beaten stiff. Fit the paste to the pan, dust with flour, fill, and bake.

Custard Pie.

$\frac{1}{2}$ cupful granulated sugar,
1 tablespoonful cornstarch,
2 cupfuls milk, scalded,
3 eggs,
Pinch salt.

Add cornstarch to sugar, mix well, stir it into milk and cook five minutes. When cool, add to the eggs, well beaten, and salt. Line a deep pie pan with paste, dust with flour, and fill three quarters full with the mixture. Bake in a moderate oven until firm in the center. Grate nutmeg over the top, and serve cool.

Crumb Lemon Pie.

$\frac{1}{2}$ cupful lemon juice,
 $\frac{1}{2}$ cupful sugar,
2 tablespoonfuls butter,
3 eggs,
Grated peel 1 lemon,
1 cupful stale sponge-cake
crumbs.

Strain the lemon juice over the crumbs and soak half an hour, cream the butter, add half the sugar, then, one at a time, the yolks of eggs, then the balance of the sugar, with the

lemon peel, and a pinch of salt. With a fork mix the crumbs well with the lemon juice, and stir them into the butter and sugar, beating well, then add the whites of eggs beaten stiff. Bake, and serve like custard pie.

Lemon Pie.

- 2 cupfuls boiling water,
- 1½ cupfuls sugar,
- ½ cupful lemon juice,
- 1 tablespoonful butter,
- 1 tablespoonful cornstarch,
- Grated peel 1 lemon,
- Yolks 3 eggs.

Mix the sugar and cornstarch well together, add to them the boiling water, stirring all the time, and cook five minutes. Remove from the fire, add butter, lemon juice, peel, and lastly the eggs beaten very lightly. Line a deep pan with the paste, dust with flour, fill three fourths full with the mixture, and bake in a moderate oven till firm in the center. When cool, cover with a meringue made from whites of eggs.

Lemon-and-Raisin Pie.

- 1 cupful chopped raisins,
- Juice and rind 1 lemon,
- 1 cupful sugar,
- 1 cupful water,
- 1 teaspoonful cornstarch.

Boil the mixture ten minutes; bake between double crusts.

Green-Currant Pie.

- 1 cupful green currants,
- ½ cupful sugar,
- 1 tablespoonful butter,
- Yolks 2 eggs,
- 1 tablespoonful flour,
- 1 tablespoonful water.

Mash currants and sugar, using a wooden potato masher. Beat to a cream butter and sugar, then add in successive order the yolks of eggs, flour, water, and the mashed currants. Line a deep pan with pastry, fill with the currant mixture, and bake. When done, cool slightly and cover with a meringue made of the whites of 2 eggs, 2 tablespoonfuls

sugar, and vanilla to flavor. Bake in a slow oven until delicately brown.

Apple Pie with Pineapple Flavor.

- 3 tablespoonfuls grated pineapple,
- 1 tablespoonful water,
- 3 tablespoonfuls sugar.

Bake an apple pie in the usual way, but without sweetening. While it is baking, take the pineapple, water, and sugar, and simmer together till the fruit looks clear. When the pie is taken from the oven, remove the top crust, spread the pineapple over the apple, replace the cover, and set the pie away to cool.

Currant Pie.

- 1 cup currants,
- 1 cup sugar,
- ½ cup molasses,
- 2 cups water,
- 2 tablespoonfuls butter,
- Pinch salt,
- 5 tablespoonfuls flour,
- Juice of 1 lemon,

Mix all ingredients except flour and boil for 5 minutes. Thicken with the flour and water enough to make a smooth paste. Bake between two pie crusts.—Zilda Southard.

German Cherry Pie.

Make a cherry pie as usual, but omit the upper crust. When nearly done, beat an egg light and add it to a scant ½ cupful cream and a tablespoonful sugar. Pour over the top of pie, return to the oven, and bake until the custard is set.

Date Pie.

- 1 pound dates,
- 3 eggs,
- 1 teaspoonful cinnamon,
- 2 cupfuls milk,
- 1 cupful sugar.

Soak dates in warm water overnight, then stew and sift the same as pumpkin. Into the pulp stir beaten eggs, cinnamon, milk, and sugar. Bake in one crust.

Fig Pie.

$\frac{1}{2}$ pound figs,
1 cupful water,
Whites of 2 eggs,
2 tablespoonfuls sugar,
1 tablespoonful lemon juice.

Make a rich bottom crust. Chop figs fine, cook with cupful water. Sweeten and flavor with lemon. When the figs are smooth, put into the crust and bake. Make a meringue of whites of 2 eggs, beaten stiff, with 2 tablespoonfuls powdered sugar, flavor with vanilla, and as soon as the crust is baked, spread this over the top; let brown a minute or two.

Almond Tart.

Yolks 9 eggs,
1 pound sugar,
 $\frac{3}{4}$ pound grated almonds,
2 cupfuls grated lady's fingers,
1 teaspoonful vanilla,
1 teaspoonful baking powder,
Juice and rind 1 lemon,
Whites 9 eggs.

Mix ingredients in order given, and bake in two layers in moderate oven.

Filling for Tart

1 pound chopped walnuts,
White 2 eggs,
Lemon juice and sugar to taste.

Gooseberry Pie.

Cut off the blossoms and stems of berries and fill a pie dish lined with plain paste, spreading over the top one-third as much sugar as berries used. Slightly dredge with flour, and cover with a thin crust pricked with a fork. Bake half an hour.

Prune Pie.

$\frac{1}{2}$ pound prunes,
 $\frac{1}{2}$ cupful sugar,
 $\frac{1}{2}$ cupful currant jelly or 1 teaspoonful lemon juice.

Stew prunes, remove stones, stir in sugar, currant jelly, or lemon juice. Dust flour over the fruit, and bake with an upper crust.

Torto Frutas (Mexican).

Line the sides of a baking dish with puff paste; cover the bottom with sliced pineapple; next a layer of sliced oranges, then sliced bananas, then a few slices lemon. Sift sugar between each layer. Repeat the layers until the dish is full, and cover the top layer with chopped nuts. Lay over the top narrow strips of the pastry, and bake slowly an hour.—May E. Southworth.

Cocoanut Pie.

2 cupfuls hot milk,
2 well-beaten eggs,
 $\frac{1}{2}$ cupful sugar,
1 cupful grated cocoanut,
1 teaspoonful vanilla.

Line a plate with paste, pour milk over eggs, set the bowl containing the mixture in boiling water, stir till thick, then take it out and stir in sugar, cocoanut, and vanilla. Fill the pie plate. Sprinkle top of pie with cocoanut, and bake till delicately brown.

Orange Pie.

1 cupful powdered sugar,
1 tablespoonful butter,
2 tablespoonfuls cornstarch,
 $\frac{1}{2}$ cupful cold milk,
Grated rind and juice 1 orange,
1 egg,
2 oranges.

Beat sugar and butter together till light. Moisten cornstarch with milk, cook and stir one minute, pour quickly on butter and sugar; add the rind and juice of orange; mix well-beaten egg; peel oranges, cut into slices, and cut each slice into quarters. Line plate with paste, and bake in a quick oven until done. Stir the orange slices quickly into the custard mixture, fill the baked crust with this, and place in a quick oven a few minutes to brown. While it is browning, beat the whites of 2 eggs until light, add 2 tablespoonfuls powdered sugar, and beat until stiff. Spread this over the pie; dust thickly with powdered sugar, and stand again in the oven until delicately brown.

Dried-Apple Pie.

Soak the apples, put in a brown earthen pot, cover with water; cover the pot, and bake four or five hours; sweeten with sugar or molasses the last half hour and mash well with a spoon; when the apples are thoroughly cooked, flavor with lemon juice and add a little butter. The pie can be baked between two crusts, or bands of the paste can be placed over the top.

Banana Pie.

- Yolks 2 eggs,
- $\frac{1}{2}$ cupful sugar,
- 2 large bananas.

Beat the yolks of eggs and sugar to a cream. Peel and mash bananas, beat into the eggs together with milk. Bake with one crust; when done, cover with a meringue made of the 2 whites and 2 tablespoonfuls sugar. Serve cold.

Carrot Pie.

- $1\frac{1}{2}$ cups cooked carrots,
- 1 cup sugar,
- $\frac{3}{8}$ teaspoonful cinnamon,
- $\frac{3}{8}$ teaspoonful ginger,
- $1\frac{3}{8}$ cups rich milk,
- 1 tablespoonful flour.

Mash the carrots and press them through colander, add cinnamon, ginger, and flour. Mix and add milk. An egg may be used in place of the flour and less milk used, but I prefer it without the egg. This is enough for 2 pies.—Mrs. H. A. Morris.

Carrot Pie.

- 1 cup chopped cooked carrots,
- 1 cup sweet milk,
- 1 cup sugar,
- Yolks of 3 eggs,
- 1 tablespoonful butter,
- 1 teaspoonful salt,
- $\frac{1}{2}$ teaspoonful ginger,
- $\frac{1}{2}$ teaspoonful cinnamon.

Bake in 1 crust and when done make a meringue of the whites of eggs and 3 tablespoonfuls powdered sugar, cover pie and brown in a very moderate oven.—Martha Skelton.

Green Tomato Pie.

Wash, pare and slice 5 or 6 green tomatoes, put into a pie plate lined with good rich crust, add $\frac{1}{2}$ cup of vinegar, add scant cup of sugar. Scatter over all bits of butter, sprinkle with flour and nutmeg, put on top crust, and bake in moderate oven for about thirty minutes.—Mrs. Chas. A. Matthews.

Green Tomato Pie.

This is a very rich pie and tastes like a cross between a rhubarb and a gooseberry pie.

Sprinkle a half cup of sugar over the bottom crust, then add a layer of thinly sliced green tomatoes and over these slice $\frac{1}{2}$ a lemon very thin. Into $\frac{3}{4}$ cup of sugar stir 1 heaping tablespoonful of flour and sprinkle half of this over the lemon and tomato. Then add another layer and repeat till the pie is full. Bake with two crusts.—Elizabeth Wormhondt.

Pie Plant Pie.

- 2 cups chopped pie plant,
- $1\frac{1}{2}$ cups granulated sugar,
- 1 tablespoonful flour,
- 2 tablespoonfuls melted butter,
- 2 yolks eggs,
- Rind of 1 lemon and a little lemon juice.

Bake in one crust. Cover with a meringue of the beaten whites when nearly done and brown slightly.—Mrs. C. E. Borland.

Rhubarb Pie.

- 1 cup of sugar,
- Yolks of 2 eggs,
- 2 tablespoonfuls of flour,
- 1 cup of chopped rhubarb,
- Flavor with nutmeg.

Bake with only one crust and use the whites of eggs for meringue.—Ruth Roberts.

Rhubarb Pie.

Wash rhubarb, cut in half-inch pieces, put in deep pie plate having narrow strip of paste around the edge, sprinkle with sugar mixed with flour, allowing $\frac{1}{2}$ cupful sugar and 2

tablespoonfuls flour to every cupful rhubarb. Cover with paste, and bake like apple pie.

Chocolate Pie.

- 2 cupfuls scalding milk,
- 3 eggs,
- 4 tablespoonfuls sugar,
- $\frac{1}{2}$ cupful chocolate, grated,
- 1 teaspoonful vanilla.

Make a custard by pouring milk gradually upon eggs that have been well beaten and sugar. Return to fire, stir in chocolate, remove from fire, add vanilla, and pour the mixture into a pie plate lined with puff paste. Bake until set. Make a meringue of the whites of eggs and a tablespoonful powdered sugar, and spread on top of the pie. Brown delicately.

Chocolate-Cream Pie.

- 1 tablespoonful cornstarch,
- $\frac{1}{2}$ cupful sugar,
- 2 cupfuls scalding milk,
- 3 eggs,
- $1\frac{1}{2}$ squares chocolate,
- 1 tablespoonful butter,
- 1 tablespoonful vanilla.

Melt the chocolate in a double boiler with the sugar, gradually pour over it the scalding milk, add the cornstarch moistened with a little cold milk, and cook five minutes; then pour over the whipped eggs. Cook till the mixture is like a custard, add a dash of salt, also butter and vanilla, pour into a freshly baked pie shell. Serve ice cold. If you wish to enrich this delicious pie, you may serve it with a meringue or a top of whipped cream.

Mince-Meat.

- $2\frac{1}{2}$ pounds round of beef,
- 2 quarts chopped apples,
- $\frac{1}{2}$ pint chopped suet,
- $1\frac{1}{2}$ pints raisins,
- 1 pint currants,
- $\frac{1}{4}$ pound citron,
- 1 quart sugar,
- $\frac{1}{2}$ pint molasses,
- 3 pints cider,
- 2 tablespoonfuls salt,
- 4 tablespoonfuls cinnamon,

- 1 tablespoonful allspice,
- 1 tablespoonful mace,
- 1 teaspoonful cloves,
- 4 nutmegs grated,
- 4 lemons.

Put the beef in a small stewpan and cover with boiling water. Simmer three hours. Take from the fire and let the meat cool in the water, with the cover off the pan. When cold, remove fat and gristle, and chop the meat rather fine. Put it in a large bowl with all the other ingredients, except the cider, and mix thoroughly. Now, add the cider, and let the mixture stand in a cold place overnight. In the morning turn the mince-meat into a porcelain kettle and heat slowly to the boiling point; then simmer gently an hour. Put the mixture into stone jars and set away in a cold place; or it may be put in glass jars and sealed. It will keep for years in this way. When the pies are being made, 1 tumbler jelly or marmalade to 3 or 4 pies will be found a great improvement.—Maria Parloa.

Mince Meat.

- $\frac{1}{2}$ pound butter,
- $2\frac{1}{2}$ pounds brown sugar,
- 3 pounds boiled beef neck,
- $1\frac{1}{2}$ pounds suet,
- $2\frac{1}{2}$ pounds white sugar,
- 2 tablespoonfuls cinnamon,
- 2 tablespoonfuls nutmeg,
- 2 tablespoonfuls mace,
- 2 tablespoonfuls allspice,
- 2 tablespoonfuls salt,
- Juice and rind 3 lemons,
- 6 pounds raisins, seeded,
- 3 pounds currants,
- 1 pound citron,
- 1 tablespoonful almond extract,
- 8 pounds apples,
- 1 pint brown sherry,
- 1 pint brandy.

Rub butter and brown sugar together; chop beef neck after boiling till tender enough to fall from bone; grind or chop fine the suet. Add spices to white sugar, grate rind of lemons, being careful not to get any white, and mix grated rind into sugar and spices. Seed raisins, wash and

dry currants, chop citron fine, peel and chop apples. Mix all thoroughly together, adding sherry, brandy, and almond extract last. Put in glass jars; it will keep indefinitely.

If you do not want liquor in your mince meat, use one pint of clear, strong coffee to each gallon of mince meat.—Mrs. Jesse Knight.

Mince Meat.

- 4 cups of chopped cold boiled beef,
- 8 cups chopped apple,
- 2 cups chopped suet (or omit the suet and add butter to each pie),
- 2 pounds currants,
- 2 pounds seeded raisins,
- $\frac{1}{2}$ pound citron, cut up fine,
- 6 cups sugar,
- 2 lemons, juice and grated rind,
- 2 oranges, juice and grated rind,
- Vinegar poured off from 2 quarts of spiced peaches or spiced pears,
- 2 grated nutmegs,
- 1 tablespoonful cloves,
- 1 tablespoonful allspice,
- 3 tablespoonfuls cinnamon,
- 1 tablespoonful salt.

Mix all together and let cook on the back of stove for an hour. Seal up in fruit jars.—Mrs. W. M. Parrett.

Mince Meat.

- 5 or 6 pounds of beef cooked in water enough to cover until tender and chopped very fine,
- 4 pounds raisins,
- 4 pounds currants,
- $\frac{1}{2}$ pound citron, cut up fine,
- 2 quarts of tart apples chopped fine,
- 2 pounds tart dried apples cut fine,
- 2 ounces cinnamon,
- 1 ounce ginger,
- 1 ounce cloves,
- 4 ounces nutmeg,
- $\frac{1}{2}$ pound orange peel,
- 2 tablespoonfuls salt,
- 1 tablespoonful pepper,
- 2 pounds sugar,
- 1 quart molasses,
- 1 quart cider,
- 3 pounds beef suet chopped fine.

Mix thoroughly, cook for thirty minutes, and keep in a cool place.—Mrs. O. H. Mahon.

Tomato Mince Meat.

One peck green tomatoes chopped very fine. Drain off juice, measure it. Add as much water. Return to chopped tomatoes and cook till tender. Add 5 pounds brown sugar, 2 pounds chopped raisins, 2 tablespoonfuls each cinnamon, cloves, allspice, nutmeg, and salt. Boil 20 minutes. Add 1 cup vinegar and cook until of desired thickness. Will keep in jars.—Mrs. E. Long.

Mock Mince Pie.

- 1 cup bread crumbs,
- 2 common crackers rolled fine,
- 1 cup molasses,
- 1 cup water,
- 1 cup sugar,
- 1 cup raisins,
- $\frac{1}{2}$ cup vinegar,
- $\frac{1}{2}$ teaspoonful each of cloves and cinnamon and nutmeg,
- $\frac{1}{4}$ teaspoonful salt,
- 2 tablespoonfuls butter.

— Mrs. James E. Shafer.

Mock Mince Pie.

- $\frac{1}{2}$ cup molasses,
- $\frac{2}{3}$ cup water,
- $\frac{1}{4}$ cup vinegar,
- 1 cup sugar,
- 1 cup raisins,
- 1 cup bread crumbs or crackers,
- $\frac{1}{2}$ grated nutmeg,
- 1 teaspoonful cinnamon,
- $\frac{1}{2}$ teaspoonful cloves,
- $\frac{1}{4}$ teaspoonful salt,
- 2 tablespoonfuls butter.

Mix and bake thoroughly and bake with two crusts.

Chocolate Pie.

- 8 tablespoonfuls grated sweetened chocolate,
- $\frac{5}{8}$ cup flour,
- 1 cup granulated sugar,
- 1 tablespoonful butter,
- 1 teaspoonful vanilla,
- 1 pint boiling water,
- Whites of 2 eggs,
- 2 tablespoonfuls powdered sugar.

Mix the flour, sugar and chocolate. Add enough cold water to blend the mixture, then add the butter and vanilla. Pour over this the pint of boiling water and set on the stove, stirring constantly until it thickens. Have the crusts baked for 2 pies and pour the filling into the crusts.

Frosting

Beat the whites of 2 eggs stiff. Add 2 level tablespoonfuls powdered sugar for the 2 pies. Spread over the pies and brown in very moderate oven.—Jennie M. Woods.

Chocolate Pie.

Beat yolks of 2 eggs with $\frac{1}{2}$ cup of sugar. Add 2 ounces grated sweet chocolate and 1 cup milk. Line a deep pie plate with pastry, prick with a fork, brush with white of egg, and bake. When half done pour in the mixture and finish baking in moderate oven. Cool slightly, and cover with meringue of the whites of 2 eggs, and 2 tablespoonfuls sugar, with vanilla to flavor.—Mrs. A. J. Mielke.

Sour Cream Pie.

1 cup sour cream,
 $\frac{1}{2}$ cup chopped raisins,
 $\frac{1}{2}$ cup sugar,
 Speck of salt,
 Speck of cinnamon,
 $\frac{1}{2}$ teaspoonful cloves,
 3 eggs.

Beat the yolks, add the cream, raisins, sugar, salt, cinnamon and cloves. Mix well and bake in one crust in a moderate oven. Beat the whites until stiff, sweeten and use as meringue for the pie.—Margola Kyle.

Sour Milk Pie.

1 cup thick sour milk,
 1 cup sugar,
 1 cup raisins,
 1 tablespoonful cinnamon,
 3 tablespoonfuls flour,
 Pinch of salt.

Bake with two crusts.—Mrs. Chas. F. Senfert.

Sour Cream Pie.

1 well beaten egg,
 1 scant cup sugar,
 1 pinch salt,
 1 cup thick sour cream,
 $\frac{1}{2}$ teaspoonful cinnamon,
 $\frac{1}{2}$ teaspoonful cloves,
 1 cup chopped raisins.

Bake with two crusts.—Mrs. Garland Eichhorn.

Sour Milk Pie.

1 cup raisins seeded and boiled until soft,
 $\frac{1}{2}$ cup sour milk,
 1 cup of sugar, stirred into raisins,
 1 egg,
 $\frac{1}{2}$ teaspoonful cinnamon,
 $\frac{1}{4}$ teaspoonful cloves.

Bake in two crusts.—Mrs. Chas. A. Matthews.

Sour Cream Pie.

1 cup thick sour cream,
 1 cup sugar,
 1 cup chopped walnuts,
 1 cup chopped raisins,
 2 eggs well beaten,
 $\frac{1}{4}$ teaspoonful salt.

Mix ingredients and bake with under crust only, until a rich brown.—Mrs. Claude E. Newman.

Whipped Cream Pie.

Spread a baked pastry shell with strawberry or other preserves, jelly, or marmalade. Whip a cupful of cream until stiff and dry, add $\frac{1}{4}$ cup sugar, and vanilla to flavor. Fill into the pie just before serving.—Mrs. A. J. Mielke.

Date Cream Pie.

Wash 1 pound dates and soak in a little cold water over night. Then stew until soft enough to run through sieve. Add 1 cup rich milk, 3 well-beaten eggs (saving 2 whites), and sugar, salt, and nutmeg to taste. Bake with undercrust only. This quantity is enough for two pies. Use the two whites for meringue.—Verna Banta.

Banana Custard Pie.

Rub 2 ripe bananas through colander, and mix into this pulp 1 pint milk, 2 tablespoonfuls sugar and 2 beaten eggs. Bake with 1 crust only, in moderate oven.—Verna Banta.

Jelly Pie.

- 3 eggs (whites),
- 1 cup jelly,
- $\frac{1}{2}$ cup sugar,
- $\frac{1}{2}$ cup butter,
- $\frac{1}{2}$ teaspoonful cornstarch,
- 2 tablespoonfuls milk.

Keep the whites of 2 eggs for the top. Beat the sugar and the butter together and then add the jelly and egg. Bake in one crust. Make a meringue and cover pie. Brown in very moderate oven.—Reta Sheibley.

Frosted Pie.

- 1 quart cold boiled rice,
- 2 eggs,
- $\frac{1}{2}$ cup milk,
- $\frac{1}{2}$ cup sugar.

Place 1 quart cold boiled rice in pan and stir into it the yolks of 2 eggs beaten well, add the milk and sugar and flavor to taste. Place over the fire and cook for about 5 minutes. Remove from fire and put over it the stiff beaten whites sweetened and flavored, then place in the oven to brown slightly.—Mrs. H. R. Morris.

Brown Sugar Pie

- 1 cup brown sugar,
- 2 eggs (yolks),
- 1 cup sweet milk,
- $\frac{1}{2}$ cup cold water,
- 1 tablespoonful butter,
- 1 tablespoonful flour.

Beat the yolks of the eggs light, and add them to the sweet milk. Pour the milk and eggs into the sugar. Mix the flour with a small quantity of the water. Add the remainder of the water and pour into the sugar. Add the butter and cook on top of the stove. When thick pour into a freshly baked tart shell. Keep the whites of the eggs to make a meringue for the

top. Brown delicately.—Reta Sheibley.

Butter-Scotch Pie.

Have crust baked. Mix 1 cup brown sugar, yolks of 2 eggs, and 2 tablespoonfuls flour to a smooth paste. Add gradually 1 cup cold water, 2 heaping tablespoonfuls vanilla. Cook until thick, take off and beat until smooth. Pour in crust and set to cool.—Mrs. Clarence Peck.

Vinegar Pie.

- 3 eggs,
- 1 cup sugar,
- $\frac{1}{2}$ cup vinegar,
- 2 tablespoonfuls cornstarch,
- 1 tablespoonful butter,
- 1 pint boiling water.

Mix the sugar and cornstarch well together. Add the beaten yolks of the eggs. To this add the boiling water and vinegar and butter. Place in a double boiler and cook to a smooth custard. Line a deep pan with paste and bake to a delicate brown. Fill with the custard and cover with a meringue made of the well-beaten whites of the eggs and two tablespoonfuls of sugar. Brown in a moderate oven.—Mrs. Ivy Beckett.

Cocoanut Macaroon Pie.

- 1 pound cocoanut macaroons,
- 2 well beaten eggs,
- $\frac{1}{2}$ cup sugar,
- 3 cups rich milk.

Soak the macaroons in the milk until they become soft. Add sugar and eggs to the macaroons, and beat together with a Dover egg beater until the macaroons form a paste with the milk and eggs. Then add a pinch of salt. Put into pan lined with pie crust and bake from 10 to 20 minutes in a medium hot oven. To test whether it is done, insert a pointed knife; if the knife comes out clean it is done. This is enough for two pies. Macaroons need not be strictly fresh.—Ethel Heuschkel.

CHAPTER XXX

PUDDINGS AND OTHER DESSERTS, AND PUDDING SAUCES

BREAD PUDDINGS—COOKED PUDDINGS—FRUIT PUDDINGS—
PLUM PUDDINGS—BLANC MANGE—TAPIOCA—CHOCOLATE
PUDDINGS—CREAMS, WHIPS, AND MERINGUES—STEAMED
PUDDINGS—HOT AND COLD PUDDING SAUCES—PUDDINGS
MADE FROM GELATIN

HINTS ON MAKING PUDDINGS

The variety of puddings into which stale bread enters is endless. It begins with the old-fashioned, economical pandowdy and ends with the queen of bread puddings, rich in jam and lovely in meringue. For puddings, use only stale bread or crumbs, rejecting crusts and oven-dried crumbs. Left-overs of fruit, fresh berries, peaches, plums, gooseberries, apples, prunes, apricots—almost anything can enrich a bread pudding. A cupful of canned or stewed fruit or a few spoonfuls of jam or marmalade give a morsel of delicious flavoring. The good cook applies common sense to the material she has at hand. If the recipe calls for red raspberries and she has nothing but dried apples, she can season them with spices, and the dessert will be a success.

When I use oranges or lemons, if the rind is fresh and wholesome, I pare it thin, so as to get none of the bitter white inner skin, and put it in a glass jar of granulated sugar. When the sugar has absorbed enough oil of the fruit skin to make it moist, it is ready to use for flavoring cakes, puddings, etc. The bits of rind give a delicious flavor to pudding sauces.

When using lemons in a way that does not call for the rind, I pare off

the yellow portion carefully, put it through the meat chopper with the finest plate, and spread it out to dry. Then I put into a corked bottle, and it frequently saves grating peel when one is in a hurry, or makes a pleasant flavoring when a fresh lemon is not at hand.

Use lemon peel, after the juice has been partly squeezed out, to rub stains from silverware; also to remove fruit stains from your fingers.

When using grated or sliced pineapple for sauce the juice of half a lemon with sugar and water added gives a delicious flavor.

Before trying to break a coconut put it in the oven to warm. When heated a slight blow will crack it, and the shell will come off easily.

Nothing else sweetens vessels in which milk has been kept so well as a solution of baking soda and hot water, in the proportion of a level teaspoonful to a quart of warm water. Let the solution stand in the vessels long enough to get cold. Pudding dishes or pots and pans which have been burned are easily cleaned this way.

The base of any bread pudding light as a soufflé and large enough for a family of 4 consists of 1 cupful stale-bread crumbs, 2 cupfuls milk, and 1 egg. This may be enriched by almonds, chocolate, nut meats, raisins,

currants, and peel or fruit of any description.

Stale cake, especially sponge cake or lady's fingers, may be converted into delicious puddings.

If the pudding is to be steamed or baked, cut the cake into fingers or break it into crumbs. If the pudding is to be soaked with wine, have a custard, fruit juice, or cream poured over it, after cutting it in slices. Reject icing; it generally makes a pudding sweeter than is desirable. A good plain pudding is made by putting slices of stale cake in a steamer and, when moist, serving with a spoonful of strawberry or marmalade sauce. Or when cold it may be covered with hot stewed berries and served with cream. Stale sponge cake serves as a foundation for charlotte russe and cabinet pudding, or, if steamed, may be covered with strawberries and whipped cream, when it makes an excellent imitation of strawberry shortcake.

Bread-Plum Pudding.

- 1 cupful suet,
- 1 cupful raisins,
- 1 cupful currants,
- $\frac{1}{2}$ cupful citron and candied orange peel,
- 1 cupful sugar,
- 3 cupfuls stale-bread crumbs,
- 4 eggs,
- $\frac{1}{2}$ cupful milk,
- 1 teaspoonful cinnamon,
- $\frac{1}{2}$ teaspoonful each allspice, cloves, and nutmeg,
- Grated rind 1 lemon.

Chop the suet fine. Seed the raisins. Slice the citron and orange peel, mix with the currants, sugar, and bread crumbs, moisten with eggs well beaten, and milk, then add the seasonings. Pour into a buttered mold. Steam four hours, and serve with hard sauce.

Graham Pudding.

- $1\frac{1}{2}$ cups graham flour,
- 1 cup milk,
- 1 cup molasses,
- 1 cup seeded raisins,
- 2 teaspoonfuls soda,
- 1 tablespoonful butter.

Steam two hours and serve with lemon sauce.—Mrs. Alice Hartman.

Bread-Crumb Steamed Pudding.

- $1\frac{1}{2}$ cups sweet milk,
- 2 cups bread crumbs,
- 1 cup molasses,
- 1 cup raisins,
- 1 cup currants, dried,
- 2 teaspoonfuls baking powder,
- Nutmeg and allspice.

Stir crumbs in milk and let stand $\frac{1}{2}$ hour, add molasses, raisins, currants, etc., and flour in which baking powder has been sifted, to make stiff batter. Steam two hours and serve with pudding sauce.—F. C. Hathaway.

Cake Pudding.

- 1 cup sugar,
- 3 eggs,
- 3 tablespoonfuls cornstarch,
- 1 pinch salt,
- 2 tablespoonfuls butter,
- 1 quart milk,
- 1 teaspoonful vanilla.

Mix sugar and cornstarch, add yolks of eggs, pinch of salt and one cupful milk. Heat the remainder of milk in double boiler, add to the above preparation, put back onto the stove and cook until it thickens. Add butter and vanilla. When cool place a small amount of custard in bowl, then a layer of jelly roll (or any stale cake) cut in small pieces and so on until all of the custard is used. Cover with meringue from whites of the eggs.—Mrs. J. E. Anderson.

Cottage Pudding.

- 1 cup sugar,
- 2 tablespoonfuls butter,
- 1 egg, well beaten,
- 1 cup milk,
- Pinch of salt,
- 1 teaspoonful baking powder,
- $\frac{1}{2}$ teaspoonful vanilla,
- 1 pint of flour.

Mix butter and sugar to a cream, add egg and milk. Sift flour, salt and baking powder together and add the flavoring. Mix thoroughly, bake in a moderate oven about twenty-five minutes and serve with cocoa sauce.

Cottage Pudding.

2 cupfuls flour,
 $\frac{1}{2}$ cupful milk,
 $\frac{1}{2}$ cupful sugar,
 3 tablespoonfuls melted butter,
 2 teaspoonfuls baking powder,
 $\frac{1}{2}$ teaspoonful salt,
 $\frac{1}{2}$ teaspoonful flavoring.
 1 egg.

Sift dry materials, beat egg, add milk, stir into dry materials, add butter and flavoring. Beat well. Bake twenty to thirty minutes in a shallow pan in a quick oven. Serve with lemon sauce.

Baked Indian Pudding.

Stir into one pint scalded milk, two tablespoonfuls corn meal, and cook until meal has thickened the milk. Add one teaspoonful each salt and ginger, two teaspoonfuls cinnamon, one cup molasses and one pint cold milk. Pour into a buttered earthenware dish, add two tablespoonfuls melted butter, and bake slowly two hours. Stir once or twice the first half hour of cooking.—Mrs. A. J. Mielke.

Steamed Pudding.

1 cup molasses,
 $\frac{2}{3}$ cup butter,
 1 cup hot water,
 1 teaspoonful soda,
 1 teaspoonful nutmeg,
 1 teaspoonful cinnamon,
 3 cups flour.

Steam three hours. Serve hot with sauce made of 1 cup sugar, $\frac{1}{2}$ cup butter, whipped to a cream, thinned with boiling water.—Mrs. A. J. Mielke.

Suet Pudding.

2 cupfuls bread crumbs,
 1 cupful raisins,
 $\frac{1}{2}$ cupful suet,
 1 cupful sweet milk,
 1 teaspoonful soda,
 1 teaspoonful cinnamon,
 $\frac{1}{2}$ teaspoonful cloves,
 1 tablespoonful sugar,
 $\frac{1}{2}$ teaspoonful salt.

Sift all dry ingredients together, mix all the rest together, combine with moist ingredients and steam two hours. Serve with lemon sauce.

Orange Pudding.

1 $\frac{1}{2}$ cupfuls stale-bread crumbs,
 1 cupful cold water,
 1 cupful sugar,
 1 cupful orange juice,
 Juice $\frac{1}{2}$ lemon,
 2 eggs,
 1 tablespoonful melted butter,
 $\frac{1}{2}$ teaspoonful salt,
 2 tablespoonfuls powdered sugar,
 $\frac{1}{2}$ teaspoonful orange extract.

Soak the crumbs in water twenty minutes, then add the sugar, orange, and lemon juice, the yolks of eggs slightly beaten, the butter and salt. Beat till thoroughly mixed, pour in a buttered dish, and bake in a moderate oven till the pudding is firm. Allow it to cool slightly and cover with a meringue made from the whites of the eggs, sugar, and orange flavoring. Brown delicately, and serve hot or cold.

Walnut Pudding.

Meats from 12 English walnuts,
 1 cupful stale brown-bread crumbs,
 2 cupfuls milk,
 2 tablespoonfuls sugar,
 3 eggs,
 1 teaspoonful vanilla.

Scald the milk in a double boiler, and add to it the crumbs and chopped walnut meats. Allow the mixture to simmer gently five minutes, then take from the fire. When cool, stir in the yolks of eggs beaten with the sugar. Add vanilla and the whites of eggs beaten to a stiff froth. Pour in a buttered mold, and bake thirty minutes. Serve hot with vanilla sauce or hard sauce.—Margaret Bailey.

Lemon-Meringue Pudding.

2 cupfuls stale-bread crumbs,
 2 cupfuls cold water,
 1 lemon,
 $\frac{3}{4}$ cupful sugar,

- 3 eggs,
- $\frac{1}{2}$ cupful chopped suet,
- 3 tablespoonfuls powdered sugar.

Soak the crumbs in water thirty minutes, then add juice and grated rind of the lemon. Beat the yolks of eggs till thick and lemon-colored, add sugar and suet, and mix thoroughly. Add the other ingredients. Bake an hour. Beat the whites of eggs stiff and dry and make a meringue with 3 tablespoonfuls powdered sugar. Heap lightly on top of the pudding, and brown delicately. Serve with a liquid sauce.

Prune-and-Bread Pudding.

- 2 cupfuls prunes,
- 8 slices buttered bread,
- 2 eggs,
- 4 tablespoonfuls sugar,
- 2 cupfuls milk,
- Nutmeg.

Soak the prunes over night, and in the morning remove the stones. Cover the bottom of a buttered baking dish with a layer of buttered bread cut in wide fingers. Cover with prunes and a dust of nutmeg and sugar. Put in another layer of buttered bread, then prunes with sugar and nutmeg. Let the crust be bread with the buttered side up. Beat the eggs well, add the milk, and pour over the pudding. Bake an hour, covering the pudding with a plate for half an hour, then leaving it uncovered to crust. Serve with hard sauce or lemon sauce.

Apple-Custard Pudding.

- 2 cupfuls pared and quartered apples,
- 1 cupful stale-bread crumbs,
- 4 tablespoonfuls sugar,
- 1 tablespoonful flour,
- 1 tablespoonful butter,
- 1 egg,
- $\frac{1}{2}$ lemon,
- $\frac{1}{4}$ cupful water.

Put the apples with water in a granite saucepan and cook till the fruit mashes easily. Remove from the fire, add sugar, butter, and the grated rind and juice of a lemon. Mix the

flour with bread crumbs and stir into the mixture. Beat the egg till light, and add it last. Turn into a buttered dish, and bake in a moderate oven three quarters of an hour. Serve hot with hard sauce.

Fig Pudding.

- 4 cups flour,
- 1 cup chopped suet,
- 1 cup seeded raisins,
- 1 cup chopped figs,
- 1 cup molasses,
- 1 cup sweet milk,
- 2 teaspoonfuls baking powder.

Thoroughly grease pan and then flour it. Pour in pudding. Steam at least $3\frac{1}{2}$ hours.—Gertrude B. Day.

Date Pudding.

- 1 cup sugar,
- 3 teaspoonfuls baking powder,
- 2 tablespoonfuls flour,
- 3 tablespoonfuls milk,
- Beaten whites of 2 eggs,
- 1 cup chopped English walnuts,
- 1 cup chopped dates.

Mix dry ingredients together. Next the milk and then the beaten whites of the eggs. Place in a double boiler in the oven and cook for about an hour.—Mrs. G. H. Wilson.

Date Pudding.

- 1 pound dates,
- $\frac{1}{4}$ pound chopped nuts,
- 3 eggs,
- 1 cup sugar,
- 1 tablespoonful flour,
- 1 teaspoonful baking powder,
- Pinch salt,
- 1 teaspoonful vanilla,

Mix thoroughly the sugar, flour, baking powder and salt. Stir in the eggs, beaten. Add vanilla, dates and nuts. Bake in a moderate oven.—Lelah R. Cheney.

Date Pudding.

- 1 cup dates,
- 1 cup walnuts,
- 1 cup sugar,
- 2 eggs,
- 2 tablespoonfuls flour,
- 1 teaspoonful baking powder.

Cut the dates and walnuts in small pieces, mix, and add the flour and baking powder sifted together. Mix the sugar and eggs together and add to the rest. Bake in a tin in a slow oven. Serve with whipped cream.—Mrs. J. Clifford Theo.

Date Pudding.

- 1 cup dates,
- 1 cup nuts,
- $\frac{3}{4}$ cup sugar,
- 2 eggs,
- 4 tablespoonfuls flour,
- 4 tablespoonfuls milk,
- 1 teaspoonful baking powder.

Bake, cut in squares, and serve with whipped cream or hard sauce.—Mrs. H. C. Penning.

Date Forte.

- 1 cup sugar,
- 3 eggs stirred together lightly (don't beat)
- 1 cup dates cut in small pieces,
- 1 cup walnuts,
- 5 tablespoonfuls flour,
- 1 teaspoonful baking powder.

Mix sugar and eggs, stir in flour and baking powder sifted together and then add dates and nuts alternately. Serve with whipped cream.—Mrs. Rev. Vater.

Fig Pudding.

- 1 cupful chopped figs,
- $\frac{1}{2}$ cupful finely chopped suet,
- 1 cupful chopped apple,
- $\frac{1}{2}$ cupful brown sugar,
- $\frac{1}{2}$ cupful stale-bread crumbs,
- $\frac{1}{2}$ cupful milk,
- 2 eggs,
- $\frac{3}{4}$ cupful flour.

To the suet add the sugar, apple, and figs. Pour the milk over the bread crumbs, and add the yolks of eggs well beaten. Combine the mixtures, add the flour and the whites of eggs beaten until stiff. Turn into a greased pudding mold and steam in a covered steamer four hours.

Orange-Marmalade Pudding.

- 1 cupful stale-bread crumbs,
- 1 cupful orange marmalade,

- $\frac{1}{2}$ cupful chopped suet,
- 1 teaspoonful baking powder,
- 1 cupful flour,
- $\frac{1}{2}$ cupful sugar,
- $1\frac{1}{2}$ cupfuls milk.

Toss the dry ingredients together. Add the suet and marmalade, then stir in the milk and egg. Beat five minutes. Put into a buttered mold, cover tightly, and steam two hours.

Sponge Pudding.

- $\frac{1}{2}$ cupful sugar,
- $\frac{1}{2}$ cupful flour,
- $\frac{1}{4}$ cupful butter,
- 1 pint scalded milk,
- 5 eggs.

Mix sugar and flour, wet with a little cold water and stir into the scalded milk. Cook until it thickens and is smooth. Add the butter and when well mixed stir it into the well-beaten yolks of the eggs. Then add the whites beaten stiff and bake in a shallow dish or cups, placing them in a pan of hot water while in the oven. Serve with creamy sauce.—Mrs. William H. Taft.

Saratoga Pudding.

- 2 cupfuls coarse bread crumbs,
- 4 eggs,
- 1 quart sweet milk,
- 1 cupful sugar,
- Pinch salt,
- $\frac{1}{2}$ cupful raisins,
- 2 tablespoonfuls butter,
- Flavoring, milk or vanilla.

After baking, spread with layer currant jelly before putting on meringue.—Mrs. J. S. Sherman.

Scalloped Apples.

- 6 large tart apples,
- 2 cupfuls stale-bread crumbs,
- 2 tablespoonfuls molasses,
- $\frac{1}{2}$ cupful hot water.

Pare the apples and cut in generous slices. Into a buttered baking dish put a layer of bread crumbs, then a layer of sliced apples, and a top layer of crumbs. Add the hot water to the molasses and pour it

over the pudding. Bake twenty minutes.

Bread Pudding with Raspberry Sauce.

- 2 cupfuls stale-bread crumbs,
- 2 cupfuls milk,
- 3 eggs,
- Salt.

Soak the crumbs half an hour in milk. Beat the yolks of the eggs till thick and lemon-colored and add to the soaked crumbs with a pinch salt. Cut in the whites of eggs beaten stiff, and bake, setting in a pan of hot water in a moderate oven, forty minutes. Put no sugar in this pudding; the sauce supplies all the necessary sweetness.

Raspberry Sauce.

- 3 tablespoonfuls powdered sugar,
- 1½ tablespoonfuls butter,
- 1 cupful red raspberries,
- Juice 1 lemon.

Cream the sugar and butter together. Mash the fruit, and beat in with the sugar and butter. Add the lemon juice, and beat till very light and frothy.

Apple Dowdy.

- ½ loaf stale brown bread,
- 8 large tart apples,
- ¼ cupful dark-brown sugar,
- ½ teaspoonful cinnamon,
- ½ cupful cold water,
- 2 tablespoonfuls butter,
- ¼ teaspoonful salt.

Cut the bread in thin slices and pare off the crusts. Butter each slice. Lay them into a buttered baking dish till it is neatly lined. Inside put the apples, pared and sliced, sugar, cinnamon, salt, and pour water over all. Cover the top with bread, buttered side up. Bake slowly an hour. Serve hot with liquid or hard sauce.

Chocolate Soufflé.

- 1 cupful stale-bread crumbs,
- 2 cupfuls scalded milk,
- 1 square chocolate,

- ½ cupful sugar,
- 1 egg,
- Dash salt,
- ½ teaspoonful vanilla.

Pour the milk over the crumbs and allow them to swell half an hour. Melt the chocolate in a bowl in the mouth of a boiling kettle, add to the sugar, and scrape it into the soaked bread, beating well. Add the salt, vanilla, and egg slightly beaten. Turn into a buttered dish and bake three quarters of an hour. Serve hot.

Jam Pudding.

- Stale bread,
- 2 cupfuls milk,
- ½ cupful sugar,
- Salt,
- 1 egg.

Cut stale bread in slices, remove crusts, spread with butter or cream, and quince or plum jelly; put together like sandwiches. Place in a baking dish in layers. Pour over a custard of milk, egg, sugar, and a little salt. Bake, covered, half an hour; then uncover, and brown. Serve warm or cold, with cream.

Caramel Pudding.

- 2 cupfuls bread crumbs,
- 1½ cupfuls milk,
- 2 tablespoonfuls butter,
- 3 eggs,
- 1 cupful sugar,
- 4 teaspoonfuls caramel.

Mix together, and add whites of eggs beaten with tablespoonful sugar just before pouring into mold. Steam three hours in a buttered mold. Serve with apple jelly and caramel sauce.

Apricot Pudding.

- 1 cupful stale-bread crumbs,
- 1 cupful fresh or preserved apricots cut in dice,
- ½ cupful sugar,
- ¼ cupful butter,
- ½ cupful water,
- ¼ cupful apricot sirup.

Butter a baking dish; cover the bottom with layer of crumbs, over it

place the fruit; cover with crumbs, dot with bits of butter, then apricots, and so on, until the dish is full. The upper layer should be of crumbs, covered thickly with bits of butter. Pour over a portion of the liquid, or add it in mixing the pudding; place in a pan of water, and bake half an hour; take from the water, and finish baking fifteen or twenty minutes. Serve with cream or apricot sauce.

Brown-Bread Pudding.

- 1 cupful brown-bread crumbs,
- 2 cupfuls milk,
- 3 eggs,
- 2 tablespoonfuls maple sugar.

Soak the crumbs in $\frac{1}{2}$ cupful milk fifteen minutes; make a custard of the remainder of the milk, eggs, and sugar; pour it hot over the crumbs; beat the whites of two eggs, with 1 tablespoonful sugar and 1 or 2 tablespoonfuls thick cream; stir lightly into the custard. Bake half an hour in a moderate oven; eat with cream.

Cocoanut Pudding.

- 2 cupfuls scalded milk,
- 3 eggs,
- 1 tablespoonful cornstarch,
- 1 tablespoonful sugar,
- $\frac{1}{2}$ cupful grated cocoanut,
- 2 tablespoonfuls powdered sugar.

Cut stale bread in slices, spread with butter and honey, and cover with grated cocoanut. Line a baking dish with the sandwiches. Pour over a custard made with milk, eggs, cornstarch, sugar, grated cocoanut, and a little salt. Bake in a moderate oven half or three quarters of an hour. Cover with a meringue of the whites of 3 eggs and powdered sugar. Brown delicately. Serve with cream.

Chocolate Whips.

- 3 eggs,
- 2 tablespoonfuls sugar,
- 1 tablespoonful chocolate grated,
- 1 tablespoonful sugar,
- 1 tablespoonful hot water,
- 2 cupfuls milk.

Beat the yolks of the eggs and sugar till light. Dissolve sugar and chocolate in hot water; when dissolved, add slowly milk scalded; pour this mixture over the beaten eggs and sugar, and cook in a double boiler, stirring constantly until it thickens. When cool, flavor with vanilla and place on ice. When ready to serve, half fill small punch glasses with the custard and whipped cream, sweetened and flavored, over it.

Sponge Cake à la Chantilly.

- 1 stale sponge cake,
- 2 cupfuls fresh or canned fruit,
- 1 cupful cream,
- 2 tablespoonfuls powdered sugar,
- $\frac{1}{2}$ teaspoonful vanilla.

From the top of a stale sponge cake cut a thin slice. Remove the inside, leaving a wall one and a half inches thick. Into this put any fresh fruit sprinkled with sugar, or canned fruit from which the bulk of the juice has been drained. Beat the cream till thick. Add the sugar and vanilla, and pour over the cake just before serving. Save the inside of the loaf; it may be utilized in various ways.

Cocoanut Sponge Pudding.

- 2 cupfuls scalded milk,
- $1\frac{1}{2}$ cupfuls sponge-cake crumbs,
- 1 cupful grated cocoanut,
- 1 cupful sugar,
- Grated nutmeg,
- 1 tablespoonful rose water,
- 3 eggs.

Pour the hot milk over the sponge-cake crumbs, sugar, beaten yolks of eggs, cocoanut. Allow it to stand half an hour. Add the nutmeg, rose water, and whites of eggs beaten to a dry froth. Bake three quarters of an hour in a buttered mold. Serve with wine sauce.—Margaret Bailey.

Marmalade Sponge Cake.

- 1 stale sponge cake,
- 4 dry lady's fingers,
- 1 cupful powdered sugar,
- $\frac{1}{2}$ cupful butter,
- $\frac{1}{2}$ cupful orange marmalade.

Cut a stale sponge cake in two, in layer style, and set it in a steamer ten minutes. Make a hard sauce by creaming the butter gradually, adding the sugar, and beating it till smooth and white. Add the marmalade at the last. Dry the lady's fingers in a moderate oven till light brown, then roll into crumbs with a rolling-pin. Spread the hard sauce on a layer of the cake, cover with the other half of the cake, spread with the remainder of the sauce, and scatter thickly with sifted lady's finger crumbs. Serve immediately. Almost any kind of jam can be used instead of orange marmalade. If it is a very rich, sweet preserve, use $\frac{1}{2}$ cupful less sugar. The sauce is also excellent if made with $\frac{1}{4}$ cupful orange juice beaten into the hard sauce, 1 tablespoonful lemon juice, and $\frac{1}{2}$ teaspoonful orange extract.

Cream in a Crust.

Make a sponge cake, and bake in a solid loaf, either round or oblong. When cool, take out the center, leaving the crust an inch thick on the sides and bottom. Make an icing of 2 ounces chocolate, a cupful sugar, $\frac{1}{2}$ cupful water, and vanilla to flavor. Melt the chocolate and add to it slowly the sugar and water boiled to a sirup which will spin a thread. Flavor, and brush with it at once the entire cake, inside and out, until it is well coated. Just before serving, fill with rich, sweet cream (about a cupful), whipped, sweetened, and flavored.

Pineapple Pudding.

- Slices of stale cake,
- 1 pineapple,
- $\frac{1}{2}$ cupful sugar,
- 1 cupful cold water.

Line a buttered pudding dish with slices of stale cake. Pare and slice the pineapple thinly. Cover each layer of cake with the fruit, sprinkling it with sugar; cover with cake, then pineapple. Make the top layer cake, and over all pour the water. Cover, and bake slowly two hours. Eat hot with hard sauce.

Cabinet Pudding.

- 3 cupfuls cake,
- 1 cupful milk,
- 2 eggs,
- Salt,
- 2 tablespoonfuls sugar,
- $\frac{3}{4}$ cupful raisins, nut meats, and citron.

Butter a quart melon mold and scatter over it a few currants, raisins, nut meats, or tiny bits of citron. Fill the mold almost to the top with broken bits of cake, and sprinkle a little fruit through it if the pieces are of plain cake. Beat 2 eggs, stir in 2 tablespoonfuls sugar, a dash salt, and the milk. Pour this custard over the cake in the mold, turning in a little at a time to allow the cake to absorb the liquid, until all the custard is used. Put on cover, covering the top with a buttered paper, and place the mold in a kettle of boiling water, not allowing the water to come quite to the top of the mold. Place a lid on the kettle and let it boil an hour. Serve the pudding hot, with wine or fruit sauce.

Crumb Pudding.

- 3 eggs,
- $\frac{1}{2}$ cupful sugar,
- $\frac{1}{2}$ cupful soft bread crumbs,
- $\frac{1}{2}$ cupful farina,
- $\frac{1}{2}$ cupful broken nut meats,
- $\frac{1}{2}$ cupful butter,
- $\frac{1}{2}$ cupful powdered sugar,
- 2 tablespoonfuls milk,
- 1 teaspoonful vanilla.

Beat the yolks of eggs until light and lemon-colored. Gradually add sugar, bread crumbs, and farina. Mix perfectly, fold in the whites of eggs beaten stiff, and nut meats. Pour into 2 layer-cake pans which have been buttered and floured. Bake half an hour in a slow oven. When slightly cooled, put the layers together with a creamy sauce made as follows: Cream $\frac{1}{2}$ cupful butter, add gradually $\frac{1}{2}$ cupful powdered sugar and 2 tablespoonfuls milk, add drop by drop. Flavor with 1 teaspoonful vanilla. Serve hot.—Katherine A. French.

Peach Crumb Pudding.

- 1 pint stale-bread crumbs,
- 1 tablespoonful melted butter,
- 2 eggs,
- $\frac{1}{2}$ cupful sugar,

On a pint of stale-bread crumbs pour boiling water and stir in melted butter. After standing till thoroughly soaked, add eggs and sugar. On the bottom of a buttered dish put a thin layer of this batter, over it a layer of sliced peaches, and so on, dredging each layer of peaches with sugar, till the dish is full, having batter at the top. About an hour in a moderate oven will be required for the baking. Serve with sweetened cream.

Cherry Pudding.

- 1 cup sugar,
- 1 cup milk,
- 2 tablespoonfuls butter,
- 1 teaspoonful baking powder,
- Flour enough to thicken.

Cream the butter and sugar, add milk, then the baking powder and flour. Stir thoroughly together. Pour into a buttered mold, and over this pour a sauce made as follows:

- 1 cup sugar,
- 2 cups boiling water,
- 2 tablespoonfuls butter,
- 2 cups canned cherries.

When baked the juice will be in the bottom.—Mrs. Merritt Wayman.

Cherry Pudding.

- 2 eggs,
- 1 cup sugar,
- 1 tablespoonful butter,
- 1 cup sour milk,
- $\frac{1}{2}$ teaspoonful soda,
- 2 cups flour.

Beat eggs light, add sugar and beat again, then the milk, the melted butter, and lastly the flour and soda sifted together. Fill two shallow pans partly full, then cover with a layer of cherries and add the remaining batter. Place another layer of cherries on top, lightly pressing them into the batter.

Bake in a quick oven and serve with

liquid sauce.—Mrs. Chas. W. Stephenson.

Suet Cherry Roly-Poly.

- 5 ounces suet,
- $\frac{1}{2}$ pound flour,
- $\frac{1}{4}$ teaspoonful salt.

Remove the fiber and skin from suet, chop fine, add flour and salt, mix well. Add sufficient cold water to make it stick, and roll out on a well-floured board. Cover with pitted cherries, dust with sugar, and roll quickly; tie in a well-floured cloth, leaving room for it to swell. Place in a kettle of boiling water and keep it boiling steadily two hours, or it may be steamed two hours and a half. Serve hot with any sweet sauce, or sweetened cream.

Marmalade Pudding.

- $\frac{1}{2}$ pound bread crumbs,
- $\frac{1}{2}$ pound brown sugar,
- $\frac{1}{2}$ pound suet, chopped fine,
- 4 eggs,
- 1 small jar orange marmalade.

Mix together, put in a mold with tight-fitting cover, and boil three hours.

Huckleberry Pudding.

Line pudding dish with buttered slices of bread. Fill with huckleberries, sprinkle over sugar and the grated rind and juice of a lemon. Place on top of buttered bread. Set in a pan of water in a hot oven; cover the pudding with a plate, and bake one and a half hours. When the pudding is done, cover with a meringue made of the whites of 2 eggs beaten stiff and 2 tablespoonfuls powdered sugar. Return to the oven to brown lightly, and serve hot.

Plain Plum Pudding.

- 4 cupfuls flour,
- 1 pound currants,
- 2 cupfuls sugar,
- 1 pound raisins,
- $\frac{1}{2}$ pound of candied lemon peel chopped fine,
- 1 pound suet chopped fine,
- 1 teaspoonful baking powder,
- Nutmeg and cinnamon.

Sift the flour, baking powder, spices, and salt; add other ingredients. When well mixed, add sufficient cold water or milk to make a batter just thick enough to spoon into the mold. Leave room for it to rise. Cover closely, and boil six hours.

Fluff Pudding.

- ¼ cupful cold water,
- 2 tablespoonfuls gelatin,
- 2 cupfuls cream,
- 1 teaspoonful vanilla,
- 2 cupfuls milk,
- 3 eggs,
- ⅓ cupful sugar.

Soak the gelatin in cold water five minutes. Scald the milk, and dissolve the gelatin in it. Beat the yolks and sugar together, pour over them the scalded milk, and cook in hot water two minutes. Take from the fire, add the vanilla, and turn into a bowl to cool. Stand the bowl in a pan of cracked ice, and stir constantly until it thickens; then add the whipped cream; turn into a mold and set away to harden. Serve with whipped cream.

Snow Pudding.

- ¼ cupful cold water,
- 2 tablespoonfuls gelatin,
- 1 cupful sugar,
- 2 eggs,
- Juice 2 lemons,
- 2 cupfuls milk,
- 1 teaspoonful vanilla,
- 1 cupful boiling water.

Let the gelatin soak five minutes in cold water, pour over it boiling water, add sugar, and stir till dissolved; add the lemon juice, and strain; set in ice water. When cold, whip with an egg beater until white as snow; beat the whites of eggs stiff, and beat them in. Dip a mold in cold water, pour the pudding into it, and set in a cold place till it hardens.

Sauce for Pudding.

Scald the milk; beat the yolks of eggs and a ½ cupful sugar together, pour over them the scalded milk. Cook two minutes, add vanilla, and

pour out to cool. Serve the pudding with the sauce poured about it.

Bananas and Tapioca.

- ¼ cupful minute tapioca,
- 1 pint boiling water,
- ⅔ cupful sugar,
- ½ teaspoonful salt,
- Juice 2 lemons,
- Whites 2 eggs,
- 5 bananas,
- Whipped cream.

Mix the sugar and tapioca, stir into the boiling water and salt; cook, stirring occasionally, until the tapioca is transparent, then add the lemon juice and fold in the whites of eggs. When the eggs are evenly distributed throughout the mixture, fold in the pulp of the bananas cut in thin slices. Serve with cream, whipped or plain.

Orange Tapioca Fluff.

- ¼ cupful minute tapioca,
- 1 cupful sugar,
- 1 pint water,
- 3 oranges,
- 2 eggs.

Cook tapioca, sugar, and water in a double boiler till clear, stirring often. Add the orange juice about three minutes before removing from the stove. When cool and beginning to harden, stir into it the well-beaten whites of eggs. Serve with a soft custard.

Raspberry Jelly.

- 3 tablespoonfuls minute tapioca,
- 3 tablespoonfuls sugar,
- 2 cupfuls hot water,
- Juice 1 lemon,
- 1 cupful raspberry juice.

Cook tapioca until clear with sugar in boiling water, add the lemon juice and raspberry juice. When beginning to harden, beat smooth with a spoon.

Danish Pudding.

- 3 cupfuls hot water,
- ½ cupful minute tapioca,
- 1 teaspoonful salt,
- ½ cupful sugar,
- 1 tumbler currant jelly.

Cook the tapioca and water fifteen minutes. Add sugar, salt, and currant jelly. Stir until jelly is dissolved. Pour into glass dish and keep on ice. Serve very cold with sugar and cream. In summer 1 pint ripe strawberries used in place of jelly makes a pleasing change.

Grape Blancmange.

1 cupful grape juice,
3 tablespoonfuls cornstarch,
Whites 3 eggs,
 $\frac{1}{2}$ cupful sugar,
Yolks 3 eggs,
1 teaspoonful vanilla,
1 pint milk.

Put the grape juice and 1 cupful water in a double boiler; when scalded, stir in the cornstarch previously mixed in cold water; cook five minutes, stirring till smooth and thick; remove from fire, fold in the stiffly beaten whites and sugar. Make a custard of the yolks of eggs, sugar to sweeten, a teaspoonful vanilla and milk, and serve with the grape blancmange. Turn it from the mold into a glass dish, and pour the custard around it.

Winter Fruit Pudding.

2 tablespoonfuls gelatin,
6 oranges,
1 can pineapple,
3 bananas,
Sugar to taste.

Slice the bananas, cut the pineapple in small pieces, and spoon the pulp from the oranges. Drain off the juice; in part of this soak the gelatin five minutes, stand in hot water until dissolved, add to the rest of the juice, and pour over the fruit arranged in a salad bowl. Set on ice until jellied, then sprinkle with grated cocoanut.

Coffee Jelly.

2 tablespoonfuls gelatin,
 $\frac{1}{2}$ cupful cold water,
3 cupfuls coffee,
 $\frac{3}{4}$ cupful sugar.

Soak the gelatin in cold water five minutes and dissolve in the hot cof-

fee; add the sugar, stir until dissolved, and turn into a mold. Serve with whipped cream.

Cocoanut Cream Tapioca.

1 quart hot milk,
2 tablespoonfuls minute tapioca,
3 tablespoonfuls cocoanut,
1 cupful sugar,
2 tablespoonfuls powdered sugar,
Yolks 3 eggs,

Cook fifteen minutes in a double boiler, stirring frequently, the milk, tapioca, cocoanut, and sugar. Pour this over the beaten yolks of eggs. Cover with whites of eggs beaten to a stiff froth with powdered sugar, and brown in a very moderate oven.

Indian Tapioca Pudding.

2 tablespoonfuls minute tapioca,
1 quart milk,
3 tablespoonfuls cornmeal,
 $\frac{1}{2}$ cupful molasses,
1 tablespoonful butter,
1 tablespoonful cinnamon,
Nutmeg to taste,
1 egg,
1 cupful cold milk.

Cook tapioca in milk ten minutes. While boiling, stir in cornmeal wet with a little milk, molasses, butter, salt, cinnamon, nutmeg, and egg. Pour in a dish, add cold milk, and bake two hours.

Coffee Tapioca.

3 cupfuls coffee infusion,
 $\frac{1}{2}$ cupful minute tapioca,
 $\frac{1}{4}$ cupful sugar,
Salt,
1 teaspoonful vanilla.

Cook tapioca in coffee fifteen minutes with sugar and salt. Flavor with vanilla, and serve cold with cream and sugar.

Apple Tapioca.

6 tart apples,
1 cupful sugar,
Salt,
 $\frac{1}{2}$ cupful minute tapioca,
1 quart water.

Pare and quarter apples. Place in dish and pour over sugar and salt. Cook tapioca in double boiler in a quart water with pinch salt fifteen minutes. Pour this over the apples. Cover the dish, and bake half an hour. Serve with cream and sugar.

Rothe Grutze (German recipe).

- $\frac{1}{2}$ cupful minute tapioca,
- 1 cupful sugar,
- $\frac{1}{4}$ teaspoonful salt,
- $1\frac{1}{2}$ cupfuls hot water,
- 2 cupfuls rhubarb.

Put tapioca in double boiler with sugar, salt, and hot water. Add rhubarb that has been washed and cut in small pieces. Cook till the rhubarb is tender. Mash with a fork, and pour, while hot, into a cold, wet earthen or granite mold. Keep in a cold place a few hours, turn out and serve with cream. This may be molded in individual cups.

Hot Chocolate Pudding.

- 2 cupfuls stale-bread crumbs,
- 2 cupfuls milk scalded,
- $1\frac{1}{2}$ ounces chocolate,
- $\frac{1}{2}$ cupful sugar,
- 1 egg,
- Dash salt,
- 1 teaspoonful vanilla.

Pour the hot milk, in which the chocolate has been melted, over the bread crumbs, add to it sugar and salt. Beat the yolk of egg till thick and lemon-colored, stir it in, add the vanilla, last of all the white of egg beaten to a stiff froth. Pour the mixture into buttered custard cups, set in a pan of hot water, then in a moderate oven bake about half an hour. Serve hot with hard sauce.

Chocolate Tapioca.

- $\frac{1}{2}$ cupful minute tapioca,
- $\frac{1}{2}$ cupful sugar,
- $\frac{1}{2}$ teaspoonful salt,
- 3 cupfuls milk,
- 1 ounce chocolate,
- $\frac{1}{2}$ teaspoonful vanilla.

Soak the tapioca in $\frac{1}{2}$ cupful water, scald the milk in a double boiler, add

the tapioca, sugar, and melted chocolate. Cook half an hour, stirring frequently. When taken from the fire, add the vanilla, and pour into a mold. Serve the pudding ice cold, with whipped cream or chilled custard.

Baked Chocolate Custard.

- 2 cupfuls milk,
- 1 ounce chocolate,
- 2 eggs,
- $\frac{1}{4}$ cupful sugar,
- Dash salt,
- $\frac{1}{2}$ teaspoonful vanilla.

Melt the chocolate in a double boiler. Pour the milk in slowly and let it come to the scalding point. Pour it over the slightly beaten eggs and the sugar and salt, strain into a buttered mold or custard cups; set them in a pan of hot water and bake in a moderate oven until a knife can be put into the middle of the custard and come out clean. Serve ice cold.

Chocolate Spanish Cream.

- 1 tablespoonful granulated gelatin, softened in 2 tablespoonfuls cold water,
- 3 cupfuls milk,
- Whites 3 eggs,
- Yolks 3 eggs,
- $\frac{1}{2}$ cupful sugar,
- Dash salt,
- 1 teaspoonful vanilla,
- $1\frac{1}{2}$ squares chocolate.

Melt the chocolate in a double boiler, add the sugar, and pour over it the scalded milk; beat till perfectly blended, then pour over the beaten egg yolks and back into the boiler, cooking till it thickens like a custard. Remove from the stove, pour it over the gelatin, strain, add the salt, vanilla, and whites of eggs beaten to a stiff froth. Turn into individual molds which have been dipped in cold water, and chill. Serve with a garnish of whipped cream.

Chocolate Marshmallow Cream Roll.

Beat 4 eggs light without separating yolks and whites. Gradually beat in 1 cup granulated sugar, $\frac{1}{4}$ cup

cocoa, 2 tablespoonfuls melted butter. Fold in 1 cup sifted flour, sifted again with 1 teaspoonful baking powder. Turn in pan $13\frac{1}{2} \times 8\frac{1}{2}$, lined with buttered paper. Let bake 12 minutes, or until firm to touch, turn on cloth, and trim the edges. Spread with marshmallow filling and roll like a jelly roll. Roll in cloth and let stand $\frac{1}{2}$ hour. Spread melted chocolate on top.—Anna Kinsley.

Marshmallow and Nut Cream.

Cut $\frac{1}{2}$ pound marshmallows in 4 parts, add 1 cup nut meats, 2 slices of canned pineapple, cut fine, mix with whipped cream, and serve in glass cups.—Anna Kinsley.

Marshmallow Pudding.

$\frac{1}{2}$ pound marshmallows,
 $\frac{1}{4}$ can shredded pineapple,
1 pint whipped cream.

Cut the marshmallows into 4 pieces. Mix with the pineapple and the stiffly beaten cream. If allowed to stand several hours, preferably over night, in a cold place, it will be greatly improved.—Mrs. J. Clifford Theo.

Strawberry Cream.

Stir 1 cup of clear strawberry juice into one pint of thick cream. Add 1 cup sugar and whip till stiff. Then add beaten whites of 2 eggs and continue beating till very stiff. Turn into a deep glass dish and garnish with large whole berries.—Mrs. Hanna Engor.

Duchess Cream.

One cup pearl tapioca covered with water over night. Drain off in the morning and cover with hot water. Let simmer until it becomes clear, stirring all the time. Add juice of 2 lemons, $\frac{1}{2}$ can grated pineapple (the juice only), 2 cups sugar and the beaten whites of 2 eggs. Let cool and serve with cream.—Gertrude B. Day.

Strawberry Custard Pudding.

Make a custard of 1 quart of milk, the yolks of 3 eggs, $\frac{1}{2}$ cup sugar, 1

teaspoonful of vanilla. Line a fruit dish with squares of sponge cake, which has been dipped in the custard. Over this put a layer of strawberries (sweetened). Fill the dish in this manner and cover the top with the whites of 3 eggs, beaten to a stiff meringue. To this meringue add $\frac{1}{2}$ cup of sugar. Over the meringue place large strawberries. Any fruit can be substituted for strawberries in the above.—Mrs. O. R. Spence.

Orange Cream Pudding.

2 tablespoonfuls powdered gelatin, soaked in $\frac{1}{4}$ cup cold water,
1 cup boiling water,
2 cups orange juice,
2 cups whipped cream,
2 cups sugar,
Yolks of two eggs.

Dissolve gelatin in the water, add sugar, orange juice, and yolks of eggs. Beat all together, then add the whipped cream. Pour into a wet mold and turn out when firm.—Ola Miller.

Cream Whip.

Soak 1 tablespoonful gelatin in $\frac{1}{4}$ cup cold water. Set over hot water, and when gelatin is dissolved, add slowly to one cup cream which has been beaten until stiff. Stir into cream 1 cup berries, or any larger fruit sliced, which has been sweetened to taste. Set on ice to stiffen.

Instead of fruit, stale cake may be used.—Mrs. A. J. Mielke.

Cupid's Soufflés.

Beat yolks of 3 eggs and $\frac{3}{8}$ cup of sugar together until light; add grated rind of $\frac{1}{2}$ lemon and whites of 3 eggs beaten until stiff and dry. Add 1 cup stiffly beaten cream, and $\frac{3}{8}$ cup of flour sifted with $\frac{1}{8}$ teaspoonful of salt. Pour mixture into 6 paper cases, sprinkle with powdered sugar and bake in a hot oven ten minutes. Serve immediately.

Chocolate Charlotte.

1 tablespoonful granulated gelatin,
 $\frac{1}{4}$ cupful cold water,

- $\frac{1}{2}$ cupful scalded cream,
- $1\frac{1}{2}$ squares chocolate,
- 3 tablespoonfuls hot water,
- $\frac{3}{4}$ cupful sugar,
- Whip 3 cupfuls cream,
- 1 teaspoonful vanilla,
- 6 lady's fingers.

Melt the chocolate in a double boiler, add half the sugar, dilute with boiling water, and put in the soaked gelatin. Stir till dissolved, add the scalded cream, strain and pour into a bowl; set in a pan of ice water and stir till it begins to thicken. Fold in the whip from the cream. Separate the lady's fingers and place them around the inside of a mold, crust side out. Turn in the chocolate mixture, and set it on ice. When very cold, turn out on a platter and garnish with whipped cream.

Chocolate Blancmange.

- 2 cupfuls scalded milk,
- 5 tablespoonfuls cornstarch,
- $\frac{1}{2}$ cupful sugar,
- Dash salt,
- $\frac{1}{2}$ cupful cold milk,
- $1\frac{1}{2}$ squares chocolate,
- 3 tablespoonfuls hot water,
- Whites 3 eggs,
- 1 teaspoonful vanilla.

Mix the cornstarch, sugar, and salt in the cold milk, pour it into the scalded milk in a double boiler. Cook ten minutes, stirring constantly till it thickens, melt chocolate over hot water, add the 3 tablespoonfuls hot water; add the chocolate to the first mixture, beat until smooth, add the whites of the eggs beaten stiff and vanilla, pour into a mold, and chill. Serve with whipped cream.

Chocolate Pudding.

- 6 eggs,
- 1 cupful sugar,
- $\frac{1}{2}$ teaspoonful vanilla,
- $\frac{1}{4}$ pound sweet chocolate grated,
- 1 cupful almonds chopped fine without blanching,
- 1 cupful sifted bread crumbs,
- 1 teaspoonful baking powder.

Beat until light and thick the yolks of eggs, sugar, vanilla, chocolate, al-

monds, bread crumbs, whites of eggs, and baking powder. Butter a pudding form, turn into it the mixture, and bake in a moderate oven thirty to forty minutes. Serve with meringue sauce. To make meringue sauce, boil together $\frac{1}{2}$ cupful sugar and $\frac{1}{2}$ cupful water until the mixture forms a soft ball when dropped in cold water, then turn it slowly over the whites of 2 eggs stirring all the time. Beat well, and flavor with vanilla. Turn out the pudding, and pile the sauce around its base, completely encircling it, and decorate, if desired, with chocolate candies.

Charlotte Russe.

- 1 quart thin cream,
- $\frac{3}{4}$ cupful powdered sugar,
- 1 teaspoonful vanilla,
- 12 lady's fingers,
- 2 tablespoonfuls gelatin,
- $\frac{1}{2}$ cupful cold water.

Soak the gelatin for five minutes in cold water. Beat the cream, and drain off the whip on a sieve. Line a mold with lady's fingers. Pour the cream in a basin and set it in a pan of ice water. Add to the soaked gelatin enough boiling water to dissolve it. Add the sugar carefully to the cream, then the vanilla, and last strain in the gelatin. Commence to stir immediately; stir from the sides and bottom of the basin until it begins to thicken, then pour into molds, and set on ice to harden.

Poor Man's Pudding.

- 2 cupfuls milk,
- 2 tablespoonfuls rice,
- $\frac{1}{4}$ cupful brown sugar,
- Dash salt,
- $\frac{1}{2}$ teaspoonful cinnamon,
- 1 tablespoonful butter.

Wash the rice, add milk, sugar, butter, and seasoning. Bake several hours, stirring frequently till it is moist and brown.

Cottage Pudding.

- $\frac{1}{2}$ cupful butter,
- 1 cupful sugar,
- 1 egg,
- $2\frac{1}{2}$ cupfuls flour,
- 3 teaspoonfuls baking powder.

Cream the butter, add sugar gradually, and the egg well beaten; mix and sift flour, baking powder, and salt; add alternately with milk to first mixture; turn into gem pans, bake thirty minutes. Serve with vanilla sauce.

Steamed Apple Pudding.

2 cupfuls flour,
4 teaspoonfuls baking powder,
 $\frac{1}{2}$ teaspoonful salt,
2 tablespoonfuls butter,
 $\frac{3}{4}$ cupful milk,
4 apples cut in eighths.

Mix and sift the ingredients; rub in the butter, add milk gradually, toss on a floured board, pat and roll out, place apples on middle of dough, and sprinkle with sugar mixed with a dash of nutmeg and salt. Wrap the dough around the apples and lift into buttered molds. Cover and steam an hour and a half, and serve with vanilla sauce.

Snowballs.

$\frac{1}{2}$ cupful butter,
1 cupful sugar,
 $\frac{1}{2}$ cupful milk,
2 $\frac{1}{4}$ cupfuls flour,
3 $\frac{1}{2}$ teaspoonfuls baking powder,
Whites 3 eggs.

Cream the butter, add sugar gradually, then the milk and flour mixed and sifted with baking powder; last the whites of eggs beaten to a stiff froth. Steam thirty-five minutes in buttered cups; serve with strawberry hard sauce.

English Plum Pudding.

1 $\frac{1}{2}$ cupfuls flour,
1 $\frac{1}{2}$ cupfuls stale-bread crumbs,
 $\frac{3}{4}$ pound raisins,
 $\frac{3}{4}$ pound currants,
 $\frac{3}{4}$ pound suet,
1 $\frac{1}{4}$ cupfuls sugar,
1 cupful molasses,
3 ounces candied orange peel,
1 teaspoonful nutmeg,
1 teaspoonful mace,
6 eggs,
1 teaspoonful salt.

Mix all the dry ingredients, add the fruit, molasses and suet, then the eggs well beaten, and stir until well mixed. Turn into a floured pudding cloth or buttered mold. If the cloth is used, tie securely, leaving some space to allow the pudding to swell, and plunge into a kettle of boiling water. Cook five hours. Keep the pudding immersed in water during the entire cooking. Serve with hard sauce.

Plum Pudding.

(Served at the White House at Christmas time.)

2 pounds raisins,
2 pounds currants,
 $\frac{1}{2}$ pound citron, sliced and cut fine,
1 pound beef suet (chopped),
 $\frac{1}{2}$ pound bread crumbs,
 $\frac{1}{2}$ pound crystallized cherries, cut fine,
1 pound brown sugar,
1 pound browned flour (brown and sift before weighing),
8 eggs beaten separately,
1 cupful New Orleans molasses,
1 teaspoonful salt,
 $\frac{1}{4}$ teaspoonful cloves (omitted if desired),
1 tablespoonful cinnamon,
1 grated nutmeg,
1 cupful grape juice,
Juice of 3 lemons,
 $\frac{1}{2}$ pound pineapple chopped fine.

Put 2 tablespoonfuls baking powder with the sifted flour and sift again. Cream the chopped suet (slightly warmed) with sugar. Add flour and eggs alternately, putting in the yolks first. Boil three hours in a mold. Small tin buckets can be used instead of molds. Fasten tops down securely. Let water steam around buckets. Fill buckets $\frac{2}{3}$ full, so pudding will have room to rise. Half the recipe can be used. The pudding may be kept for some time by removing from buckets when cold and wrapping well in oiled or paraffin paper until needed. Then re-place in bucket and reheat by placing in boiling water for an hour.—Mrs. A. I. Davey.

Plum Pudding.

- 1 cupful chopped suet,
- 1 cupful sour milk,
- 2 eggs,
- 1 cupful cooking molasses,
- 1 cupful raisins,
- 1 cupful currants,
- $\frac{1}{2}$ cupful chopped nuts,
- 1 teaspoonful cinnamon,
- 1 teaspoonful nutmeg,
- 1 teaspoonful cloves,
- 1 pinch salt,
- 1 teaspoonful soda,
- 1 cupful finely chopped bread crumbs,
- Flour enough to make stiff batter.

Pour into pudding, mold and steam steadily for four hours. Serve with the following sauce:

Two tablespoonfuls flour, or one of cornstarch, moistened with cold water. Then pour over it two cupfuls boiling water, stirring constantly. Into this thin starch stir two tablespoonfuls vinegar, 1 cupful sugar, $\frac{1}{2}$ cupful butter. This pudding can be made several days before serving and can be warmed up by steaming one hour. Serve hot.—Mrs. Samuel Kirkpatrick.

English Plum Christmas Pudding.

(For 12 persons.)

- 2 pounds raisins, seeded,
- 1 pound currants,
- 1 pound suet chopped very fine,
- 1 pound mixed peel of citron, lemon and orange,
- 1 pound sugar,
- 1 teaspoonful cloves,
- 1 teaspoonful cinnamon,
- 1 teaspoonful nutmeg,
- 1 pound flour,
- A few blanched almonds chopped fine,
- 8 eggs,
- Wineglass brandy.

Boil hard eight hours, without stopping, in a bag in boiler, or steam six hours.

Coburg Pudding.

- 3 cupfuls milk,
- $\frac{1}{2}$ cupful rice,

- 1 egg,
- 2 tablespoonfuls sugar,
- 1 teaspoonful cinnamon,
- 3 teaspoonfuls butter,
- 1 teaspoonful salt.

Cook rice in 1 cupful of boiling water five minutes; turn into double boiler in which you have the milk heated and cook until tender. Stir in 1 teaspoonful salt and 1 teaspoonful butter. Beat egg very light; add 2 tablespoonfuls sugar and stir into the rice just as you take it from the fire. Turn into dish for serving. Mix remaining sugar and cinnamon; sprinkle over the top. Dot with the remaining butter. Let stand ten or fifteen minutes and serve.

Rice Pudding.

- 1 cup rice,
- 9 cups milk,
- $\frac{3}{4}$ cup sugar,
- 1 teaspoonful salt.

Butter your baking dish, put all together and cook on top of stove, where it will not boil quickly, until rice is soft—about three hours—then put in oven long enough to brown. When hot and done the milk should be of the consistency of cream—it thickens when cold. Do not stir after rice is softened.—Mrs. A. J. Mielke.

Rice Pudding.

- $\frac{3}{4}$ cup rice (washed),
- 1 cup raisins,
- 1 cup sugar,
- 1 tablespoonful lemon extract,
- Large pinch salt,
- 1 tablespoonful butter,
- 2 quarts sweet milk.

Mix all together. Cook slowly on top of stove or in a slow oven. Stir occasionally.—Mrs. Thomas Stout.

Sago Pudding.

Scald 1 quart of milk in double boiler, add $\frac{1}{3}$ cup of sago, and $\frac{1}{2}$ level teaspoonful salt and cook 1 hour or till transparent, stirring frequently. Add 1 level tablespoonful butter and 1 egg beaten. Melt $\frac{1}{2}$ cup sugar in a

saucepan till brown. Add $\frac{1}{2}$ cup water and stir into the sago. This gives caramel flavor. Turn into a greased pudding dish and bake about twenty minutes. Eat hot with butter. One egg is sufficient. Do not be tempted to make it less delicate by adding more.—Mrs. Hanna Engor.

Down East Rice Pudding.

Mix $\frac{1}{2}$ cupful of washed rice with two cupfuls of milk, $\frac{1}{2}$ cupful molasses, a level tablespoonful of butter, and a little salt. Bake very slowly for two hours, adding more milk when it thickens. Serve hot with cream.

Cocoanut Tapioca.

Make a custard of two cupfuls of milk, yolks of two eggs, three tablespoonfuls of sugar, and a pinch of salt. Cook with the custard, in a double boiler, $1\frac{1}{2}$ tablespoonfuls of tapioca that has soaked overnight, and $1\frac{1}{2}$ tablespoonfuls desiccated cocoanut that has soaked in cold milk for fifteen minutes. Just before serving, whip the whites of three eggs stiff, beat in two tablespoonfuls of confectioner's sugar, and dot the top of the custard with it. Do not brown this meringue.

Chocolate Rice Pudding.

Put four cupfuls of milk in a double boiler, and when scalded, add $\frac{1}{2}$ cupful of washed rice, five tablespoonfuls of sugar, one tablespoonful of butter, three tablespoonfuls of grated chocolate, and $\frac{1}{2}$ teaspoonful of salt, one teaspoonful vanilla. Cook for two hours or more. Serve hot with whipped cream.

Steamed Graham Pudding.

Make a batter with $\frac{1}{2}$ cupful of molasses, $\frac{1}{2}$ cupful of sweet milk, one cupful graham flour, one tablespoonful of melted butter, a teaspoonful of cinnamon, a little nutmeg, and $\frac{1}{2}$ a teaspoonful of soda. Turn into a buttered, loaf-shaped dish and steam for an hour; $\frac{1}{2}$ cupful of raisins and currants may be added, if desired.

Apple Tarts or Apple Dumplings.

Roll out pie crust as you would for a pie, cut in circles, the size of common saucer. Pare and core an apple for each tart, and cut as for pie. On each circle of crust place the cut up pieces of apple, put on heaping teaspoonful sugar, flavor with nutmeg. Fold up edges and fasten well at the top. Bake about thirty minutes and let brown slightly on top. Serve on little plates with whipped cream, if possible. Raisins, berries, peaches, or almost any kind of fruit may be used thus to make tarts. To use up a little fruit and a little crust, these dumplings may also be sewed in cloth and dropped in boiling water thirty minutes or steamed thirty minutes if preferred. This is an excellent way to use up remains of the crust of pie.—Mrs. A. J. Mielke.

Steamed Apple Dumpling.

Line 3 large coffee cups with biscuit dough, rolled thin, fill with tart apples sliced thin, a pinch of salt, a little cinnamon or nutmeg, 1 teaspoonful of sugar and 1 tablespoonful of water. Fold the dough over the top and make a small incision for the escape of steam. Set the cups in a kettle of boiling water, which must come up about two inches from the tops, boil one hour. The cups must be well greased. Split the dumpling in half and serve with sauce. Will serve six persons.—Mrs. Geo. Ford.

Apple Brown Betty for Dessert.

Peel a good-sized tart apple, cut it into thin slices crosswise of the core which take out from each slice cut in two. Cover the bottom of a pan with slices of bread and then place a layer of sliced apple over the bread. Sprinkle sugar over the apple. Put in a layer of sliced bread and another layer of sliced apple with sugar sprinkled over it. Finally cover with a layer of bread and pour over the top $1\frac{1}{2}$ cups of boiling water. Put in a hot oven to bake twenty minutes. If the top should be too much browned pour a little milk over it to soften the browned bread. Serve with milk or cream and sugar

for four persons.—James Thompson, Sr.

Apple Pudding.

Pare and dice 3 good-sized apples and sweeten with $\frac{1}{2}$ cup sugar. Make a cake dough of the following:

- 1 tablespoonful butter,
- $\frac{1}{2}$ cup sugar,
- 1 egg,
- $\frac{1}{2}$ cup milk,
- 1 teaspoonful baking powder,
- $1\frac{1}{2}$ cups flour.

Pour the dough over the apples and bake until brown. Serve with whipped cream.—Ola Miller.

Warm Apple Pudding.

- 1 tablespoonful butter,
- 1 cup sugar,
- 1 egg,
- 1 cup sweet milk (scant),
- 2 teaspoonfuls baking powder,
- $1\frac{1}{2}$ cups flour.

Cream butter and sugar, add egg not beaten. Add flour and milk little by little. Grease pan well and sprinkle with dry bread crumbs. Peel apples and cut in thin slices, put a thick layer of apples in the dish and pour the dough over and bake. Serve with vanilla sauce. Serve the pudding warm, the sauce lukewarm.—Elizabeth Turmo.

Apple Pudding.

- $\frac{3}{4}$ cup sugar,
- 1 cup milk,
- 2 tablespoonfuls melted butter,
- 2 cupfuls flour,
- 3 teaspoonfuls baking powder,
- $\frac{1}{4}$ teaspoonful salt,
- 1 egg.

Beat egg and sugar together. Sift flour, baking powder, and salt. Combine mixtures, adding milk and butter. Half fill a baking dish with sliced apples, pour batter over the apples, steam one hour. Serve with cream.—Mrs. A. J. Mielke.

Coddled or Porcupine Apples.

Make a sirup by boiling eight minutes, $\frac{3}{4}$ cup sugar and $\frac{1}{4}$ cup water.

Wipe, core and pare 4 apples. Put in sirup and cook until soft. Better to have apples covered with the sirup. Drain apples from sirup when done, cool and pour whipped cream over them and stick almonds in them like pins in a pincushion.

Baked Apples.

- 6 medium-sized apples,
- 1 cup of sugar,
- $\frac{1}{2}$ teaspoonful each salt and cinnamon,
- Whites of 3 eggs,
- 3 tablespoonfuls powdered sugar.

Wash and take out as much of the core of the apples as possible, and put in a pan. Mix sugar, salt and cinnamon, fill cavities of apples with the mixture and put a little water in the pan. Bake until nearly done. Then beat the egg whites and sugar to a stiff froth and flavor with vanilla. Cover top of apples and set in oven to brown. Can be eaten either hot or cold with thick cream.—Lizzie Sorensen.

Baked Apple Recipe.

Core six apples, fill cavities with a mixture of 1 cup brown sugar, $\frac{1}{4}$ cup butter, 1 tablespoonful flour, 1 teaspoonful cinnamon, $\frac{1}{4}$ pound English walnuts, and 1 tablespoonful peanut butter. Pour on about 1 cup hot water and bake slowly until done.—Mrs. J. H. Jackman.

Delicious Spiced Apples.

Wash and core carefully so as to leave the apple whole. For eight apples mix $\frac{1}{2}$ cup any kind of sugar with $\frac{1}{4}$ teaspoonful cinnamon and a pinch of allspice. Fill the holes in apples with the mixture. Set in a basin containing a little boiling water and bake in a slow oven.—Mrs. R. H. Friend.

Apple Sauce.

Wipe, quarter, core and pare 8 apples. Make a sirup by boiling five minutes 1 cup sugar, with 1 cup water. Add apples enough to cover bottom of stew pan. Watch carefully and remove as soon as soft. Con-

tinue until all the apples are cooked.
—Lelia Cooper.

Apple Meringues.

Pare and core tart apples, place close together in buttered pudding dish, fill cavities with sugar, lay a small piece of butter on top, flavor with a little nutmeg, cinnamon, lemon peel, or vanilla. Cover with a plate and cook in oven till tender, not broken.

Sauce.—Into 1 pint hot milk stir $\frac{1}{2}$ cup sugar, pinch salt, yolks of 3 eggs. Pour this over apples, place dish again in the oven, and when the custard has set spread with a meringue of the whites of the eggs and 6 tablespoonfuls sugar and flavor as preferred. Place in moderate oven. Cook eight minutes. Serve with cream. Mrs. A. J. Mielke.

Meringues.

Beat the whites of 4 eggs dry. Gradually beat into them 1 cup granulated sugar. Fasten paper on boards 1 inch thick and on these form the mixture into round or oval shapes. Dredge with granulated sugar (chopped almonds, blanched, may be added). Let bake in a cool oven about $\frac{3}{4}$ hour or longer.—Anna Kinsley.

Meringues with Macedoines of Fruit.

When meringues are done, remove a little of the soft portion of under side and sprinkle with almonds chopped fine. Return to oven to dry. When ready to serve fill with green grapes cut in halves, seeded and skinned; small pieces of canned pineapple; and peaches, mixed with a little fruit juice. Add a spoonful of whipped cream and sprinkle with chopped nuts.—Anna Kinsley.

Chocolate Forte.

$\frac{1}{2}$ cup butter,
 $\frac{3}{8}$ cup sugar. Beat to a cream.

Separate yolks and whites of 6 eggs. Beat yolks until light and add to butter and sugar. Then add 2 squares of chocolate grated. Add 1 cup walnuts coarsely chopped. Beat

whites of eggs to stiff froth. Add 1 teaspoonful baking powder and $\frac{3}{4}$ cup flour, sifted together. Add flour alternately with the whites, folding like angel food. Bake in round tin or molds. Serve with whipped cream.—Anna Kinsley.

Caramel Custard.

$\frac{1}{2}$ cup sugar (caramelized),
2 cups scalded milk,
3 eggs,
1 teaspoonful vanilla,
 $\frac{1}{4}$ cupful sugar.

Melt the sugar and pour into a mold. Turn the mold so that sirup runs over the bottom and sides. Beat the eggs slightly, add the sugar, and flavorings. Pour scalded milk over it, stirring all the time. Turn into mold, set in pan of hot water, and bake in slow oven. Cool and unmold.—Anna Kinsley.

Jellied Prunes.

Wash $1\frac{1}{2}$ pounds of prunes, cover with cold water and let stand over night; in the morning simmer in the same water until tender, then cut in halves and remove pits. Strain juice and add enough hot water to make 2 cups. Have ready 2 tablespoonfuls of gelatin softened in half a cup of cold water and when the juice reaches the boiling point stir in the softened gelatin, add a cup of sugar and juice of a lemon and stir until sugar is dissolved. Again strain the juice, add prunes, put in mold, cool and put in the ice box. Serve with cream.—Mrs. James E. Shafer.

Prune Pudding.

Wash $\frac{1}{2}$ pound prunes. Stew soft and mash fine. Remove the pits and add $\frac{1}{2}$ cupful sugar. Then add well-beaten whites of 4 eggs. Fold together, bake in buttered dish thirty to thirty-five minutes. Cool and serve garnished with whipped cream.—Mrs. A. J. Mielke.

Marble Pudding.

2 cupfuls sugar,
4 tablespoonfuls melted butter,
2 egg yolks,

- 1 cupful cold water,
- 2 cupfuls flour, sifted three times with
- 2 teaspoonfuls baking powder,
- $\frac{1}{2}$ teaspoonful salt,
- $\frac{1}{4}$ teaspoonful cinnamon,
- Whites of 2 eggs beaten stiff.

Mix in the order given. Then mix $1\frac{1}{4}$ ounces chocolate in $\frac{1}{2}$ of this mixture. Put in buttered mold in alternate layers. Steam one hour.—Mrs. J. Baumgartner.

Cocoanut Pudding.

Soak $\frac{3}{4}$ cup cocoanut in 3 cups of milk, one hour. Beat 2 eggs slightly, add $\frac{1}{2}$ cup sugar, $\frac{1}{4}$ teaspoonful salt, and add to cocoanut and milk. Bake slowly, having dish set in a pan of water, forty minutes.—Mrs. A. J. Mielke.

Buttered Dumpling.

- 1 pint of flour,
- 3 teaspoonfuls of baking powder,
- $\frac{1}{4}$ teaspoonful salt.

Mix with water to a soft dough, and roll with hands into a long, round roll about $\frac{1}{2}$ inch in diameter, then cut with knife into pieces about two (2) inches long. Drop in a kettle of boiling water, let boil ten or fifteen minutes, lift out of water on platter and sprinkle with salt and pepper, pour over them hot butter and serve hot.—Huldah Beutenmiller.

Peach Delight.

- 6 ripe peaches or $1\frac{1}{4}$ cups peach pulp.
- 1 teaspoonful lemon,
- $\frac{1}{2}$ cup confectioner's sugar,
- 3 egg whites.

Combine peach pulp with the lemon juice. Beat egg whites with the sugar until stiff. Stir in the peach pulp gradually, beat again, and serve with sliced and sugared peaches.—Anna Kinsley.

Individual Fruit Pudding.

Make a batter of 1 pint of flour, 2 teaspoonfuls of baking powder, a

pinch of salt and milk enough to give it a consistency liquid enough to pour from a spoon. Butter cups or small bowls, put in each a spoonful of batter and fill to an inch of the top with any kind of fruit desired. Then cover with the batter and steam for an hour. Serve with cream and sugar or any kind of sauce.—Mrs. W. H. Penniston.

Cobbler's Peaches or Peach Cobbler.

Scald, pare and slice 3 or 4 peaches and place in baking dish. Sweeten to taste. Prepare a top of baking powder biscuit batter, about 1 or 2 inches thick. Place over peaches all in one piece, place in oven and bake about twenty minutes till golden brown on top. Serve with cream.—Mrs. A. J. Mielke.

Raisin Puffs.

- $\frac{1}{2}$ cup butter,
- 1 cup sugar,
- 2 eggs,
- 1 cup milk,
- 2 cups flour,
- 2 teaspoonfuls baking powder,
- 1 cup raisins chopped.

Cream butter and sugar, add well-beaten eggs, mix flour and baking powder, and add flour and milk alternately to the first mixture. Put 1 spoonful of batter, then raisins, 1 spoonful of batter again in cups, and steam thirty minutes. Raisins may also be mixed with batter. Any fruit may be used.

Sauce.—Two tablespoonfuls cornstarch, 1 pint boiling water, $\frac{3}{4}$ cup sugar, juice of 2 lemons and grated rind of $\frac{1}{2}$ lemon, cook.

Mix cornstarch and sugar, add to boiling water, cook five minutes. Add juice and rind of lemons.—Mrs. A. J. Mielke.

Fruit Omelet, Caramel Sauce.

Beat 4 yolks of eggs until thick, add 1 tablespoonful of sugar, the grated rind of a lemon, 1 tablespoonful of lemon juice and a speck of salt. Add stiffly beaten whites of eggs and pour into a very hot but-

tered omelet pan. Cook slowly several minutes over simmering burner. Spread with crushed and sweetened fruit and place in moderate oven two minutes. Turn out on hot platter and serve with whipped cream flavored with a few spoonfuls of caramel made by melting and browning $\frac{1}{2}$ cup of granulated sugar and simmering gently for ten minutes with $\frac{1}{2}$ cup of boiling water. If cream is not very stiff the caramel may be mixed with the stiffly beaten whites of eggs before adding it to the cream, or foamy sauce may be substituted.

Coffee Jelly.

- 2 cups sugar,
- 2 cups strong coffee,
- 2 $\frac{1}{2}$ cups boiling water,
- 1 cup cold water,
- 1 box gelatin, or
- 4 tablespoonfuls granulated gelatine.

Soak gelatin in cold water until it has taken up all the water. Pour over boiling water, and when gelatin is dissolved, add sugar and coffee. Turn into molds and set away in a cool place.—Mrs. A. J. Mielke.

Snow Balls.

- 1 quart milk, scalded after re-serving
- $\frac{1}{2}$ cup cold,
- $\frac{1}{2}$ cup cornstarch,
- 3 egg yolks,
- $\frac{1}{2}$ cup sugar,
- 2 tablespoonfuls butter.

Mix cornstarch and sugar and wet with cold milk. Add to scalded milk, and cook fifteen minutes. Add egg yolks slightly beaten and cook five minutes. Flavor with 1 teaspoonful vanilla, or the grated rind and juice of half an orange. Turn into small molds, which have been wet with cold water, and set away to cool. Turn from mold, brush with white of egg, and sprinkle thickly with cocoanut. Serve with cream sweetened and flavored with fruit juice.—Mrs. A. J. Mielke.

Angel-Food Pudding.

- 2 eggs,
- 1 cupful powdered sugar,
- 1 tablespoonful flour,
- 1 teaspoonful baking powder,
- 1 cupful broken walnut meats,
- 1 cupful dates.

Beat together thoroughly eggs, sugar, flour, and baking powder, add nuts and dates. Pour into a baking dish, set it in a pan of hot water and bake about half an hour. Let it cool, still standing in the water, chill, and serve with whipped cream.

This pudding is a great favorite with children.—Mrs. John Burke.

Molasses Pudding.

- 1 cupful molasses,
- 1 cupful butter,
- 1 cupful hot water,
- 1 teaspoonful soda,
- 3 cupfuls flour,
- 1 cupful raisins.

Cream butter, add molasses, then hot water; beat in flour with which soda has been sifted, stir in raisins, put in a greased mold, and steam three hours.

Sauce for Molasses Pudding.

- 1 cupful butter,
- 1 cupful sugar,
- 2 eggs.

Cream butter and sugar, then add thoroughly beaten eggs. Stir together, set over fire in cold water, let water come to boil, and serve sauce hot. A glass of sherry or brandy may be added, though we prefer it without.—Mrs. Edwin Lee Norris.

HOT PUDDING SAUCES

Chocolate Sauce.

- 1 cupful water,
- $\frac{1}{2}$ cupful sugar,
- 1 stick cinnamon,
- 1 square chocolate,
- $\frac{1}{2}$ cupful milk,
- 1 $\frac{1}{2}$ tablespoonfuls cornstarch,
- Dash salt,
- 1 teaspoonful vanilla.

Cook together the water, sugar, and cinnamon, strain, add the chocolate which has been dissolved in hot milk, thicken with cornstarch, wet in a little water. Add the salt and beat till creamy. After taking off the fire, add the vanilla and serve hot. This is a very nice sauce to use with a hot plain pudding of any kind or with vanilla ice cream frozen hard.

Foamy Sauce.

- ½ cupful powdered sugar,
- 3 whites eggs,
- 1 teaspoonful vanilla,
- 1 cupful boiling water.

Beat the whites of eggs stiff, add the powdered sugar, flavoring, and water slowly, stir carefully, and serve very hot.

Orange Sauce.

- 2 tablespoonfuls butter,
- Yolks 4 eggs,
- 3 tablespoonfuls powdered sugar,
- ¼ cupful thick cream,
- ¼ cupful orange juice,
- Grated rind 1 orange.

Cream the butter and whip the sugar into it, put in a double boiler, add the yolks of eggs well beaten with the cream, stir constantly till it is like a thick custard, then take from the fire, and blend in orange juice and rind.

Fruit Sauce.

- ½ cupful sugar,
- 1 cupful boiling water,
- 1 tablespoonful arrowroot,
- ½ can any preserved fruit.

Boil sugar and water together, add the fruit, which may be anything you happen to have—strawberries, peaches, apricots, raspberries (red), or quinces will make a nice sauce. Cook in the sirup a few minutes, then press the pulp through a potato ricer, put back on the fire in a saucepan; when boiling, thicken with the arrowroot dissolved in cold water, beat till thick and creamy. This sauce may be served hot with any hot pudding, or

when thoroughly chilled it is nice with cold rice or vanilla ice cream.

Hard Sauce.

- ½ cupful butter,
- 1 cupful powdered sugar,
- Little nutmeg.

Cream butter, stir in slowly sugar, and beat to a cream. Pile on a plate, and grate over a little nutmeg. Keep cool.

Strawberry Sauce.

- 1 tablespoonful butter,
- 1½ cupfuls powdered sugar,
- White 1 egg,
- 1 pint mashed strawberries.

Beat butter to a cream. Add gradually sugar and the whites of eggs. Beat till very light, and just before serving add strawberries.

Maple Sauce.

- ¼ pound maple sugar,
- ½ cupful water,
- Whites 2 eggs,
- ½ cupful thick cream,
- 1 teaspoonful lemon juice.

Boil water and sugar till it will spin. Whisk boiling hot into the beaten whites of eggs, add cream and lemon juice.

Creme d'Amande Sauce (French recipe).

- 2 cupfuls sweet cream,
- 2 ounces sweet almond,
- 2 drops extract bitter almond,
- ½ cupful powdered sugar,
- 1 teaspoonful rose water.

Chop almonds which have been blanched and browned in the oven, pound them very fine. Add sugar, almonds, and rose water to the cream. beat until the sauce is very light.

Aigre Diouz (French recipe).

- 2 cupfuls sour cream,
- Juice and grated rind 1 lemon,
- Sugar to taste.

Beat hard and long until the sauce is very light.

Currant-Jelly Sauce.

- $\frac{1}{2}$ cupful currant jelly,
- Whites 3 eggs,
- $\frac{1}{2}$ cupful powdered sugar,
- $\frac{1}{2}$ cupful thick cream.

Beat the cream till perfectly stiff, adding the sugar gradually. Blend in the white of egg beaten to a froth, flavor with the vanilla, and serve cold.

Beat the whites of eggs stiff, add sugar by degrees, and beat well. Soften the jelly by heating in a bowl set in hot water. When soft enough to drop from a spoon, beat it into the eggs and sugar. Add the cream. Stir in 2 tablespoonfuls jelly cut in dice, and serve.

Lemon Sauce.

- 1 cupful sugar,
- $\frac{1}{2}$ cupful water,
- Rind and juice 2 lemons,
- Yolks 3 eggs.

Boil the water, sugar, juice, and rind of lemons all together ten minutes. Beat the yolks of eggs. Strain the sirup, stir into eggs, set the saucepan in boiling water, and beat rapidly until thick and smooth; remove from the water, and beat five minutes.

Orange Sauce.

- 1 cupful sugar,
- 1 cupful water,
- $\frac{1}{2}$ teaspoonful cornstarch,
- $\frac{3}{4}$ cupful orange juice,
- Juice 1 lemon,
- 1 cupful orange pulp.

Make a sirup of sugar and water, and thicken with cornstarch. Take from the fire, cool, add orange juice, juice of lemon, and orange pulp. Serve ice cold.

Vanilla Sauce.

- 1 cupful sugar,
- 1 cupful water,
- 1 apple,
- Pinch cinnamon,
- $\frac{1}{2}$ teaspoonful vanilla,
- $\frac{1}{2}$ teaspoonful arrowroot,
- 1 cupful whipped cream.

Mix the sugar and water, and put over the fire. Peel and core the apple, slice, cut into dice, and put at once in the hot sirup. Simmer gently until soft. Take out, thicken the sirup with arrowroot, cook five minutes, strain, add whipped cream.

Jelly Sauce.

- Yolks 3 eggs,
- $\frac{1}{2}$ cupful powdered sugar,
- 2 cupfuls hot milk,
- 1 tablespoonful gelatin,
- 1 teaspoonful vanilla.

Beat the yolks of eggs till very thick, adding the sugar gradually, pour over it the milk, cook to a creamy custard, then add the gelatin dissolved in a little cold water, and flavor with vanilla.

Pistachio Sauce.

- 1 cupful sugar,
- 1 tablespoonful cornstarch,
- 2 cupfuls boiling water,
- 1 teaspoonful pistachio,
- $\frac{1}{2}$ cupful chopped pistachio nuts.

Boil the sugar and water together five minutes, thicken with cornstarch dissolved in cold water, flavor with pistachio, and stir in the nuts, and chill. If desired, this sauce may be served hot with a hot pudding.

Creamy Sauce.

- 1 teaspoonful butter,
- 2 cupfuls powdered sugar,
- 1 egg,
- $\frac{1}{2}$ cupful thick cream,
- 1 teaspoonful vanilla.

Rub to a cream butter, sugar, and egg, add cream and vanilla. If it should separate, set it over hot water and stir until smooth again. Keep on ice till wanted.

Plain Hot Sauce.

- 2 cupfuls water,
- 1 cupful sugar,
- 1 tablespoonful cornstarch,
- 1 teaspoonful butter,
- 1 lemon.

Boil sugar, and water, stir in cornstarch, wet with water, butter, 1

lump of sugar well rubbed on lemon rind, or any flavoring preferred. Care must be taken to cook cornstarch well or it will taste raw.

Hot Sauce.

- $\frac{1}{2}$ cupful butter,
- 1 cupful sugar,
- Whites of 2 eggs,
- 1 gill boiling water,
- 1 gill wine or brandy.

Beat butter to a cream. Add sugar and beat. Add whites of eggs, one at a time, beating until very light. Add water, then wine or brandy. Set in boiling water over fire, stir until frothy and serve.—Willie Clifford Scott.

COLD PUDDING SAUCES

Egg Sauce.

- 3 eggs,
- 1 cupful sugar,
- 1 teaspoonful vanilla.

Separate the eggs and beat the yolks till thick and lemon-colored, adding the sugar gradually. Whip the eggs to a stiff froth, blend with the yolks, flavor with the vanilla, and serve ice cold.

Whipped-Cream Sauce.

- 1 cupful double cream,
- $\frac{1}{2}$ cupful powdered sugar,
- White 1 egg,
- 1 teaspoonful vanilla.

Cream Sauce.

- 1 cupful butter,
- 1 cupful sugar.

Cream well. Add 4 tablespoonfuls of cream, put on stove and let melt, then beat until thick; add 1 teaspoonful of sherry, 1 teaspoonful of vanilla. This is better made day before using.

Lemon Sauce.

- 6 tablespoonfuls sugar,
- 1 tablespoonful flour,
- 1 teaspoonful lemon extract,
- 10 tablespoonfuls hot water.

Mix the sugar and flour together. Pour over it the hot water, add the lemon extract and cook until transparent.

Vanilla Sauce.

Cook together, in a double boiler, 4 tablespoonfuls of sugar, 2 tablespoonfuls of butter, 1 tablespoonful of flour, and $\frac{3}{4}$ of a cupful of boiling water. Cream the other ingredients together before adding the water. At the last, add the stiffly beaten white of an egg. Flavor with vanilla.

Caramel Sauce for Cornstarch Pudding.

Put $\frac{1}{2}$ cupful sugar in a frying pan and stir over a low fire until melted and a light brown. Be very careful not to burn sugar. When melted to the thickness of syrup add $\frac{1}{2}$ cupful boiling water and boil 1 minute. Then let simmer for 10 minutes.—Lela Cooper.

Sauce for Dumpling.

Melt 1 tablespoonful of butter in a sauce pan, add 1 tablespoonful flour, when smooth add gradually 1 cupful of hot milk and $\frac{1}{2}$ cupful of sugar, stirring all the while. Pour this mixture over one well beaten egg. Flavor with vanilla.—Mrs. Geo. Ford.

Lemon Sauce.

- 2 cupfuls granulated sugar,
- Butter size of egg,
- 1 tablespoonful cornstarch wet in cold water,
- Juice of 1 lemon,
- $\frac{1}{2}$ grated lemon peel,
- 1 cupful boiling water.

Cream the butter and sugar together. Pour cornstarch into boiling water and stir over fire until it thickens. Then mix with the creamed butter and sugar and serve hot.—Mrs. Alice Hartman.

Chocolate Sauce.

- 2 squares chocolate,
- 4 tablespoonfuls sugar,
- $\frac{1}{8}$ teaspoonful salt,
- $\frac{3}{4}$ cupful hot water,

$\frac{1}{2}$ cupful cream,
 $\frac{1}{2}$ cupful chopped walnuts,
 $\frac{1}{2}$ teaspoonful vanilla.

Grate chocolate, add sugar and hot water. Boil ten minutes and add cream. Cook two minutes. Add nuts and vanilla, and serve with pudding or fritters.—Mrs. A. J. Mielke.

Chocolate Sauce.

3 tablespoonfuls grated chocolate
 or cocoa,
 $\frac{1}{2}$ cupful cold milk,
 1 cupful scalded milk,
 Yolks 2 eggs,
 $\frac{1}{2}$ cupful sugar,
 $\frac{1}{2}$ cupful cream,
 1 teaspoonful vanilla.

Mix chocolate or cocoa with cold milk, add to scalded milk with yolks of eggs beaten with sugar; cook until thickened.

Custard Sauce.

Put 1 pint rich milk in double boiler to scald. Beat 4 tablespoonfuls sugar with yolks of 3 eggs. When very light, pour hot milk gradually into the sugar and eggs, beating constantly. This prevents eggs curdling as they often do when poured into hot milk over fire. Stir the sauce over hot water till it thickens and will coat a silver knife. Remove from fire or eggs will cook too long. When slightly cool add 1 teaspoonful vanilla. Serve cold. A few whole cloves or a stick of cinnamon may be scalded in the milk to give different flavor to sauce. If you have only 2 yolks use a tablespoonful cornstarch beaten up with the egg and sugar. This sauce with the spice flavoring is nice served with apple desserts.—Mrs. A. J. Mielke.

CHAPTER XXXI

FROZEN DESSERTS

PROCESS OF FREEZING—WATER ICES AND SHERBETS—FRAPPÉS—FROZEN FRUITS—ICE CREAM—PARFAITS, MOUSSÉS AND FROZEN PUDDINGS—PUNCHES—SAUCES FOR ICE CREAM—GLACÉS

To the country housewife who has access to plenty of ice, milk, cream, and fruit, raw or preserved, frozen desserts are not a luxury; besides, they require no more time to make than a pie. In hot weather at least they are very much to be preferred to pastry desserts, both hygienically and from a palatable standpoint. Cream is by no means a necessity in the making of frozen dishes—fruit can be frozen, delicious sherbets may be made from milk or fruit-flavored water, and are as inexpensive as they are good. In a home where there are children, the little ones will gladly come to aid during the freezing process when ice cream is in prospect, as every mother knows.

First, there is the necessity of a good freezer. Never economize by purchasing a cheap one; the best is the truest economy in the end. Also provide a strong burlap bag and a mallet for smashing ice, as well as a dipper to measure salt and ice, for half the rapidity of the freezing process depends on the proper proportions being used. In winter, snow can be utilized instead of ice; if the salt does not act rapidly upon it, add a cupful cold water.

Before pouring the stuff to be frozen into the can, adjust every part and give the crank a few twirls to make sure that the freezer is in first-class order. Then fill the can, adjust it again, and put in the crushed ice

and salt in proper quantities. If there is only a small quantity to be frozen, the salt and ice need come no higher than the mixture inside. Never fill the can to the top, since the ice cream increases in bulk as it freezes. At first, turn the crank steadily but rather slowly.

Never draw off the brine till the freezing process is accomplished, then remove the top and dasher, and pack solidly with a spoon, put a cork dipped in lard into the hole at the top so there will not be the slightest danger of brine working in, and re-pack the freezer with 4 measures ice to one salt. Cover with newspapers or a piece of carpet and leave it, if possible, for two hours to mellow and ripen. When serving time comes, remove the can, wipe it off carefully before opening to make sure not a drop of brine can get inside, take off the lid, run a palette knife around the edge of the cream, invert the can on a platter, and the contents will slip out. If it should prove refractory, wring a cloth from water, wrap it about the can, and there will be no further trouble.

Keep your freezer in perfect order. After using, wash it thoroughly and set the pieces in a moderate oven or over the stove to get perfectly dry. Occasionally a drop of oil is needed to make it work well. There is a small hole in the cap covering the gear; look into this end

and turn the crank till you discover another hole in the top gear of the frame. Let a few drops of machine oil drop into it.

Frozen dishes may be classified thus:

Water Ice.—Sweetened fruit juice, diluted with water, requires 3 level measures ice to 1 salt.

Sherbet.—A water ice, to which has been added a small quantity of dissolved gelatin or beaten whites of eggs, or milk.

Frappé.—Water ice frozen to the consistency of mush. Frappé requires equal quantities of ice and salt to give it a granular consistency.

Punch.—A water ice, to which has been added spirits or spices for stronger flavoring.

Frozen Fruits.—Fruit pulp frozen where one or several kinds of fruits have been used.

Philadelphia Ice Cream.—Thin cream, sweetened and flavored.

Mousse (Parfait or Fruit Pudding).—Heavy cream, whipped stiff, sweetened, flavored, poured in a mold, packed in ice and salt (2 parts ice to 1 salt), and allowed to stand three or four hours. Mousse is also made from the whip off thin cream folded into a mixture containing a small quantity of gelatin.

WATER ICES AND SHERBETS

Cider Ice.

- 1 quart cider,
- 1 cupful orange juice,
- $\frac{1}{4}$ cupful lemon juice,
- $1\frac{1}{2}$ cupfuls sugar.

Dissolve the sugar in the cider, add the fruit juice, mix the ingredients, and freeze.

Orange Ice.

- 4 cupfuls water,
- 2 cupfuls orange juice,
- 2 cupfuls sugar,
- $\frac{1}{4}$ cupful lemon juice,
- Grated rind 2 oranges.

Boil sugar and water twenty minutes. Add fruit juices and grated rind; cool, strain, and freeze.

Apple Water Ice.

- 6 large tart apples,
- 2 cupfuls sugar,
- 4 cupfuls water,
- 2 lemons.

Put the apples, sugar, and water on to boil, add the grated yellow rind of 1 lemon. Cook until the apples are reduced to a pulp, take from the fire, drain carefully, without squeezing, add the juice of the lemons; when cold, freeze.

Currant Water Ice.

- 2 cupfuls red-currant juice,
- 2 cupfuls sugar,
- 2 cupfuls boiling water.

Add the sugar to the boiling water, and stir until dissolved. When cold, add the currant juice, and freeze.

Pineapple Water Ice.

- 2 large yellow pineapples,
- 3 cupfuls sugar,
- 4 cupfuls water,
- Juice 2 lemons.

Pare the pineapples, grate them, and add the juice of the lemons. Boil the sugar and water together five minutes. When cold, add the pineapple, strain through a fine sieve, and freeze.

Raspberry Water Ice.

- 1 quart red raspberries,
- 4 cupfuls water,
- Juice 2 lemons,
- 2 cupfuls sugar.

Add the sugar and lemon juice to the berries, stir, and stand an hour; then mash, add the water, strain through a cloth, and freeze.

Strawberry Water Ice.

- 1 quart strawberries,
- 2 cupfuls sugar,
- 4 cupfuls water,
- Juice 2 lemons.

Add the sugar and lemon juice to the strawberries, mash them, and stand an hour; add the water, strain through a cloth, and freeze.

Grape Water Ice.

3 pounds Concord grapes,
4 cupfuls water,
2 cupfuls sugar.

Boil the sugar and water together five minutes. Pulp the grapes, add the pulps and skins to the sirup; stand to cool. When cold, press through a fine sieve, being careful not to mash the seeds, and freeze.

Ginger Water Ice.

6 ounces preserved ginger,
1 quart lemon water ice.

Pound 4 ounces ginger to a paste. Cut the remaining 2 ounces into very thin slices and stir these into the water ice. Repack, and stand to ripen.

Lemon Water Ice.

4 large juicy lemons,
4 cupfuls water,
1 orange,
2½ cupfuls sugar.

Put the sugar and water on to boil. Chip the yellow rind from 3 lemons and the orange, add to the sirup, boil five minutes, and stand to cool. Squeeze the juice from the orange and lemons, add to the cold sirup, strain through a cloth, and freeze.

Fruit Milk Sherbet.

2 lemons,
Grated rind 1 lemon,
4 peaches,
2 cupfuls milk. 1 cupful cream,
2 cupfuls sugar,
¼ teaspoonful salt.

Peel and mash the peaches, and add to sugar with grated rind, and juice of lemons. Add milk, and cream, and freeze as any ice cream.—Mrs. A. J. Mielke.

Fruit Sherbet.

¼ box sparkling gelatin,
1 orange,
1 lemon,
1½ cupfuls sugar,
3 cupfuls rich milk.

Grate outside of both orange and lemon. Squeeze out all juice, add to this the sugar. When ready to freeze stir in the milk slowly to prevent curdling. Take part cupful milk, add the gelatin. After standing five minutes place in a pan of hot water until dissolved; then stir into rest of milk and fruit juice. Freeze. Makes large allowance for five persons.—Frances Owsley.

Pineapple Sherbet.

1 pint fresh or
1 can grated pineapple,
1 pint sugar,
1 pint water,
1 teaspoonful gelatin soaked in
1 tablespoonful cold water,
¼ cupful boiling water,
Juice 1 lemon.

Boil sugar and water two minutes, add fruit, gelatin dissolved in boiling water. Freeze, using three parts ice and one part salt.—Mrs. A. J. Mielke.

Raspberry Sherbet.

1 quart water,
1 pint sugar,
1 teaspoonful gelatin (softened
in 2 tablespoonfuls cold water),
1 pint raspberry juice.

Boil sugar and water 20 minutes, add gelatin softened in cold water, and strain into the freezer. Add the raspberry juice, and freeze as usual. For strawberry sherbet use same recipe, and add the juice of 2 lemons.—Anna Kinsley.

Sicilian Sherbet.

1 can peaches,
2 cupfuls sugar,
1 cupful water,
2 cupfuls orange juice,
½ teaspoonful each of almond and
rose extract,
½ teaspoonful lemon extract,
1 white of egg,
2 tablespoonfuls powdered sugar.

Drain juice from peaches, press through sieve. Take 1 cupful of juice and 1 of peaches. Boil sugar and

water until it threads, let cool, add the fruit juice, and extracts. When nearly frozen add egg white beaten and mixed with powdered sugar, and finish freezing.—Anna Kinsley.

Cranberry Sherbet.

1 quart cranberries, cook till soft in 1 pint water; strain,
Juice of 2 lemons,
2 cupfuls sugar,
1 quart water.

This will make 3 quarts. More sugar may be needed.—Mrs. Frank L. Henderson.

Three-of-a-Kind Sherbet.

Mix juice of 3 lemons, 3 oranges, and pulp of 3 bananas with 3 cupfuls sugar. Add 5 cupfuls of chilled milk and 1 cupful of cream, and freeze.—Anna Kinsley.

Barberry Water Ice.

4 large juicy lemons,
4 cupfuls water,
1 orange,
2½ cupfuls sugar,
1 cupful barberry juice.

Add ½ pint barberry juice, slightly sweetened, to the recipe for lemon water ice, before freezing.

Pomegranate Water Ice.

1 dozen ripe pomegranates,
2 cupfuls water,
2 cupfuls sugar.

Cut the pomegranates into halves, remove the seeds carefully from the inside bitter skin, press in a sieve without breaking the seeds. Add the sugar to the juice, and stir until dissolved, add the water, strain, and freeze.

Quince Water Ice.

3 large ripe quinces,
4 cupfuls water,
1 cupful sugar.

Pare the quinces and cut into thin slices, add with the sugar to the water, cover the saucepan, cook fifteen minutes, strain, and freeze.

Italian Tutti-Frutti.

1 pound mixed French candied fruits,
4 cupfuls water,
2½ cupful sugar,
3 lemons,
4 oranges.

Chop the fruit fine. Put the sugar and water with chipped rinds of 2 lemons and 1 orange to boil five minutes. When cold, add the juice of 2 lemons and oranges, strain, and freeze very hard; then stir in the fruit, stand thirty minutes, and it is ready to serve.

Lemon Ice.

4 lemons,
2 cupfuls sugar,
1 quart boiling water.

Shave off the peel from 2 lemons. Put the parings into a bowl, add the boiling water, and let stand ten minutes closely covered. Cut the lemons in halves, remove the seeds, squeeze out the juice, and add with the sugar to the water. Strain and freeze.

Lemon Sherbet with Gelatin.

1 tablespoonful gelatin,
3½ cupfuls cold water,
6 lemons,
1 cupful sugar,
½ cupful boiling water.

Soak the gelatin in ½ cupful cold water twenty minutes. Put the sugar and remaining cold water into a pitcher. Pare the lemons, cut in halves, remove the seeds, and press out the juice with a lemon squeezer; add it to the sirup. Dissolve the soaked gelatin in the boiling water, and add to the other mixture. Strain and freeze.

Apple Sherbet.

2 cupfuls sugar,
Juice 2 lemons,
1 pound apples,
1 quart water,
White 1 egg,
1 tablespoonful powdered sugar.

Put the sugar, water, and rind of 1 lemon, chipped, on to boil. Pare,

core, and quarter the apples, add them to the sirup, and cook until tender; press through a fine sieve, add the juice of lemons, and, when cold, freeze the same as ice cream. Beat the white of 1 egg until frothy, add a tablespoonful powdered sugar, and beat until white and stiff. Remove the dasher, stir in the meringue, and re-pack.

Apricot Ice.

1 quart apricots,
1 lemon,
1 cupful sugar,
1 cupful water.

Boil the sugar and water five minutes. Press the apricots through a sieve, add to the sirup, and lemon juice. When cold, freeze. Peach sherbet is made in the same manner.

Banana Ice.

1 dozen red-skinned bananas,
2 cupfuls sugar,
2 oranges,
1 quart water.

Boil the sugar and water five minutes, and add the juice of the oranges; when cold, stir in the bananas mashed fine, and freeze.

Cherry Ice.

1 quart sour cherries,
2 cupfuls sugar,
1 quart water.

Boil the sugar and water fifteen minutes. Stone the cherries, and add to the sirup when cold. Press through a sieve, and freeze.

Ginger Ice.

4 large juicy lemons,
1 quart water,
1½ pounds sugar.

Make a lemon sherbet; when frozen, add a tablespoonful sirup from preserved Canton ginger.

Orange Sherbet.

1 pint orange juice,
2 tablespoonfuls gelatin,
2 cupfuls sugar,
1 quart water.

Cover the gelatin with a little cold water and soak half an hour. Boil the sugar and water five minutes, add the gelatin, and allow to cool. Add the orange juice, and freeze.

Raspberry-and-Currant Ice.

1 quart raspberries,
½ pint currant juice,
2 cupfuls sugar,
1 quart water.

Boil the sugar and water five minutes. When cold, add the currant juice and the raspberries, mashed; strain through a cloth, and freeze.

Pineapple Ice.

2 large pineapples or 1 quart can,
2½ cupfuls sugar,
Juice 2 lemons,
1 quart water.

Grate the pineapple. Boil the sugar and water five minutes, add the pineapple and juice of lemons. Strain and freeze.

Pomona Ice.

1 pint orange juice,
1 quart new cider,
2 cupfuls sugar.

Mix the cider and orange juice, stir in the sugar until thoroughly dissolved; strain and freeze.

Strawberry Ice.

1 quart red strawberries,
2 cupfuls sugar,
1 quart water,
Juice 2 lemons.

Boil the sugar and water. Add the lemon juice to the strawberries and mash them. When the sirup is cold, pour it over the strawberries, strain and freeze.

Pomegranate Ice.

2 cupfuls sugar,
1 teaspoonful gelatin,
1 quart water,
½ dozen blood oranges,
1 lemon.

Prepare a sirup as for lemon sherbet; when cold, add lemon juice, freeze.

Peach Sherbet.

2 cupfuls sugar,
1 teaspoonful gelatin,
2 oranges,
1 quart water,
 $\frac{1}{4}$ peck peaches,
1 lemon.

To a sirup prepared as for lemon sherbet, add a pint peach pulp, also the orange and lemon juice.

Blackberry Sherbet.

2 quarts blackberries,
1 tablespoonful gelatin,
2 cupfuls granulated sugar,
2 lemons.

Crush 2 quarts juicy blackberries with a cupful granulated sugar. Let stand an hour. Put the fruit and sugar through a vegetable press and strain the juice. There should be at least $1\frac{1}{2}$ pints. To this add another cupful sugar and a pint water, and stir until the sugar is dissolved. Have ready a tablespoonful gelatin which has been soaked half an hour in cold water, then dissolved in a little boiling water. Put this with the other ingredients, add the lemon juice, and freeze.

Milk Sherbet.

1 teaspoonful gelatin,
 $1\frac{1}{2}$ cupfuls sugar,
1 quart milk,
Juice 4 lemons,
Juice 1 orange.

Soften the gelatin in $\frac{1}{2}$ cupful milk, dissolve over hot water, and strain into the rest of the milk; turn the milk into the can of the freezer packed for freezing; when thoroughly chilled, add the fruit juice and sugar stirred together; freeze.

FRAPPÉS

Iced Chocolate.

4 ounces chocolate,
Scant $\frac{1}{2}$ cupful sugar,
1 cupful water,

1 quart cream,
1 teaspoonful vanilla.

Put the chocolate, water, and sugar in a saucepan to melt; stir until perfectly smooth. Put the cream in a double boiler, and when hot, add gradually to the chocolate mixture, and beat until thoroughly mixed; when cold, strain, add the vanilla, and freeze.

Iced Coffee.

$1\frac{3}{4}$ cupfuls sugar,
2 cupfuls water,
2 cupfuls black coffee,
1 quart cream.

Boil the sugar and water together five minutes, add the coffee, then the cream, and when cold, freeze. Serve in glasses.

Iced Lemonade.

2 cupfuls sugar,
4 cupfuls water,
Juice 4 large lemons.

Melt the sugar and water together, add the lemon juice, and freeze to the consistency of soft snow. Serve in lemonade glasses.

Iced Raspberry Vinegar.

Sugar,
1 quart water,
Raspberry vinegar.

Mix the sugar, raspberry vinegar, and water according to taste, making it a little oversweet; freeze.

Frozen Chocolate.

Cook three squares or three ounces of chocolate with one cupful of boiling water with a few grains of salt for five minutes. Turn into one quart of scalded milk, add one cupful of sugar, and two teaspoonfuls of vanilla. Cool and freeze. Serve in glasses, with whipped cream, sweetened and flavored on top. This is sufficient to serve ten persons, if sherbet glasses are used.

Coffee Frappé.

8 cupfuls water,
2 cupfuls sugar,

1 cupful coffee,
White 1 egg.

Put the coffee in a farina boiler, pour boiling water over it, stir occasionally five minutes, then strain through fine muslin, add the sugar, and stir until dissolved. When cold, add the white of egg unbeaten, and freeze to the consistency of wet snow. Serve in punch glasses. Tea frappé may be made after the same fashion.

Orange Granite.

6 oranges,
2 cupfuls orange juice,
2 cupfuls sugar,
2 cupfuls water.

Boil the sugar and water five minutes. Peel the oranges, remove every particle of white skin, separate the carpels and carefully remove the seeds. Drop these into the hot sirup, and stand an hour, then drain the sirup into another vessel, add the orange juice, mix, strain, and freeze. When frozen rather stiff, add the pieces of oranges, and serve in glasses.

Strawberry Granite.

2 cupfuls orange juice,
2 cupfuls strawberry juice,
1 quart whole strawberries,
3 cupfuls sugar,
3 cupfuls water.

Boil the sugar and water five minutes. Drop the strawberries into this sirup, lift them carefully with a skimmer, and place on a platter to cool; then add to the sirup the strawberry and orange juice. Strain and freeze. When frozen, stir in the strawberries, and serve in glasses.

FROZEN FRUITS

Frozen Apricots.

1 quart can apricots,
2 tablespoonfuls gelatin,
2 cupfuls sugar,
2 cupfuls cream.

Drain the apricots, cut them in pieces, measure the sirup, and add sufficient water to make $1\frac{1}{2}$ pints;

add the sugar. Cover the gelatin with a little cold water and soak half an hour. Boil the sugar, sirup, and water together five minutes, skim carefully, add the gelatin, stir until dissolved, add the apricots, and stand to cool; then freeze, stirring slowly. When frozen, remove the dasher and add the cream whipped. Repack, cover, and stand two hours. Dried apricots, carefully cooked, can be used.

Frozen Plums.

2 quarts of dark blue plums,
3 cupfuls sugar,
3 cupfuls water,

Stone plums, mix them with sugar and stand $\frac{1}{2}$ hour; add the water, stir until the sugar is thoroughly dissolved, put in freezer and turn rapidly until frozen.—Edna Adams.

Fruit Surprise.

One quart fruit, peaches, bananas, berries or combination of fruits. Rub through colander. Two cupfuls sugar, 1 cupful cold water, whites of 4 unbeaten eggs. Turn freezer fast until frozen stiff like ice cream.—Lelah R. Cheney.

Frozen Bananas.

1 dozen red-skinned bananas,
2 cupfuls sugar,
2 cupfuls water,
Juice 2 oranges,
2 cupfuls cream.

Peel the bananas, cut them in slices, then mash fine. Boil the water and sugar five minutes, strain, and when cool, add the orange juice and bananas. Freeze, turning slowly. When frozen, remove the dasher and stir in carefully the cream whipped. Repack, and put away to ripen.

Frozen Peaches.

2 pounds peaches,
4 cupfuls water,
6 peach kernels,
3 cupfuls sugar.

Pare the peaches and take out the stones. Pound the kernels to a paste,

add them with the sugar to the water, boil five minutes, strain, and cool. When cold, add the peaches, mashed, and freeze. Repack, and stand to ripen.

Frozen Cherries.

- 2 quarts morello cherries,
- 4 cupfuls sugar,
- 4 cupfuls water.

Stone the cherries, mix them with the sugar, and stand an hour; add the water, stir until the sugar is thoroughly dissolved, put in the freezer, and turn rapidly until frozen.

Frozen Pineapples.

- 2 large pineapples,
- 4 cupfuls sugar,
- 4 cupfuls water.

Pare the pineapples, cut out the eyes, and grate the flesh, rejecting the core; add the sugar and water, stir until the sugar is dissolved, and freeze.

Frozen Raspberries.

- 1 quart raspberries,
- 2 cupfuls sugar,
- Juice 2 lemons,
- 4 cupfuls water.

Add the sugar and lemon juice to the berries, mash, and stand an hour; add the water, stir until the sugar is dissolved, and freeze.

Frozen Strawberries.

- 1 quart strawberries,
- Juice 2 lemons,
- 2 cupfuls sugar,
- 4 cupfuls water.

Add the sugar and lemon juice to the berries, and stand an hour. Mash the berries, add the water, stir until the sugar is thoroughly dissolved, and freeze slowly.

ICE CREAM

Ice Cream Cones.

- $\frac{1}{2}$ cupful butter,
- $\frac{1}{2}$ cupful powdered sugar,
- $\frac{1}{2}$ cupful milk,
- $\frac{7}{8}$ cupful flour,
- $\frac{1}{2}$ teaspoonful vanilla.

Cream the butter, add the sugar, and cream them well together, then add the milk very slowly, and last add the flour and flavoring. Spread very thin with a broad bladed knife on the bottom of a square or oblong tin. Bake until light brown, then cut quickly in large squares and roll up, beginning at one corner, like a cornucopia. If the squares become too brittle to roll up, place them in the oven again to soften. The lower end must be pinched together so that the cream will not run out as it melts.—Mrs. John Franck.

Coffee Cream.

- $\frac{1}{2}$ cupful very strong coffee,
- 1 pint milk,
- 3 pints cream,
- 2 cupfuls sugar.

Heat the milk and half the cream in a double boiler. Put in the coffee and sugar, and stir until the latter is dissolved. Take from the fire, and when cool, put into the freezer with the uncooked cream. If you wish to have a light, more spongy cream, you may whip the uncooked cream, and stir this into the contents of the freezer when these have begun to congeal. Freeze, and when solid, pack for an hour before serving.

Lemon Cream.

- 1 pint cream,
- $\frac{1}{2}$ teaspoonful salt,
- 1 cupful sugar,
- 1 lemon.

Pare the rind off a lemon, cut in halves, remove the seeds, and squeeze out the juice. Strain the juice and mix it with the same amount of sugar. Boil until clear, stir through the cream, and freeze.

Vanilla Ice Cream.

- 3 cupfuls milk,
- $1\frac{1}{2}$ cupfuls whipped cream,
- $\frac{3}{4}$ cupful sugar,
- 2 eggs,
- 1 tablespoonful vanilla.

Beat the eggs with the sugar, scald the milk, blend, and pour the mix-

Iced Rice Pudding.

- $\frac{1}{2}$ cupful rice,
- 1 pint milk,
- 1 quart cream,
- 2 cupfuls sugar,
- Yolks 6 eggs,
- 1 teaspoonful vanilla.

Boil rice in 1 pint cold water; drain, cover with the milk, and boil half an hour longer. While this is boiling, whip the cream. Stand the whipped cream in a cold place. Press the rice through a sieve, and return to the double boiler. Beat the yolks and sugar together, pour over the rice, stir, return again to the fire, and cook two minutes, or until it begins to thicken. Add the vanilla, stir in the whipped cream, remove the dasher, smooth down the pudding, repack, and stand two hours.

Compote of Oranges.

- 1 dozen sweet oranges,
- 2 cupfuls sugar,
- Juice $\frac{1}{2}$ lemon,
- 1 gill water.

Put the sugar and water to boil; cook five minutes, skim, and add the lemon juice. Peel the oranges, cut in halves crosswise and cut out the cores with a sharp knife; put a few pieces at a time in the hot sirup, and lay them out singly on a flat dish; pour over them the remaining sirup and stand on ice to cool. To serve the pudding, lift out the can and carefully wipe off the brine. Wipe the bottom with a towel dipped in boiling water, put a dish over the top of it, turn it upside down, and remove the can. Heap the oranges on top and arrange them around the base of the pudding, pour the sirup over them, and serve.

Purée of Apricots.

- 1 quart can apricots,
- 1 cupful sugar,
- Yolks 6 eggs,
- 1 pint cream.

Mash the apricots, beat the yolks of eggs and sugar together until light, then add them with the cream to the

apricots; turn into a double boiler, and stir until the eggs begin to thicken. Strain, and whip to the consistency of sponge-cake batter. When cool, turn into a mold and set in ice and salt three hours.

Plombière.

- $\frac{1}{2}$ pound Jordan almonds,
- Yolks 7 eggs,
- 1 quart cream,
- $\frac{1}{2}$ cupful sugar.

Blanch and pound the almonds to a paste. Scald the cream in a double boiler, add the almonds, pour over egg yolks and sugar beaten to a cream, and stir over hot water until they begin to thicken; beat for three minutes. Strain and freeze. When frozen, remove the dasher, make a small well in the center, fill with apricot jam, cover, and stand two hours.

Montrose Pudding.

- 1 quart cream,
- Yolks 6 eggs,
- 1 cupful sugar,
- 1 tablespoonful vanilla,
- 1 pint strawberry water ice.

Scald the cream, beat the yolks and sugar, pour over them cream, and cook over hot water until it thickens. Take from the fire, add the remaining pint cream and the vanilla, stand until cool, and freeze. When frozen, pack into a round mold, leaving a well in the center. Fill with strawberry water ice, cover with some of the pudding you have taken out. Pack in salt and ice, and let stand two hours. Serve with the following sauce poured around it:

Vanilla Sauce.

- 1 tablespoonful gelatin,
- 1 pint cream,
- Yolks 3 eggs,
- $\frac{1}{4}$ cupful sugar,
- 1 teaspoonful vanilla.

Cover the gelatin with a little cold water and soak half an hour. Scald the cream. Beat the yolks and sugar together, add hot cream, cook over

hot water until it thickens, add the gelatin, stir until it dissolves; take from the fire, add the vanilla, and stand in a cold place until wanted.

Frozen Chocolate with Whipped Cream.

2 squares chocolate,
1 cupful sugar,
Dash salt,
1 cupful milk,
3 cupfuls thin cream,
1 teaspoonful vanilla.

Melt the chocolate, scald the milk with the sugar and salt, and pour it over the chocolate. Add the cream, cool, freeze, and serve in glasses with a spoonful whipped cream in each.

Chocolate Sauce to Serve with Vanilla Ice Cream.

1½ cupfuls water,
½ cupful sugar,
6 tablespoonfuls chocolate,
1 tablespoonful cornstarch,
½ cupful cold water,
Dash salt,
½ tablespoonful vanilla.

Boil the water and sugar five minutes. Mix the cornstarch in cold water, add the grated chocolate, combine the mixtures, and cook in a double boiler till creamy. Flavor with vanilla, and serve hot with vanilla cream frozen very hard.

Frozen Plum Pudding.

1 quart chocolate ice cream,
¾ cupful candied fruit,
½ cupful blanched and chopped almonds,
½ cupful raisins,
½ cupful macaroon crumbs toasted,
¼ cupful shredded figs,
¼ cupful chopped walnuts.

Make the cream as directed in recipe for chocolate ice cream; when almost frozen, take off the lid, put in the fruit, turn the crank five minutes, then pack. This cream is so rich that it is at its best when served in small portions with a garnish of whipped cream.

Chocolate Mousse.

2 squares chocolate,
1¼ cupfuls sugar,
1 cupful cream,
¾ tablespoonful granulated gelatin,
3 tablespoonfuls boiling water,
1 teaspoonful vanilla,
1 quart cream.

Melt the chocolate with ½ cupful sugar and add 1 cupful cream. Scald, then put in the gelatin dissolved in cold water, the rest of the sugar, vanilla, and a dash of salt. Strain into a bowl and set in a pan of ice water. Stir occasionally till it thickens, then add the whip from the rest of the cream. Pour into a mold, rubbing inside the lid of the mold with lard to form a waterproof coating so no brine can enter, pack in ice and salt, and let stand four hours.

Continental Pudding.

1½ pints baked Indian-meal pudding,
1 pint thick cream,
1 cupful sugar,
1 tablespoonful caramel,
½ teaspoonful cinnamon.

Stir the ingredients to a smooth paste, whip the cream, beat in the sugar, add the spice, mix with the pudding, and freeze without beating, scraping the frozen mixture from the sides of the can, and stirring smooth. Serve, when frozen, with cream.

Angel-Cake Glacé.

1 quart cream,
Whites 6 eggs,
1¼ cupfuls sugar,
1 teaspoonful vanilla,
¾ cupful water,
½ cupful finely sifted angel-cake crumbs.

Cook the cream in a farina boiler, add sugar and flavoring, cool, strain, and freeze. Reserve ½ pound sugar and whites 4 eggs. Cook the sugar and water to the same degree required for boiling icing, and pour hot upon the whites beaten to the stiffest possible froth. Stir this icing, with

the cake crumbs, gently into the frozen cream. Line the bottom of a mold with slices of angel cake; upon these place a layer of the cream, then cake, so on until the mold is full. Cover tightly, and pack in ice three hours.

Fruit-Cake Glacé.

1 pint cream,
Yolks 4 eggs,
1 cupful sugar,
 $\frac{1}{2}$ teaspoonful vanilla,
 $\frac{1}{2}$ teaspoonful mixed spices,
2 ounces browned almond paste,
4 macaroons,

2 ounces dried and pounded fruit cake,
1 ounce chocolate,
1 tablespoonful caramel.

Make a custard of the cream, yolks, and sugar; add vanilla, sugar, spices, chocolate, and caramel; freeze, then stir in nuts and crumbs, mold in a cake pan—any ordinary oblong pan, two or two and a half inches deep, freeze in salt and ice. Turn out on platter, cover half an inch with almond paste mixed with little boiled icing. Serve in slices, with soft custard.

CHAPTER XXXII

BEVERAGES FOR ALL OCCASIONS

COFFEE, CHOCOLATE, AFTERNOON TEA, FRUIT PUNCHES,
LEMONADE, GRAPE JUICE, ETC., ETC.

When we speak of beverages, the term includes such daily drinks as tea, coffee, and cocoa, also the delicious fruit punches, which are easy to make and, in hot weather, as cooling to the blood as they are palatable. In preparing all hot beverages, freshly boiled water is a necessity, for after water has boiled five minutes it loses a sort of sparkle that makes all the difference between a poor cup of tea and one that is stimulating and fragrant. As to coffee, there are various methods of making it, but in boiled coffee, which is the common everyday kind, we have probably the quickest and most economical method. To have coffee at its best, the water and coffee should be carefully measured, carefully watched and timed in the cooking, and the coffeepot kept scrupulously clean. Don't buy poor, cheap tea and coffee.

Most fruit punches have one base — a sirup of equal quantities of water and sugar. This is a much better way to prepare such drinks than by sweetening them with granulated sugar, which can only be half dissolved in cold water. After the sirup for such a beverage is prepared, its flavoring is limited only by the variety of fruit on hand. The ever-handy lemon gives it necessary tartness, and to add to its deliciousness anything may be added, even a leftover of sirup from canned fruit or a cup of cold tea.

Coffee, if possible, should always be served with cream. To keep cream sweet heat it to almost boiling point, put it in a glass bottle or

earthen vessel, cover, and set aside to cool. Cream thus treated will keep sweet and fresh several days, in moderate weather, and over the second day in warm weather.

French Coffee.

1 cupful finely ground coffee,
6 cupfuls boiling water.

There are a number of pots on the market for making French coffee. Any of them are suitable, provided they contain a fine strainer, which holds the coffee and prevents the grounds from getting into the infusion. To make coffee in this fashion, put the coffee into the strainer, which is generally set into the mouth of the pot; place the pot on the stove and slowly pour the water over the grounds, allowing it to filter through. If you wish to have the coffee stronger, pour out the infusion and pour it a second time over the grounds, but do not allow it to cool.

Boiled Coffee.

6 tablespoonfuls ground coffee,
1 quart freshly boiling water,
 $\frac{1}{2}$ white of egg.

Mix the white of egg with 3 tablespoonfuls cold water, beating with a fork; add the coffee and stir till wet. Scald coffeepot, put in prepared coffee, pour in boiling water, cover the spout, and boil five minutes. Pour in quickly $\frac{1}{2}$ cupful cold water; stand three minutes to settle. Strain into a hot pot or have strainer on table.

Tea.

Water for tea should be used when it has just reached the boiling point. Teas are of differing strengths, but a safe rule is 1 teaspoonful dry tea to 1 cupful boiling water. Scald the pot, put in dry tea, and cover one minute. Add boiling water and cover closely. Let stand three to six minutes and strain off into another hot pot.

When serving afternoon tea, try using slices of orange instead of the inevitable lemon. The flavor is very delicious, especially when combined with green tea.

Cocoa.

In a tablespoonful of boiling water dissolve 1 tablespoonful of cocoa powder, then add a cupful of boiling water, and boil together for five minutes, stirring continually, add 1 cupful scalded milk. Beat with an egg beater to prevent scum forming. When served, sweeten to taste.

Afternoon Chocolate.

- 1 quart milk,
- 2 squares unsweetened chocolate,
- 1½ cupfuls boiling water,
- 2 tablespoonfuls sugar.

Put the chocolate in a double boiler. When it melts, add the sugar and stir thoroughly till both are dissolved. Add the boiling water and boil five minutes, then pour over it the scalded milk. With an egg beater, whip the beverage till it foams, keeping it over the fire. Serve from a chocolate pot, sweetening to taste and putting into each cupful a tablespoonful of whipped cream. If you desire the chocolate delicately thickened, add ½ tablespoonful cornstarch dissolved in cold milk during the cooking process.

Piazza Punch.

- Juice 2 lemons,
- Juice 1 orange,
- 1 cupful sugar,
- 2 cupfuls grape juice,
- 2 cupfuls water.

Mix together the juice of the lemons and orange, add sugar, grape

juice, and water. Place a small cake of ice in the bottom of a punch bowl or in a tall glass pitcher and pour in the liquid.

Lime Punch.

- ½ cupful lime juice,
- 2½ cupfuls sugar sirup,
- 2 cupfuls pineapple juice,
- ¾ cupful orange,
- 2 cupfuls water.

Mix together the lime juice and sirup; then add the pineapple juice and orange, and water. When ready to serve, put in glasses half filled with crushed ice and add a few Maraschino cherries.

Pineapple Punch.

- 1 cupful grated pineapple,
- 2 cupfuls water,
- 2 cupfuls sugar,
- ½ cupful fresh-made tea,
- Juice 3 oranges,
- Juice 3 lemons,
- 1 cupful grape juice,
- 2½ quarts water.

Put the pineapple and 2 cupfuls water to boil for fifteen minutes. Strain through cheese cloth, pressing out all the juice. Add 1 pint of water to the sugar, boil ten minutes, then add the tea, juice of the oranges and lemons, grape juice, and the balance of the water. Put in a punch bowl with a large lump of ice. Serve perfectly chilled in punch glasses.

Fruit Sirup.

Cook a cup of fruit (strawberry, currant, raspberry, cherry) in ½ cup water. Strain, and press out juice through a heavy cloth. For every pint of very acid juice use ½ pint sugar, bring to the boiling point, and bottle. Many like ½ water and ½ sirup. Thin to suit the taste.—Mrs. A. J. Mielke.

Fruit Sirup.

- Juice 6 lemons,
- 2 cupfuls water,
- 2 cupfuls sugar,
- Chopped rind 1 lemon,
- 2 bananas,

- 1 grated pineapple,
- $\frac{1}{2}$ bottle Maraschino cherries and their liquor,
- 2 quarts Apollinaris.

Put the water, sugar, and rind of lemon on to boil; boil five minutes, strain, and while hot slice into it the bananas, pineapple, cherries and their liquor. When ready to serve, put in the center of punch bowl a square block of ice; pour over it the Apollinaris; add to the fruit the juice of the lemons and put it all into the bowl.

Mulled Cider.

- 1 quart cider,
- 1 teaspoonful whole allspice,
- $\frac{1}{2}$ teaspoonful cassia buds,
- 3 eggs.

Put the cider with the spices in it in a saucepan and boil three minutes. Pour it carefully over the eggs, which have been beaten thoroughly, and serve hot.

Raspberry and Currant Punch.

A pleasant drink is made of raspberries and currants—a pint of the former to a quart of the latter. Bruise the fruit in a preserving kettle with a potato masher and pour over it 2 quarts cold water. Put the kettle over a moderate fire, where it will heat gradually. After it begins to boil, remove the kettle from the fire; pour the contents into a jelly bag and let it drain through the bag into a large bowl. When it is clear and cool, ice and sweeten it and serve in little glasses.

Strawberry Ambrosia.

Select large, ripe strawberries. Arrange in a glass bowl with alternate layers coarsely chopped pineapple. Sprinkle between the layers powdered sugar and freshly grated cocoanut, then pour over top 1 cupful orange juice. Set on ice, and serve very cold.—Mrs. J. S. Sanders.

Tea Punch.

- 1 quart boiling water,
- 3 tablespoonfuls tea,

- 1 cupful granulated sugar,
- Juice 4 lemons,
- $\frac{1}{2}$ pint Apollinaris.

Pour the boiling water over the tea; cover and leave for five minutes; strain off and cool. Half fill the punch bowl with cracked ice, add the sugar and strained juice of the lemons. Pour the tea over these, and, as it goes to table, add the Apollinaris. Strew a handful of mint sprays on the surface and serve at once.

Cocoa Nibs or "Shells"

Wet 1 cup cocoa shells with a little cold water and stir into them a quart of boiling water. Boil steadily for two hours; strain, stir in a quart of scalded milk, and serve. Sweeten in the cups.

Blackberry Cordial

Put berries over fire in a preserving kettle. Mash down until the juice is boiled out; strain and measure. For each quart of juice put in two teaspoonfuls each of cloves, mace and allspice, and four of cinnamon. Boil like simple syrup, skimming carefully. When clear add one cup of granulated sugar. Take off and cool. When cold add 1 pint of brandy to each quart of juice. Strain and bottle, corking tightly. Note—For cholera this has no equal.—Mrs. William E. Hitchcock.

Raspberry Vinegar.

Mash the berries and, when reduced to a pulp, add enough vinegar to cover them. Set close by the stove for twelve hours, stirring often. Strain and press; add as many raspberries (mashed) to the vinegar as before; cover and leave in the hot sun for six hours. Now strain, and measure the juice; add half as much water as you have juice, and stir into this 5 pounds granulated sugar for every 3 pints of liquid. Bring slowly to a boil, let it boil up once, and strain. Bottle, cork, and seal.—Marion Harland.

Ginger Beer.

- 6 ounces bruised ginger,
- 6 quarts water,
- 5 pounds loaf sugar,
- 1 gill lemon juice,
- $\frac{1}{2}$ pound honey,
- 17 quarts cold water,
- 1 egg,
- 2 teaspoonfuls essence lemon.

Boil the ginger and water for half an hour; then add the sugar, lemon juice, honey, the balance of the water, and strain through a cloth. When cold, put in the egg and essence of lemon. After standing three or four days it may be bottled.

Ginger Pop.

- 2 gallons lukewarm water,
- 2 pounds white sugar,
- 2 lemons,
- 1 tablespoonful cream of tartar,
- 1 cupful yeast,
- 2 ounces white ginger root, bruised and boiled.

Pour this mixture into a stone jar and stand in a warm place for twenty-four hours; then bottle. The next day it will be ready to "pop."—Marion Harland.

Cream Soda.

- 1 pound loaf sugar,
- 2 cupfuls rich cream,
- 1 quart water,
- 1 tablespoonful vanilla,
- $\frac{1}{4}$ ounce tartaric acid.

Mix the ingredients and bring slowly to a boil; then put in jars. Use a tablespoonful of this and a third of a teaspoonful of soda to a glass of iced water.

Portable Lemonade.

Rasp the rind of a large and not too-ripe lemon on $\frac{1}{4}$ pound loaf sugar, reduce it to a powder, and mix with the strained juice of the fruit. Stir well together, and when thoroughly mixed, press tightly into a small jar, cork, and tie over with waxed paper. When required for use, dissolve a tablespoonful of the paste in a glass of water with a lump of ice. This

paste will keep good for months. If too sweet, a slight amount of citric acid will give it the necessary sharpness.

Egg Lemonade.

- 2 cupfuls sugar,
- 3 cupfuls water,
- Grated rind 1 lemon,
- Juice 4 lemons,
- 1 egg,
- 1 bottle effervescent water.

Boil together the sugar and water for ten minutes; add the grated rind and juice of the lemons. Allow this to cool, and at time of serving add the egg, beaten until very light and creamy, and the effervescent water, poured from some height in order that the mixture may foam. Serve with cracked ice in glasses.

Cocoa-nut Beverage.

Break 2 cocoanuts saving the milk carefully. Grate the cocoanuts, add them to milk and also 4 pints of water. Put in a sauce pan and boil 5 minutes stirring with a wooden spoon constantly to prevent burning. Then strain, add $\frac{3}{4}$ lb. powdered sugar and mix well. Ice it and serve.—Mary Shaw.

Chocolate Cream Nectar.

- 4 tablespoonfuls hot coffee,
- 2 squares unsweetened chocolate,
- $1\frac{1}{2}$ cupfuls sugar,
- 3 cupfuls water,
- 1 teaspoonful vanilla.
- Whipped cream.

Melt the chocolate in the hot coffee; add the sugar and water; boil until clear and strain. There should be 1 quart of the liquid. When cold, add the vanilla, then pour it into glasses in which you have placed a little shaved ice. Put 1 tablespoon of whipped cream on top and serve. This is good hot, if a portion of milk is added to the chocolate sirup, and the whipped cream placed on top.

Black-Currant Cup.

To 1 quart weak green tea add $\frac{1}{2}$ pint black-currant juice; sweeten to

taste and chill thoroughly before serving.

Fruit Cup.

- Juice $\frac{1}{2}$ lemon,
- 1 teaspoonful lime juice,
- 1 teaspoonful pineapple juice,
- 4 ounces sugar,
- 2 ounces shaved ice.

Fill up the glass with rich milk, shake until foamy, and drink at once.

Pineapple Lemonade.

- 1 pineapple,
- Juice 4 lemons,
- 1 pound sugar,
- 1 pint water.

Pare, eye, and grate the pineapple; add the strained juice of the lemons and a sirup made by boiling together for four minutes the sugar and water. When cold, add 1 quart water; strain and ice.

Fruit Beverage.

- 12 lemons,
- $2\frac{1}{2}$ pounds sugar,
- 1 quart ripe raspberries,
- 1 pineapple.

Peel the lemons very thin; squeeze the juice over the peel and let stand two hours; then add 1 pound sugar; mash the raspberries with $\frac{1}{2}$ pound sugar, strain the lemon juice and mash the raspberries through a coarse sieve, then the pineapple, and mix all together, adding 3 quarts cold water. Stir until the sugar is dissolved; strain, and serve with a little of the fruit in each glass.

Russian Tea.

- 4 teaspoonfuls tea,
- 1 quart boiling water,
- 1 teaspoonful sugar,
- $\frac{1}{2}$ slice lemon,
- 1 Maraschino cherry.

Pour the boiling water over the tea, and allow it to stand for five minutes. Into each cup put the lemon, cherry, and sugar, and pour the tea over them.

Raspberry Shrub.

For every cupful raspberry juice take $\frac{1}{2}$ cupful white-wine vinegar and 2 cupfuls sugar. Put the fruit juice, sugar, and vinegar over the fire, stir until the sugar dissolves and boil to a thick sirup; strain and bottle. All fruit juices are used in the same manner. When served, allow $\frac{3}{4}$ cupful sirup to $\frac{3}{4}$ cupful ice water.

Unfermented Grape Wine or "Communion Wine."

- 5 pounds grapes,
- 1 pound sugar,
- 1 quart water.

Pick over grapes from the stems, add water and bring slowly to the boiling point. Boil five minutes, turn into jelly bag and drain. When cool press out all remaining juice, add sugar, heat to the boiling point, skin, and seal immediately.

Grape Juice.

Grapes 1 pint, water 1 cup. Add $\frac{1}{2}$ water to grapes, cook till grapes burst, then mash, add rest of water, strain through close cloth without squeezing bag (to make clear), then heat the juice and for every cup of juice add $\frac{1}{2}$ cup sugar, remove any scum, strain into jars, and seal up like canned fruit.—Mrs. A. J. Mielke.

Elder blossom Wine.

- 1 quart elderberry blossoms,
- 9 pounds sugar,
- 1 yeast cake,
- 3 gallons water,
- 3 pounds raisins,
- $\frac{1}{2}$ cupful lemon juice.

The blossoms should be picked carefully from the stems and the quart measure packed full. Put the sugar and water together over the fire, stir until the sugar is dissolved, then let it boil without stirring. Boil five minutes, skim, and add the blossoms. As soon as the blossoms are stirred in, take from the fire and cool. When lukewarm, add the dissolved yeast and lemon juice. Put in an earthen jar for six days, stirring thoroughly

three times daily. The blossoms must be stirred from the bottom of the jar each time. On the seventh day strain through a cloth and add the raisins, seeded. Put in glass preserve jars and cover tightly. Do not bottle until January.

Mint Fizzle.

Cut the rind of 1 lemon thin, then into small strips. Squeeze juice of $\frac{1}{2}$ lemon in each glass; add 1 teaspoonful sugar; stir until dissolved; fill half up with shaved ice; pour in half ginger pop and half grape juice; place 3 sprigs of mint and 2 pieces of peel in each glass and serve with straws.

Red-Currant Punch.

Boil for five minutes 1 cupful sugar and 3 quarts water. Remove from the fire, and, while the sirup is still hot, dissolve in it 1 pint red-currant jelly. Add the juice of 3 lemons and 3 oranges. Set on ice until chilled and serve in glasses partly filled with crushed ice.

Tutti-Frutti Punch.

- 2 quarts water,
- 1 pound sugar,
- Grated rind 2 lemons,
- Grated rind 4 oranges,
- Juice from the lemons and oranges,
- 24 Malaga grapes,
- 2 slices tangerine oranges,
- 4 slices pineapple,
- 1 banana,
- 1 pint Maraschino cherries.

Boil five minutes 1 quart of the water and sugar; add the grated rinds of the lemons and oranges and continue boiling for ten minutes longer. Strain the sirup through cheese cloth and add 1 quart cold water. Extract the juice from the lemons and oranges, strain, and mix with the grapes, cut in half and seeded, oranges, pineapple, sliced banana, and the Maraschino cherries with their liquor, the cherries being halved. Serve from a punch bowl in which a cube of ice has been placed.

Sparkling Lemonade.

- 36 lemons,
- 3 pounds granulated sugar,
- 6 oranges,
- 1 pineapple,
- 1 box strawberries,
- 4 quarts carbonated water.

Squeeze the juice from the lemons and strain. Put it into the punch bowl with the sugar and stir until dissolved. Slice the oranges, shred the pineapple, hull and wash the berries; then add them all to the lemon juice. Put a large cube of ice in the punch bowl. Just before serving, add the carbonated water, which has previously been chilled.

Cider Eggnog.

To each quart of cider allow 4 eggs. Beat the yolks until they assume the consistency of cream. Beat the whites to a stiff froth. Stir together the cider and beaten yolks and sweeten to taste. Stir in half the beaten whites and season slightly with grated nutmeg. Stand on ice until cold. Serve in punch glasses with a teaspoonful of the meringue on top of each glass.

Mint Ale.

- Juice 5 lemons,
- 1 $\frac{1}{2}$ cupfuls sugar,
- $\frac{1}{2}$ dozen stalks and leaves of bruised mint,
- 2 bottles ginger ale.

Mix the lemons and sugar together; when melted, place in a punch bowl with the bruised mint, and when the bowl has been half filled with cracked ice, add the ginger ale.

Chocolate Sirup.

To use in emergency for making cool drinks.

- 2 ounces unsweetened chocolate,
- 2 cupfuls boiling water,
- 2 pounds sugar,
- 2 tablespoonfuls vanilla.

Put the chocolate in a double boiler and let it melt gradually, stirring occasionally. Add the sugar and

water. When thoroughly dissolved, strain and add the vanilla. Bottle and keep in a cool place until wanted. A tablespoonful added to a glass of iced water or charged water makes a delicious cool drink in a moment or two. Or pour a few spoonfuls of it in a cocktail glass over shaved ice and cover with sweetened whipped cream for an afternoon-tea delicacy. With boiling water and whipped cream it makes a cupful of hot chocolate without a moment's delay.

Old Colonial Mint Cup.

- 1 bunch fresh mint,
- 6 oranges,
- 2 lemons,
- $\frac{1}{2}$ ounce pulverized gum arabic,
- $\frac{1}{2}$ cupful cold water,
- 1 cupful sugar,
- Whites of 2 eggs.

Steep mint in sufficient hot water to extract the flavor, adding the juice of the oranges and lemons. Dissolve over hot water the gum arabic, soaked in cold water for twenty minutes, add the sugar and cook until it spins a thread; pour this boiling hot upon the stiffly beaten whites of eggs, beating until cold and smooth.

Stir in the strained mint flavoring and fruit juice. Dilute to the required strength with carbonated water and serve in tumblers containing finely cracked ice, garnishing each portion with lemon peel and sprigs of mint.

Lemonade.

- 2 cupfuls sugar,
- 1 quart water,
- $\frac{3}{4}$ cupful lemon juice.

Boil the sugar and water ten minutes, then add the fruit juice. Cool and, if too strong, add a piece of ice to dilute it.

Ginger Punch.

- 2 cupfuls sugar,
- 2 quarts water,
- 1 pound Canton ginger,
- 1 cupful orange juice,
- $\frac{3}{4}$ cupful lemon juice.

Pour the water over the sugar and add the ginger, which has been cut coarsely in a meat chopper. Boil for twenty minutes, add the fruit juice, and strain. Allow it to cool, then pour over a piece of ice in a punch bowl.

CHAPTER XXXIII

PRESERVATION OF MEAT AND VEGETABLES

FERMENTATION—FRESH MEAT AND FISH—SALTING AND PICKLING MEAT—CURING HAMS, TONGUES, AND BACON—MAKING AND KEEPING SAUSAGE—PRESERVATION OF COOKED MEAT—TRYING OUT AND STORING LARD—PRESERVING, TESTING, AND PACKING EGGS—STORING AND PRESERVING VEGETABLES, FRUIT, NUTS, AND HERBS

FERMENTATION

Fermentation in the widest sense of the term includes all forms of decomposition in both vegetable and animal substances when exposed to air and moisture at temperatures between the freezing and boiling point of water. But in common language, the word fermentation is more often confined to those processes by which vegetable juices are transformed into alcoholic liquors. These processes, however, are entirely similar to putrefaction, or the decomposition of organic matter which sets free foul-smelling gases; and decay, or the change by which, without moisture, the trunk of a tree molds into dust. Fermentation does not ordinarily take place much below 32° F. or much above 140° F. It usually causes liquids to rise in temperature and to give off gases with considerable internal motion, to become turbid, to form a scum and to deposit a sediment.

Among the useful results of fermentation are the raising of bread with yeast; the preparation of alcoholic beverages and certain food products, as sauerkraut; the curdling of milk by means of rennet to form cheese; the manufacture of vinegar, etc.

Among the injurious results are

the souring of milk and vegetables, the putrefaction of meat, the becoming rancid of fats and the decay of articles of wood or textile fabrics.

Fermentation is caused by the vital action of microscopic plants, the germs of which may be present in the fermenting substance, or may be deposited on their surface from the air or from contact with water or other substances containing them. Or they may be introduced intentionally, as when yeast is used for brewing, or for making vinegar or bread. These small plants feed upon fermentable substances and bring about various chemical changes. Thus the subject of fermentation has two phases: i. e., (1) how to induce those forms of fermentation that are useful, and (2) how to prevent those that are injurious.

The promotion of fermentation falls under such various subjects as fermented beverages, the making of vinegar, cheese, bread, etc. The prevention of fermentation falls under such subjects as the preservation of food, the preservation of timber, etc.

As fermentation occurs from the presence and development of germs, it is evident that its prevention depends upon the destruction of any germs that are present, and keeping away others, or the removal of con-

ditions favorable to germ life. Hence, in general, fermentation and putrefaction may be prevented by drying heat; by cooling below the point at which fermentation takes place; by heating or cooking substances to a point sufficient to kill the germs present, and then hermetically sealing them to exclude others; and by the employment of various antiseptics, as alcohol, common salt, saltpeter, sugar, sirup, smoke, borax, and many other substances.

Putrefaction.—This change is a decomposition of animal or vegetable substances with the liberation of ill-smelling gases. It can only take place at a temperature between the freezing point of water (32° F. and 140° F.), in the presence of moisture and after exposure to the air. Generally speaking, the more moisture and the greater warmth present, the more rapid is the process. The germs of the bacteria which cause putrefaction are heavier than the germs of yeast and mold, and hence do not float in equal numbers, as dust in dry air. They are more often communicated by contact with water or moist surfaces. For this reason in dry climates meats and vegetables may be preserved simply by drying or curing them by exposure to sunlight. But it is well known that if these substances are left out after the dew falls, and allowed to become moistened, they may be covered with a coating of mold. Most of the bacteria that cause putrefaction are killed by exposure to a temperature of 140° F. for a number of hours; to a temperature of 212° F., the boiling point of water, for ten to fifteen minutes; or to a temperature of 215° F. for 4 or 5 minutes. The activity of these bacteria ceases at the freezing point, but they cannot be killed by freezing, and again become active when warmed to a temperature of 40° F. Hence, in general terms, boiling in water kills bacteria and freezing suspends their activity.

FRESH MEAT AND FISH

To Keep Fresh Meat.—Refrigeration in a dry, well-ventilated air

chamber cooled to a temperature of 40° F. or lower by means of ice, is the best means of preserving fresh meat in summer or in warm climates. For this purpose ice may be stored in northern climates in homemade ice houses, and utilized by means of homemade refrigerators as elsewhere recommended.

If ice houses are not available, fresh meat may be kept for several days by the use of sour milk, vinegar, charcoal, or borax, or by immersing it in cold running water, or by means of a mixture of salt, sugar, and saltpeter.

Or hang up joints of meat, if not required for immediate use in any dry, shady place where there is good ventilation. They will keep fresh from 2 to 4 days, and will become more tender and digestible by hanging. But in all cases, hang them with the cut end up and knuckle downward, or the reverse of the usual way. Thus the blood remains in the meat and keeps it sweet and juicy. In summer, if the weather is dry, lamb and veal will keep 2 days, and beef and mutton 3 to 4 days. In cold weather, mutton may be kept for twice that length of time.

Or if running water is available from a spring or otherwise, provide a covered box or tub in a shady place, into and out of which the water can flow. Immerse the meat in this. If fresh it will sink of its own weight. Look at it two or three times a day and as soon as it commences to rise from the bottom, it must be used. The outside will be somewhat whitened, but the flavor will be uninjured. The meat will be sound and tender after 3 or 4 days in hot summer weather, and may then be boiled or roasted.

Or pieces of fresh meat may be placed in large stone jars and covered with skimmed milk, sour milk, or buttermilk. They must be weighted with a clean stone to keep the meat under the surface of the liquid, and the jar placed in a cold cellar or in the running water from a spring. It is not necessary to remove the bone or fat. Thus fresh meat can be preserved for a week or 10 days. The

milk can afterwards be fed to pigs. Before cooking, the meat should be washed thoroughly in clear water and afterwards soaked 3 to 5 minutes in water containing about one tablespoonful of cooking soda to the gallon. This neutralizes the acid of the milk and makes the meat more tender.

Or fresh meat may be preserved by soaking it for 3 to 5 minutes in a solution of one tablespoonful of borax to a gallon of water, or by rubbing it with powdered borax dry. Rinse with clear water when required for use.

Or trim the meat carefully with a knife, removing any parts that seem likely to taint, and wrap it up with a cloth moistened with vinegar, or equal parts of vinegar and water. The acid vapor drives away flies and the moisture, by evaporation, keeps it cold.

Or rub meat thoroughly with fresh powdered charcoal, which has powerful antiseptic properties. It can be readily rinsed off with clear water.

Or cut the meat in pieces, not exceeding 2 or 3 pounds in weight, and pack them down between layers of dry corn meal or bran. Or cover with corn meal or bran as thickly as possible and hang in some shady place where there is a free circulation of air.

To Preserve Meat from Flies.—In addition to the germs that cause putrefaction, fresh meat is liable to be visited by flies and other insects for the purpose of depositing their eggs, and these will, in warm weather, quickly hatch and produce maggots. A cloth moistened with vinegar prevents the approach of insects.

Or the meat may be rubbed with ground pepper or ginger. It may also be protected by a coating of waxed paper. To prepare this paper, melt with gentle heat 5 ounces of stearic acid. Stir in 2 ounces of carbolic acid and add, in a thin stream, 5 ounces of melted paraffin, stirring constantly. Remove from the fire and continue to stir until the mixture sets. Again melt with gentle heat, and apply with a brush to suitable

paper. Wrap up the meat in the paper and seal.

To Preserve Fish.—To keep fish fresh without ice for any length of time is very difficult. But if ice is not available, wash inside and out with a solution of equal parts of vinegar and water. Lay the fish on an earthenware platter on a stone floor. Place in the inside of each fish a cheese-cloth bag containing fresh charcoal in small lumps, about the size of small peas or large gravel stones, and wrap in a cloth moistened with vinegar, or equal parts of vinegar and water. In very hot weather remove the cloth and bag of charcoal two or three times a day and dip the fish into cold salt water. Afterwards wrap up as before.

Or if the fish shows signs of decay, immerse in a pickle of vinegar and water.

To Sweeten Tainted Meat.—Apply a solution of chloride of soda by means of a soft clean brush or sponge. With this quickly wash over the tainted portions and rinse immediately with fresh water. Afterwards broil or roast the meat so as to expose the tainted portions to a high temperature and char them with the heat.

Or if they are to be boiled, place half a dozen lumps of charcoal, the size of an egg, in the water.

Or place a quantity of pulverized charcoal in a cheese-cloth bag, and place these in the kettle. All odors will be absorbed by the charcoal and the meat will be sweet and clean.

To Keep Frozen Meat.—In cold climates and in winter, meat may be preserved indefinitely by allowing it to freeze. But it must not be permitted to freeze and thaw frequently, and must not be thawed out too quickly when required for use. To preserve meat by freezing, first expose it to the weather until thoroughly frozen through and through. Wrap in waxed paper or cover with a cloth coated with shellac or other varnish and pack in an ordinary flour barrel between layers of hay, straw, or excelsior, pressing the whole as tightly and solidly as possible. Place the barrel in a bin or packing case,

and surround it with a layer of 5 or 6 inches of dry sawdust.

To thaw frozen meat when required for use, place it in a moderately warm room at a distance from the fire, and allow it to thaw gradually.

Or better still, soak it 2 or 3 hours in cold water.

If thawed too quickly it will be unfit for use.

SALTING AND PICKLING MEAT

Curing Meat.—Among the various methods of preserving beef, pork, mutton, and other meats for considerable periods of time, are drying, canning, pickling, and smoking. Drying meat is practiced chiefly in hot climates and in localities where the air is free from moisture. It is accomplished by cutting the meat into convenient pieces and exposing it to direct sunlight on suitable drying forms so arranged as to admit of a free circulation of air. The canning of meat is similar in principle to the process of canning fruit and vegetables. It consists in cooking the meat until tender, placing it while at the boiling point in sterilized jars, and sealing while hot so as to exclude the air. In addition, it is customary to pour over the meat the gravy or meat jelly in which it has been cooked, in the same manner that sirup is poured over canned fruits. Pickling consists in immersing the meat in a solution of antiseptics, usually salt, sugar, and saltpeter with soda or potash. Smoking is accomplished by suspending the meat in a suitable chamber, exposed to the fumes of smoldering corncobs, hickory or beech chips, sawdust, or other substances. The antiseptic effect of smoking is due to impregnation with pyroligneous acid, an impure acetic acid which, together with tarry matter, is contained in the smoke. The effect of smoking is therefore similar to that of rubbing fresh meat with vinegar, except that the admixture of tarry matter prevents the acetic acid from escaping by evaporation.

Pickling Meat.—The points to be observed in pickling are cleanliness

and sterilization. That is, all foreign matter, as blood, dirt, and the like, should be removed from the meat, and the tubs or casks in which it is packed should be sterilized. In addition, of course, the pickle must be sufficiently strong, and the meat fully covered with it and heavily weighted. If these precautions are observed, there is no reason why meat cannot be kept sweet the year round.

Preparation of Meat for Pickling.

—The beef, pork, or mutton carcass to be pickled should be carefully cut into strips of equal thickness, so that it can be packed tightly in tubs or casks in uniform layers. The carcass should be cut up as soon as the animal heat is out of it, and the pieces to be pickled rubbed thoroughly with fine salt or powdered saltpeter or a mixture of these dried in a slow oven. After the salt and saltpeter have been well rubbed over the surface of the meat, sprinkle the pieces lightly with the same, and lay them on slats or boards slanted so that the blood will drain off, and let them stand from 24 to 48 hours. This will remove all the surface blood and leave the meat fresh and clean. When the necessary tubs or casks and pickling liquid are in readiness, rinse off the meat by dashing cold water over it from a dipper or pail. Wipe dry with a clean cloth. It will then be perfectly clean and ready to pack.

Pickling Liquid for Meat.—A full barrel, if properly packed, will contain about 200 pounds of meat and will require from 6 to 8 gallons of pickle. The proportions of salt, saltpeter, and sugar recommended are about as numerous as the various authorities. But as these antiseptics do their work separately, the proportion is not essential, provided the pickle is strong enough. To prepare a standard pickling liquid, place in a large kettle 8 gallons of pure soft cold water, to which add 14 to 16 pounds of pure salt, 4 to 6 ounces of saltpeter, about 6 pounds of good brown sugar, or about 3 pounds of the sugar and an equal bulk of good New Orleans molasses, to which may be added 2 to 6 ounces of pure baking soda. Place the whole over a slow

fire and bring to a boil with very gentle heat, removing the scum as it rises so as to have the liquid clear before it boils. After the pickle has been clarified, remove from the fire. Cover to keep out the dust and let stand until it becomes cold.

To Pack Meat.—Scald thoroughly the inside of the tubs or barrels by pouring into them boiling water and washing down the sides with a swab of clean cloth tied to the end of a stick or clean mop handle. Cover the bottom of the cask with common salt $\frac{1}{2}$ inch or more in depth. Pack the meat in layers as tightly as possible with common salt sprinkled between them and, when packed, pour over it the cold pickling liquid through cheese cloth until the barrel is full. Place on top a loose cover of wood, previously scalded, small enough to slip inside of the barrel and rest on the meat. Lay on this a stone or other heavy weight, to keep it below the surface of the pickle, and be sure that the pickle does not evaporate so as to leave the meat exposed to the air. Otherwise it will rust. The above is a general method to which the following favorite recipes may be added to show the manner in which the proportions may be changed according to the experience of different individuals. But all of these are tested recipes.

Pickle for Beef.—Dissolve in 8 gallons of soft water 20 pounds of coarse fine salt, 8 ounces of saltpeter, and 4 pounds of coarse brown sugar. Bring to a boil with very gentle heat, skimming constantly. This quantity is sufficient for one full barrel, or 200 pounds of beef, if properly packed.

Or prepare in a similar manner a pickle containing 14 pounds of coarse fine salt, 2 ounces of saltpeter, 2 ounces of Cayenne pepper, 3 pints of New Orleans molasses, 2 pounds of brown sugar, and 12 gallons of soft water.

Or 10 pounds of salt, 1 ounce of saltpeter, 2 pounds of brown sugar, and 6 gallons of soft water.

Or 12 pounds of salt, 4 pounds of brown sugar, 4 ounces of saltpeter, 8 gallons of soft water, and 4 ounces of potash.

Or 2 quarts of coarse fine salt, $3\frac{1}{2}$ quarts of molasses, 2 teaspoonfuls of saltpeter, and 8 gallons of soft water.

Salting Meat.—Another method of curing meat is to rub or pack it with a mixture of salt, sugar, and saltpeter, but without water, thus allowing the meat to form a brine by means of its own juices. If the brine which forms is allowed to drain from the meat, it is said to be dry-salted. Or if the meat is packed in a tight receptacle, and the brine is allowed to remain over it, it is said to be wet-salted.

To salt beef or pork, first remove all bones. Rub the pieces, especially the cut surfaces, with a mixture of 1 pound of salt, 1 ounce of saltpeter, and 1 ounce of sugar. Use pressure enough to rub the salt thoroughly into the grain of the meat. Let stand 24 to 48 hours. Again rub with the same mixture, sprinkling common salt freely between the layers. Cover also the top thickly with salt, and put over all a heavy weight—the heavier the better.

Or for $\frac{1}{2}$ a barrel, or 100 pounds of beef, prepare a mixture of 4 quarts of coarse fine salt, 4 pounds of brown sugar, and 4 ounces of saltpeter. Rub thoroughly into the meat. Let stand 48 hours to drain, turning occasionally, and pack in layers under a heavy weight, sprinkling the above mixture between but without the addition of water. If a scum rises it should be taken off with a skimmer and a little fine salt sprinkled over the surface.

Or for the same quantity of beef, prepare a mixture of 6 quarts of coarse fine salt, 4 pounds of light "A" or coffee sugar, 6 ounces of soda, and 4 ounces of saltpeter. Cure in all respects as above.

Rusty or Tainted Meat.—If meat has been properly drained to free it from blood, the pickle boiled and clarified, the barrels scalded, and the meat kept under the pickle by means of a suitable weight, it should keep indefinitely. But it is quite customary, as a precaution, to pour off the pickling liquid on the approach of summer, say in April, in temperate

climates. Again bring it to a boil, with the addition of about $\frac{1}{2}$ pound of salt to each gallon of pickling liquid, and when cold, once more pour it over the meat through a cheese-cloth strainer. But this is said to harden the beef and injure its flavor. It is believed that if the meat is properly cured, this will not usually be found necessary.

If the meat should become tainted, pour off the tainted pickle and discard it. Rinse the meat with clear water and wash out the barrel with a strong solution of lime water or wood ashes. If the barrel is much tainted, it may be well to fill it with this solution and let stand overnight. Afterwards scald with boiling water.

Rub the meat in a mixture of salt-peter and sugar, and pack it between layers of charcoal. Finally, pour over it fresh pickling liquid, prepared as above, strong enough to float an egg.

Or mix 12 pounds of powdered charcoal, 10 pounds of common salt, and 4 pounds of saltpeter. Cover the bottom of the cask with a layer of this mixture, rub each piece with the same, and sprinkle it freely between the layers of meat. By either of these methods all traces of taint can be removed. The charcoal can be rinsed off with clear water.

Red Pickling Liquid for Meat.—To impart a fine red color to meat and to improve its flavor, dissolve in 8 gallons of pure soft water 8 pounds of bay salt, 8 pounds of common salt, 6 pounds of brown sugar, 1 pound of saltpeter, 8 ounces of bruised pimento, 5 ounces of bruised black pepper, and 2 ounces of grated nutmeg.

To Improve Corned Beef.—The quality of corned beef can be improved by immersing the pieces for half a minute by the watch, in boiling water before pickling. This is in accordance with the well-known practice of immersing beef that is to be boiled for the table in hot water in order to harden the surface, and cause the meat to retain its natural juices. Similarly this method tends to make corned beef more tender and juicy than otherwise. To effect this result first drain the meat to free it from blood, rinse it in clear water.

Bring to a boil a solution of 2 ounces of saltpeter in 4 gallons of water and with a large fork having a long wooden handle, or a piece of wire having a hook at the end, immerse the pieces of meat for half a minute each in the boiling solution.

Or the same result may be obtained by pouring the pickling liquid while scalding hot over the meat; but the former method is to be preferred.

CURING HAMS, TONGUES, AND BACON

Pickling Mutton Hams.—First rub the hams with a mixture of 1 pound of salt, 1 ounce of saltpeter, and 1 ounce of sugar. Hang up for 24 or 48 hours to drain. Cover with a solution of about $\frac{1}{2}$ pound of salt to 2 gallons of water, and let stand for 2 or 3 weeks. Pack closely in tubs or barrels and for each $\frac{1}{4}$ barrel, or 100 pounds, prepare a pickle by dissolving 6 pounds of coarse fine salt, 2 ounces of saltpeter, 2 ounces of soda, 1 pint of molasses, and 1 pound of brown sugar in 6 gallons of pure soft water.

Pickling Tongues.—After trimming off the roots, with the exception of a little of the fat, rub the cut surface with a mixture of 1 pound of salt and 1 ounce of saltpeter. Sprinkle with the same and let drain for 48 hours. Now prepare a pickle by dissolving in 1 gallon of soft water $2\frac{1}{2}$ pounds of bay salt, 2 ounces of saltpeter, and 1 pound of brown sugar. Bring to a boil over a slow fire, skimming constantly, and immerse the tongues in this.

Or mix 1 tablespoonful of salt, 1 tablespoonful of brown sugar and 2 tablespoonfuls of saltpeter to each tongue. Rub this well into the tongues twice a day for a week and let them stand in the brine. At the end of this time, add 1 additional tablespoonful of salt for each tongue and rub the pickle into them once a day for a week or 10 days.

Curing Pork Hams.—Pork hams may be cured either by dry- or wet-salting or pickling. It is then customary to smoke them, both to impart a smoky flavor and as a protection

against insects. And they may be further protected by wrapping or sealing in cloth or paper cases.

To dry-salt hams for smoking, but without pickle, which is the English method, rub the fleshy parts thoroughly each day with fine table salt and hang up the hams for 3 or 4 days where they can drain. On the fourth day, rub well into the hams, using plenty of "elbow grease," a mixture of 1 pound of common salt, 1 pound of bay salt, 4 ounces of saltpeter, and $\frac{1}{2}$ pound of brown sugar. Lay the hams on a board or shelf, rind side down, and each day apply to the fleshy side with a soft brush, a mixture of 1 pound of brown sugar and 1 pound of molasses. At the end of a fortnight, smoke with hickory wood or corncobs.

Or for each 100 pounds of pork, mix $1\frac{1}{2}$ ounces of saltpeter, 1 ounce of black pepper, 5 ounces of brown sugar and 1 quart of common or bay salt. Add just enough hot water to dissolve. Mix all together and rub thoroughly into the meat. A woman's hands are not heavy enough to do this work properly. It is advisable to take out the bone and rub the inside of the ham where the bone is removed in the same manner. But if this is not done, the bone may be loosened slightly with a knife and the mixture forced into the cut for a few inches. Lay the hams with the fleshy side up and rub them over with this mixture every day for 10 days or 2 weeks, after which smoke them with hickory chips or corncobs.

Or for a wet-salting process, mix 1 pound of common salt, 1 pound of bay salt, 3 ounces of saltpeter, and $\frac{3}{4}$ pound of brown sugar. Dissolve the saltpeter in a little boiling water, using no more than is necessary to dissolve it. Mix the other ingredients and rub the whole thoroughly into the fleshy side of the ham. Place them in a firkin or other tight receptacle and add for each ham 2 tablespoonfuls of pure vinegar. Each day turn the hams, and rub the brine into them thoroughly for a week or 10 days. Then let stand 3 or 4 days in the pickle, basting them occasionally with a large wooden spoon.

Or for each ham of 16 or 18 pounds' weight, mix 2 tablespoonfuls of saltpeter, and 4 ounces of brown sugar and rub it thoroughly into the fleshy side. After which cover the fleshy side with a layer of fine salt $\frac{1}{2}$ inch thick, and lay the hams down in the tubs for 4 or 5 weeks.

Or mix 1 pound of bay salt, $\frac{1}{2}$ pound of saltpeter, $\frac{1}{4}$ pound of common salt, and $\frac{1}{4}$ pound of brown sugar. Heat to dryness, and rub well into the fleshy side of the ham. Lay it in a tub, barrel, or firkin, the rind side down. Cover the fleshy parts with a layer of this mixture and each day turn the hams, and rub the brine into them for a week or 10 days. Afterwards let stand for a month basting the pickle over them daily with a large wooden spoon. Hang up to dry for 2 or 3 days and smoke.

Or protect against insects and store without smoking. A small ham will require about 2 weeks, and a large one 3 to 4 weeks to cure by the above method. A tongue will require about 12 days. They may then be used at once without drying, or may be dried and smoked.

Or if the weather is hot, and the hams show signs of rusting, make a pickle of common salt and water strong enough to float an egg, and pour it over them.

Smoking Pork Hams.—Remove the hams from the pickling liquid and hang them up to drain and dry. When they have drained sufficiently, wipe them carefully with a sponge or clean cloth, and rub thoroughly into the fleshy side a mixture of equal parts of Cayenne and black pepper, especially about the bone and hock. This will prevent flies lighting upon them. Now sew up each ham in a bag of cheese cloth or scrim to protect it from soot, and hang up in the smoke house under a barrel or any suitable receptacle and smoke—the longer the better. Chips or sawdust from hickory or beech wood or corncobs are the most suitable fuel with which to smoke hams. After being lighted they must be kept smoldering by sprinkling them lightly with water whenever they commence to blaze.

And the process may be continued for 8 or 10 hours or for several weeks, according to convenience or the quality desired. Some persons who burn wood exclusively as fuel, smoke hams by sewing them up in a coarse cloth and hanging them up in the chimney, but this method is not suitable if coal is used as fuel in any part of the house. When hams are smoked properly the pyroligneous acid of the smoke permeates the meat. It also dries slowly at the same time. Quick smoking merely coats the outside of the ham, but does not penetrate its fiber.

Or an imitation of smoking may be had by immersing the ham in diluted pyroligneous acid for 2 or 3 hours, or giving it 2 or 3 coatings with a brush. But this method tends to harden and toughen the meat and is therefore not to be recommended for domestic use.

To Store Smoked Ham.—After removing hams from the smoke house, they may be rinsed in cold water, or better still, immersed for 2 or 3 minutes in boiling water, the effect of which is to cover them with a coating of grease and also to kill any germs or eggs of insects that may be present. Next, coat them with flour paste prepared by rubbing up 2 teaspoonfuls of flour in a little cold water, bringing to a boil, and stirring in 1 teaspoonful or more of Cayenne pepper. Cover the hams thickly with this paste by means of a soft brush, and hang them up in the direct sunlight until the paste dries. When dry, sew them up in coarse cloth, and give the cloth a coating of shellac or other varnish.

Or suspend them in a loose bag surrounded by finely chopped straw to the thickness of 2 or 3 inches.

Or place them in ordinary paper flour sacks. Tie tightly to exclude the air and insects and hang up in a cool, dark, well-ventilated place.

Or wrap each ham in ordinary brown butcher's wrapping paper, seal with paste containing Cayenne pepper, and tie with twine. Pack in packing cases or barrels in finely chopped straw. A coating of pyroligneous acid, if carefully applied, so

as to cover the entire surface and penetrate all crevices, will effectually prevent contamination of insects.

Curing Bacon.—The process of curing bacon is similar to dry-smoking pork hams. Rub the flitches of bacon with 1 ounce of common salt, 1 ounce of saltpeter, and 1 ounce of brown sugar. Lay them on slats or slanting boards to drain for 48 hours, turning frequently. Next lay the flitches in a deep dripping pan, and cover with the same mixture. Turn and rub the pickle into them 2 or 3 times a day for a week or 10 days. Let stand in the pickle for about 3 weeks in all, basting them frequently with a large wooden spoon. Remove and smoke as for hams. Place in paper flour sacks and tie tightly to exclude the air and preserve from insects.

MAKING AND KEEPING SAUSAGE

Sausage.—Fresh pork, beef, and other meats may be preserved in the same manner as sausage meat by seasoning them highly with spices and packing them in air-tight cases, or in earthenware or other tight receptacles, and running over them a layer of melted lard or tallow to exclude the air.

Intestine Cases for Sausage.—Remove from the pig's intestines the loose fat and outer membranes. Turn them inside out and cleanse them thoroughly in borax water. Bleach by letting them soak for 24 hours or more in water containing 1 ounce of chloride of lime to the gallon. Rinse thoroughly in clear soft water and scrape or tear off a part of the inner lining until they are as thin as may be without tearing or puncturing them. Finally, wash them thoroughly several times in warm water.

Seasoning for Sausage.—Salt, pepper, and sage, according to taste, are ordinarily used for seasoning sausage. Summer savory is also frequently used, and other spices, as allspice, cloves, ginger, etc., are sometimes recommended. But, as a rule, salt, pepper, and sage are sufficient, and will be preferred by most per-

sons. The proportion of seasoning recommended varies, and it is a good plan in mixing sausage meat, to fry a little of the meat after seasoning and add more of the ground meat or seasoning, as desired, until the flavor is satisfactory. The following are all tested recipes, and by comparison, a selection may be made according to whether it is desired to have the sausage highly seasoned or not:

For 10 pounds of ground sausage meat, use 4 ounces of salt, $\frac{1}{2}$ ounce of pepper, and $\frac{3}{4}$ ounce of sage.

Or for the same quantity, 5 tablespoonfuls of sage, 4 tablespoonfuls of salt, and 2 tablespoonfuls of pepper.

Or for each pound of meat, 1 heaping teaspoonful of salt, 1 of pepper, and 1 of sage, with the addition to each 3 pounds of meat, if desired, 1 teaspoonful each of allspice, ginger, and summer savory.

Or for over 25 pounds of meat, 12 ounces of salt, 2 ounces of sage, and 2 ounces of pepper.

Or for 10 pounds of meat, 4 ounces of salt, 1 ounce of sage, and 1 ounce of pepper.

Grinding Sausage Meat.—The trimmings of the hog's carcass are ordinarily ground into sausage meat, the proportion of fat and lean being varied according to taste. Some prefer $\frac{1}{2}$ fat meat to $\frac{2}{3}$ lean. Others $\frac{1}{4}$ fat to $\frac{3}{4}$ lean.

To Prepare Sausage.—To prepare good sausage, it is desirable to have a sausage grinder or suitable meat cutter, although the sausage meat can be chopped in a wooden tray with a chopping knife or on a block by means of a heavy knife or cleaver. It will be found easier in mixing the spices thoroughly into the meat to dry and pulverize them as finely as possible, cut the meat into rather small pieces and sprinkle the spices over it before it is ground. It will thus become thoroughly incorporated with the meat in grinding. The sausage grinder is ordinarily fitted with a device for filling the cases. If link sausage is to be made, care must be taken not to fill the sausage cases too full, but to pinch and twist them at intervals to make them link properly.

Or sausages may be packed in

cases of muslin or other clean white goods about $2\frac{1}{2}$ or 3 inches thick, forced in by means of a clean round stick of hard wood, laid down in jars, and covered with brine or melted lard.

Or the cloth cases may be dipped in melted lard and hung up to dry, care being taken that they have a uniform coating of lard to exclude the air.

Or the sausage meat may be laid down in earthenware pans 4 or 5 inches deep, and a coat of melted lard $\frac{1}{4}$ to $\frac{1}{2}$ inch deep poured over them to exclude the air. As long as the coating of lard is not broken, the sausage meat will keep indefinitely. Or if the dish is not too large, it will usually keep after being opened until required for family use. Or after slices have been removed for use, the open end can be covered with a coating of melted lard until more is needed.

Or large earthenware jars may be used for this purpose, although, in most cases, they are not as convenient.

To Improve Sausage Meat.—The addition of about $\frac{1}{10}$ by weight of ground beef to pork sausage, is preferred by many, as it makes the sausage less greasy and firmer in texture.

Or for immediate use, powdered bread crumbs at the same rate may be added for this purpose. But this should not be used if the sausage meat is to be laid down for a long time as it will not keep so well.

Bologna Sausage.—The so-called bologna sausage is a mixture of approximately equal parts of pork and beef or other meats highly seasoned and packed in large cases, 3 to 6 inches in diameter, obtained from the intestines of beeves. The following mixtures are recommended:

Grind up together in a sausage machine or meat cutter 4 pounds of beef and 2 pounds of pork free from fat or gristle, to which add 6 pounds of fresh fat pork cut in thin strips and chopped on a block by means of a heavy knife or cleaver into pieces about $\frac{1}{4}$ of an inch square or less. Season this quantity with 8 ounces of salt, $\frac{1}{2}$ ounce of saltpeter, 8 ounces of coffee sugar, and $\frac{1}{2}$ ounce of bruised

pimento. To exclude the air, the cases must be packed with as much pressure as they will stand without bursting, and this may be done by tying them at the bottom and pressing in the meat with a round block of wood or pestle, nearly but not quite large enough to fill the inside of the case. If the meat is not packed tightly enough, the sausage will not keep.

Rub the outside of the cases with salt butter. Tie them tightly at both ends and hang up to dry for 3 weeks, then smoke as for hams or bacon.

Mixed Sausage.—Cut in small pieces equal parts of fat pork, lean pork, lean veal, and beef suet. For each 6 pounds of meat add the rind of a lemon grated, a small nutmeg grated, $\frac{1}{2}$ ounce of powdered sage, 2 teaspoonfuls of butter, 4 teaspoonfuls of salt, and 1 teaspoonful of summer savory. Pack in cases or lay down in jars and cover with lard.

Beef Sausage.—In summer, when fresh pork is not obtainable, raw beef may be ground up with beef suet in the proportion of about 1 part of suet, 2 parts of lean beef, and the whole seasoned with 1 teaspoonful each of pepper, salt, sage, and summer savory ground through the meat cutter or sausage grinder, and made into cakes to be fried, or laid down in earthenware pans under a coating of lard until required for use.

Pickled Tripe.—Empty the paunch by turning it wrong side out, taking care not to let any of the contents get on the outside. Rinse with cold water. Tie or sew up the openings tightly with strong cord so that the lime water cannot get inside, and immerse it in a tub of cold fresh slaked lime about as thick as whitewash. Let it stand 15 or 20 minutes, or until the dark outside skin is loosened and can be readily pulled off. Pass through 3 or 4 rinsing waters. Tack up on a board and with a dull knife scrape off the dark surface until it looks clean and has no offensive odor. Soak for half an hour in hot water, then scrape with a dull knife and repeat until perfectly white and clean. Immerse in strong brine and let stand 3 or 4 days, changing the water

each day. Cut into pieces a foot long and 6 inches wide, and immerse in buttermilk for 3 or 4 days to whiten. Rinse and lay down in a suitable cask. Cover with pure white wine or cider vinegar, or spiced pickling liquid as preferred.

PRESERVATION OF COOKED MEAT

In addition to the preservation of fresh meat in various ways, cooked or partially cooked meats may be preserved for considerable periods of time by canning or taking other means to exclude the air. Meats to be canned are first cut into suitable pieces, boiled until tender and packed in glass jars surrounded by boiling water. The meat jelly, or "aspic," in which they have been cooked, is then seasoned to taste and poured over them, boiling hot, until the jar is filled to the brim, and they are then sealed while hot. The addition of the aspic, which is, of course, melted when the cans are sealed, but which solidifies on cooling, not only assists in preserving the meat, but also improves its flavor.

Or suitable tin cans may be used. The cans, surrounded with hot water, are packed with the cooked meat, and the meat jelly poured over them. The cover is then soldered in place, a small hole is punctured in it and the water surrounding the can is boiled until steam escapes from the aperture. The opening is then closed with solder. The condensation of the steam inside the can on cooling produces a vacuum by which the sides of the can are made slightly concave. And if at any time this concavity disappears, or the sides of the can swell so as to become convex, it is a sure indication that the contents were not properly preserved and have become putrid.

Or to preserve pork chops or sliced ham for summer frying, pickle fresh pork about 10 days or 2 weeks and fry it until about half done.

Or remove the hams from the brine in April, slice, trim, and fry them until half done. Pack the chops or hams separately in solid layers in stone jars. Let them cool, and when

entirely cold, pour over them their own fat with the addition of a little melted lard, so as to cover the surface with a layer $\frac{1}{2}$ inch or more thick. Place over the top of the jar a layer of cotton batting. Put on the lid tightly and store in a cool place until required for use. After taking out a portion of the meat for use, re-melt the lard and pour back over the meat to exclude the air. Lamb or veal chops, beefsteak or sausage meat may be laid down in the same manner.

Preserving Cooked Sausage.—Pack sausage in cases, or sausage meat, into a small crock or bean pot about $\frac{2}{3}$ full. Place in a baking oven and bake about fifteen minutes for each pound of sausage, i. e., for 6 pounds of sausage bake an hour and a half. Remove from the oven and set aside to cool. When cold, fill the crock with melted lard. Throw over the top a layer of cotton batting, put on the lid, and store in a dark, cool place until required for use.

Or fried sausage can be laid down in the same manner and covered with its own grease.

Or for cooked bologna sausage, grind together 2 pounds each of pork, bacon, beef, and veal free from fat or gristle, and 2 pounds of beef suet. First cut in small pieces and sprinkle over it before grinding 4 ounces of salt, 6 tablespoonfuls of black pepper, 1 tablespoonful of cayenne, and pack tightly into beef cases 4 or 5 inches in diameter. Form links about 12 or 15 inches in length, tying at both ends. Prick the skins and boil for about an hour. Hang up to dry for 2 or 3 days and afterwards smoke with hickory wood or corncobs.

Or grind up together with suitable seasoning equal quantities of ham, veal, or pork; or $\frac{1}{3}$ pork and $\frac{2}{3}$ beef. Cook and smoke as above.

Potted Beef.—Cut 3 pounds of lean beef into pieces weighing about $\frac{1}{3}$ of a pound each and sprinkle over them a mixture of $\frac{1}{2}$ pound of table salt and $\frac{1}{4}$ ounce of powdered saltpeter. Let the beef lie in this pickle 2 or 3 days, turning the pieces occasionally. Remove the meat from the pickle, place it in a stone jar or pan cov-

ered, if convenient, with a little beef gravy or just enough cold water to prevent burning. Put an earthenware plate over it and bake in a slow oven for about 4 hours, or until the meat is very tender and falls away from the bones. Remove the meat from the gravy. Shred or chop it fine, moisten it with the gravy and pound it in a marble mortar or otherwise with a little fresh butter to a very fine paste. Season to taste with pepper, allspice, nutmeg, mace, or cloves. Or add, if desired, cayenne, tabasco, curry powder, or anchovies, mustard, or other condiment, according to taste. Press tightly in small crocks or jars, or in fruit jars. When cold, pour over the tops of the jars melted lard or butter to a thickness of $\frac{1}{4}$ inch, and cover with a layer of cotton batting tied tightly on any cover that will exclude the air.

Pressed Beef.—Or select about 5 pounds of cheap beef that would otherwise be too tough to cook, including about $\frac{2}{3}$ of a pound of beef fat. Cover with a mixture of $\frac{1}{4}$ pound of salt and $\frac{1}{2}$ ounce of saltpeter and let stand for a couple of days turning it now and then, and rubbing brine into it. Rinse in clear water and boil until it falls from the bones, taking care that when boiled down, the gravy will be as thick as possible. Remove the beef from the gravy with a skimmer and chop fine. Allow the gravy to cool. Take off the cake of fat, and dissolve $\frac{1}{2}$ ounce of gelatin in the gravy with gentle heat. Spice to taste. Stir in the chopped meat. Pack in jars under a weight and pour melted lard or butter over the top to the depth of $\frac{1}{4}$ inch or more. If carefully preserved from the air, this will keep for a considerable time at ordinary temperatures, and may be sliced and eaten cold without further cooking.

LARD, BUTTER, ETC.

Lard.—The leaf fat which adheres to the ribs and belly of the hog make the so-called "leaf lard," which is of the best quality. Hence it is a good plan to try out the leaves separately. But any part of the hog fat not used

for other purposes may be tried out to make an ordinary quality of lard. A set kettle, or other large kettle, held over a camp fire by means of a tripod out of doors on a clear, calm day, is the best utensil for this purpose. Cut the fat into small pieces 1 or 2 inches square, and add 1 ounce of soda for each 25 pounds of meat. Stir frequently as soon as the fat melts and the scraps begin to brown. Melt with very gentle heat, taking care not to allow the fat to smoke or burn. Toward the last, the lard must be stirred constantly to prevent burning. The lard will be done when the steam ceases to rise. When the scraps are brown and shriveled, throw in a little salt to settle the sediment, and strain through a cheese-cloth strainer into tubs or jars. Tie over the tops a layer of cotton batting to exclude the air. Lard will keep better in small jars than in large ones. Good lard should be white and solid without any offensive odor. Store in a cool, dry place. The lard from the intestines will not keep as well as leaf lard, hence should be rendered separately. It will keep better if soaked for 3 or 4 days in strong brine changed each day.

Bleaching Lard.—The addition of about 1 pint of boiled white lye from hickory ashes, strained through cheese cloth into the fat before boiling, tends to bleach it.

Adulteration of Lard with Water.—The addition of 3 to 5 per cent milk of lime allows about 25 per cent of water to be mixed with lard while cooling, thus greatly increasing its weight and volume. The presence of water may be perceived by the sputtering made in melting the lard. Also, the water will collect in the bottom of the vessel and the lard will float on its surface. This test will often show that the purchaser is paying for a considerable percentage of water instead of lard.

Butter.—To 2 gallons of brine strong enough to bear an egg, add $\frac{1}{2}$ pound white sugar, and 1 tablespoonful salt-peter. Boil the brine, skimming frequently. When cold, strain carefully. Make the butter into rolls, wrap each separately in

white muslin and tie with string. Pack a large jar full, weigh the butter down and pour over the brine until all is submerged. Do not put upon ice butter that you wish to keep any length of time.—Gertrude B. Day.

Cod Fat.—The suet taken from the beef flank is called cod fat. It makes a much softer and better fat than the common suet. Obtain the best looking pieces of cod fat from the butcher, free them from veins or spots and melt with very gentle heat. Pour the melted suet into clear cold water, iced water, if convenient, to harden. Pour off the water, remove all dampness with a clean dry cloth. Wrap up the fat in waxed paper and store in a cool, dry place.

Cottolene.—This substitute for lard or suet consists of 6 parts cotton oil, 4 parts oleostearine. Melt together with very gentle heat and run through a filter in jars. This is preferred by many to animal fat, being purer as well as cheaper.

PRESERVING, TESTING, AND PACKING EGGS

Preservation of Eggs.—More hens' eggs are laid during the months of March, April, May, and June than during the other 8 months of the year. Hence the bulk of the consumption of eggs during the fall and winter months is of eggs that are not fresh laid. The commercial method of preserving eggs is by means of cold storage in vaults kept at a temperature of 40° F. or less. Eggs are collected all over the United States and stored in the largest cities, whence they are distributed at wholesale and often times sold in the winter months to farmers and others who keep hens, but who are not, at that season, getting enough eggs for their own consumption. The wholesale market recognizes seventeen grades of eggs according to their size, weight, and freshness and the localities from which they come. But the ordinary buyer of eggs is unable to distinguish among them, and often gets a very much cheaper grade of cold-storage egg than she pays for. Hence on all grounds, it is much better and

cheaper for those who keep chickens to preserve, in the season when eggs are plentiful, all that are not required for immediate use. If care is taken, eggs if perfectly fresh when preserved will be nearly, if not quite equal to new. But at all events, home-stored eggs, if properly preserved, will be superior to cold-storage ones, which are often far from fresh when gathered and placed in storage.

Testing Eggs.—Eggshells are porous or perforated right through by minute holes for the admission of air needed by the chick for breathing. Hence in time a part of the liquid contents of the egg evaporates. The white and yolk shrink and the resulting emptied space is filled with air. This space is normally at the broad end. And this is the reason why, in storing eggs, the point should always be downward. To test eggs take a candle or electric light or lamp in an otherwise dark room and fit it with a candling chimney, which may be obtained at any poultry store or may be readily made from a piece of cardboard. This is merely a cylinder of cardboard large enough to surround the candle or the lamp chimney, and having a tube inserted at right angles somewhat smaller in diameter than an ordinary egg, and about the level of the flame. Through this the egg can be observed against the light.

To test eggs, hold each one up against the opening of this cylinder, broad end upward, and look through them at the light. If the contents do not fill the shell, the egg is not perfectly fresh, and the larger the air space the older is the egg. The yolk should be perfectly clear and round in outline. If, besides the air space, there is a dark haze or cloud in the egg, it has become spoiled. If the cloud contains a black spot, the egg is bad. All storage eggs show some shrinkage, and eggs shipped by freight from distant points to a wholesale market, will shrink on the way even if not afterwards preserved in cold storage.

Methods of Preserving Eggs.—The object to be secured in preserving eggs is to prevent the evaporation of

their contents, and thus prevent the air coming in to fill the space. This may be accomplished by any method of filling the pores of the shell so as effectually to prevent the passage of air. Among the substances recommended for this purpose are mucilage made of gum arabic or gum tragacanth dissolved in water; albumen, or the white of egg; collodion, linseed oil, paraffin; shellac, or other varnish; saltpeter, lard, sugar sirup; finely powdered gypsum, or plaster of Paris, dry salt, and various solutions, as lime, soda, saltpeter, salt, etc., in water.

As a result of an exhaustive series of experiments with all the above and many other methods, under the auspices of the United States Department of Agriculture, the following process has been recommended, and has been successfully tested at the various experiment stations and by many poultry keepers, farmers, and others. It is believed that if this recipe is carefully followed no other will be required.

Mix one part of the soluble silicate of sodium,—a substance commonly called liquid glass, or water glass, which costs about twenty-five cents a quart, and is available at every drug store—with 9 quarts of pure water, freshly boiled and cooled. Pack the eggs, small end down, in a clean stone or earthenware jar, taking care not to allow any metal to come in contact with them, and pour the solution over them. Cover with a loose board and store in the cellar or other cool place. An additional supply of the sodium silicate solution may be kept at hand in a large glass jar or other receptacle and additional eggs and solution added from time to time, as required, provided the solution is always kept at a level of at least 2 inches above the tops of the eggs. A little pure water, freshly boiled and cooled, may be added from time to time as the water evaporates. The eggs should be strictly fresh and it should be noted that unfertile eggs keep better than fertile ones. They should not be washed, as washing injures their keeping qualities, prob-

ably by dissolving the mucilaginous coating on the outside of the shell.

Packing Eggs.—To pack eggs for transportation, layers of newspaper or any soft, cheap paper that may be available will be found safer than oats or bran. Crumple a number of newspapers, and lay them in the bottom of the box or basket, and bring them up well around the sides. Pack the eggs close together so that they cannot roll against each other. Lay over them 2 or 3 thicknesses of paper, on this another layer of eggs, and so on. Throw over the top 2 or 3 thicknesses of coarse burlap and fasten it around the outside of the package with cord. Eggs packed in this way in a clothes basket may be driven in a wagon over the roughest roads without breaking.

Or to pack for market, obtain an egg case, manufactured for this purpose, which will serve as a model for making cases at home. Or they can be made at trifling expense by the local carpenter. It will be found that the cost of these cases will be more than repaid in convenience and in preventing breakage.

Pickling Eggs.—Prepare a spiced pickling liquid the same as for spiced cucumber or other pickles.

Or boil in a cheese-cloth bag for 15 or 20 minutes in 1 quart of white wine or pure cider vinegar, 1 ounce of raw ginger, 1 ounce of allspice, 2 blades of mace, 1 ounce of pepper, 1 ounce of salt, 3 or 4 cloves of garlic, and 1 ounce of mustard seed. Boil for this quantity of pickle, a dozen eggs for 10 minutes. Place to cool in a pan of cold water. Remove the shells, pack them in a crock, and when perfectly cold, pour the pickling liquid over them. Lay over the top a folded cloth to keep the eggs under the pickling liquid, and tie over the top of the jar a thickness of cotton batting. They will be ready to use in about 4 weeks.

Dried Eggs.—Break any quantity of eggs in a suitable receptacle, and beat them well with an egg beater. Spread out in a thin layer on a clean earthenware platter, and let them dry into a paste. Pack closely in glass jars and seal.

Or pour the beaten eggs into glass jars and set the jar in a pan of hot water at about a temperature of 125° F. until the moisture is evaporated and the egg becomes hard. Seal until required for use. They can then be dissolved with about 3 times their own bulk of cold water, and beaten up together, when they will be found to have retained much of their original flavor.

STORING AND PRESERVING VEGETABLES, FRUIT, NUTS, AND HERBS

Conditions that cause vegetables to decay are moisture and heat, or frequent and extreme changes of temperature, as alternate freezing and thawing. These conditions are also favorable to the attacks of insects. Cold storage in a dry vault, with a temperature near or below the freezing point, is, of course, the best method. Coöperative cold storage plants, both large and small, the benefits of which may be shared by a group of neighbors or an entire community, are likely in time to come to be very numerous. But if cold storage is out of the question, a cool, dry place, where the temperature is likely to be as even as possible, should be sought for most vegetables.

Vegetable Pits.—To preserve root crops—as beets, turnips, and parsnips, also cabbages—dig a trench on the north side of a sandy slope or ridge where the drainage is as perfect as possible, so that after a storm no water will stand in the trench. Dig a trench two or three feet deep about the same in width, and any desired length. Pack the vegetables carefully in this. Pile them up in a pyramid like the ridge of the roof of a house. Cover with a layer about a foot thick of meadow hay or straw and throw enough earth lightly over the straw to keep it in place. After the first frosts in the fall cover with a layer of earth 5 or 6 inches thick, and in the latter part of November or about the 1st of December, cover solidly with earth to the depth of a foot or more. Remove the vegetables from one end as required for use and cover the opening with hay or straw

and keep it in place with boards, or shovel snow over it.

Ventilate these pits by means of 6-inch tile drains or square boxes of 6-inch boards nailed together. Insert these ventilators at intervals of 25 or 50 feet in large pits and plug the opening with loose straw to keep out the frost. Otherwise there is danger of decay from moisture in the event of an early thaw.

Or pull root crops, as turnips, beets, and the like on a hot, dry day and let them lie in the sun until all dirt can be shaken from the roots. Twist off the tops, leaving the tap root on. Pack them in clean, dry barrel or bins and fill with fine dry sand or road dust, shaking it down around them until the box or barrel is full. Root crops should not be packed on the floors of cellars, as dampness is likely to cause them to decay and furnish breeding places for bacteria that cause filth diseases.

To Keep Celery.—In the latter part of October dig a trench 18 inches deep and 12 to 15 inches wide on a dry, well-drained ridge. Loosen the earth about the roots of the celery and draw out the stalks without shaking off the soil that adheres to them. Stand them upright close together in the trench inclining slightly toward the middle, and draw the earth around them up to the tips. Cover with a thick layer of leaves, straw or meadow hay, put a board across the top and weight with stones or otherwise. If there is any danger of standing water from rains or melting snow, in winter, dig a ditch deeper than the celery trench for drainage.

Vegetable Cellar.—To preserve small quantities of vegetables for domestic use, sink a half hogshead, cask, or large dry-goods box about two-thirds of its depth into the ground and slope the earth around it on all sides to the top. Knock the bottom out, and line the space with loose brick laid on the earth side by side or with a layer of loose stone. Fit it with a water-tight cover coming down over the edge.

Pack in this such vegetables as cab-

bage, celery, beets, turnips, etc. They will keep fresh all winter.

When cold weather comes on, throw over the top a large bag of burlap or potato sacking made like a mattress and filled loosely with hay or straw. This can readily be removed to allow access and replaced after required vegetables have been taken out for use.

To Store Onions.—Pull the onions and let them lie in the field until the tops are withered. Spread them under cover on an open floor or on slats until they are bone dry.

The best receptacles for onions are slat boxes having solid heads of inch pine stuff, with sides and bottoms of rough laths, the width of one lath open between every two. These should be made to hold a bushel or half a bushel. Stack them one above the other, with pieces of inch pine stuff between to admit of free circulation of air. Pack these in a cool cellar on a platform raised 8 or 10 inches from the cellar bottom.

Or stack them in a shed or out-house. Make a bin around them of rough boards about 6 inches from the outside of the crates, and fill the space with chopped straw, chaff, or sawdust. Cover over the top with sand and throw over the whole any old burlap, carpet, or canvas that may be at hand. Thus protected it will do no harm if the onions freeze, as chaff or straw is a nonconducting material, and they will not thaw out until spring, and then very slowly. The same would be true in an ordinary cellar.

Or small quantities may be packed in barrels or boxes in chaff or sawdust, and stored in a dry attic which is not heated in winter.

To Keep Parsnips.—Parsnips may be left in the ground all winter in temperate climates, or in very severe climates they may be buried in a deep pit in the garden.

Or pull them late in the fall, leave the tips on, and lay them side by side in rows and cover with 6 or 8 inches of coarse straw, leaves, or chaff. Freezing tends to improve their quality.

Salsify.—Like parsnips, salsify is

improved by freezing and hence may be preserved in the same manner.

Turnips.—Turnips are not injured by freezing. Hence they may be packed in small crates, boxes, or barrels placed in an outhouse and covered with straw to exclude the light and to prevent their thawing readily. Or they may be buried in trenches or packed in boxes or barrels between layers of fine earth and allowed to freeze.

Beets.—Beets may be stored as for onions, but should be kept in a dry place and at as uniform a temperature as possible. In small quantities they may be stored in any suitable receptacle in sand or dry moss.

Squashes and Pumpkins.—These vegetables are very susceptible to frost and moisture. Hence they should not be placed in cellars or outhouses. Hung by the stem from the ceiling in a warm, dry storeroom the hard-shelled varieties will keep practically all winter.

To Store Tomatoes.—Pack green tomatoes in lath crates and store in a cool, dry storeroom away from the frost.

To Store Potatoes.—Potatoes are usually stored in bins or barrels in a dark cellar. They should not be left in the field any longer than is necessary to dry them after being dug, as they are injured by exposure to direct sunshine. It is advisable to cover the bottom of the bin or barrel with a layer of fine, dry sand, throw over the top a piece of burlap and place a layer of sand on this. They should be examined once or twice a month during the winter, and if they commence to rot should be picked over, care being taken to handle them carefully so as not to bruise them.

To Store Sweet Potatoes.—Pack in boxes or barrels on a very hot day in summer in clean, dry sand. Take care that the potatoes do not touch one another, and place in a dry storeroom where the temperature will range between 40° and 60° F. Care must be taken not to bruise them, and they must be bone dry when packed. Small quantities procured from dealers in winter may be kept in sand

near the kitchen stove, or in any warm, dry place.

To Store Cabbage.—Cabbages are not injured by frost, but wither and wilt in a drying heat. Hence they should be kept in a cool, dark, and moist place, but must not be kept in standing water, as it injures their flavor, or packed together, else they will heat and rot.

Cut them before the severe fall frosts, leaving about 2 inches or more of the stem attached. Let the outside leaves remain on. Tie a strong cord about the stalks, and hang them from the timbers of the ceiling of a cool, dry cellar, heads downward. Several cabbages may be suspended on one cord one above another, and in this way a large number can be stored in an ordinary cellar, just enough space being left among them to admit of a circulation of air.

Or pack in sawdust in large casks or packing cases. Take care to have a layer of several inches of sawdust between the cabbages and the box. Put them in any outhouse and let them freeze. Sawdust being a non-conductor, they will not thaw out until spring, and will not be injured.

Or cabbages may be stored out of doors by loosening the earth about the roots and pulling them up without shaking off the dirt which adheres. Now set them out in furrows, burying the roots just as they grow up to the head in soil. Let the heads touch. Drive posts in the ground, build a shed roof over them of rough boards or poles high enough so that there will be circulation of air between the roof and the cabbages, and cover the roof with corn fodder or straw. Pack straw or meadow hay around the sides to keep out the snow, and let them freeze. They will keep green and fresh all winter.

Sauerkraut.—Sauerkraut consists of sliced cabbage laid down between layers of common salt—at the rate of about one pint of salt to a barrel of cabbage—in a wooden tub or firkin, and with the addition of black pepper, anise, mustard, caraway, or celery seed if desired.

Thoroughly scald the tub, firkin, or cask. Remove the outer leaves of the

cabbage and use them to line the cask. Slice the heart of the cabbage fine by means of a slaw cutter or sharp knife. Place a layer of clean leaves on the bottom of the cask. Sprinkle over them a small handful of salt and put in a layer of sliced cabbage about 6 inches in depth, using the outer leaves as a lining to keep the sliced cabbage from the sides of the cask. Sprinkle over the cabbage a small handful of salt, and by means of a wooden bettle or the end of a round stick of hard wood, pound the cabbage until it is a solid mass, or until the juice just makes its appearance, but do not pound or salt the cabbage too much. Now add another layer of cabbage and another handful of salt, and so continue pounding down each layer solidly until the cask is nearly full.

Cover the top over with the loose outer leaves, and lay over these several thicknesses of cheese cloth. Lay on a loose cover of boards and on this a weight of stone equal to 25 or 30 pounds. Let the cask stand in a warm place for three or four weeks, during which it will ferment and give off at first a very disagreeable odor. After forty-eight hours, if brine has not been formed, add a little salt water, about as salt as tears, to cover the cabbage. After two days more, add more salt water, if necessary, until brine forms over the top of the board cover and a scum appears. Remove the cloth cover, taking the brine with it, rinse thoroughly in cold water, wring dry, and return to its place. Continue to do this every few days until it ceases to ferment. This will require four or five weeks. It is then ready for use and may be stored in any cool, dark place.

Sauerkraut is usually made in the fall for winter use, but if it is desired to keep what is left for use in summer, squeeze out the brine through cheese cloth. Select a suitable earthenware jar, sprinkle the bottom with salt and pack the sauerkraut in this. Make a brine by dissolving 1 tablespoonful of salt to a quart of cold water. Bring to a boil over a slow fire removing the scum as it rises. Set aside to cool and pour over the sauer-

kraut. Lay over the top several thicknesses of cheese cloth, and tie over the jar a piece of cotton batting. This will keep until the hottest days of summer.

Cauliflower.—In a well-drained part of the garden dig a ditch 12 or 15 inches deep and 12 inches wide. Pack the cauliflowers in this with the roots down and cover with earth up to the heads. Fill the trench with hay or straw 6 or 8 inches thick, and weight it down with stone, earth, or boards.

Or pack the cauliflowers on the cellar bottom, burying the roots and stalks in earth. In this way they can be kept until the 1st of March or later.

To Store Green Beans.—Pack down green string beans in glass jars between layers of salt. Seal the jars. When required for use, freshen in clear water for several hours, changing the water frequently.

To Store Green Peas.—Select shelled peas that are full grown but not hard and dry them in a dripping pan in a very slow oven or on the back of the stove. Let them dry slowly, stirring them frequently, and do not have them too thick in the pan. Continue the heat until they are hard and dry as bone. Pack in glass or stone jars. Seal and keep in a dry place. Let soak overnight in cold water before boiling.

To Store Dry Beans.—Dry shelled beans should be stored in a dry, cool place, and will not require protection unless they become infested with bugs. In that case place the beans in a coarse sack or basket and dip them in boiling water for a minute or two. Hang up to drip dry and they will not only be free from insects but will also keep better.

To Store Lima Beans.—Gather lima beans before they ripen, and while they are still tender and green. Spread them on cloths in the sun to dry.

To Dry Peas.—Pick over the peas and remove any pods that are mildewed or spotted. Spread the pods to dry on cloths in the sun.

To Store Peas.—Store shelled peas in any dry place. They will keep un-

less they become infested with weevils. In that case put them in a tin dripping pan, cover, place in a slow oven and heat until the weevils are killed.

To Dry Corn.—Cut the corn raw from the cob and dry it thoroughly in pans in an oven. This gives a finer flavor than when it is partly boiled.

Or dip green corn on the ear in boiling water, remove, and hang up the ears until dry in a room where there is a free circulation of air.

Or husk and clean the silk from the corn. Place the ears in a colander over a kettle of steaming water, and steam a half hour or more. Split the kernels with a sharp knife, scrape out the pulp and dry it on clean tins or earthenware platters. Care must be taken not to scorch or brown it.

Or husk and clean the corn, shave off the kernels with a sharp knife, scrape the remaining pulp from the cobs, and lay on earthenware platters. Sprinkle $\frac{1}{2}$ teacupful of sugar to each 3 quarts of corn, stir well and place in a medium hot oven for ten minutes, but do not scorch or brown it. Remove and spread to dry in a drying rack or under a hotbed sash. It should be dried as quickly as possible as it deteriorates with exposure. Store in tight jars or boxes in a dry place. When required for use soak it in lukewarm water.

Or cut the corn from the ear, place it in a shallow pan, and set this pan in another filled with hot water, after the manner of a double boiler. Slowly cook in this way till all milk is absorbed by the kernels. Finally take out and dry gradually in the open air or by a stove. Although this requires longer than the old way, it is well worth while, because the corn tastes better.—Mrs. K. A. Krotke.

Preserving Green Peas.—Shell and pick over the peas. Cover them with cold water and bring to a boil. Pour them into a sieve or colander to drain. Crush the pea pods in a saucepan or run them through a meat cutter, and pour over them a little of the water in which the peas were boiled. Pack the peas into glass jars. Salt the juice from the pea pods to taste,

pour it boiling hot over the peas and seal.

Or shell and pick over the peas, place them in a kettle of cold water and bring to a boil for two or three minutes only. Remove from the boiling water and let them drip dry. Now spread them out on a cloth on a table or other smooth surface. Lay over them another dry cloth to remove all moisture. Pack them in jelly tumblers or fruit jars, and pour over them clarified butter or mutton suet to the depth of an inch. Tie over the top a piece of cotton batting and store in a cool place until required for use.

Or shell and pick over the peas when full grown, but not hard, and dry them in shallow earthenware plates in a slow oven. Stir frequently and let them dry slowly. When they are hard, set them aside to cool and pack them in stone jars covered with cotton batting. Soak in cold water when required for use.

To Dry Pumpkins.—Prepare the ripe fruit, cut into cubes about as large as the rind is thick, discarding the inner pulp and seeds. Cook until soft and squeeze through a colander. Dry in a slow oven with the doors open, on earthenware plates covered to the depth of about an inch. This will require eight or ten hours. Store the sheets in a dry place and soak overnight in milk when required for use.

To Dry Rhubarb.—To dry the stalks of rhubarb, first strip off the outer skin with a sharp knife. This is a painstaking process, but it pays as the rhubarb dries more quickly and thoroughly. Spread on cloths in the sun, preferably under a hotbed sash, and dry as quickly as possible.

To Cure Rhubarb Root.—Pull up the roots from the old rhubarb bed when a new bed has been set out. Brush off the earth with a dry brush, and cut the roots into squares 2 inches long. Take off the skin with a sharp knife. Bore a hole through the middle and run a string through them, knotting it so as to keep each piece of root separate from the others. String these between suitable

posts or pegs upon the ground, and expose to the sun to dry. Take them indoors at night or when it rains, as dampness is apt to cause mold.

To Dry Parsley.—To have bright, crisp parsley, pick it in dry weather. Spread it thinly on a platter and bake it in a moderate oven with the doors open, turning frequently. If the oven is not too hot, the leaves will become dry and brittle without losing their green color. Take care that the heat is not sufficient to turn the leaves brown or they will be spoiled. Now rub it to powder between the palms of the hands, pick out the stalks, sift the powder through a coarse sieve, place it in a glass bottle or jar and cork tightly. Keep in a dry place. A peck or more of the parsley should be gathered, as it is reduced very much in bulk by drying. The dry powder is suitable for most purposes for which fresh parsley is employed, and is much more convenient.

To Dry Herbs.—Herbs should be gathered in dry weather, carefully picked over and dried as quickly as possible, either in a slow oven or under a hotbed sash. They should be spread out thin on sheets of blotting paper and turned occasionally. Fresh herbs are, of course, to be preferred, but as they are not obtainable in winter it is necessary to preserve them by drying.

The season at which herbs are best fit to be preserved by drying varies with different species. Orange flowers, elder flowers, parsley and chervil in May, June, and July; burnet and tarragon in June, July, and August; knotted marjoram and mint in July; summer savory, July and August; basil, winter savory, and lemon thyme, the end of July and August.

The aromatic herbs must not be exposed to too great heat, as otherwise the essential oils which give them their flavor will be volatilized. After being dried, the herbs should be screened through a large sieve to remove dust and other impurities, the stems removed, and the leaves stored in glass bottles. All of the above herbs will be found useful condiments in cookery, and several of them have medicinal qualities. These and many

others can also be obtained of druggists and other dealers.

To Gather Roots.—Most medicinal and other roots should be gathered in the spring and are, as a rule, better in the fresh than in the dry state. To dry them it is only necessary to brush off the dust with a dry brush, rinse the roots in cold water, string them together and expose them to the heat of the sun or in a slow oven until bone dry.

Lath Boxes for Vegetables and Fruit.—Cut end pieces of inch thick pine stuff 14 inches long and 12 inches deep. Cut laths 17½ inches long which will give two pieces for each lath. Tack these laths to the end pieces to form two sides and the bottom, having the thickness of one lath between every two. Cut holes about 3½ inches long and 1 inch or more deep in the two ends about 3 or 4 inches from the top as handles, and use these boxes for picking up apples, potatoes, onions, and other vegetables, and storing them for winter use.

Packing Fruit.—Carefully pick over the fruit and discard all windfalls, and specked or wormy specimens. For an extra fine quality, wrap each fruit in tissue paper. Pack in clean, dry, flour barrels and pour over the top dry sand or road dust, shaking it down until the barrel is full. Place the barrels in a cellar or other cool place where they will not freeze.

Evaporated Apples.—To dry or evaporate apples, peel and core them and cut across in thin slices. Let the slices fall into cold water to prevent their rusting. When all are sliced, and in readiness, lay the slices on a large piece of cheese cloth and baste them to this by means of a darning needle and suitable cotton thread, taking a stitch through each slice, so that it will lie flat and keep in place. Suspend the cheese cloth out of doors by the four corners to suitable stakes, high enough to be out of the reach of small animals, spread another thickness of cheese cloth over the fruit and expose to direct sunlight. Be sure to take them in before dew falls. When sufficiently dry store

them in a dark place. This is the cheapest and most convenient way to dry apples, and the color will be nearly equal to that of the commercial article.

Or thin trays or slats about $\frac{1}{4}$ of an inch in width may be tacked together, the apples spread on these and covered with cheese cloth to prevent the fruit turning dark.

Storing Nuts.—Pack walnuts in jars, boxes, or casks between layers of fine dry sand. If they have become shriveled, let them stand overnight in skimmed milk or a solution of milk and water. Chestnuts and filberts may also be stored in the same manner.

Almonds.—Buy for domestic use the sweet almond, as the bitter almond contains prussic acid which is a deadly poison. To freshen almonds place them while still in the shells in a colander set in a basin of cold water and bring to a boil. Lift them out, peel them as quickly as possible and drop the kernels into cold water. Never leave almonds in boiling water to cool as it is likely to make them bitter.

To roast almonds for salting or bonbons, put them in an ordinary corn popper and shake them over a brisk fire.

CHAPTER XXXIV

PRESERVING AND CANNING FRUIT AND VEGETABLES

CANNED GOODS FOR THE MARKET—UTENSILS AND MATERIALS—THE PROCESS—PRESERVES AND PRESERVING—SMALL FRUITS—LARGE FRUITS—PURÉES AND MARMALADE—JELLY MAKING—CANNING VEGETABLES

The art of preserving and canning fruit and fresh vegetables is much more important than is usually realized. Preserved fruit is, perhaps, most often classed with candy and other sweetmeats as an expensive luxury. But fruit, properly put up, is not necessarily expensive and may be regarded as a very essential part of the diet especially in winter. The value of fruit as food can hardly be overestimated. The fruit juices have a peculiarly wholesome effect upon the digestive organs and tend to keep the blood in good condition. They also, to a large extent, prevent the necessity for cathartic medicines. Fresh fruit in season should, of course, have the preference, but in winter properly canned fruit and preserves may take their place with almost equally good effect.

The art of canning fresh vegetables in the kitchen has now been so perfected that most kinds of garden truck may be canned without expense other than for jars, labor and fuel. All housewives who have not yet attempted this newly devised process will be delighted to discover that they can easily preserve such garden vegetables as early peas, sweet corn, and others, and serve them in mid-winter with all their original delicacy of texture and flavor. The value of such a contribution to the winter diet is apparent. It not only adds to the palatability, æsthetic

value and wholesomeness of the diet. It is also an important measure of economy, since by this means any surplus of garden products, which would have little or no value in summer, may be preserved for use during the period of greatest scarcity and consequent high prices. It is safe to say that any housekeeper who has a small garden spot at her command can easily put up peas, corn and other vegetables worth several times the cost of this volume every year of her life.

Preserving and Canning.—These terms are used somewhat loosely, but the word preserves more properly applies to the old-fashioned method of our grandmothers, which consisted in boiling the fruit in sirup after the time-honored recipe of "pound for pound." This process, to be entirely successful, is difficult and tedious. It is also expensive on account of the amount of sugar required. The old-fashioned preserves are still favored by some, but the easier, quicker and cheaper method of canning, or steaming, has largely deposed them. The term "preserves" also covers jams, or purées, and marmalade, which are fruit, or mixtures of fruit, stewed to a smooth paste.

CANNED GOODS FOR MARKET

Money in Preserving Fruit.—In addition to the importance of pre-

serving fruit and vegetables for home use there is a large and constantly increasing market both locally and in the large cities for a fine grade of homemade canned products. Prices ranging from seventy-five cents to \$1.50 per quart, at retail, for a high grade domestic article are not infrequent. After deducting the cost of fruit, or vegetables, sugar and other materials including jars, rings, bottle wax, labels, the cost of packing and transportation, and the labor cost (at a nominal figure, say, ten or fifteen cents an hour) for all time actually engaged in picking the fruit, preserving and packing it, there should be a profit of at least 100 per cent clear to the maker. And after a reputation has been established for a product of uniformly high quality, even better prices can be realized. This is not only a practical way for any housekeeper to earn extra pin money. In many localities it is the only feasible method of marketing the fruit and truck crop.

Ordinarily so much produce ripens at about the same time in villages and rural communities, that there is no sale for it at any price. And the comparatively small amount grown by one family, together with the distance to the nearest market, often makes it unprofitable to pack and ship the produce as it ripens to a commission merchant. But the smallest quantities can be gathered and canned from day to day during the season. Thus a sufficient quantity can be accumulated to justify the time and cost of packing and shipping by freight to the nearest city.

Or if the quantity is large enough, it may be worth while to make a trip in person, taking a sample of the product, in order to make an advantageous sale to some large consumer. Commission merchants and wholesale grocery houses are usually glad to buy, at fair prices, all the homemade goods of this sort they can obtain. But the stewards of the finest hotels and clubs, such as the country clubs that are springing up all over the United States, will often pay fancy prices for an especially fine article.

Even local merchants have a con-

siderable demand for these goods and will sometimes make a special effort to sell them for a good customer. Or orders can be secured from neighbors by means of an advertisement in the local paper or by tactful solicitation.

The principal difficulty met in the sale of homemade goods is the common belief among merchants and others that they may not be of uniformly high quality. Factory-made goods are nowadays done up with scientific care and accuracy. The jars are carefully inspected and the contents very rarely mold or sour.

Unless one is willing, therefore, to take every step with the most rigid and painstaking thoroughness, it is useless to attempt to compete with the factory product. But once a well-deserved reputation has been built up, a demand will have been created for all that one will ordinarily wish to supply.

Many women earn a living for themselves or contribute largely to the family income by thus creating a market for all the produce that their husbands can grow. Many others find it profitable to buy fruit and vegetables from their neighbors, employ and carefully train assistants and put up hundreds of dollars' worth annually.

To Pack Canned Goods for Market.—Use only the best quality of all-glass jars. Do not attempt to economize on labels, but obtain the most attractive that money will buy. A distinctive label is an immensely important point in promoting sales and building up a reputation for one's product. Cement the labels neatly and securely in a uniform position on the jars. Wrap each jar in stout colored wrapping paper, fold and seal top and bottom with mucilage, or by means of a label gummed over all, and place a label on the outside of the wrapper in addition to that on the jar itself.

The best method of packing is to obtain from a dealer cylinders of the proper size which are made for this purpose of corrugated cardboard. Obtain also a supply of the same cardboard to place between the lay-

ers of jars. If your annual output is large enough, suitable cases to hold a quarter gross or half gross of jars can be made at home, or for a trifle by a local carpenter. These will be returned by the purchaser on request.

Or the jars may be packed in stout packing cases or barrels and surrounded with excelsior, straw or hay. An excellent method is to place between two sheets of thick manila paper a layer of excelsior and stitch or quilt the whole together at intervals with long stitches such as are used in basting. The whole may then be cut with shears to proper lengths, between the rows of basting. In these wrap up the separate jars. Also line the box or barrel with them and place one or more thicknesses between the different layers of jars. In addition crowd excelsior between the jars so that no two jars can come in contact.

If packing cases are used, the excelsior must be crowded in at the top so that the contents cannot move, and the lids securely nailed on. It is easy to ascertain by shaking it vigorously whether the case has been solidly packed. If any rattling is heard, it should be opened and re-packed.

If barrels are used, it is sufficient to take off the top hoop and cover the top with a piece of canvas or burlap. Replace the hoop over the cloth and put on the top a stout label marked "Glass, This Side Up, With Care." Better care is given a package thus left without a head than to a sealed box or barrel. Place even dozens in each package, and be sure to make an accurate count. Have a printed billhead and promptly notify the consignee of the time of shipment by mailing the bill with a courteous note.

To Fix a Price on Canned Goods.—Keep account of all time taken in picking, preserving or packing the produce and figure out what it would cost you to hire the work done by ordinary day labor. Usually ten or fifteen cents an hour is a fair figure. Add to this the cost of the produce and sugar actually consumed, jars and all accessories, including packing

material, labor, etc. When you have thus arrived at the actual cost including labor, double this amount to allow yourself 100 per cent profit. If at first you are unable to sell your goods at this price or better, it is probably because you are inexperienced. Either you are not taking advantage of the work, or others are taking advantage of you in the price you are paying for labor or material. But 100 per cent profit is the ideal you should have in view, and some persons making homemade canned goods realize two or three times as much on their investment.

Storing Preserves.—Canned vegetables, fruits and preserves should be stored in a cool, dark, dry place. The cellar is not the best place unless it is dry and well ventilated. A storeroom partitioned off from the cellar and built of concrete is an ideal apartment for this purpose. In houses that are heated in winter, a dark, airy closet in the upper part of the house is a good place. But of course, they must not be placed where they will freeze in cold weather. If it is necessary to store them in an ordinary cellar to prevent freezing, a swinging shelf should be constructed for this purpose. The jars should be allowed to become stone cold before being stored away. They will keep much better if carefully wrapped in dark-colored paper folded and pasted top and bottom, and labeled on the outside so that it will not be necessary to disturb the wrappers until they are required for use.

UTENSILS AND MATERIALS

Utensils for Canning.—The most useful utensil for canning in considerable quantities is an ordinary tin wash boiler, such as is used in the laundry, cut down to convenient size. As this utensil will not ordinarily have a great deal of wear, a cheap tin wash boiler may be purchased, or an old wash boiler that has been discarded may, by means of patches and solder, be put into sufficiently good order to answer this purpose. Measure from the bottom of the wash boiler to a point four or five inches

higher than the top of an ordinary quart fruit jar, mark a line all around at this point, and have a tinsmith cut it off on this line. Or you can cut it off yourself with a chisel and hammer by inserting the end of a block of wood and striking against this. But it is better to have this work done by a tinsmith, and have him turn over the sharp edge so that you will not cut yourself on it. Now have a gridiron of wooden slats or wires fitted into the bottom in the inside. This is to keep the jars off the bottom on the principle of the double boiler. The result is a utensil of the right size for use on an ordinary range or on two burners of a gas or alcohol stove, and of convenient depth for sterilizing jars as well as canning the produce.

Or use an ordinary wash boiler fitted with a suitable false bottom. This has the same advantages, except that it is less convenient to reach into its steaming depths when removing the jars.

A large porcelain preserving kettle holding ten or twelve quarts, a porcelain skimmer and ladle and a long-handled stirring spoon of wood are also necessary. A pair of scales and suitable measuring cup should always be at hand in the kitchen. The old-fashioned Mason jar is still in use, but the so-called lightning jar is preferable. Have on hand a sufficient quantity of new rubber rings. Never attempt to use old rings, as rubber decays very rapidly, and the old ring is almost certain to admit the air into the jar, causing the contents to spoil before it is used. Old rings also harbor bacteria that cause fermentation. With clean jars and new rubber rings, the battle is already half over. Other useful devices in canning, preserving and jelly making are the sugar gauge, fruit pricker, ordinary wooden vegetable masher, wire sieve or colander and wire basket.

To make a fruit pricker cut a piece one-half inch deep from a broad cork, press through this a dozen or more coarse darning needles and tack the cork on a piece of board. One stroke on this bed of

needles punctures the fruit with a dozen holes. But be sure to use large, strong needles and take care that none of the points are broken off and remain in the fruit. Remove the cork from the board, and wash and dry thoroughly after using. A little olive or sweet oil on the needles will prevent rusting.

The sirup gauge and glass cylinder are essential to uniform success in making jelly. These may be obtained from any druggist at a cost of about 75 cents. A cylinder with a lip holding a little over a gill is the best size. The sirup gauge is a glass tube with a weighted bulb so graduated as to register 0° to 50°. To use the sirup gauge, fill the glass cylinder to about two-thirds of its height with a sample of the liquid to be tested. Insert the gauge and the quantity of sugar present, if any, will be registered. In pure water the bulb will rest on the bottom. The more sirup is dissolved in the water the higher the gauge will rise. When testing hot liquids, the gauge and cylinder must be heated gradually to avoid breaking. The fruit juice or sirup either for canning, preserving or making jellies may thus be tested at any stage. The sirup may be made heavier by adding sugar or lighter by adding water as the case demands.

Glass Jars.—It is conceded by most women that glass jars are the most desirable and economical for use in canning for home use, as they can be used from year to year, or indefinitely, by simply adding new rubbers and tops each year. Practically all of the various types of glass jars available on the market can be successfully used in the canning of fruits, vegetables, and meats by the "cold-pack" method.

In the handling of all glass-top jars having top and clamp springs, it is important to remember that the rubber, cap, and top spring are put in place, while the lower clamp spring is left up, or raised, during the entire period of sterilization and then lowered and completely closed after sterilization.

In handling the screw-top jar it is important to remember that the rub-

ber and top are put in place and the top turned until it touches the rubber, sealing the jar partially, but not so closely as to prevent the escape of excessive or expanded air.

When using glass jars always utilize the jars you have on hand, but when you buy new jars, buy the best. They are the cheapest in the long run. No glass jar with metal or rubber in direct contact with the food product is desirable unless the cap is enameled, lacquered, or vulcanized. Glass jars should be thoroughly cleaned and should be taken directly from hot water to be filled.

Canned products in glass jars, if exposed to light, will bleach, fade, and sometimes deteriorate in food value; hence the necessity of wrapping in paper.

Breakage of Jars.—When breakage of jars occurs it is due to such causes as:

Overpacking the jars. Corn, pumpkin, lima beans, and sweet potatoes swell or expand in processing. Do not fill the jars quite full of these products.

Placing the cold jars in hot water or vice versa. As soon as the jars are filled with hot syrup or hot water, place them immediately in the canner.

Having the wire bail of glass-top jars too tight.

Allowing a cold draft to strike the jars when they are removed from the canner.

Having the wire bail too tight, thus breaking the jars when the lever is forced down.

Defective Jars.—The following are valuable tests for screw-top jars:

Place the top on the jar without the rubber. Turn it down tight. If the thumb nail can be inserted between the top and the glass, the top is usually defective.

Place the rubber and the cap in position and screw them down lightly. Pull the rubber from its position. Release it. If the rubber returns to its position between the top and the jar, the top is defective.

Tests for Glass-Top Jars.—Place the glass top on the jar without the rubber. Tap around the outer edge

of the top with the finger. If the top rocks, it is defective. The wire bail placed over the top of the cover should go in with a snap, even when the tightening lever or the clamp spring is up. If it does not, remove the bail from the tightening lever and bend it to make it tight. This tightening of the bail should be done every year.

Rubbers.—A good rubber will stand considerable pulling and jerking and will return to its original shape. A good rubber will also stand several hours of boiling in a hot-water-bath outfit without being affected.

Alcohol Stove.—A proper stove is a very important consideration. Produce is ordinarily ready for canning in sultry weather, and the heat of a cook stove or range is so unbearable that the process rarely receives the quality of skill and the degree of attention that the best results demand. A tired and overheated housekeeper is in no mood to closely observe the delicate points that contribute to the perfection of a high grade product. Housekeepers fortunate enough to enjoy the use of gas will need no suggestion to use a gas range for canning fruit, and at a time when the oven burners are not lighted. But where there is no available supply of gas a two-burner stove consuming denatured alcohol is especially recommended. This is self-contained and portable. Thus the whole apparatus for canning fruit can be moved into a large, cool room, into an outhouse, or if desired in still, clear, or sultry weather, out of doors on the veranda, or in the shade of a tree on the lawn. At all events, an effort should be made to "keep cool" in both senses, if one is ambitious to obtain the best possible results.

Materials for Canning and Preserving.—The materials used for canning and preserving should invariably be of the finest quality. Only the best grade of white granulated sugar should be used. And this should be clarified as described under candy making. Fresh, ripe fruit and vegetables of the best quality should be selected and care-

fully picked over. All bruised, specked, or wormeaten specimens should be discarded. Small fruits, as raspberries and strawberries, and all vegetables, should be canned if possible the morning they are picked. Great care should be taken in handling produce to avoid bruising it. A silver paring knife should be used for fruit as an iron or steel knife tends to darken it. The fruit when pared should be instantly dropped into a vessel of clear cold water, care being taken that it is not bruised in falling. This prevents the fruit from "rusting" or turning dark by exposure to the air. All hard portions should be removed as they resist the effects of heat. And all "specks" or decayed portions since they injure the flavor and color.

The best quality of canned fruit is obtained by heating fruit in the jars as hereafter described. This method avoids bruising the fruit by stirring, lifting, or pouring it from one vessel to another. Particular attention and care when preparing all canned goods will be amply repaid in the improved quality of the product. If fruit is pared, the work should be done thoroughly and no particles of skin allowed to remain. If the cores, pits, or stones are removed at all, the work should be done in a painstaking manner. Especially if the goods are offered for sale, a small fraction of additional labor at the start will add largely to the price and salability of the product. For similar reasons only the best quality of spices, brandy, or other condiments should be used.

PROCESS OF CANNING AND PRESERVING

Nature of the Process.—Canning or preserving is a process of killing, by means of heat, the germs that cause decay and preventing the contact of other germs by covering the produce with boiling sirup and sealing it hermetically so as to exclude the air. The reason that boiling is necessary, is that the germs of decay may be already present in the substance of the produce itself. Hence

it must be boiled until the heat has penetrated every part and effectually destroyed the germs. And the reason that air must be excluded is that the microscopic germs that cause putrefaction float in the air in very large numbers. Hence if a bubble of air remains among the fruit, or if air is admitted through a crevice as fine as a needle point in the rubber ring or metal top of the jar, putrefaction will certainly result.

Other substances such as clear water or fruit juices exclude the air as well as sugar sirup. Sugar is added partly because it makes the product more palatable and nutritious, and partly because the presence of sugar is unfavorable to bacterial growth. Hence the amount of sugar to be added to a given quantity of fruit may be varied at will. The old-time rule for "preserving" was pound for pound, but this is by no means necessarily an invariable principle. The present tendency is in favor of "canning." The pound-for-pound preserves are regarded by many as unnecessarily sweet and expensive. A much thinner sirup is commonly used in canning and, provided proper precautions are taken, preserves the fruit equally well. Or, if desired, fruits and fruit juices and in fact any kind of vegetable, may be canned without the addition of any sugar at all.

To sum up, the produce must be thoroughly boiled through and through. The jars must be filled to overflowing with boiling hot sirup or other liquid so that all bubbles of air will be excluded. Then they must be instantly sealed, else the contents will cool slightly and leave a space filled with bacteria-laden air between the top and the jar cover. The jar must be provided with a tight ring of new rubber or other substance that will absolutely exclude the air or the bacteria that it contains. Such substances as blotting paper and cotton batting are sometimes used for the reason that they have the property of screening or filtering the air so as to prevent bacteria from passing through.

Methods of Canning and Preserv-

ing Fruit.—There are two different ways of canning or preserving fruit, either of which will give satisfactory results: (1) steaming the fruit in the jars or cans, or (2) boiling it in a preserving kettle. The old-time method of “preserving” consisted in boiling the fruit in a suitable preserving kettle, in sugar sirup, lifting it from the sirup when sufficiently boiled, packing it into jars or cans and pouring the boiling sirup over it. This method is still preferred by many.

The modern method of “canning” consists in packing the fruit in the cans or jars without sugar, or with sugar sprinkled between the different layers at the rate of about one tablespoonful to each pound of fruit, placing the jars on the stove in a suitable receptacle surrounded by water, bringing the water to a boil and finally filling the cans with boiling sugar sirup and sealing them.

The canning or steaming method is somewhat slower unless a large receptacle is provided in which to place a considerable number of fruit jars while boiling. But the process is easier and is likely to give a more satisfactory result. All bubbles of air are driven out of the fruit while steaming. And the jar itself is uniformly heated, so that when boiling sirup is added to fill it to the brim, it does not shrink by cooling in the moment of time required to clap on the cover and seal. Then, too, the fruit is undisturbed, and its shape, color, and texture are not injured.

Preserving Day.—Many housekeepers prefer, when putting up fruits for home use, to prepare a jar or two each day, selecting the finest fruits as they ripen. Thus the labor is distributed over the season and associated with other cooking from day to day so as to be hardly realized. But it is of some advantage, when a considerable quantity of fruit is to be preserved, to get everything in readiness at one time and make a day of it.

To Test Jars.—The contents of several jars may be saved in the course of a season by testing the jars before using. To this end, fill

them with warm water, put on the new rubber rings that are to be used, seal them and stand them upside down on a large sheet of blotting paper. Or butcher's brown paper, or an ordinary folded newspaper, will answer. If there is the slightest leak, the water will trickle out and be seen on the absorbent paper. Thus defective rubber rings, or uneven, nicked, or cracked jar tops can be discarded and assurance can be had that no valuable material and labor will be wasted. Similarly, it is a good plan to turn the filled jars upside down on absorbent paper and let them stand overnight before storing them away. If by chance a defective ring or jar has been used it will be detected and the contents can be transferred to another jar.

To Sterilize Jars.—The first step is to place in the special boiler above mentioned, or in a preserving kettle, the jars that are to be used, with about one tablespoonful of borax to twelve quarts of cold water, and bring them to a boil over a slow fire. The tops should be put in place and boiled with the jars themselves. But the rubber rings must not be boiled as this will harden the rubber and make it unfit for use. Jars having glass tops should invariably be given the preference. This will effectually kill all germs, free the jars from dust and dirt, and also toughen them so that, if properly handled, they will not crack in the process of canning. After they have boiled fifteen minutes or so, pour off the borax water and pour over them hot water to rinse them. Care must, of course, be taken not to pour cold water over hot jars, or expose them to a draught of cold air while hot, or they may be cracked and broken.

Canning Fruit.—After the jars have been thus rinsed and sterilized, replace them on the stove in the above-mentioned boiler or other suitable receptacle, surround them with hot water, and pack in the fruit, either without sugar, or with sugar sprinkle among the layers of fruit at the rate of one tablespoonful to a pound of fruit up to a teacupful to each can, more or less, as desired.

Boil until the fruit is soft enough so that a straw can be run through it. The time required will vary according to the fruit, from a few minutes in the case of small fruits, as raspberries, strawberries, and others, to an hour or more in the case of hard pears, quinces, and the like. But observe that the latter cannot be cooked properly in the cans. They must be done up in the preserving kettle in the old-fashioned way. And there is the less objection as their firmer texture protects them from being injured by handling.

Berries and small fruits of soft and delicate texture, undoubtedly present a better appearance and have a finer flavor and color if cooked in the can. These include cherries, strawberries, raspberries, huckleberries or blueberries, ripe peaches, summer pears, and ripe plums.

Some fruits cooked in the can with sugar, shrink and leave the can only partly full. Do not attempt to crowd the cans when first filled as this will crush the fruit and injure its appearance. Remove one can and gently pour its contents into the tops of the others until all are full. Finally, when sufficiently boiled, remove the jars one by one, wrapping a towel about each; place the jar on a plate, or in an agate basin, to catch the overflow, pour boiling sirup on top until it runs over and instantly seal before the contents cool, and air is admitted. Place the jars in a warm place and out of a draught, as otherwise they may crack in the process of cooling.

Sirup for Canning and Preserving.—The strength of the sirup to

be used in filling jars after the fruit has been cooked in them is a matter of individual preference. It also depends upon the amount of sugar, if any, that has been sprinkled in the fruit while cooking.

The old time pound-for-pound rule called for $\frac{1}{2}$ a pint of water more or less, for each pound of sugar and pound of fruit, according to the amount of juice in the fruit. But a larger amount of water is more commonly used at present. To prepare sirup, place the sugar in a small preserving kettle, pour the required amount of cold water over it and stir until the sugar is fully dissolved before placing on the fire. The sirup will be clarified and improved by the addition of a little gum arabic or white of egg. The scum, as fast as it rises, may then be removed with a skimmer, taking all impurities with it. This sirup may be poured over the fruit after it has been cooked in the can.

Or according to the earlier method, the fruit may be dropped into the clarified sirup while at a boiling point, cooked until it is tender, removed with a skimmer, packed in the jars and the boiling sirup added until they are filled to overflowing.

Making Sugar Sirups.

Unsatisfactory results frequently follow from the use of a sirup which is not of the density best suited to the particular purpose for which it is employed. Sugar sirups are made by boiling sugar and water together to a certain density, expressed as "degree" or "per cent." This may be accurately measured by a density

SUGAR	WATER	PER CENT
1 pound	Quarts	16
1 pound, 4 ounces	"	20
1 pound, 9 ounces	"	25
2 pounds, 8 ounces	"	30
1 pound,	"	32
2 pounds, 3 ounces	"	35
2 pounds, 8 ounces	"	40
2 pounds, 13 ounces	"	45
3 pounds, 2 ounces	"	50
3 pounds, 7 ounces	"	55
3 pounds, 12 ounces	"	60

gauge, and it is advisable always to have one at hand. But in the absence of a suitable gauge, sirup of any required density may be made by reference to the foregoing sirup table, which is computed on the number of pounds of sugar in 100 pounds of solution, and, therefore, is called a "per cent. table."

A formula much used in the West for sirup is 3 quarts of sugar to 2 quarts of water, boiled to a thin, medium-thin, medium-thick, or thick sirup. Another formula, sometimes called the Eastern formula, is 3 quarts of water to 2 quarts of sugar, boiled to a thin, medium-thin, medium-thick, or thick sirup.

Approximate Density Terms Explained.

Thin Sirup is sugar and water boiled sufficiently to dissolve all sugar; but is not sticky.

Medium thin sirup is that which has begun to thicken and becomes sticky when cooled on the finger tip or spoon.

Medium thick sirup is that which has thickened enough to roll or pile up over the edge of a spoon when you try to pour it out.

Thick sirup is that which has become so thick that it is difficult to pour out of a spoon or container (not sugared).

Thin sirups are used for all sweet fruits that are not too delicate in texture and color, such as cherries, peaches, apples, etc.

Medium-thin sirups are used in the canning of the medium-sweet fruits, such as blackberries, currants, dewberries, huckleberries, raspberries, etc.

Medium-thick sirups are used in the canning of all sour fruits, such as gooseberries, apricots, sour apples, etc., and delicately colored fruits, such as strawberries and red raspberries.

Thick sirup is used in preserving and in making all kinds of sun preserves.

PRESERVES AND PRESERVING

Preserving Fruit.—The process of preserving is a very simple one, although it takes a large amount of

time and great care. However, any housekeeper can accomplish it. The principal secret of success is that the fruit should be put up and sealed while hot and the jars filled to the brim. It is usually the custom to place the fruit in the kettle, a layer of fruit and a layer of sugar, pound for pound or measure for measure and to let the whole come to a boil at once.

Or place the fruit in a vessel without the sugar. Put just enough water over it to keep it from scorching, and allow it to boil until the scum rises. Carefully skim away the scum while it continues to rise before adding the sugar. Many seem to think that the scum rises entirely from the sugar, but the experience of those who have used the above-mentioned method is that an equal amount of scum comes from the boiling fruit.

Or weigh the sugar and the fruit, pound for pound, then place the sugar in the kettle without the fruit. Put in just enough water to dissolve the sugar and stir until it is dissolved. Now place on the fire and let come to a boil. Continue to simmer for half an hour or so before dipping in the fruit, being careful to skim away the scum as it rises. Then place the fruit in the boiling liquid and let it continue to simmer on the back of the stove until the fruit becomes thoroughly impregnated with the sirup.

When about half done lift the fruit from the boiling sirup, place it in large porcelain or other vessels, being careful not to allow any sirup to come with it, and place it in the sun for an hour or more to bleach. After this, again drop the fruit into the sirup and let it boil until tender enough to allow a straw to run through it.

When the fruit is thoroughly done, if the sirup is not as thick as desired, it may continuously simmer until the desired thickness is reached. Then place the fruit in glass jars that have been previously heated and sterilized by boiling in water containing a little borax and rinsing in hot water. After filling the jar with fruit as full as you conveniently can, pour

in the boiling sirup until it fills up all the crevices between the fruit, excluding all the air possible. While performing this process, place the jar in a pan filled with hot water. This will prevent cracking the jar.

SCALDING, BLANCHING AND COLD DIPPING

The terms scalding and blanching, as applied to canning, both refer to a preliminary heating of the product, but are not usually interchangeable. The word scalding signifies in this connection, dipping in boiling water for a very brief space, chiefly for three reasons: to loosen the skins, to remove objectionable acids and bitter flavors, and to start a flow of coloring matter, to be later arrested or coagulated by the cold dip. The term blanching applies to a much longer period of preliminary cooking. Its objects are in part the same as those of scalding, namely, to eliminate sourness and bitter flavors. But blanching is also practiced in part to reduce the bulk of succulent vegetables such as cabbage, greens, and the like, and in part as preparation — in connection with the cold dipping — for the sterilization process.

Every one knows that sudden and extreme changes of temperature are injurious to living things, and this is the philosophy that underlies the blanching and cold dipping process. The fruit or vegetable to be canned is first blanched — i.e., partially cooked — from 1 to 15 minutes, depending upon the kind and condition in hot water or live steam, and then removed quickly from this and plunged forthwith into cold water. The resulting shock very greatly weakens the resistance of the bacteria, spores, and molds that cause canned goods to spoil, and thus adds to the efficacy of the sterilization process. Hence if blanching and cold dipping are practiced the period of sterilization can be shortened, with the result that the product will be much better because not over-cooked. It will be more true to nature in color, flavor, and texture, and more natural in appearance. The

cold dipping following the blanching process also hardens the pulp under the skin so as to permit the removal of the skin without injury to the pulp, and coagulates the coloring matter so that it is less likely to dissolve during the sterilization period.

Fruits may be classified for convenience with reference to the blanching and cold dipping process into four groups or classes, i.e., soft fruits, sour-berry fruits, hard fruits, and citrus fruits. The blanching and dipping process is not advisable for soft fruits such as strawberries, blackberries, dewberries, sweet cherries, blueberries, peaches, apricots, etc. But sour-berry fruits such as currants, gooseberries, cranberries, and sour cherries should be blanched in hot water 1 minute; hard fruits, such as apples, pears, quinces, etc., 1½ minutes; and citrus fruits, such as oranges, 1½ minutes. Most vegetables should be blanched for a considerable length of time. After blanching, fruits and vegetables should be forthwith plunged quickly into cold water, then packed cold in the can, fruit jar, or other container, and sterilized for the required length of time.

CANNING SMALL FRUITS

The method of canning such small fruits as raspberries, blackberries, currants, gooseberries and blueberries, is substantially the same except for the proportions of berries, sugar and water required. Select fruit just before it is perfectly ripe — choosing an underripe rather than overripe fruit — and can promptly while freshly picked. Discard all imperfect fruit. Gnarled, broken or otherwise defective specimens, not decayed, may be used for marmalade or jellies. Avoid berries having a large proportion of seeds to pulp and if no other can be obtained — as may happen during a dry season — remove the seeds by rubbing through a sieve and preserve the strained pulp as marmalade or purée. Pick over the berries, hull and stem them and drop the perfect fruit in small quantities into a colander. Rinse in cold

water and turn them on a sieve to drain. Do this quickly so that the fruit will not absorb too much water.

Have ready two bowls, one for sugar and one for fruit. Observe how much of each will be required to fill the preserving kettle or the number of jars desired. Measure the fruit into the proper bowl as fast as it is picked over and washed, and for each measure of fruit add to the other bowl the proportionate amount of sugar. When the required quantity of fruit and sugar has been measured, put both into the preserving kettle, add the required amount of water, if any, and while the first kettle is cooking prepare the fruit and sugar for another. Fruit designed to be served as sauce may have any proportion of sugar cooked with it according to taste, or if intended for beverages or cooking purposes, it may be canned without the addition of sugar. Juicy fruits require little or no water, except when cooked in a heavy sirup. The above are general rules which require to be modified for particular fruits as follows:

For raspberries and blackberries use 2 quarts of sugar to 12 quarts of fruit. First express the juice from 2 quarts of the fruit by heating it slowly on the stove in the preserving kettle, crushing with a wooden vegetable masher and squeezing through cheese cloth. Rinse the preserving kettle, pour into it the strained juice, add the sugar, heat and stir until the sugar is dissolved. Let the sirup come to a boil, add the remaining 10 quarts of berries and heat slowly. Boil ten minutes from the time it begins to bubble and skim carefully while boiling. Can and seal as above directed.

For currants the process is the same as for raspberries and blackberries, but the proportions are different, namely: 4 quarts of sugar to 12 of fruit. For raspberries and currants combined use $2\frac{1}{2}$ quarts of sugar to 3 quarts of currants and 10 quarts of raspberries. First express the juice from the currants as above directed, then proceed as for raspberries.

For green gooseberries use $1\frac{1}{2}$ quarts of sugar and 1 pint of water to 6 quarts of fruit. Dissolve the sugar in the water, add the fruit and cook fifteen minutes. Or can the same as rhubarb. For ripe gooseberries use only one-half as much water.

For blueberries use 1 quart of sugar and 1 pint of water to 12 quarts of berries. Put all together in the preserving kettle and heat slowly. Boil fifteen minutes from the time the mixture begins to bubble.

For cherries use $1\frac{1}{2}$ quarts of sugar and $\frac{1}{2}$ pint of water to 6 quarts of fruit. Measure after stemming. Stone or not as preferred, but if the stones are removed, take care to save the juice. First stir the sugar into the water over the fire until dissolved, then add the cherries and bring slowly to a boil. Let boil ten minutes, skimming carefully.

For grapes use 1 quart of sugar and 1 gill of water to 6 quarts of fruit. First squeeze the pulp from the skins. Cook it five minutes and rub through a fine sieve to remove the seeds. Now bring the water, skins and pulp slowly to a boil. Skim, stir in the sugar and boil fifteen minutes. If the grapes are sweeter or more sour than ordinary, use more or less sugar, according to taste.

Rhubarb may be cooked and canned with sugar in the same manner as gooseberries, or either rhubarb or gooseberries may be canned without heat as follows: Cut the rhubarb when young and tender, wash thoroughly, pare and divide into pieces about two inches long. Pack in sterilized jars, fill to overflowing with cold water and let stand ten minutes. Drain off the water and once more fill to overflowing with fresh cold water. Seal with sterilized rings and covers. When the cans are opened the rhubarb may be used in all respects the same as if fresh.

CANNING LARGE FRUIT

Such large fruit as apples, pears, peaches and quinces must usually be pared and cored before canning. Se-

lect first class fruit just before it is ripe — preferably underripe rather than overripe — and discard all imperfect specimens. It is better not to can or preserve spotted or bruised fruit, but if such are used, all decayed or bruised spots must be freely cut out. Measure the fruit as soon as it is pared and cored into a large bowl containing cold water made slightly acid with lemon juice at the rate of one tablespoonful to the quart. This will keep the fruit from turning brown. For each measure add the proportionate quantity of sugar into another bowl until the amount of fruit and sugar needed to fill the preserving kettle or required number of jars is at hand.

Large, hard fruits such as apples, pears, quinces, etc., after having been pared, quartered, and cored should be placed in a wire basket or colander and blanched $1\frac{1}{2}$ minutes, for reasons previously stated, then cold dipped by being plunged quickly into cold water.

To peel peaches, plums or tomatoes, have ready a deep kettle a little more than half full of boiling water. Fill a wire basket or colander with the fruit and suspend it by means of a string through the handles, or otherwise, in the boiling water for three minutes. Now remove and plunge the basket for a moment into a pan of cold water. Let drain a few moments and peel. The process of canning in general is much the same for all fruits, but the following special modifications for particular fruits may be observed:

For peaches and ripe pears use 1 quart of sugar and 3 quarts of water to 8 quarts of fruit. Prepare the fruit either whole or in halves as desired. If the latter, remove all the pits except a few in each jar which retain for the sake of their flavor. Stir the sugar into the water over the fire until dissolved and bring slowly to a boil. Skim carefully and let stand where it will remain hot but not boil. Put only a single layer of the prepared fruit in the preserving kettle at a time and cover with some of the hot sirup. Bring slowly to a

boil, skin carefully, boil gently for ten minutes, or longer if not fully ripe, can and seal. The fruit is not done until it can be readily pierced with a straw or a silver fork. Unripe or hard pears will require much longer boiling.

For quinces use $1\frac{1}{2}$ quarts of sugar and 2 quarts of water to 4 quarts of fruit. Rub the fruit hard with a coarse crash towel. Then wash and drain. Pare, quarter and core and drop the pieces into cold water acidulated with lemon juice. Cover the fruit in the preserving kettle with plenty of cold water, bring slowly to a boil and let simmer until tender. Remove the pieces one by one as soon as they can readily be pierced with a silver fork and let drain on a platter. Now strain the water in which the fruit was cooked through cheese cloth and put 2 quarts of the strained liquid over the fire. Stir in the sugar until dissolved, bring slowly to a boil, skim well, add the cooked fruit and boil gently for about twenty minutes.

For crab-apples use $1\frac{1}{2}$ quarts of sugar and 2 quarts of water to 6 quarts of apples. A part of the stem may be left on the fruit if desired, but wash carefully and especially rub well the blossom end. Stir the sugar into the water over the fire until dissolved, bring slowly to a boil, skim, add the fruit and cook gently from twenty to fifty minutes, or until tender, depending upon the kind of fruit.

For plums use 2 quarts of sugar and 1 pint of water to 8 quarts of fruit. Wash and drain the fruit and remove the skins if desired as above suggested. Or if they are left on, prick them thoroughly with a fruit pricker to prevent bursting. Stir the sugar into the water over the fire until dissolved, bring to a boil and carefully skim. Add the fruit in small quantities one or two layers at a time, cook five minutes, can and seal and so continue, adding more sirup from time to time if necessary.

CANNING APPLES

To be able to transform windfall and cull apples into a valuable and

palatable food product, available for home consumption throughout the year as well as for the commercial market, is a great advantage worth the consideration of all apple growers. In addition to the use of such apples for making apple sauce, cider, cider vinegar, apple jelly, apple preserves, apple butters, and similar products, new recipes admit of using windfalls and culls profitably for various other purposes; as, canning the apples whole, sliced for pie filling, or quartered for fruit salads; the sterilization of cider so as to keep it sweet and unfermented throughout the year; and a method of making apple sirup. The recipe for this sirup was furnished by Mr. H. C. Gore, of the U. S. Bureau of Chemistry.

The windfall and cull apples may be divided into two grades. The first grade would include the whole, reasonably sound, fruit; the second grade, the worm-eaten, partially decayed, and injured fruit. Do not can any injured or decayed part nor allow apples to become overripe before canning.

Canning Whole, Reasonably Firm, Apples.—Wash apples. Remove core and blemishes. Place whole apples in blanching tray or blanching cloth, and blanch in boiling water for two minutes. Remove and plunge quickly into cold water. Pack in large, empty glass jars. Pour over the product a hot thin sirup of about 18° density. Place rubber and top in position. Seal partially, not tight. Process half-gallon or gallon containers 20 minutes in boiling hot water. Remove jars, tighten covers, invert to cool, and test joints. Wrap in paper, and store. The time of heating will have to be varied according to ripeness and condition of the fruit. Use just time enough to sterilize perfectly, and yet not enough to change the color or reduce the pulp to sauce.

Firm and tart apples may be cored and peeled first, then canned by the above recipe.

Apples so canned may be used as follows: (1) As a breakfast dish, with cream and sugar added; (2)

baked, like fresh apples for breakfast or for other meals; (3) in apple salad, often served for lunch or supper; (4) as a relish with roast pork—the apples may be fried in the pork fat or the cores may be cooked with roast pork for flavoring; (5) in apple dumplings, deep apple pie, and other desserts in which whole apples are desirable; or (6) the sirup of canned whole apples can be used for pudding sauces or fruit drinks.

Canning Apples for Pie Filling.—Use second grade of windfalls or culls. Wash, core, pare, and remove all decayed or injured spots. Slice apples quickly into a basin containing slightly salted cold water (about 1 teaspoonful per gallon) to keep from discoloring. Pack fresh cold product in glass jars. Add one cupful of hot, thin sirup of about 18° density to each quart of fruit. If using glass cans, put on the rubbers, and screw on the tops, but do not seal completely. Sterilize 12 minutes in hot-water bath. Remove jars, tighten covers, invert to cool, and test joint. Wrap in paper, and store.

This filling can be used for making apple pies in the same way that fresh apples would be used, with the exception that the sirup must be poured off, and less sugar should be used. Since the apples have already been cooked, only enough heat is needed to cook the crust and to warm the apples through. Pies may be baked in 7 minutes. The apple pies made with these apples are, in the opinion of many housekeepers, as good as those made with fresh fruit, and have the advantages that they can be made in less time and are less expensive.

Canning Quartered Apples for Fruit Salads.—Select best grade of culls of firm and rather tart varieties. Core, pare, and quarter. Drop into a basin containing slightly salted cold water. Pack these quartered pieces tightly in glass jars. Add a teaspoonful of thin, hot sirup to each quart. Place rubber and top in position, partially seal, but not tight. Sterilize 12 minutes in hot-water bath. Remove jars, tighten covers, invert

to cool, and test joint. Wrap in paper, and store.

Canning Sweet Apple Cider.— Fill fruit jars with the fresh apple cider. Add a tablespoonful of sugar to each quart. Place rubber and cap in position and partially tighten. Sterilize in hot-water bath for 10 minutes. Remove jars, tighten cover, invert to cool, and test joint. If you desire the apple cider to be a little tart or slightly fermented, it will be necessary to let it stand for two or three days before you sterilize, and then add about two minutes in the hot water.

Reducing Sweet Apple Cider to Sirup.— It may not be practical for the average fruit farmer to make apple sirup as a commercial proposition, but during seasons when there are a large number of culls and windfalls, when markets are glutted, and there is no profitable market for apples, it is a matter of business economy to utilize by-products and the making of apple sirup for the family's winter use is quite worth while. Wash apples, remove all decayed and worm-eaten spots, and press out juice as usual for cider making. Be sure the juice does not ferment or "work" as only sweet cider should be used for sirup making. The sterilizing, reducing vat, or kettle, should be a third larger than required to hold contents. Add 5 ounces of powdered calcium carbonate to 14 gallons of apple cider. Powdered calcium carbonate (carbonate of lime) or, to give it its common name, precipitated chalk, is a low-priced, harmless chemical available at any drug store. Boil in kettle or vat vigorously for a period of five minutes. Pour the liquid into vessels, preferably glass jars or pitchers, and allow it to stand six to eight hours, or until perfectly clear. Pour the clear liquid into preserving kettle. Do not allow sediment at bottom to enter. Add to the clear liquid one level teaspoonful of lime carbonate and stir thoroughly. The process is completed by boiling down rapidly to a clear liquid. Use density gauge or candy thermometer and bring it up to 220° F., or without thermometer, re-

duce bulk to one-seventh of original volume.

To see whether it is cooked enough, test as you would sirup or candy, by pouring a little of it into cold water. If boiled enough, pour it into fruit jars, pitchers, etc., and allow it to cool slowly. Slow cooling is important, as otherwise the suspended matter will not settle properly and the sirup will be cloudy. A good way to insure slow cooling is to stand the vessels full of sirup in a bucket or a wash boiler of hot water. They may also be placed in a fireless cooker. The white sediment which settles out during cooling is called "malate of lime" and is a harmless compound of lime with the natural acid of the apple. When the sirup is cooled, it should be stored in fruit jars or bottles. Place the rubber cap or cork in position and tighten. Then place the bottles or cans of sirup in hot water and sterilize for 12 minutes in a hot-water or wash-boiler outfit.

Apple sirup made by this method is a very palatable and high-grade product. It has a flavor much like the thick sirup or jelly which is so often formed when apples are baked with a little sugar. This apple sirup can be used in cooking with good results, as well as for table purposes.

FRUIT PRESERVING

While the modern method of canning fruits with small quantities of sugar or none at all is to be preferred in most cases, there are a few fruits which make preserves of such excellent quality that their use may be recommended for special purposes. These are strawberries, sour cherries, sour plums and quinces. They should be put up preferably in tumblers or small jars.

For strawberries use equal weights of sugar and fruit. Put a layer of berries in the bottom of the preserving kettle and sprinkle over it a layer of sugar. So continue until the fruit and sugar are about four inches deep. Bring slowly to a boil, skim carefully and boil ten minutes from the time it begins to bubble.

Now pour upon platters to a depth of about two or three inches and place these in a sunny window in an unused room for three or four days, when the preserve will thicken to a jelly-like consistency. Put the cold preserve into jars or tumblers and seal. The large proportion of sugar present in this and other preserves is unfavorable to the growth of bacteria and thus prevents them from spoiling.

For white currants select large firm fruit, remove the stems and proceed as for strawberries.

For cherries select the sour varieties such as Early Richmonds and Montmorency. Remove stems and stones and proceed as for strawberries. Or cherries may be preserved with currant juice. Use for this purpose 2 quarts of sugar to 3 quarts of currants by heating in a preserving kettle, crushing them as they boil up and straining through cheese cloth. Stem and stone the cherries taking care to save all the juice. Add the cherries to the fruit juice, stir in the sugar over the fire, bring to a boil slowly and carefully skim. Boil twenty minutes. Put in sterilized jars or tumblers and seal. This gives an acid preserve. The quantity of sugar may be doubled if desired.

For plum preserve use 2 quarts of sugar to 1 pint of water and 4 quarts of greengage or other plums. If the skins are left on, prick the fruit and cover with plenty of cold water. Bring slowly to a boil and let boil gently for five minutes. Drain well. Now stir the sugar into the water over the fire until dissolved and boil five minutes, skimming well. Add the drained fruit and cook gently twenty minutes. Put in sterilized jars. Remove the skins from the white varieties.

For quince preserve use 2 quarts of sugar to 1 quart of water and 4 quarts of fruit. Pare, quarter and core the quinces. Boil in clear water until tender, skim and drain. Now stir the sugar into the water until dissolved, bring slowly to a boil, skim well and boil for twenty minutes. Pour one-half the sirup into another kettle. Put one-half the cooked and

drained fruit into each kettle, simmer gently half an hour and put in sterilized jars. Preserve the water in which the fruit is boiled and add to it the parings, cores and gnarly fruit to make jelly.

Purées and Marmalade.—These preserves are merely crushed fruit pulp cooked with sugar. Purées differ from marmalades in being cooked with a small quantity of water and not cooked so long. They retain more of the natural fruit flavor. This process is especially useful for preserving small seedy fruits for frozen desserts, cake and puddings. Pick over and remove leaves, stems and decayed portions, or peach, plum and cherry pits. Rub through a purée sieve and add to each quart of strained fruit a pint of sugar. Pack in sterilized jars, put the covers on loosely and place on the rack in the boiler. Put enough cold water in the boiler to come half way up the sides of the jars. Bring slowly to a boil and boil thirty minutes from the time the water begins to bubble. Remove the jars from the boiler one by one, place in a pan of hot water, fill with hot sirup and seal.

For marmalade pick over berries with great care and rub through a fine sieve to remove the seeds. Remove all cherry, plum or peach pits. Wash, pare, core and quarter large fruit. Allow 1 pint of sugar to each quart of fruit. Rinse the preserving kettle with cold water leaving a slight coat of moisture on the sides and bottom. Put in a layer of fruit, sprinkle with a layer of sugar and so continue until all the fruit and sugar are used. Heat slowly and stir very frequently so as to break up the fruit as much as possible. Cook for about two hours and put in small sterilized jars.

Cranberry Conserve.

2 pints cranberries,
 $\frac{1}{2}$ pound English walnut-meats,
 1 large orange,
 $1\frac{1}{3}$ cupfuls water,
 1 cupful Sultana raisins,
 $1\frac{1}{2}$ pounds sugar.

Pick over and wash the cranberries, put them into a lined saucepan

with half of the water and boil until the skins break. Rub through a strainer, and add the remaining water, sugar, raisins, and grated rind and pulp of the orange. Bring slowly to the boiling-point and allow to cook slowly for twenty-five minutes, then add the nut-meats broken in small pieces and cook for five minutes longer. Divide into jars and seal.—Marion Harris Neil.

Plum Conserve.—Cook 5 pounds plums until tender, covering with 3 pints water. Strain through a colander and measure. Add $\frac{3}{4}$ pound broken English walnuts, juice and pulp of 3 oranges, 2 pounds seeded raisins cut fine. Add $\frac{3}{4}$ pound sugar to each pound of fruit. Cook until like marmalade.—Anna Kinsley.

Currant Conserve.

Place in a preserving kettle

- 1 pint currant juice,
- 2 pounds currants,
- 3 pounds raisins,
- 4 pounds sugar,
- Grated peel and juice of 4 oranges.

Stir and boil until thick, and seal.—Anna Kinsley.

Rhubarb and Fig Conserve.—Cut rhubarb in small pieces. Have 3 pounds. Cut $\frac{1}{4}$ pound figs in small pieces, $\frac{1}{2}$ pound candied orange peel, grated rind and juice of 1 large lemon. Put in kettle with layers of sugar and let stand over night. Boil down until thick—about 1 hour—pour in glasses and cover.—Anna Kinsley.

Quince Preserves.

Choose fine fruit: it will prove the most economical in the end, even though higher in price. Wash, dry and pare carefully, cut into quarters and remove the cores. Place the fruit in the preserving kettle with just enough water to create steam, and arrange the parings over the top. Cover the kettle, let heat slowly and stew very gently until tender. Carefully remove all the parings from the

surface, take the fruit out with a skimmer, drain as thoroughly as possible, and spread out on large dishes. Strain the liquor through a cheese cloth bag, and then return it to the kettle, adding granulated sugar, measure for measure. Stir until the sugar is dissolved, and then let the sirup boil for 10 minutes, skimming repeatedly. Place the quinces in the boiling sirup and simmer gently until they become clear and take a rich color—usually about 20 minutes. Lift the fruit out with a perforated spoon and pack in jars. Fill to the brim with boiling hot sirup and seal air tight.—Mrs. Fred S. Long.

Quince Honey.

- 4 pounds of white sugar,
- 2 pints of water,
- 2 quinces.

Put sugar and water on the stove and let boil. Grate the quinces and stir them in, let cook until it is as thick as you wish it to be when cool. You can use more quince to the same amount of sugar and water if you so desire, or grate a few apples and add to the quinces.—Mrs. Fred S. Long.

Preserved Pears.

- 5 pounds chopped pears,
- 5 pounds sugar,
- 2 large or 3 small lemons,
- Dry ginger root.

After the pears have been cored—not peeled—and all rotten parts cut away, chop enough to give five pounds. The quickest method for doing this is by means of a food chopper. Put on stove with the chopped pulp of the lemons, and tie up in a bag about as much ginger root as can be bought for five cents. You can then remove this bag whenever the pears have enough of this flavor. Cook slowly $1\frac{1}{2}$ hours, or until thick.—Mrs. K. A. Krothe.

Raspberry Bar le Duc.

- 1 quart perfect red raspberries,
- 1 cup currant juice,
- 3 cups sugar,
- 1 cup red raspberry juice.

Combine fruit juices, add sugar, boil until they are very thick, and almost jelly. Then drop in raspberries, a few at a time. Cook 2 or 3 minutes, remove with skimmer to small glasses. When berries are all cooked, the sirup is thinned, boil down very thick. Pour into the glasses containing the berries, and seal.—Anna Kinsley.

Strawberry and Pineapple Preserves.—Take 3 large pineapples, peel and cut up, weigh them, cover with water, and cook until tender. Take 8 quarts strawberries, wash, stem, and weigh them. For each pound of fruit use $\frac{1}{2}$ pound sugar. Add sugar to water pineapple was boiled in. Boil up and add pineapple; when nearly soft add strawberries. Let boil slowly, being careful to keep from burning. Cook until pineapple is tender. Seal when thick.—Anna Kinsley.

Ginger Pears.—Eight pounds pears, four pounds sugar, juice and grated rind of four lemons, one-fourth pound ginger root, one cup water. Boil forty-five minutes.—Mrs. M. L. Judd.

Kumquat Marmalade.—Take 3 pounds of kumquats, wash and slice thin. Weigh again and add an equal weight of water. Let stand 24 hours, then boil 30 minutes and set to cool again. Next day boil 30 minutes. Again weigh and add equal weight of sugar and boil 20 minutes. Fill glasses and cover when cold.—Glenn Martin.

May-Haw Jelly.

$\frac{3}{4}$ cupful sugar,
1 cupful juice.

Using this proportion, proceed as in making apple jelly.—Glenn Martin.

Pineapple and Apricot Jam.

Cook together, stirring frequently for about 40 minutes, 4 cups cooked apricots—either fresh or dried—and 1 pineapple—cut in small pieces—(or 1 can of pineapple) and 4 cups of sugar. Place in tumblers, and cover as for jelly.—Mrs. W. M. Parrett.

Spanish Jam.

To the juice of 5 quarts of currants add 2 cups of water, and bring to a boil, skinning repeatedly. Stir in the grated rind of 6 oranges and boil for 20 minutes. Then add the juice of the oranges, stir in 5 pounds of sugar and $1\frac{1}{2}$ pounds raisins, and boil for $\frac{3}{4}$ hour, or until it is of the desired consistency.

English Orange Marmalade.

Use preferably a combination of Seville and California or other sweet oranges, in the proportion of 1 dozen Seville to $\frac{1}{2}$ dozen sweet oranges. Shred the fruit as fine as possible, remove the pits, and add $2\frac{1}{2}$ pints of water to each pint of shredded fruit. Place in a preserving kettle, cover, and let stand over night. Bring to a boil and let boil for 1 hour. Again cover and let stand over night. Then add $1\frac{1}{2}$ pounds of sugar to each pound of the fruit, and boil about $\frac{1}{2}$ hour, or until the mixture jellies. Cover the pits of the Seville oranges with warm water, let steep 24 hours, strain, and add the flavored water to the mixture just before the last boiling.

Preserved Figs.—Gather the figs when not quite ripe. Peel and weigh them. Take $\frac{3}{4}$ pound granulated sugar and $\frac{1}{2}$ teaspoonful of ground ginger to each pound figs. Boil the sugar to a sirup in as little water as possible. Then add the figs and thin slices of lemon (half lemon to each pound). As soon as the fruit becomes transparent, lay it in a sterilized glass jar. If the sirup is thin let it boil 10 minutes longer before pouring over the fruit. Seal tightly.—Kate Matson Post.

Stuffed Figs.

Figs,
1 egg white,
1 tablespoonful chopped preserved ginger,
 $\frac{1}{2}$ cupful orange-juice,
Powdered sugar,
Chopped nut-meats,
Sugar,
Red coloring.

Select large, light figs, trim off the stem end, pick over carefully and with a sharp knife open one side. Fill with a mixture made as follows: Mix the white of the egg with the orange-juice, preserved ginger, and sufficient powdered sugar to make a stiff dough; then mix in with it one-half as much chopped nut-meats. When the figs are filled with this mixture, press together, roll in pink sugar and pack in flower-pots lined with wax-paper. Decorate the top with small Christmas trees. To make the pink sugar, put some fine or granulated sugar on a piece of stiff white paper, sprinkle over it a few drops of red coloring, and rub with a wooden spoon till evenly distributed. Dry in a moderate heat, occasionally separating the grains by rubbing them between the fingers.—Marion Harris Neil.

Fig Preserves.

For 1 quart figs use $\frac{3}{4}$ quart sugar and 1 sliced pineapple, or lemon. After thoroughly washing the figs, run a fork through each. The figs should be handled with care, holding them by the stems, so they will not become shapeless. Place the sugar in a granite saucepan and moisten it with water. Boil the sirup until clear, then drop in the figs. Boil one hour, then add sliced lemon or pineapple and boil one hour more.—Glenn Martin.

Spiced Peaches.

Look over the peaches carefully, selecting ripe fruit and discarding all that are soft or speckled. Rub clean with a soft dry cloth and stick in each large peach four or five cloves and in each small one, two or three cloves. Place in a preserving kettle 1 quart sugar, 1 pint vinegar and a small quantity of cinnamon bark and bring to a boil. Then place in this sirup 8 or 10 peaches, allowing them to cook until soft enough to pierce easily with a fork. Pack the peaches in a quart jar, cover with sirup and seal.—Mrs. Grover C. Stemple.

Fruit Preserved in Grape Juice.—Any kind of fruit can be preserved

by this method without the use of sugar, but it is particularly recommended for apples, pears and sweet plums. Boil 6 quarts of grape juice in an open preserving kettle down to 4 quarts. Have the fruit washed and pared and large fruit quartered and cored. Cover the prepared fruit with boiled grape juice, boil gently until tender and put in sterilized jars.

Boiled Cider.—Choose cider that is perfectly fresh and sweet. Fill an open preserving kettle not over two-thirds full and boil down one-half, skimming frequently. Put in bottles or stone jugs and use to improve mince meat or make cider apple sauce.

Cider Apple or Pear Sauce.—Use 5 quarts of boiled cider to 8 quarts of pared, quartered and cored fruit. Cover the prepared fruit with boiled cider and cook for two or three hours, or until clear and tender. Place the kettle on an iron tripod or ring to prevent burning. But if necessary to stir the sauce take care to break the fruit as little as possible.

Fruit Butter.

An appetizing and very economical kind of preserve, much favored in many localities, is fruit butter, i.e., apple, peach, pear, or other fruit pulp boiled down in water or cider to a smooth paste. A special advantage of this process is that it admits of using inferior grades of fruit, but the fruit should be carefully looked over and all rotten spots or other defects cut out. The usual method of making fruit butter is by boiling down the fruit pulp in an open kettle on the top of the stove, as for making jam or marmalade, but the process may be shortened and considerable labor saved by baking the pulp during the latter part of the process in the oven with a slow and steady fire. Boiling down fruit juice on the top of the stove is a tedious and laborious process, because constant stirring is required to prevent the fruit pulp from burning on. A number of the large glass balls that boys call agates, placed in the bottom of the kettle, will save considerable labor, as the

movement of the boiling mass will keep them moving and will tend to prevent the pulp from sticking and burning on.

To prepare apple, peach, pear, or other fruit butter, wash the fruit without peeling or coring it, but carefully cut out wormy or rotten spots and other defects. Place the fruit in the preserving kettle with just enough water to cover it, except in the case of cider apple butter, in which substitute cider for water. Boil the fruit slowly until it falls to pieces, then pass the juice and pulp through a granite colander to remove skins, cores, and seeds, and allow to simmer until of the thickness of rich cream. At this stage, add spices and sugar if desired and continue boiling with constant stirring until the pulp is perfectly smooth and of the desired consistency.

Or place the pulp in an earthenware crock or granite pan or kettle, cover with a heavy lid, and bake in a slow steady oven until it looks glossy and thickens like jelly, when it will be done. By the baking process the necessity of constant stirring is avoided, as it will be sufficient to stir the mass at intervals of about half an hour.

Remove while hot to jelly tumblers, ordinary glass jars, or earthenware crocks, and cover with paraffin to exclude the air, or seal.

For the different kinds of fruit the following special suggestions may be observed:

Apple or Peach Butter.—Drain off the juice in which the fruit is cooked through a cloth, and use for jelly. Mix the pulp with about one-third its own bulk of sugar and boil down or bake, as desired.

Cider Apple Butter.—Select apples that cook easily, wash, peel, quarter, and core them, boil down the cider to one-half, cover the fruit with an equal amount of the boiled down cider; and boil rapidly on the top of the stove as, if the boiling is slow, the fruit is likely to sink to the bottom and scorch. After the butter commences to thicken, usually in the course of about two hours, it will be necessary to stir constantly and vig-

orously, to prevent burning. If the butter thickens or jellies before it becomes perfectly smooth, stir in a little more cider. Sweeten with granulated sugar and spice to taste, but avoid using too much spice, as it tends to cover the natural flavor of the product.

Crabapple Butter.—Fruit butter from crabapples is not quite equal to cider apple butter, but is more economical, as crabapples are usually cheap and abundant. Follow the above process, adding sugar and spices to taste at the stage when the pulp begins to thicken.

Pear Butter.—Boil the fruit in a very little water until it falls to pieces, put through a colander to remove cores and seeds, add half as much sugar by bulk as there is pulp, and spice to taste. Cook slowly, stirring constantly to prevent burning.

JELLY MAKING

All fruit when ripe or nearly so contains a substance called pectin which has properties somewhat similar to starch. All housekeepers know that starch when boiled in water cools in a jelly-like mass. A similar property in pectin causes fruit juices, when properly boiled, to jell. But if fruits become overripe, or if fruit juices ferment or are cooked too long, the pectin undergoes a change and loses this power. Experience has shown that a definite amount of sugar dissolved in the fruit juice—namely, 25 degrees as registered by the sirup gauge—is exactly right for combining with pectin to make jelly. Any excess of sugar tends to form crystals and the presence of these tends to cause the whole mass to crystallize. Moreover, if the sirup boils so rapidly that some of it rises on the sides of the preserving kettle, such particles will form crystals and these, if stirred into the sirup, may crystallize the whole. Hence the three chief secrets of jelly making are: (1) The selection of fruit which is just ripe, or slightly underripe; (2) the use of the sirup gauge; and (3) slow and careful boiling with especial care not to boil too long. The sirup gauge should

register 25 degrees for every kind of fruit without exception.

Housewives are often perplexed because one lot of jelly crystallizes or refuses to harden, whereas another prepared by the same recipe and treated under apparently similar conditions is entirely satisfactory. The difference may be due to either of several causes. One lot of fruit may be overripe or may contain a greater or less proportion of fruit sugar than another. Or the difference may be caused by too rapid or prolonged boiling. Fruit picked during a cold, wet season or immediately after a rain will contain a good deal more water and consequently a less proportion of sugar than if picked after a prolonged period of heat and sunshine. Hence if the proportion of sugar is determined solely by measurement, somewhat less than a pint of sugar will be required for a pint of juice during wet seasons and vice versa. For the same reason small fruits should be washed quickly and thoroughly drained to prevent their absorbing much water. But the use of the sirup gauge will obviate all such difficulties. It measures the exact amount of sugar present, including both the natural fruit sugar and cane sugar added in the process of preserving.

Hence, in general, select for jelly making juicy fruit picked during a period of sunshine, or at least preferably not immediately after rain. Wash quickly, drain, express the juice, add to the clear juice about 1 pint more or less of granulated sugar to the pint of juice, boil, skim and pour into tumblers or small jars.

Acid fruits make the best jelly and the following are to be preferred in the order given: Currant, crab-apple, apple, quince, grape, blackberry, raspberry, peach. Wild raspberries, blackberries, barberries, grapes and beech-plums all make delicious jellies. Take care to choose barberries that are fresh and not overripe. Sweet fruits, such as apples, make a very mild jelly, but may be flavored with fruits, flowers or spices, but with the sour varieties this will not be neces-

sary. Some fruits, such as the strawberry, contain very little pectin and are difficult to jell without the addition of some other fruit juice, such as the currant, when a pleasant jelly will result.

Apple Pectin from Pomace.—To 25 pounds of apple pomace add 1 ounce of tartaric or citric acid and 100 pounds of water. Boil slowly for 60 minutes, and press the liquid from the pomace in a cider press. Filter the liquid through a canton-flannel bag. The pectin of the pomace will be in this extract. When it is desired to make a good quality of jelly from fruit juices that do not jell readily, add this pectin after sugar has been dissolved in the juice.

Currant Jelly.—To make good jelly from currants, raspberries, blackberries, ripe grapes and plums, proceed as follows: Pick over the fruit and remove all leaves, large stems and the like. Wash quickly, drain, and put fruit over the fire in a preserving kettle. Crush with a wooden vegetable masher or spoon enough to start the juice, heat slowly and stir frequently. When hot crush thoroughly with the vegetable masher. Express the juice into a large bowl through two thicknesses of cheese cloth spread over a hair or wire sieve. Let the juice drip without pressure, merely moving the pulp about by lifting the corners of the cheese cloth and slightly shaking the contents until all the free juice has been obtained. Use this to make the best quality of jelly either as it is or after first passing it through a flannel or woolen cloth or jelly bag. This will make a somewhat more transparent jelly. Now remove the sieve to another bowl, twist the corners of the cheese cloth and squeeze out as much more juice as can be obtained. Use this to make jelly of a lower grade.

Measure the juice into a clean preserving kettle and stir in a pint of granulated sugar for every pint of juice until the sugar is dissolved. Place over the fire and bring to a boil slowly. Observe carefully the moment it begins to boil, withdraw from the fire and skim. Again bring to a boil, remove and skim a second

and third time. Then pour into hot sterilized glasses and place these on a hot sunny window-sill covered preferably with panes of glass. When cool and firm seal and store in a dark, cool place.

Or jelly may be prepared directly from the strained juice without boiling by dissolving the required amount of sugar in the cold juice, pouring it into warm sterilized glasses and otherwise treating as before. Such jelly is more delicate but does not keep quite so well.

Other good jellies may be made by the same process from a mixture of equal parts of currants and raspberries, or a mixture of 10 quarts of strawberries with 2 quarts of currants, but the last mentioned must be boiled fifteen minutes.

For ripe grape jelly choose an acid grape, as the sweet varieties contain too much sugar, or use half ripe fruit or equal portions of nearly ripe and green grapes. Wild grapes are excellent.

For plum jelly use an underripe acid plum. Wash, stem and cook gently in 1 quart of water for each peck of fruit. Strain the juice and proceed as for currant jelly.

Apple and Crab-apple Jelly.—Large fruits such as apples, peaches and pears must be boiled in water to extract the pectin and flavoring matter they contain. As a rule 4 quarts of water added to 8 quarts of fruit will produce 3 quarts of strained juice, but juicy peaches and plums may require only 3 or 3½ quarts of water. Boil down the juice if necessary to 3 quarts. Stem and wash the fruit. Wipe dry and clean carefully the blossom end, and cut in quarters. Add 4 quarts of water to 8 of fruit and cook gently until soft and clear. Strain the juice, boil down to 3 quarts if necessary and proceed as for currant jelly. The quality of the jelly will depend upon the natural flavor of the fruit. Hence choose preferably a fine flavored acid apple and make the jelly at any time of the year when the fruit chosen is at its prime. Apple jelly made in the spring may be improved by the addition of the juice

of a lemon to every pint of apple juice.

To make cider apple jelly, use cider fresh from the press instead of water.

Quince Jelly.—Rub the quinces with a coarse crash towel. Cut out the blossom end, rinse and drain. Wash and pare the fruit, quarter and cut out the cores, and keep them by themselves. Drop the best pieces of fruit into a bowl half full of water containing lemon juice, to be preserved or canned. Run the parings and imperfect parts through a meat chopper or chop finely. Add a quart of water to every 2 quarts of chopped fruits and parings and cook gently for two hours. Strain and proceed as for apple jelly. Put the cores into another kettle, cover with plenty of water and cook two hours.

Now, to make a second grade of jelly, add the chopped parings and fruit from which the juice has been extracted, mix and strain. Return the clear juice to the preserving kettle, stir in a pint of sugar for each pint of juice and boil ten minutes.

Covering Jelly.—Cut out some discs of any thick white paper, preferably paraffin or butter paper, the size of the top of the jelly glass. A simple way to make a pattern of the exact size is by means of a small compass or pair of dividers. When the jelly is hard and firm, brush over the top with brandy or alcohol to kill any spores of mold that may be present. Dip a disc of paper in the spirits and let it rest on the jelly. Now put on the covers.

Or tie a disc of cotton batting over the top of the glass.

Or cut discs of paper about half an inch in diameter larger than the top of the glass, wet them in a mixture of the white of an egg beaten together with a tablespoonful of cold water and press down the sides until they stick.

Or cut covers about an inch in diameter larger than the top of the glass, dip in olive oil and tie on the glass with string.

Or pour melted paraffin in the top of the glass over a piece of paper

dipped in brandy or alcohol. Set the paraffin in a cup surrounded by warm water and heat gently until melted. Make a layer at least one-fourth of an inch thick.

Fruit Juices.—These may be canned or bottled with or without sugar as desired. Use preferably self-sealing bottles such as pop or beer bottles with care to sterilize both bottles and corks.

For grape juice wash the grapes, pick them over and remove the stems and all defective specimens. To express the juice crush slightly in the preserving kettle, heat slowly and boil gently for half an hour. Crush the fruit and express the juice as for jelly making, except that all the juice may be preserved together. Bring the strained juice to a boil in a clean preserving kettle, remove and skim. Do this a second time. Then stir in the sugar until dissolved, boil five minutes, skim and put into hot sterilized bottles or jars. Set these in pans of boiling water in a moderate oven for ten minutes. Now fill up with boiling juice, seal and place on boards to cool protected from drafts. For grapes use about 1 gill of sugar to a quart of juice.

For raspberries, blackberries and strawberries, use $\frac{1}{2}$ pint of sugar to each quart of juice and for currants a full pint, otherwise proceed as for grape juice.

For cherry, plum and peach juices add $\frac{1}{2}$ pint of sugar to each quart of juice.

Fruit Sirups.—Proceed in all respects as for fruit juices, but use at least one-half as much sugar as fruit juice. Use fruit sirups to flavor ice creams and water ices, also for beverages at the rate of two or three spoonfuls to the glass of ice water.

Preserving Powders.—Avoid all so-called "preserving powders" whether advertised under various trade names or put up and sold by druggists or peddlers. Any antiseptics that will prevent the decay of fruits and vegetables are injurious to health regardless of all claims by interested persons to the contrary. Nothing of the sort is necessary if sound ripe fruit is selected and sterilized by means

of heat in the proper manner. And since the necessary care to do good work adds little or nothing to the cost of preserving fruits and vegetables, the so-called "preserving powders" serve no useful purpose. On the contrary they tend to encourage unclean and slovenly work and to conceal the effects of using decaying fruits and vegetables.

CANNING VEGETABLES

Some vegetables are more difficult to preserve properly than fruits and fruit juices, since they contain a considerable proportion of the element nitrogen, the presence of which makes any substance a good culture medium for the bacteria, spores and molds which cause decomposition. Moreover, the addition of sugar to fruits and fruit juices helps to produce a condition which is unfavorable to the growth of these injurious organisms. But the addition of sugar to most vegetables would not be desirable. Hence, a considerably longer and more heroic treatment for canning vegetables is required. The process, however, is simple and is so similar to the ordinary methods of canning fruit that it can be readily carried out by any housekeeper if the following suggestions are observed:

The secret of canning vegetables lies in the fact that whereas bacteria may be readily killed at the temperature of boiling water, the spores or seeds of certain kinds may retain their vitality unless they are kept at the temperature of boiling water for a long time—about five hours—or preferably boiled for about one hour upon two or three successive days. The latter is the method employed by scientific men and is the one here recommended. The first day's boiling kills all the molds and most of the bacteria but does not kill their spores or seeds. These start to grow as soon as the contents of the jar is cool. The second boiling kills the crop of bacteria thus formed before they have time to develop spores. The third boiling is not always necessary, but is advised to make assurance doubly sure. This process is

called by scientists "fractional sterilization." It is the whole secret of canning meat, fruits or vegetables and any one who will bear it in mind may be sure of satisfactory results.

Observe, however, that the air must be excluded at all times after the first boiling. Otherwise a new crop of bacteria, spores and molds will be deposited from the air and the work of sterilization will be undone. Cooking for three short periods in a closed container at a comparatively low temperature instead of cooking for one short period at a high temperature, or for one long period in an open vessel makes the vital difference and insures a freshness of flavor and color such that the difference between the product and the fresh vegetables can hardly be detected. After the jars have been sterilized and tested keep them in the dark, or wrap them closely in dark colored paper, as sunlight will soon destroy the color.

Canning Corn.—All housewives will be glad to know that corn is one of the easiest vegetables to can if proper precautions are observed. Select preferably the sweetest and most delicate varieties. Experiment has proved that the amount of sugar in sweet corn diminishes very rapidly after the ear is pulled from the stalk. Hence endeavor to get the kernels into the can within an hour after the corn is picked. If this can be done the result will be far superior to the ordinary commercial product. Select ears with full grains, just before they begin to harden, since the corn is then sweetest. Husk the ears and remove the silks with a stiff brush. Shear off the grain with a sharp knife, pack the jar full and salt to taste, usually at the rate of one teaspoonful to the quart. Fill up the jar to the top with clear cold water, put on the rubber ring and place the glass top on loosely but without depressing the spring. Now place the jars upon a false bottom in a wash boiler and separate them by means of rags or cotton rope, such as an old clothesline, so that they cannot strike one another when the water begins to boil. Pour

in about three inches of cold water or enough to fill the boiler with steam. More than enough to prevent the boiler from going dry is not necessary as the steam will do the cooking. Cover the boiler tightly, bring to a boil and let boil for a full hour. Now remove the cover and allow the steam to escape. Press down the spring to prevent air from entering. Remove the jars to cool, or let them stand in the boiler until the next day.

On the second day raise the spring as before and again boil for one hour. Once more clamp down the top and let stand until the following day. Then repeat the operation. Observe that the jars when hot must be carefully shielded from drafts of cold air or the sudden change of temperature will crack them.

After the third boiling clamp on the top and let stand two or three days. Then test each jar by releasing the spring and picking up the jar by the glass top. If the top does not come off the contents are reasonably sure to keep unless there should chance to be one or more anaerobic bacteria present which may cause trouble later on. Should this happen increase the length of boiling for the next lot to 1½ hours.

If the tops come off when the can is tested, decomposition has begun to take place and gases have been formed which offset the atmospheric pressure on the outside of the jar. In this case it is best to reject the contents and to cleanse and refill the jar.

The above directions apply only to pint and quart jars. Increase the time of boiling for half gallon jars to one and a half hours. A little practice may be required at first to secure perfect results by this method; hence do not try too many jars the first time. Make a few experiments in the early part of the season until you fully understand the directions and learn to follow them properly. After that there will be no difficulty and the benefits of fresh vegetables from the kitchen garden will be extended to every season of the year.

The same general process applies to canning other vegetables except for the mode of preparing them before commencing the sterilizing process, as to which the following suggestions are offered:

Stringbeans.—Pick these when young and tender, string, break into short lengths, pack firmly in the jar, cover with cold water and add a teaspoonful of salt to each quart. Otherwise proceed as for corn. Add a small bit of red pepper in the bottom of each jar, if desired.

Eggplant.—Pare, cut in thin slices and drop into boiling water for fifteen or twenty minutes. Drain and pack in jars. Proceed as for corn. Remove in slices when required and fry in bread crumbs, or make into puddings and bake.

Beets.—Pull while young and tender. Cut off the tops, wash and drop in boiling water for one and a half hours, or until thoroughly cooked. Skin, slice and pack in jars. Proceed as for corn. To pickle, cover with equal parts of water and good vinegar and sweeten to taste.

Okra or Gumbo.—Pick the pods while young and tender, wash, cut in short lengths and sterilize as above. Use for soups and stews.

Summer Squash.—Cut into small blocks, pack, cover with water, add salt and sterilize as above. Or skin, boil or steam until well cooked, mash, pack and sterilize. But in this case steam for an hour and a half each day as the heat penetrates the jar more slowly. Each jar will contain above twice as much of the cooked vegetable as if uncooked.

English Peas.—Choose young sweet peas and proceed as for corn. This product has all the delicate flavor of the fresh vegetable.

Asparagus.—Can the tips only, the same as for corn.

Cauliflower.—Prepare in summer the same as for serving at table. Pack in jars and sterilize.

Carrots and Parsnips.—Gather in early summer when the young plants are tender and sweet. Prepare as for serving at table and sterilize as for corn.

Turnips and Kohl-Rabi.—Prepare as for the table, pack and sterilize.

Lima Beans.—Pick before the pods begin to harden and treat as for corn.

Pumpkin or Winter Squash.—Preserve these in their natural condition in a suitable storeroom as long as possible. But should they show signs of decay, steam and can the same as summer squash. By this time the jars which have been emptied of other vegetables will be available and may thus be made to do double service.

Succotash.—Gather fresh corn and beans early in the morning. Prepare and sterilize as above. This is one of the most difficult things to can, hence boil an hour and a half each day as for summer squash.

Vegetable Roast.—Prepare corn, lima beans, tomatoes, stringbeans, okra, squash and eggplant as for canning separately. Mix in any desired proportions but let the corn and lima beans predominate. Add two or three medium sized onions to each quart and run through a food chopper to mix thoroughly. Pack into jars and sterilize by boiling an hour and a half each day for three days as for summer squash. To prepare for the table mix an equal amount of bread crumbs, add a piece of butter the size of a walnut and one egg. Season to taste with pepper and salt and bake in a round baking dish until brown. Cut into slices like a meat loaf and serve hot with drawn-butter sauce.

Or corn, okra and tomatoes, mixed in equal proportions, may be canned as soup stock.

Stewed Tomatoes.—These keep very easily even in the common screw-top jar. Hence such jars may be set aside for tomatoes and the more modern styles used for canning other vegetables. In this case observe that the tops and rubbers must first be sterilized by placing them in cold water. Bring to a boil and boil for ten minutes. Handle as little as possible, especially the inside of the top or inner edge of the rubber. Fill the jar with the cooked tomatoes while steaming hot, put on the rubber, screw the top down firmly, in-

vert it and let it stand in that position until cold. To prepare the tomatoes, wash and plunge them in boiling water for five minutes. Now dip for a moment in cold water, pare, slice and place them in a preserving kettle over an iron ring or tripod. Heat slowly and stir frequently from the bottom. Bring to a boil and then boil thirty minutes. Put in sterilized jars and seal.

Whole Tomatoes.— Use 8 quarts of medium sized whole tomatoes and 4 quarts of sliced tomatoes. Prepare the sliced tomatoes as for stewed tomatoes. Boil twenty minutes, rub through a strainer and return to the fire. Now pare the whole tomatoes and put them in sterilized jars. Pour over them the stewed and strained tomatoes until the jar is full. Put the uncovered jars in a moderate oven on a pad of asbestos, or in a shallow pan of hot water and cook for half an hour. Remove, fill to overflowing with boiling hot strained tomatoes and seal. Any strained tomatoes left over may be canned for sauces.

Blanching and Cold-Dipping Vegetables.— Advocates of the blanching and cold dipping process assert that the effects of the sudden and extreme change of temperature upon bacteria, spores, and molds is so effectual that this process when followed by a single period of sterilization is just as effective as though three periods for three successive days were used, and that the product having been cooked less, appears more natural in color and texture, and has a better flavor. It is further argued that, while the intermittent or fractional sterilization method is very effectual, the lifting of jars in and out of the sterilizer three times consumes too much energy, that the process requires too much time, too much fuel, and usually over-cooks the products, and hence that this method does not encourage the saving, in large amounts, of such inexpensive and important vegetable foods as greens, sweetcorn, tomatoes, beets, etc.

The fractional sterilization method is elsewhere recommended since it

may, perhaps, be regarded as the safest for the ordinary housekeeper who desires to put up only a few jars of vegetables for family use, and can readily sterilize these upon the back of the stove for an hour on three successive days without loss of time or additional cost for fuel. But whoever desires to put up vegetables in large quantities would do well to experiment with the blanching and dipping process followed by the single period of sterilization, and for this process the following recipes are recommended:

Vegetable Greens.

Prepare and can the day picked. Sort and clean. Blanch in a vessel with a little water under false bottom or in a regular steamer, 15 to 20 minutes. Remove. Plunge quickly into cold water. Cut in convenient lengths. Pack tight in jar or container, season to taste and add a little chipped beef, olive oil, etc. Add hot water to fill crevices, and a level teaspoonful of salt to each quart. If using glass jars, place rubber and top in position, and partially seal. Sterilize 90 minutes in hot-water bath outfit. Remove from canner. Tighten covers. Invert to cool and test joints. Wrap in paper to prevent bleaching, and store.

This recipe may be applied to any or all of the following cultivated vegetables: swiss chard, kale, Chinese cabbage leaves, upland cress, French endive, cabbage sprouts, turnip tops, New Zealand spinach, asparagus, spinach, beet tops, cultivated dandelion, dasheen sprouts; and also to the following wild greens: native mustard, Russian mustard, collards, rape, pepper cress, lamb's quarter, sour dock, smartweed sprouts, purslane or "pussley," pokeweed, dandelion, marsh marigold, wild mustard, and the tender sprouts and young leaves of milkweed.

For Cabbage, Brussels Sprouts, and Cauliflower the recipe is practically the same as for the above-named vegetable greens, and the same instructions may be followed. Experience alone will teach the slight varia-

tions necessary in amount of time required for blanching, amount of seasoning necessary for the various vegetable greens, etc.

Root and Tuber Vegetables.—In canning carrots, parsnips, beets, turnips, sweet potatoes, etc., grade for size, color, and degree of ripeness. Wash thoroughly, using vegetable brush. Scald in boiling hot water sufficiently to loosen the skin, then plunge quickly into cold water. Scrape or pare to remove skin. Pack whole or cut in sections or cubes, as required by the home or market standard. Add boiling hot water and one level teaspoonful of salt to the quart. Place rubbers and tops in position. Partially seal, but not tight. Sterilize 90 minutes in hot water.

Tomatoes.—Scald in hot water enough to loosen skins. Plunge quickly in cold water, remove, core, and skin. Pack whole. Fill container with whole tomatoes only. Add one level teaspoonful of salt to each quart. Place rubber in cap in position and partially seal, but not tight. Sterilize 20 minutes in hot water.

Sweet Corn on the Cob.—Always can corn the same day picked. Remove husks, silks, and grade for size. Blanch on the cob in boiling water 5 to 15 minutes. Plunge quickly in cold water. Pack ears, alternating butts and tips, in half gallon jars or gallon tin cans. Pour over boiling hot water and add 2 level teaspoonfuls of salt to each gallon. Place rubbers and tops in position, seal partially, but not tight, and sterilize in hot water 180 minutes, one period. When sweet corn is taken from jar or tin can for table use, remove ears as soon as jar or can is opened. Heat corn, slightly buttered, in steamer. Do not allow ears to stand in water or to be boiled in water the second time.

Sweet Corn Cut from the Cob.—Always can the same day as picked. Remove husks and silks, blanch on the cob in boiling hot water 5 to 15 minutes. Plunge quickly in cold water. Cut the corn from the cob with a thin, sharp-bladed knife. Pack corn

in jar tightly until full. Add one level teaspoonful of salt to each quart and sufficient hot water to fill. Place rubber and top in position, seal partially, and sterilize 180 minutes in hot water.

Lima Beans, String Beans, Peas, Okra, Etc.—Always can same day vegetables are picked. Cull, string, and grade. Blanch in boiling hot water for 2 to 5 minutes. Remove and plunge quickly in cold water. Pack in container until full. Add boiling hot water to fill crevices. Add one level teaspoonful of salt to each quart. Sterilize in hot water for 120 minutes.

Pumpkin and Squash.—For pie filling, cut up the squash into convenient sections, core, and remove skins. Cook for 30 minutes to reduce to pulp. Pack in glass jars or tin cans, add 1 cup sugar and 1 teaspoonful salt to each quart of pulp. Place rubber and top in position, partially seal, and sterilize for 60 minutes in hot water.

For canning pumpkin and squash for special dishes (fried, creamed, or baked) cut into small uniform size cubes, blanch in boiling water for 10 minutes, plunge quickly in cold water, pack in jar until full, add boiling hot water and 1 level teaspoonful of salt to the quart, place rubbers and caps in position, partially seal, and sterilize 60 minutes in hot water.

Eggplant.—Remove the skin and slice across the fruit. Make the slices about one-half or three-fourths of an inch thick. Blanch 3 minutes in boiling water to which has been added a tablespoonful of salt per quart. Plunge into cold water and pack in glass jars. Fill with boiling hot water and add a level teaspoonful of salt per quart. Put rubber and cap in position, partially seal, and sterilize 50 minutes in hot water.

Sweet Peppers.—Place either red or green peppers in the oven and bake until the skins separate from the meat. Remove the skins. Pack solid in glass jars. Add no boiling water. Add 1 level teaspoonful of salt per pint. Put the rubber and cap in posi-

tion, not tight. Sterilize in hot water for 90 minutes.

Corn and Tomato Combination.—Blanch fresh corn on the cob 6 minutes. Cold dip it. Cut the corn from the cob, cutting from tip to butt. Blanch the tomatoes $1\frac{1}{2}$ minutes and cold dip. Remove the skin and core. Chop the tomatoes into medium-sized pieces. Mix thoroughly 2 parts of tomatoes with 1 part of corn. Pack the mixture in glass jars, add a level teaspoonful of salt per quart, put rubber and cap in position, not tight, and sterilize in hot water for 90 minutes.

Corn, Tomatoes and String Beans Combination.—Use 1 part of corn, 1 part of green string beans, and 3 parts of tomatoes. Blanch fresh corn on the cob for 6 minutes and cold dip. Cut the corn from the cob, cutting from tip to butt. Prepare string beans and cut them into convenient lengths. Blanch them 4 minutes and cold dip. Blanch the tomatoes 1 to 3 minutes and cold dip. Remove the skin and core. Cut the tomatoes into medium-sized pieces. Mix thoroughly. Pack the mixture in glass jars. Put the rubbers and caps in position, not tight, and sterilize in hot water for 90 minutes.

Cauliflower.—Use only the flowered portion. Blanch it 3 minutes. Plunge into cold brine (one-half pound salt to 12 quarts of water). Allow the cauliflower to remain in this brine for 12 hours. Pack in glass jars, fill them with boiling water and add a level teaspoonful of salt per quart. Put the rubber and cap in position, not tight, and sterilize in hot water for 45 minutes.

Cabbage or Brussels Sprouts.—Use small, solid heads. Cut them into convenient sections and remove the core. Blanch 10 minutes. Cold dip. (See cauliflower.) Pack in glass jars. Pour on boiling water and add a level teaspoonful salt per pint. Put the rubber and cap in position, not tight, and sterilize in hot water for 90 minutes.

Mushrooms.—Unless you are absolutely sure that you know a mushroom when you see it, do not run the risk of gathering and using for food

what you may think are mushrooms. A very large number of people are poisoned every year in this manner. There are a number of poisonous plants which resemble the edible mushroom. Can mushrooms immediately after picking; if allowed to stand they become unfit for use. Wash and trim the mushrooms. If small, can them whole, if large, cut into sections. Blanch the mushrooms in boiling water for 5 minutes. Remove and plunge them quickly into very cold water. Pack them in glass jars, add boiling water to cover them, and add 1 level teaspoonful of salt to the quart. Place rubber and cap in position, not tight, and sterilize in hot water 90 minutes.

TROUBLES IN CANNING

Canner's "flat sour" is a common trouble in canned corn, beets, beans, and asparagus. The canned product before being opened shows no signs of being spoiled, but when opened has a sour taste and disagreeable odor. To avoid this use only a fresh product which has been gathered not more than 5 or 6 hours, blanch, cold dip, pack one jar at a time, and place each jar in the canner as soon as packed. The first jars in will not be affected by the extra cooking.

The chief difficulty with corn is failure to recognize the proper time to pull the ears, which is just between the milk stage and the dough. If corn is gathered after the dough stage has been reached the product will have a cheesy appearance. Blanch on the cob, not longer than 5 minutes, plunge in cold water, cut from the cob with a sharp knife, and pack into sterilized jars as rapidly as possible. To this end it is desirable to have two persons cut and one fill, but if one person works alone he should fill a jar as soon as he has cut off sufficient corn, prepare it and place it at once in the canner. The longer the finely cut product is exposed to the air the more bacteria, spores, and molds accumulate, and the greater the liability that some of them may not be destroyed in the steriliz-

ing process. Hence the more speed the better, provided no essential of the process is overlooked. No more corn should be blanched and cold dipped than can be cut off at once, and the cold dip should not be prolonged. A mere plunge into the cold water is sufficient.

Peas for canning should be carefully looked over, all split and broken ones being removed, and this vegetable should be handled very gently in the blanching and cold dipping process. Otherwise, although the peas may keep well, the liquid will show a cloudy or hazy appearance. Peas that are too old will sometimes crack if the blanching is not carefully done, and cause the liquid to become cloudy. Hard water also has a tendency to cause cloudiness.

How to Open a Jar.—Run a thin knife blade under the rubber next to the jar and press against the jar firmly. If this does not let in enough air to release the pressure on the top, pour fairly hot water onto the top of the jar, or, if necessary, place the jar in a deep sauce-pan of water, bring to a boil and keep boiling a few minutes. It will then open easily.

A convenient can wrench for opening screw top fruit jars may be readily improvised out of a piece of heavy copper wire. Simply bend the wire about two-thirds of the way around the top of the jar, then bend the ends backward upon themselves to give the hand a good grip. Roughen the inside of the wire with a file so that it will not slip, and the device will be found to work perfectly.

CHAPTER XXXV

VINEGAR, PICKLES, AND PICKLING

NATURE OF VINEGAR—PROCESS OF VINEGAR-MAKING—SPECIAL VINEGARS—PICKLES AND PICKLING—MIXED PICKLES—PICKLED VEGETABLES, NUTS, AND FRUITS

All vinegar, of which there are several kinds, consists of a dilute solution of acetic acid in water with a small amount of sugar and other organic matter. Vinegar is the result of the action of the oxygen of the air, in the presence of a particular kind of yeast or ferment, upon a solution of alcohol. The alcoholic liquors from which vinegar is made may be produced by the fermentation of almost any vegetable or fruit juices. The principal kinds of vinegar are, accordingly, wine vinegar, produced from grapes; malt vinegar, from barley; cider vinegar, from apples; sugar and molasses vinegar, from cane sugar products; corn vinegar; beet vinegar; etc. The alcoholic fluid, or "wash," as it is called, should contain not over 4 per cent to 12 per cent of alcohol. And for the best results the temperature should be from 70 per cent to 85 per cent Fahrenheit. Plenty of air to introduce the oxygen required by the process must be supplied and mixed with the alcoholic solution. The changing of alcohol to acetic acid by the action of oxygen produces heat and increases the weight of the liquid.

Commercial vinegar is made on the Continent of Europe principally from cheap grades of wine, in England from malt and sour beer, in the United States from cider and cheap grades of alcoholic liquors, as whisky and the like.

Methods of Making Vinegar.—There are two principal ways of making vinegar—the slow and the

quick process. In the former the alcoholic solution is placed in a barrel or vat containing a little old vinegar or mother, which supplies the necessary yeast, or in the case of wine vinegar, old wine lees, either exposed to the sun or placed in a warm room. Air is admitted through the bung of the casks or otherwise, and the liquid is allowed to stand until it turns to vinegar. This takes two weeks or more in summer, and a month or more in cold weather. The process is similar to that of making cheap vinegar from molasses and yeast, or making ordinary cider vinegar.

Or to make vinegar by the quick, or German process, prepare a special contrivance as follows:

Supply a large vinegar cask with a false bottom about a foot from the true bottom perforated with a large number of $\frac{1}{4}$ inch gimlet holes. If a fine quality of vinegar is desired, cover this with one or more thicknesses of white flannel cloth, and an inch layer of clean white sand on top. Bore, around the outside of the barrel an inch below the false bottom, a row of $\frac{1}{2}$ inch auger holes slanting downward from without 2 or 3 inches apart. These are necessary to admit the air. Fill the barrel from the false bottom to within 4 or 5 inches of the top with maple, beech, or basswood chips previously soaked for three or four days in first-class vinegar.

Now cut another cask of somewhat smaller size in halves. Bore the bottom of one half barrel full of gimlet holes the size of a goose quill or

about $\frac{1}{2}$ inch in diameter. Cover this with cotton batting or yarn, and place it on top of the barrel resting on cross slats or upon the chips.

Insert a spigot into the cask below the false bottom, slanting downward to the bottom of the cask but having its opening just below the level of the row of air holes, and place beneath the spigot the other half barrel, protected by a wooden cover from dust and dirt.

The alcoholic liquor poured into the upper half barrel causes the yarn or cotton in the bottom to swell and fill the gimlet holes, whence the liquor drops through upon the chips. The process of fermentation produces heat, which causes a current of air to rise through the openings for that purpose below the false bottom, and to meet the alcoholic liquor as it percolates drop by drop through the chips. The air current escapes between the bottom of the upper half barrel and the top edges of the large cask. Thus the action of the oxygen in the air in turning the alcohol into acetic acid is made very rapid.

The vinegar, after passing through the sand and flannel strainer, and the false bottom, accumulates in the bottom of the barrel but cannot escape through the spigot until it reaches the level of its mouth, or a depth of 8 or 10 inches. It is then first drawn from the bottom where its strength is greatest. And the strong vinegar thus accumulated assists in the process of fermentation.

To use this apparatus, pour in about 4 gallons of alcoholic liquor or "wash" every hour with the addition of 1 quart to make up for the waste. And withdraw every hour about 4 gallons of vinegar from the bottom. The first product must be ladled back into the upper half barrel, run through again and again, when it will be converted into vinegar in three or four days. It must then be poured into a clean tank or cask, and one or two quarts of molasses added to it each day, until the molasses settles in a bed 3 or 4 inches thick. This improves the flavor of the vinegar and gives it a fine color. This process is the quickest and most satisfactory

that has ever been devised. And as the apparatus is inexpensive, and the product is more salable than ordinary vinegar, there would seem to be no reason why it could not be utilized by grocers and other dealers in vinegar, or by private families or individuals either for domestic use or for sale.

Water for Vinegar.—Pure soft or distilled water ought to be used for the manufacture of good vinegar, and if the water is not pure it should be purified by filtering through charcoal.

Wash or Liquors for Vinegar.—The commonest alcoholic liquor used for commercial vinegar in this country consists of about 3 gallons of corn whisky, 4 gallons of good commercial vinegar, and 33 gallons of pure water.

Or 50 gallons of 60 per cent whisky and 37 gallons of beer or maltwort.

Or 2 gallons of brandy, 4 gallons of vinegar, and 12 gallons of water, with the addition, to promote fermentation, of about 1 gallon of an infusion of equal parts bran and rye meal.

Or use $1\frac{1}{2}$ pounds of sugar to each gallon of pure water.

Or $\frac{1}{2}$ gallon of water to 2 gallons of cider. Add to the above in all cases 2 quarts of yeast to every barrel of the liquor.

To Ferment Vinegar.—The process of making vinegar requires the presence of the minute vegetable organisms called yeast, and is greatly hastened by conditions favorable to their growth. This is the reason that vinegar is made more rapidly in hot than in cold weather, and that the temperature of 75° to 80° F. hastens the process. The germs of yeast are, of course, present in large numbers in the lees and mother of old vinegar and also in the vinegar which is soaked into the fiber of the cask. Hence an old vinegar barrel, if sound, is preferable to a new one. The germs of yeast are also present in ordinary vinegar, and if 1 gallon of sound vinegar can be added to each 3 or 5 gallons of cider or other alcoholic liquor or "wash" from which vinegar is to be made, no other yeast will be necessary.

Or good brewers' yeast may be

added to the alcoholic liquor at the rate of about $\frac{3}{4}$ of a pint to each 12 gallons.

Or homemade hop yeast at the rate of $1\frac{1}{2}$ pints to 12 gallons. The "wash" should be at a temperature of about 75° or 80° F. when the yeast is added, and should be kept at or near that temperature while the vinegar is being made. Yeast must not be scalded as a temperature above 140° F. kills it. When old vinegar barrels are employed, or ordinary vinegar is put into new casks to hasten fermentation, care must be taken that the vinegar formerly made in the casks, or used for this purpose, is of the same kind and of at least equally good quality to the desired product. That is, if a fine quality of cider vinegar is desired, only casks that have been used in making pure cider vinegar, or the best grade of cider vinegar itself should be used in the process.

Or boil until tender $1\frac{1}{2}$ pints of shelled corn to each gallon of the "wash" and add this in place of yeast to promote fermentation. When the vinegar is sour enough, strain it through cheese cloth to remove the corn and let stand another week to clarify.

Money in Vinegar.—Grocers and other merchants who sell vinegar at retail should make their own vinegar. They can thus, by employing only the best materials, guarantee a pure article. They can also materially increase their profits. In fact, any person living in the country or small town, can profitably manufacture vinegar for family use and also, if desired, by producing a pure and genuine article can build up a neighborhood trade. To do this it is only necessary to leave samples, with price attached, at the neighboring houses and keep always on hand a sufficient quantity of first-class vinegar. The commercial article is so often adulterated with injurious acids that most persons will prefer to buy homemade vinegar at the market rates or better and a satisfactory profit will be assured.

Cheap Molasses Vinegar.—To make vinegar by the slow process, fill a

large jug, keg, or cask with a mixture consisting of 1 quart of best New Orleans molasses, 1 pint of yeast to each 3 gallons of warm rain water. Tie a piece of cheese cloth over the bung to keep out dust and insects, but to admit the air. Place the receptacle out of doors in the sun during hot weather. Or in cold weather let it stand near the kitchen stove. It will be converted into vinegar in from three weeks to a month. When it gets low, draw off a supply for family use, leaving more or less old vinegar with the mother and lees in the bottom of the cask. Fill up with new liquid in the same proportions, and let stand until converted into vinegar as before.

Or dissolve $\frac{1}{2}$ a pound of light-brown "A" or coffee sugar in 2 gallons of soft warm water. Add 3 pints of homemade hop yeast or $1\frac{1}{2}$ pints of good brewers' yeast to each 12 gallons. Pour all into a suitable keg or cask.

Or a firkin may be used if fitted with a tight cover having one or more auger holes to admit air through it. Fill the receptacle about two-thirds full, or a little more, so as to expose as large a surface as possible to the air. Cover the openings with cheese cloth and let stand in a warm place. Where the conditions are favorable it will be converted into vinegar in about two weeks or a month.

Or for a somewhat better quality, take 5 gallons of water to 1 gallon of molasses, and add a quart of yeast. The addition of a gallon of good vinegar will hasten the process. Odds and ends of sirup, as rinsings from fruit jars, molasses cans, and the like, may be added to the liquor from time to time.

Or for a cheaper quality, take 25 gallons of warm rain water, 4 gallons of molasses, and 1 gallon of brewers' yeast.

Cider Vinegar.—The best quality of vinegar is undoubtedly that made from cider, providing the apples used are sound, ripe, sweet fruit. As the best grades of cider vinegar bring a fancy price, it is advisable to separate ripe, sweet windfalls from small, unripe, or defective fruit, and use the

best fruit for an A 1 grade of cider. The usual careless method of making cider is merely to fill a cask to its capacity with cider and let it stand four to six months to sour. But, with proper care and attention, a better grade of cider can be made in a much quicker time. The better way is to place the cider in a hogshead or large tank. Lay the ripening casks, with the bungholes open, on their sides, exposed to the heat of the sun or in a warm cellar, and fill them at first only about a quarter full of cider. After about two weeks, add another quarter, making the barrel half full, and after two weeks more do the same, leaving the cask about three quarters full. Thus a considerable flat surface inside is left exposed to the air. Once a day for the first few weeks draw from the spigot a gallon or more of cider and pour it from a considerable height through a funnel into the bunghole. This keeps the cider full of air. Also, put into each barrel a pound or more of bread dough, prepared as for making ordinary wheat bread, in the state in which it is ready to be put into the oven.

Other methods recommended for hastening the process of fermentation are the addition of a quart or more of molasses to each cask, 2 ounces of brown sugar to each gallon of cider, or brown paper dipped in New Orleans molasses. But the bread dough is perhaps to be preferred. The ordinary skunk-cabbage balls, which occur plentifully in swamps and meadows in many localities, are also employed for this purpose.

Or the mother of vinegar from an old cider barrel will greatly hasten the process.

White-Wine Vinegar.—Crush 2 pounds of clean juicy raisins. Add a gallon of filtered rain water, place in a 2-gallon jug uncorked, and let it stand in a warm place. In about a month it will be converted into pure white-wine vinegar.

Pour out the clear vinegar through a cheese-cloth strainer, leaving the raisins and sediment in the jug; add $\frac{1}{2}$ pound of raisins in another gallon of water, and repeat the process.

Corn Vinegar.—Boil in a gallon of rain water a pint of shelled Indian corn until the kernels burst. Pour the whole into a 2-gallon stone jug and add filtered rain water to supply that lost by evaporation, making a gallon all told. Dissolve $\frac{1}{2}$ pound of granulated sugar in $\frac{1}{2}$ pound of soft water by bringing it to a boil. Pour into the jug; shake well. Cover the mouth of the jug with two or three thicknesses of cheese cloth. Let stand in a warm place at a temperature of 75° or 80° F. It will be converted into vinegar in about a month. Pour off this vinegar into another jug, leaving about half the mother, and repeat the process.

To preserve this vinegar, cover the mouth of the jug with a piece of cloth and store it in a dry, warm place. This recipe makes vinegar about as cheaply as it can be made, and gives a quality that is preferred by many to ordinary cider vinegar. It is worth trying.

To Clarify Vinegar.—To clarify vinegar for bottling, draw it off into a clean cask or other vessel and throw into it a handful more or less of shredded isinglass. Let it stand for a few days and filter through a cheese cloth.

Strength of Vinegar.—The strength of vinegar or the amount of acetic acid which is contained in different specimens, differs greatly. To determine the proportion of acetic acid, suspend 4 or 5 ounces, by weight, of broken pieces of fine marble in 16 ounces, by weight, of vinegar. The acetic acid will attack the marble and will be gradually neutralized. Let stand overnight. Remove the marble, rinse it in cold water, dry it thoroughly with gentle heat on top of the stove (but take care not to melt it), and weigh it carefully; $\frac{1}{8}$ of its loss in weight is the quantity of actual acetic acid contained in the sample. And from this amount the proportion of acetic acid can be readily obtained.

Good vinegar should contain about 5 per cent. of absolute acetic acid. The commercial test is the number of grains of pure carbonate of potassium that will exactly neutralize

1 fluid ounce of vinegar. If 20 grains of carbonate of potassium are required, the sample is known as 20 grains' strength.

Purity of Vinegar.—Various mineral acids, as sulphuric, nitric, hydrochloric and others, are sometimes added to vinegar as adulterants to increase its acidity, and for other purposes. Red pepper, mustard, and other acrid substances are also used, and traces of copper and lead are sometimes derived from the vats or kettles in which the vinegar is prepared.

Test for Sulphuric Acid.—Stir into a sample of suspected vinegar a small quantity of potato starch and bring to a boil. Remove from the fire and let stand until entirely cold. Add slowly, drop by drop, a solution of iodine. If the vinegar is pure, the iodine solution will produce the blue color of iodide of starch, but if sulphuric acid is present the starch will have been converted by boiling into dextrin, and the blue color will not appear.

Or dip a piece of writing paper in the vinegar and heat it over the stove; if the vinegar is pure, the paper will not be charred, but the presence of 2 per cent. or more of sulphuric acid will char it.

Or a more delicate test consists in bringing to a boil a solution of $\frac{1}{4}$ ounce of sugar in 16 ounces of water and when it reaches the boiling point dipping into it a china cup or saucer. If a drop of vinegar is let fall on this china surface while moistened with sirup at the temperature of boiling water (212° F.) if pure it will produce no perceptible effect. But if it contains the slightest trace of sulphuric acid it will produce a spot of color ranging from pale green to a darker brown or black in proportion to the quantity of free sulphuric acid present.

Test for Hydrochloric Acid.—To test for hydrochloric acid use the boiled potato-starch and solution-of-iodine test for sulphuric acid; the reaction will be the same. A blue color will indicate purity.

Or add to the suspected sample a little silver nitrate, which, if hydro-

chloric acid is present, will produce a white precipitate.

Test for Nitric Acid.—To test for nitric acid, add a solution of indigo to the sample of vinegar and bring to a boil. The nitric acid can be detected by a yellow color.

Tests for Other Adulterants.—To discover the presence of red pepper, mustard, etc., boil down the vinegar until all the water it contains has been evaporated, when, if these substances are present, the resulting extract will have a sharp, biting taste.

To test for copper, add potassium ferrocyanide, which will give a brown precipitate.

To test for lead, add hydrogen sulphide, which will give a black precipitate, or potassium iodine, which will produce a yellow precipitate.

PICKLES AND PICKLING

Pickling Vegetables.—Almost every sort of esculent may be preserved for table use by means of spiced vinegar. The objects to be obtained are to secure firmness or hardness of texture, to impart a fine bright green or other color, to kill all germs of decay that may be present, and to protect from the air.

Firmness of texture is secured by steeping the vegetable in strong brine for a number of days, and by pickling them over at intervals to discard all doubtful specimens. This may be done by lifting them from the brine, rinsing them and after they have been pickled over, covering them with brine that is freshly made. The excess of brine may then be removed by freshening them in pure salt water for twenty-four hours or more.

A fine green is imparted by lining a kettle with fresh vine leaves and packing the pickles with these in alternate layers. The addition of powdered alum sprinkled among the layers assists in setting or fixing the color. They are then covered with cold water and boiled for two hours or more until the color is satisfactory. Cooking, of course, softens them, but their freshness may be restored by dropping them into iced water for an hour or two.

Finally, scalding hot pickling liquid is poured over them both to kill the germs of decay and exclude the air. And this process may be repeated by pouring off the pickling liquid, bringing it to a boil and again pouring it over them at intervals of every two or three days for a fortnight. The jars may then be sealed, or a layer of cotton batting tied over them to exclude the germs that float in the air, and thus they may be preserved for years.

To Select Cucumbers for Pickling.—Plant for pickles a variety of cucumbers that bears a large number of small cucumbers, only 2 or 3 inches long when ripe. These are small, compact, and make firm, crisp pickles that are preferred by most persons to the large cucumber pickles, which, when ripe, are 5 to 7 inches long, 2 to 3 inches thick, and full of seeds.

Or use the small, unripe specimens of the large varieties. Cut the cucumbers from the vines carefully. Leave part of the stem on. And take care to handle them gently. If bruised they will become soft and decay. Pick the vines clean each morning of all that are of a suitable size. This keeps the vines bearing. Pick them over carefully. Throw out any that are bruised or spotted in any way. And, if an AI quality of pickles is desired, either for home use or for sale, sort them into lots of uniform size and shape.

To Preserve Cucumbers for Pickles.—Have ready two or more stout wooden tubs or earthenware jars, and in these each morning as fast as they are gathered pack the pickles in layers. First put on the bottom of the vessel a layer of salt $\frac{1}{2}$ inch thick, then a layer of cucumbers. Over them put a layer of salt about $\frac{1}{4}$ inch thick. When about 30 cucumbers have been packed in this way, add a large cupful of water. This will dissolve the salt and make brine enough to cover the cucumbers. Put a stout board, with a stone on top, over the cucumbers to press them down in the brine. Continue to add more cucumbers from time to time as they are ready, picking them if possible in the morning before the dew is off. Add

salt and water until the keg is full. Weigh down the cucumbers securely under the brine and until ready to do them up store the keg in a cool cellar. Look at them now and then to be sure that they are kept under the brine, and add more brine, if necessary, to replace the water lost by evaporation. Let stand in brine ten days to two weeks, or until they become yellow. But they will not be injured if allowed to stand longer, provided the brine covers them.

Or after standing in cold brine for one week, lift them carefully from the brine with the hands, so as not to bruise them. Place the brine over the fire and bring it to a boil. Immerse the cucumbers in the brine while boiling hot.

Or some authorities recommend that the brine be poured off, heated, and again poured over the pickles each day for a week or more, or every two or three days. But the better opinion seems to be in favor of steeping or immersing them in cold brine for a longer period to draw out the rank juices that occur in all crude fruit rather than to pour scalding brine over them. Scalding is thought by many to be unnecessary, and to tend to make the pickles soft.

To Store Pickles.—Wooden tubs or casks are to be preferred for storing pickles in large quantities, or glass bottles or fruit jars for the finer qualities. There is an advantage in small bottles, crocks, or jars, as only a small quantity need be opened at a time.

Porcelain, graniteware, aluminum, or new tinware are the most suitable vessels in which to heat the vinegar and the brine. Anything that has held grease will spoil pickles.

If packed in wide-mouthed glass bottles or fruit jars, seal tightly, or cork and cover the corks with melted paraffin or other bottle wax. But if the pickles are laid down in jars or kegs they should be looked over occasionally, and if any of them are soft they should be removed, the vinegar turned out, scalded, and again poured over the pickles. There must be sufficient vinegar to cover the pickles thoroughly, and it must be of at least

medium strength. If the vinegar becomes weak, pour out and replace with fresh vinegar scalding hot. The addition of a little sugar when the pickles are looked over helps to keep them and improves their flavor. By the blending of the flavors of the various ingredients, pickles, if properly laid down, should improve with age.

Store pickles in a cold place, as if they are kept too warm they may be attacked by the small fly so familiar in autumn.

Or to lay down pickles permanently in brine, cover them with boiling water and let stand until they are cold. Drain thoroughly. Put a layer of dry salt in the bottom of the barrel, put down a layer of pickles, cover with dry salt, and so continue. Add no water. Put a weight above them and their juice will furnish the necessary moisture to dissolve the salt and make sufficient brine to cover them. A small quantity can be freshened from time to time and freshly pickled as required for use. But this method of laying down pickles is not the one commonly preferred.

To Freshen Cucumbers.—After cucumbers have been steeped in brine until they are entirely yellow, and about three days before they are to be done up, lift them carefully from the brine into a clean vessel, cover them with clean cold water and let stand three or four days, changing the water each day or oftener to freshen them.

To Pickle Cucumbers.—Pack the freshened cucumbers in wide-mouthed bottles or jars and pour over them either pure vinegar boiling hot or any desired pickle or spiced vinegar and seal.

Or first pour over them pure vinegar scalding hot and let stand in a warm place until they become green. Every two or three days pour off the vinegar, reheat it and again pour it over the cucumbers scalding hot; when the color is satisfactory pour off the pure vinegar and cover them with the spiced pickle if desired. But while the above is recommended as a thorough method designed to prepare a high-grade quality of pickles, recommendations of authorities differ

very widely and good practice doubtless varies equally as much or more. One authority recommends merely washing cucumbers in salt and water, and immediately bottling and covering them with boiling hot pickle. Another, scalding fresh-picked cucumbers with boiling brine, and when cold draining and at once covering them with boiling vinegar. Another would cover fresh-picked cucumbers at once with boiling vinegar containing a handful of salt, reheating the vinegar every two or three days until they become green, then pickling and sealing. Hence it may be inferred that preserving in brine before pickling is not necessary, but we prefer to recommend it for reasons already stated.

Authorities also differ as to whether the brine should be cold or heated, and the length of time the cucumbers should be immersed in brine, and also as to whether it is sufficient to cover the cucumbers with scalding vinegar and immediately seal, or preferable to let them stand, reheating the vinegar occasionally to green them. All of these questions must be decided by each person for himself according to the grade of pickles desired, and his willingness to take the necessary pains. In general, it is believed that the slower and more painstaking the process, the better will be the quality of the product.

Dill Pickles.—Select cucumbers about four inches long, wash and wipe them, and place in layers in half gallon fruit jars. Between every alternate layer place a small bunch of dill, and a grape leaf. When the jar is full pour over brine made as follows: to 1 cup of salt add 12 cups boiled and cooled water into which a tablespoonful of alum has been dissolved. Seal perfectly air tight and keep in a dark place. They will keep all winter.

Cucumber Pickles.—Fill a quart jar full of freshly gathered and thoroughly washed cucumbers. Small or medium preferred. Then add 1 tablespoonful sugar, 1 tablespoonful salt dissolved in vinegar, 1 tablespoonful white mustard seed, 1 tablespoonful celery seed, if liked. Fill with

cold vinegar and seal. Pickles will be firm, crisp and fresh.—Mrs. A. F. Corrington.

Olive Oil Pickles.—For 100 small cucumbers use 1 quart sliced onions, $\frac{1}{2}$ cup celery seed, $\frac{1}{2}$ cup white mustard seed, 1 cup olive oil, and $\frac{1}{4}$ cup black pepper. Do not peel the cucumbers but slice them and put in layers with salt. Let stand 3 hours. Drain, add the onions, 1 tablespoonful alum and the celery seed, mustard seed, olive oil, and pepper, mixed together. Then cover all with cold vinegar and let stand from 24 to 36 hours. They are then ready for the table or may be sealed up for future use.—Margola Kyle.

Utensils for Pickling.—It was formerly customary to make pickles in kettles of brass or bell metal in order to give them a bright green color, and also to add more or less alum for the same purpose. But the action of the acetic acid contained in vinegar upon brass and similar metals is to produce a poisonous compound, especially if the pickles are allowed to stand in them until they become cold. The use of alum is also injurious, and for the same reason cheap earthenware, which is frequently glazed with lead, should not be employed.

Many people have a prejudice against deep green pickles found on the market, on account of the fear that poisonous substances may have been used in the manufacture. Hence homemade pickles of a good color and flavor usually find a ready and profitable local market.

To Test Pickles for Copper.—To find out if pickles are poisonous from having been cooked in brass or copper kettles, chop a sample of the pickle fine, place it in a glass bottle with a few drams of liquid ammonia diluted with about half as much water. Shake thoroughly, and if there are any traces of copper in the pickles the contents will be of a deep blue color.

Vinegar for Pickles.—White-wine or sugar vinegar is perhaps the most suitable for a fine grade of pickles. But any good quality of vinegar that is fully ripened and has been previously clarified may be used. The

vinegar should be boiled and freed from mother or sediment that would cause the pickles to ferment.

To Clarify Vinegar.—Throw an ounce or so of shredded isinglass into each gallon of vinegar and let stand a few days to clear. Strain through cheese cloth.

To Keep Vinegar Free from Mold.—Lay a small bag of thin muslin containing mustard on top of the pickles. If the vinegar has been properly boiled and clarified, it will tend to prevent the formation of mold.

To Strengthen Weak Vinegar.—Pour it off the pickles, bring it to a boil, pour it back over them and add about $\frac{1}{4}$ teaspoonful of alum and spread over the top layer a piece of brown paper soaked in New Orleans molasses.

Or boil down the vinegar with very gentle heat so as to allow it to lose its surplus water by evaporation.

Or allow it to freeze, and remove the ice before it melts. Acetic acid does not readily freeze. Hence the quantity of acid in proportion to the bulk of water becomes greater.

Spiced Pickle.—The following recipes are recommended for pickling liquids for cucumbers and other vegetables, mixed pickles, etc., including mushrooms, onions, walnuts, cucumbers, cauliflowers, samphires, green gooseberries, barberries, radish pods, melons, French beans, tomatoes, lemons, peaches, garlic, peas, codlins, beet root, and red cabbage without brine and with cold vinegar. The smaller and more delicate vegetables should not be soaked in brine as long as the larger and the coarser sorts, and may in some cases be pickled cold by pouring over them strong pickling vinegar without scalding. Spices for pickles should not be ground, and should be slightly bruised or crushed in a mortar, which may be improvised by using a wooden bowl and a potato masher as a pestle, or the end of a hard piece of wood. When ground spices are used they should be tied up in bags of thin muslin. Any surplus of sirup remaining when putting up pickled peaches, pears, or other fruit may be put in separate jars, sealed, and set away

with the pickled fruit, to be used the following season. If the jars are opened and the spiced liquid reheated once a year it will keep indefinitely, and the spice, sugar, and vinegar will be saved, besides the time that will be required for making new sirup.

To make spiced pickle add to 1 gallon of vinegar 1 cup of salt, 1 cup of sugar, 1 handful of horse-radish, 2 tablespoonfuls of mustard, 1 green pepper.

Or to every 2 quarts of vinegar add $\frac{1}{2}$ ounce of mace, 1 ounce of ginger sliced, 1 dozen cloves, 1 ounce of black pepper, 1 handful of salt. Boil all together for not more than five minutes, and pour over the pickles scalding hot.

Or add to the above if desired 3 or 4 cloves of garlic and shallots.

Or to 3 quarts of pure white-wine or other strong vinegar add 2 ounces of ginger, $\frac{1}{2}$ ounce of mace, $\frac{1}{2}$ pound of salt, $\frac{1}{2}$ tablespoonful of Cayenne pepper, 1 ounce of white or black pepper unground, 1 ounce of mustard seed, 4 ounces of shallots. Boil together not more than five minutes and pour over cucumbers and other hard, firm vegetables scalding hot, or over small and delicate vegetables cold.

Or crush together in a mortar 4 ounces of unground black pepper, 2 ounces of ginger root, 1 ounce of allspice and 4 ounces of salt. Cayenne, paprika, or garlic may be added in small quantities if desired. Place a quart of vinegar in an enameled saucepan, and bring to a boil. Stir in these spices. Let boil not more than five minutes and pour over the pickles scalding hot for cucumbers, walnuts, and the like, or cold for cabbage or fancy mixed pickles.

To Pickle Large Cucumbers.—Pare 7 pounds of large cucumbers, remove the seeds and cut into inch pieces. Cover with vinegar and water, half and half, and add a large pinch of salt. Boil until clear but not overdone. Drain in a colander.

To one pint of good vinegar add 3 $\frac{1}{2}$ pounds of brown sugar; as soon as it comes to the boiling point put the cucumbers back into the kettle and let the whole boil up. Again drain through the colander, and when cold

put them in layers in a jar, sprinkle between the layers stick cinnamon, cloves, allspice, a few kernels of black pepper, a little mace, and a handful of raisins. Cover with the pickling liquid and seal.

Or cut a piece from the large end of each cucumber, leaving it attached by a piece of the skin. Scoop out the seeds and steep in strong brine for a week until entirely yellow. Stuff with equal parts mustard seed, ground ginger, and pepper, with the addition of small onions, shallots, or garlic if desired. Sew on the tops and cover with pickling liquid as for gherkins.

To Pickle Melons and Mangoes.—Prepare as for large cucumbers, cutting off the top and stuffing the inside with the same mixture. Or pickle as for gherkins. First steep in strong brine for a week or more, then freshen in clear water and pickle in pure vinegar or spiced pickling liquid, as preferred.

Watermelon Pickles.—Peel and cut into two-inch pieces the rind from two melons. Let stand in salt water overnight. Then boil in water until tender. Remove and drain well. Put on the stove 2 cups vinegar, 2 cups sugar, 1 cup water, few whole cloves, and 3 two-inch pieces of stick cinnamon. Let come to boil. Add melon and boil fifteen minutes. This will make 4 quarts pickles.—Mrs. B. H. Baker.

Watermelon Pickles (quick).—For the rind of one medium sized watermelon use 3 pounds sugar, 1 quart vinegar, 65 cloves and 1 ounce cinnamon stick. Peel watermelon rind, cut in strips, boil in salt water until tender, so you can pierce them with straw. Drain well. Dissolve sugar in vinegar, add spices and bring to a boil. Now add melon, let boil an hour, put up in glass jars, and seal.—Helen Starkweather.

Cucumber Mangoes.—Soak in strong brine nine days as many large green cucumbers as you wish to use. Then lay them forty-eight hours in clear water. Cut a slit lengthwise in each, scoop out seeds, wipe dry and fill with stoned raisins, lemon cut in long, thin strips, and 6 or 8 whole cloves. Tie up slit with white string,

pack cucumbers in a stone jar and cover with a boiling sirup made after following recipe: Add to 1 quart vinegar 5 pounds sugar, also mace, cinnamon, and cloves to taste. Reheat sirup and pour boiling hot over cucumbers for nine successive mornings.—Mrs. John F. Shafroth.

Sweet Pickles—Cucumbers and Melons.—Prepare as for gherkins by steeping in strong brine for a week or more. Quarter them, take out the seed and pulp, freshen in clear water for three or four days, and cover with a sirup prepared of sugar, ginger, and lemon as follows:

Dip 1 pound of loaf sugar lump by lump in clear, soft water and place dripping wet in a porcelain saucepan. Stir in $\frac{1}{2}$ ounce of bruised ginger and boil to the thread, stirring in the juice and grated rind of one lemon. Pour over the melons cold.

To Green Pickles.—If fresh grapevine leaves are obtainable, line a kettle with these and pack into it the cucumbers, etc., in alternate layers with vine leaves, and put a thick layer of vine leaves on top. In addition, sprinkle powdered alum, if desired, among the layers and over the top. Fill up the kettle with cold water and cook or steam the contents over a slow fire for two hours, or until the color is satisfactory. Drain off the hot water through a colander, immerse the vegetables immediately in iced water, and let stand for an hour or more to harden. Then pack in a suitable vessel and pour scalding hot pickling liquid over them.

Or the vine leaves may be used without the alum and will assist in giving a fine green color to the pickles.

MIXED PICKLES

To make cheap mixed pickles have at hand a keg containing vinegar and put into it from time to time odds and ends of vegetables, as small green beans, young cucumbers, small onions, radish pods, bits of cauliflower, and the like, adding vinegar from time to time to keep the vegetables covered. Thus any odd vegetables can be preserved without expense except for the vinegar, spice, etc., and with very lit-

tle trouble. When the keg is nearly full place the contents in a suitable kettle with vine leaves and boil them about two hours.

Drain off the hot vinegar, immerse the vegetables in cold water for an hour or more to harden, add spices to the vinegar, boil for five minutes, drain the vegetables thoroughly, place them in a suitable keg or jar and pour the scalding hot pickling liquid over them.

Or take any assortment of succulent vegetables, as small French beans or uniform size, small select gherkins 2 or 3 inches long, small cucumbers sliced, and prepare them as for ordinary cucumber pickles.

Prepare separately such vegetables as broccoli, cauliflower stripped into branches, small pickling onions peeled, small red peppers, capsicums, radish pods, small fruit, white and red cabbage, celery, nasturtium seeds and the like by steeping for a short time, say two or three days, in brine and slightly freshening them. Now pack the gherkins and sliced cucumbers with the other vegetables in wide-mouthed glass bottles or jars in such a way as to show the greatest variety of color and display the contents to the best advantage. Much of the attractiveness and consequent salability of mixed pickles is due to skillful packing. Cover with any of the above spiced liquids recommended for cucumber pickles.

Or prepare a special pickle containing turmeric, which will improve the color. For each gallon of vinegar mix 4 ounces of ginger, 4 ounces of turmeric, 2 ounces of white pepper, 2 ounces of chili pepper, 2 ounces of allspice, 1 ounce of garlic, $\frac{1}{2}$ ounce of shallots, $\frac{1}{2}$ pound of bay salt. Bruise together in a mortar and boil in the vinegar not to exceed five minutes. Pour this liquid scalding hot over the vegetables and when cold slice in $\frac{1}{2}$ pound of horse-radish and stir in 1 pound of mustard seed.

Or for each gallon of vinegar mix 3 ounces of bay salt, $\frac{1}{2}$ pound of mustard, 2 ounces of turmeric, 3 ounces of ginger, 1 ounce of cloves, $\frac{1}{2}$ ounce of black pepper, cayenne, or paprika to taste. Bruise the spices in a mor-

tar, mix all together and boil in the vinegar not more than five minutes.

Green Pepper Relish.—Put 18 green peppers and 12 onions through meat chopper; add 1 cup sugar, 1 tablespoonful salt, 2 tablespoonfuls mixed spices. Cover with vinegar and cook slowly one hour.—Mrs. M. L. Judd.

Corn Relish.

- 1 dozen ears corn,
- 1 large head cabbage,
- 2 pods pepper,
- 1 quart vinegar,
- 1 cup sugar,
- 1 bunch celery,
- $\frac{1}{2}$ dozen mangoes.

Grind cabbage, celery, mangoes and pepper through a meat grinder. Then mix all together and let come to a boil. Can and seal.—Mrs. E. Long.

Corn Relish.—Take 12 ears of corn cut from the cob, 1 head of cabbage, 2 stocks of celery, 3 onions, 4 chopped peppers (2 red, 2 green), $\frac{3}{4}$ pound of brown sugar, salt to taste, 2 quarts of vinegar, $\frac{1}{2}$ pound of white mustard, 1 tablespoonful dill seed. Put all together and boil until tender, then can.—Mrs. Ray Stallsmith.

Tomato Relish.

- 1 large can tomatoes,
- 1 medium size onion,
- $\frac{1}{2}$ teaspoonful small red peppers.

For best results run through a food chopper. Then add $1\frac{1}{2}$ cups vinegar, 1 cup sugar, $\frac{1}{2}$ teaspoonful cloves. Boil until mixture is quite thick. Can be used right away or bottled as it will keep indefinitely.—Mrs. Ross Perry.

Beet Relish.

- 2 pints of beets,
- 2 pints of cabbage,
- 1 cup horse radish,
- 2 onions,
- 2 cups of brown sugar or 1 cup of white,
- $\frac{1}{4}$ teaspoonful red pepper,
- $\frac{1}{2}$ teaspoonful black pepper,
- 2 pints of vinegar.

Put beets through chopper with cabbage and horse radish. Mix with vinegar, sugar and pepper. Boil. Put in jar and seal and keep in cool place.—Mrs. Garland Eichorn.

Rummage Pickle.—Put through a food chopper, using the coarse knife, 3 quarts green tomatoes, 1 quart ripe tomatoes, 6 medium sized onions, 4 green peppers (seeds carefully removed), 1 small head cabbage, 4 ripe cucumbers. Put over this $\frac{1}{2}$ cup salt, let stand over night, drain, and add 1 quart vinegar, 2 pounds granulated sugar, 3 teaspoonfuls mustard, $\frac{1}{2}$ teaspoonful black pepper. Simmer on back of stove $\frac{3}{4}$ hour, and put in cans.—Mrs. K. O. Taylor.

Mustard Pickles.—Steep in a weak brine for twenty-four hours about 2 quarts of gherkins, 1 quart of pickling onions, 2 quarts of small green tomatoes, 1 small cabbage head chopped fine, or one large cauliflower pulled into branches with 3 or 4 green peppers and boil. Then stir together in a mixing bowl 1 cup of flour, 6 tablespoonfuls of mustard, 1 heaping teaspoonful of turmeric, 1 quart of sugar. Rub up with a little cold vinegar and stir in the additional vinegar to make 2 quarts in all. Cook over a brisk fire, stirring constantly until it thickens. Pour over the pickles scalding hot and seal.

Cut into small pieces 1 quart of large green cucumbers, 1 quart of very small gherkins, 2 inches in length or less, 1 quart of white button onions, 1 quart of green tomatoes sliced and cut in cubes, 1 large cauliflower pulled into tiny flowerets, and 4 peppers sliced and cut into cubes. Do not chop the ingredients, but cut into cubes or chunks $\frac{1}{4}$ to $\frac{1}{2}$ inch in thickness. Soak for twenty-four hours in a weak brine of about 1 cupful of salt in a gallon of water. Place the whole on the fire, bring to a boil and pour into a colander to drain. Mix together in a bowl 6 tablespoonfuls of ground mustard, 1 of turmeric, 1 cupful of flour, 1 cupful of brown sugar, mix dry, rub into a smooth cream with a little vinegar, and dilute with additional vinegar, 2 quarts being used in all. Pour the mixture into a preserving kettle and

let it boil until it thickens, then stir in the pickles, let them boil up, pour into suitable cans or jars, and seal.

Or for sweet chowchow, cut into inch cubes 2 dozen small cucumbers, 6 green peppers, or 3 green and 3 red peppers, and 2 quarts of green tomatoes. Add 2 quarts of small button onions, 2 heads of cauliflower picked into pieces. Place these in a preserving kettle, and pour over them a sauce composed as follows:

Mix together in a bowl 4 teaspoonfuls of celery seed, 1 cupful of mustard, $\frac{1}{2}$ ounce of turmeric, 4 cupfuls of sugar. Rub to a smooth paste with a little of the vinegar and dilute with the remainder of the vinegar, using 2 quarts in all. Pour over the strained pickles, bring them to a boil, pour out and seal.

India Pickle.—Chop together 1 peck of green tomatoes, 1 small head of cabbage, 6 or 8 large green peppers and 8 large onions. Mix and cover with vinegar and boil until they are tender. Salt to taste. Drain in a colander. Add a dressing composed of $\frac{1}{2}$ pound of mustard with 2 tablespoonfuls of curry powder stirred to the consistency of cream with vinegar. Mix well and seal in glass jars or wide-mouthed bottles.

Spanish Peppers.—Steep in brine for three days $\frac{1}{2}$ dozen good-sized cucumbers. On the second day slice $\frac{1}{2}$ dozen onions and chop fine $\frac{1}{2}$ peck of green tomatoes and 2 heads of cabbage. Sprinkle these with salt and let stand overnight. Now drain the cucumbers from the brine, cut in slices, place all in a preserving kettle and cover with vinegar. Add 2 ounces of white mustard seed, $\frac{1}{2}$ ounce of celery seed, 1 heaping tablespoonful of turmeric, $\frac{1}{2}$ cup of mustard, 1 pound of brown sugar. Mix and simmer with gentle heat for half an hour. Pour into wide-mouthed glass bottles or jars, seal, and keep in a cool place.

Piccalilli, or Indian Pickle.—This consists of a great variety of succulent vegetables (the more varied the better) mixed and pickled together. To make piccalilli slice 1 hard white cabbage head, remove the outer leaves, pull to pieces 2 cauliflowers, add 20 selected French beans, 1 root of horse-

radish, sliced fine, 2 dozen pickling onions, 1 dozen green gherkins of uniform size. Let stand in brine three or four days, drain through a colander, and place in a preserving kettle. Add 2 ounces of curry powder, 1 ounce of garlic, 1 ounce of ginger, 1 ounce of white mustard seed, $\frac{1}{2}$ ounce of capsicum or paprika. Cover with vinegar and bring to a boil. Preserve in glasses tightly sealed.

Or pull apart the branches of a large head of cauliflower, cut a hard white cabbage head in quarters, remove the outer leaves, chop it fine or shred it as for cold slaw. Slice a number of cucumbers and pickling onions, French beans, radish pods, nasturtiums, samphire, and any other vegetables at hand. Place these in a large sieve, sprinkle them with salt and lay them out in the sun for three or four days to dry. Now place them in a preserving kettle, cover with cold vinegar, and bring to a boil. Let them boil up once. Pack in glass and seal.

Or if it is desired to make an extra quality, keep all the ingredients separate and scald them separately in hot vinegar, but do not put them together until they are cold. Bruise together in a mortar 4 ounces of ginger, 2 ounces of whole white pepper, 2 ounces of allspice, $\frac{1}{2}$ ounce of chilis, 4 ounces of turmeric. Add $\frac{1}{2}$ pound of shallots, 1 ounce of garlic, $\frac{1}{2}$ pound of bay salt. Cover with 1 gallon of vinegar and boil thirty minutes. Strain through cheese cloth and add 1 pound of mustard rubbed up free from lumps with a small quantity of cold vinegar. Then dilute with more vinegar to the consistency of milk and stir into the pickling liquid. When the pickling liquid is cold pour it over the pickles. Mix well and pack in glass bottles or a large jar corked or sealed to exclude the air.

Piccalilli if well prepared should improve with age.

Chowchow.—Chowchow is the Chinese name for a kind of mixed pickles originally imported from that country and similar to piccalilli or Indian pickle, except that the ingredients are minced fine and mixed together. Chowchow is frequently used to stuff

pickled peppers. It is sometimes known as English chowchow on account of its popularity in that country. French chowchow is a name sometimes applied to mustard pickles.

To make Chinese or "English" chowchow chop fine 2 medium-sized heads of firm, white cabbage, $\frac{1}{2}$ peck of green tomatoes, 2 quarts of firm ripe tomatoes, $\frac{1}{2}$ dozen of green peppers, and 2 red peppers. Mix all together and pack in a bag of coarse burlap or linen in layers of 2 or 3 inches deep, mixed between with layers of salt. Improvise a rack of slats of wood laid over the top of the barrel or keg into which it can drain. Place the chowchow on this and put over it a heavy weight. Let stand twenty-four hours under this pressure. Remove, pour out into a large pan and add $1\frac{1}{2}$ pints of sugar, $\frac{1}{2}$ cupful of grated horse-radish, $\frac{1}{2}$ teaspoonful of ground mustard, 1 ounce of white mustard seed, 1 ounce of celery seed, 1 tablespoonful of mace, 1 gill of Dutch mustard. Stir well, pack in glass or wood and seal.

Or for another sort of chowchow slice or chop fine, as preferred, $\frac{1}{2}$ peck of tomatoes, 1 quart of green peppers, 2 quarts of onions, 1 medium-sized cabbage head shredded as for cold slaw, and 1 quart of white mustard seed. Keep these ingredients separate and pack in layers in a jar or tub, first tomatoes, next peppers, next onions, next cabbage. Sprinkle over this part of the mustard seed, and so continue, repeating the layers again and again until all has been packed. Pour over this any strong liquid desired, scalding hot. Let stand twenty-four hours, pour the whole into the preserving kettle, bring to a boil and let boil not more than five minutes. Pack down in suitable jars or tubs and seal.

Bengal Chutney.—To make this celebrated Indian condiment, mix together 1 pound of tamarind pulp, 1 pound of sultana raisins, 1 pound of ripe tomato pulp, 1 pound of sweet apples minced fine; extract and add the juice of 12 lemons, grate and stir in the rinds; add 4 ounces of garlic, 6 onions chopped fine, $\frac{1}{2}$ pound of red chilis, 12 ounces of powdered ginger,

1 pound of brown sugar. Place all together in a tub or jar, cover with a gallon of strong vinegar, and let stand for a month or more in a warm place, stirring occasionally until it is well fermented. Pack in small, wide-mouthed glass bottles and seal tightly.

Cucumber and Onion Pickles.—Cut into thick slices 3 large onions to each dozen cucumbers. Place in a colander or sieve, sprinkle with salt and let stand twenty-four hours. Place in a suitable keg or jar, cover with boiling vinegar. Cover tightly and let stand overnight. Boil up the vinegar each day, pour over them scalding hot, and at once cover tightly to exclude the air. When the color is satisfactory pour over them spiced pickling liquid and seal.

PICKLED VEGETABLES, NUTS, AND FRUITS

To Pickle Tomatoes.—Slice $\frac{1}{2}$ peck green tomatoes, bring to a boil $\frac{1}{2}$ gallon of any good spiced pickling liquid, and put the tomatoes to boil in this for a quarter of an hour. When cold pack away in tubs or jars and seal.

Or slice 1 peck of green tomatoes; sprinkle with salt. Let stand two days. Slice and salt separately 12 medium-sized onions. Mix in a bowl 4 ounces of mustard, $\frac{1}{2}$ ounce of mustard seed, 1 ounce of cloves, 2 ounces of turmeric, and add garlic, capsicum, or paprika to flavor if desired. Put in a preserving kettle a layer of onions, sprinkle with mixed spice, then a layer of tomatoes and spice, and so on. When all are packed pour over them boiling vinegar and simmer for about two hours until the color is satisfactory.

Pickled Onions.—To prepare onions for pickling, "top and tail" them, remove the outer skins and steep them in brine for a period of two or three days, to two weeks or more. Afterwards freshen them in clear water for a period of one to three days.

Or if preferred, boil them in clear water or brine for ten or fifteen minutes. Afterwards pack them in wide-

mouthed glass bottles or jars, and cover with pure vinegar or spiced pickling liquid scalding hot or cold. When cold seal for use. The addition of a spoonful of olive oil to each bottle is said to keep the onions white. Cork tightly and cover the corks with bottle wax or melted paraffin. Seal with cotton batting.

To Select Pickling Onions.—Choose for pickling small silver-skin button onions, preferably of uniform size. Gather them when they are quite dry and ripe and pick them over carefully, rejecting any that are soft, unripe, or spotted.

To Pickle Onions Cold.—Place the onions in a clean, dry glass bottle or jar, cover them with cold vinegar and add mixed spices as preferred. Add a little mustard seed, mace, and capsicum, or allspice and black pepper unground or grated, or sliced horseradish or garlic, capsicum and paprika, if desired. Seal the bottle and let stand two or three weeks before using. Onions are very easily pickled in this way and have an exquisite flavor, but will not keep more than about six or eight months.

To Pickle Onions with Brine.—Cover the onions with cold brine and let stand two weeks or more, or steep in strong brine for one week, then heat the brine and pour it over them scalding hot.

Or pour over them at once strong and hot brine and let stand two or three days. After steeping in brine drain through a colander, freshen in clear water for twenty-four hours, pour off the water and lay them on a dry cloth to drain. Pack them in jars or bottles and cover with spiced pickling liquid boiling hot. Cork tightly and seal.

Or pour over them cold pickling liquid or cold vinegar and seal.

Pickled Cabbage.—Select firm, ripe heads of either white or red cabbage, or mix the two. Quarter them, remove the outside leaves, and let them dry. Shred them as for cold slaw and lay them down in a suitable jar between layers of salt. Cover with strong spiced pickling liquid and seal.

Or shred the cabbage, place it in a

preserving kettle or suitable jars, and cover with boiling water. Let stand until cold. Drain. Add mixed spices and cover with cold vinegar, or cover with spiced pickling liquid.

Or boil the cabbage in salted water until it is tender. The pickling liquid may be poured on cold or scalding hot. In the latter case let stand until perfectly cold. Seal air tight and store in a cool, dry place.

Or if the jars are not air tight, after a few days open them, fill up with vinegar and again seal.

Pickled Cauliflower.—Cut the cauliflowers on a dry, hot day, after the dew has evaporated and before they are fully blown. Slice and sprinkle them with salt, and let stand for two or three days.

Or boil in salt and water until they are tender. Drain off the water or juices, spread upon a dry cloth, covering with another cloth, and let stand in a warm place for twenty-four hours. Pack in jars, cover with cold spiced pickling liquid and seal.

Or place the cauliflowers in cold salt and water at the rate of 4 ounces of salt to 1 quart of water, and bring to a boil over a slow fire. Remove immediately and cover with cold spiced vinegar.

Pickled Green Corn.—Pull the ears of corn when slightly overripe but not too hard. Take off the outer husks, leaving the corn well covered with the inner husks, and tie the latter tightly at the top end. Pack the ears of corn thus prepared in a clean firkin or cask and cover with strong brine. When wanted for use soak in fresh water twelve hours or more, changing the water occasionally.

Pickled Walnuts.—Pick small green walnuts about the first week in July or before the middle of the month, after which they are likely to become hard and woody. Test them by thrusting a strong pin through them, and discard all that are too old and hard. Scald them slightly in boiling water. Rub off the outer skin between cloths (or this may be omitted if preferred), and put them into cold brine strong enough to bear up an egg. Thrusting a pin through them also allows the pickle to penetrate

more thoroughly and quickly than would otherwise be the case. Let them stand a week or two, changing the brine every two or three days. Pour them out in a sieve or into a cloth strainer to dry and let them stand a day or two or until they turn black. Pack them in bottles or jars and pour over them spiced pickling liquid scalding hot. Let stand until cold and seal.

Or if they are not to be sealed air tight, pour off the pickle each day for three or four days, bring it to a boil, take off the scum and pour over the walnuts scalding hot.

Or instead of steeping in cold brine, place the walnuts in a strong brine and simmer for an hour or two. Expose in a sieve or cloth strainer twenty-four hours or more, or until they turn black. Pack and cover with scalding hot spiced pickling liquid. Two to six months will be required before they are fit to eat. During this time they must be kept covered from the air either by sealing the jars or keeping them covered with vinegar.

To Pickle White Walnuts.—Pick small green walnuts as above and pare them very thin, or until the whites appear. Place in cold brine strong enough to bear up an egg and simmer for five or ten minutes, but do not let them come to a boil. Drain and cover them with cold brine for twenty-four hours or more. Pour out in a sieve or cloth strainer, cover them with a cloth, dry them carefully between clean, soft pieces of cloth and pack them down with blades of mace, nutmeg, and horse-radish. Cover with cold or hot vinegar and when cold seal tightly to exclude the air.

Pickled Lemons.—Slice $\frac{1}{2}$ dozen lemons, sprinkle them with salt, lay them down in a large glass jar and sprinkle among them 2 ounces of spice, 2 ounces of white pepper, $\frac{1}{4}$ ounce of mace, $\frac{1}{4}$ ounce of cloves, all bruised together in a mortar with $\frac{1}{4}$ ounce of cayenne, 2 ounces of horse-radish, 2 ounces of mustard seed. Pour over them 2 quarts of vinegar scalding hot. This pickle is for immediate use, and will be ready in three days to a week. Red peppers,

paprika, or garlic and shallots may be added if desired.

Or cut $\frac{1}{2}$ dozen lemons into six or eight pieces, cover with the mixed spices, as in the first recipe, place in a preserving kettle, cover with 2 quarts of vinegar and boil a quarter of an hour.

Or pack the lemons in a jar, set the jar in boiling water and boil for fifteen or twenty minutes. Let the jar stand in a warm place stirring daily for several weeks. Finally, bring to a boil, pack in small jars or bottles and seal.

Or to pickle whole lemons, select small fruit and slit the rinds as if to take off the peel in quarters, but do not cut through the pulp. Cover the lemons with salt, and pack it down hard to fill these slits. Pack them on end in a dripping pan three or four days, or until the salt melts, and let them stand, turning them end for end in the liquor two or three times a day until the rinds are tender. To this liquor add sufficient spiced vinegar to cover the lemons. Pack them in jars with mustard seed and garlic. Cover with any prepared pickling liquid and seal.

Pickled Peaches.—Look over the peaches carefully, selecting the ripe fruit and discarding all that are soft or specked. Rub clean with a soft, dry cloth and stick into each large peach 4 or 5 cloves without the heads, and into each small one 2 or 3 cloves. Place in a preserving kettle 1 gallon of vinegar. Stir in 6 pounds of brown sugar and bring to a boil, removing the scum as fast as it appears. Pack the peaches in suitable bottles or jars. Pour the boiling sirup over them scalding hot and cover tightly. Let stand overnight, pour off the sirup once more, bring to a boil and again pour over the peaches. Do this for three or four days. Finally, pack in cans or bottles and seal while hot.

Or for sweet-pickled peaches, allow $\frac{1}{2}$ pound of sugar by weight for each pound of fruit. Put the sugar and peaches in layers in a preserving kettle and bring to a boil. Add for each 6 pounds of fruit a pint of vinegar and in the vinegar place a thin muslin bag containing a tablespoonful

each of cinnamon, cloves, and mace. Pour the spiced vinegar into the peaches and sirup with the bag of spices, and boil for not more than five minutes. Take out the peaches with a skimmer, lay them on blotters to cool and continue boiling the sirup until it thickens. Pack the peaches in jars, fill to overflowing with boiling sirup, and seal at once.

Or for 1 gallon peeled peaches, use 3 pounds sugar, 1 pint pure cider vinegar, 2 dozen cloves, 6 sticks cinnamon. Boil vinegar, sugar, cinnamon, and cloves fifteen minutes, then pour liquor over peaches and let stand over night in stone jar covered with a plate. Next morning pour off liquor and heat to boiling point, then add peaches to boiling liquor and let cook slowly until tender. Seal in glass jars.—Mrs. W. R. Stubbs.

Pickled Pears.—The above recipes for pickled peaches may also be applied to pickled pears.

Or pack in a preserving kettle in alternate layers 10 pounds of ripe pears and 3 pounds of coffee sugar. Pour over them 1 quart of vinegar containing, in a thin muslin bag, 1 ounce of cinnamon, 1 ounce of cloves, $\frac{1}{4}$ ounce of mace. Slice and stir in 4 ounces of citron and boil until the pears are tender. Take out the pears with a skimmer, boil the sirup half an hour or more until it is thick. Fill the jars or cans to overflowing and seal at once.

Or prepare a sirup of $1\frac{1}{2}$ pints of vinegar and 3 pounds of fine sugar. Bring this to a boil. Place in a preserving kettle a peck of ripe fruit, peeled and cored, pour the sirup over it and boil until the fruit is tender, but not soft. Remove the fruit with the skimmer and pack it in jars. Preserve the sirup, which may be used again, and prepare a fresh sirup of $1\frac{1}{2}$ pints of vinegar and 2 pounds of coffee sugar. Place in this sirup a thin muslin bag containing an ounce each of any kind of mixed spices preferred. Bring to a boil, fill the jars to overflowing, and seal.

Pickled Cherries.—Fill a wide-mouthed glass bottle or jar with nice firm and medium ripe cherries. Add 2 tablespoonfuls of salt, and fill the

jars with cold vinegar. Seal and let stand six or eight weeks before using.

Pickled Peppers.—Soak fresh bell peppers, either green or red, in strong brine for a week or two, changing every two or three days. Pack in suitable jars and cover with cold vinegar. The seeds tend to make the peppers very strong, and may be removed if less strength is desired. A few peppers added to pickled cucumbers improves them very much, as the heat of the peppers is taken out by the vinegar and becomes blended with the cucumbers, giving them an agreeable flavor.

Pickled Beets.—Select small red beets having the roots on and wash them carefully so as not to break the roots or the skin. Place in a large kettle, cover with plenty of water and boil three or four hours. Take them up carefully with a skimmer so as not to break the skins. Place them on a cloth strainer to cool and dry. When cold, quarter them or pack them in suitable jars, cover with pure or pickled cold vinegar, and seal so as to exclude the air. If not sealed it will be necessary to pour off the vinegar occasionally, bring it to a boil and pour it scalding hot over the beets.

Or after the beets have been boiled, pack them in jars and cover with hot brine strong enough to float an egg. When cool put the jars in a saucepan full of cold water, place it on the stove, and boil half an hour or more. Seal air tight while hot and store in a cool place.

Nasturtiums.—Collect the seeds while young and tender. Place them in a double boiler, cover with strong cold brine. Let stand for an hour, then place on the stove and bring to a boil. When they boil up take them out of the skimmer, put them into a suitable jar, and cover them with boiling hot spiced pickling liquid.

Or have at hand a jar of sweetened spice vinegar and into this drop nasturtium seeds picked as they accumulate during the season before they become hard and woody. They make an excellent substitute for capers and an agreeable addition to salads and sandwiches.

Pickled Barberries.—To pickle barberries for a garnish, especially for cold meats, salads, and the like, select the large, firm bunches of berries of a fine deep red. Remove the leaves and the discolored berries. Place them in jars and cover with brine strong enough to float an egg. Seal to exclude the air, or cover with paraffin or waxed paper. If any scum or mold appears upon the surface pour out the barberries on a cloth strainer, dry them between two cloths, and cover them with fresh brine.

Pickled Melons.—Take hard muskmelons that are late in ripening, cut out a circular piece around the stem about 3 inches across and through this opening remove the seeds and scrape out any part that may be soft or ripe. Pack the melons in a wooden tub, fill them inside, and cover them with salt and let stand until the salt is melted. Remove them from the salt, rinse with pure water and fill with a mixture of chopped peppers and onions with a few shallots, a little garlic, and a quantity of bruised mustard seed. Close the opening with the plug, and fasten it with thread or with skewers made of toothpicks. Pack the melons in a tub or earthen jar and cover with spiced pickling liquid boiling hot. Remove and scald the spiced liquid every day for four or five days, pour it back over the melons, and finally seal up the jars.

Or stuff the melons with a piccaililli or chowchow or any sort of mixed pickles, as desired.

Pickled Citron.—Cut the citron into inch cubes, cover with weak brine. Let stand twenty-four hours and pour out on a cloth strainer to dry. For every gallon of spiced vinegar add 4 ounces of coffee sugar, bring to a boil and pour over the citron boiling hot. Let stand three or four days, each day pouring off the pickling liquid from the citron, scalding it and pouring it back. Finally, bring the whole to a boil and cook until the citron is very tender. Pack in suitable jars. Seal and store in a cool, dry place.

Peach Mangoes.—Select large free-

stone peaches and take out the stone through a slit in the side. Cover with weak brine scalding hot. Let stand until cool enough to handle. Lift out the peaches on a cloth strainer, and wipe dry with a clean, soft cloth. Now fill the cavity with mixed spices to taste, as white mustard seed, cloves, mace, cinnamon, grated horse-radish, ginger root, etc., softened by placing all together in a thin muslin bag and immersing for a few minutes in boiling water. Remove the bag from the water, let the spices drip dry, fill the peaches, sew them up, pack them in jars, and fill to overflowing with a scalding hot sirup made of 1 pint of sugar in 3 pints of vinegar. Seal white hot. Let stand a week or two before bringing to the table.

Canning Tomatoes.—Select firm, ripe tomatoes, place them in a colander and dip them into boiling water just long enough to loosen the skin. Remove from the water, place them where they will drain, and carefully pull off the skin without injuring the fruit. Once more place in colander to drain and pack carefully in large glass jars or cans as full as they will hold. Place these in hot water, bring to a boil and seal.

Or if tin cans are used, first apply with a soft brush fresh butter or unsalted lard to the inside of the can and its cover. This will prevent the fruit acid from attacking the tin and forming a poisonous compound. Seal with a bit of solder or putty, or lay over the top a cloth dampened with alcohol, run paraffin over this and draw over the top a piece of cotton batting.

Tomato Catsup.—A favorite relish with most people is tomato catsup, which may be prepared either by the cold process, or by boiling. For cold catsup mix 2 green and 2 red peppers, chop fine and add 1 cup white mustard seed. Mix separately 1 quart onions chopped fine and 1 pint of chopped celery and set aside to drain. Chop fine $\frac{1}{2}$ peck ripe tomatoes and drain them. Now stir together the 3 mixtures, sweeten and salt to taste, lay down the cold catsup in jars, cover with cold vinegar, and seal.

For boiled catsup have ready a deep kettle a little more than half full of boiling water, place the tomatoes in a wire basket or colander and dip them by means of a string through the handles, or otherwise, in the boiling water for 3 minutes. Remove quickly and plunge the basket for a moment into a pan of cold water, let drain for a few moments, and remove the peels, which will come off easily. Slice the fruit and bring to a brisk boil. Now drain off the juice and boil the pulp slowly for four hours. For each peck of ripe tomatoes add 2 tablespoonfuls salt, 1 tablespoonful black pepper, 1 teaspoonful cayenne pepper, 1 teaspoonful paprika, and 1 tablespoonful mustard. After stirring in the spices, boil one hour, cool, stir in 1 pint of vinegar, and seal in jars.

Currant Catsup.—Pick over carefully 2 pounds of ripe red currants and place them in a preserving kettle with $\frac{3}{4}$ of a pound of granulated sugar. Cook until of the consistency of thick cream. Boil in a separate saucepan for not more than five minutes $\frac{3}{4}$ of a pint of vinegar, in which place a muslin bag containing $\frac{1}{2}$ tablespoonful of ground pepper, and any other spices desired. Pour the spiced vinegar into the currants and sugar and bottle for use.

Preserving Olives.—After opening a bottle of olives, if the remainder are not required for immediate use, pour off the liquid and cover with olive oil. This will keep the olives good and fresh for several weeks.

Walnut Catsup.—Pick young green walnuts about the first week in July, as for pickled walnuts, and squeeze the juice out of them under a press. Or run them through two or three times with a hatpin. Crush them with a wooden mallet, place in a keg or jar throwing in a handful of salt for each two dozen walnuts. Cover with water and let stand two weeks or more, stirring frequently. Squeeze out the liquor through cheese cloth into a preserving kettle. Moisten the walnuts with boiling hot vinegar and mash them to a pulpy mass. Pour on additional hot vinegar to cover them. Mix and squeeze out the vine-

gar into the juice and brine in a preserving kettle. Add to each gallon of juice 12 or 14 ounces of mixed spices as desired, bruising the whole spices in a mortar, or placing the ground spices in a thin muslin bag. Flavor with cayenne, paprika, garlic, or shallots as desired, and boil one hour or more, or until reduced about one half. Bottle and seal when cold.

Oyster Catsup.—Squeeze through a sieve 1 pint of oysters with the juice. Add 1 pint of white wine or sherry, and salt to taste. Add 2 or 3 ounces of mixed spices. Flavor with garlic, celery, etc., as desired. Simmer fifteen or twenty minutes. Strain and bottle when cold.

Pepper Catsup.—Place in a preserving kettle about 25 large red bell peppers without removing the seeds. Add 1 pint of vinegar and boil until tender, stirring constantly. Rub the whole through a sieve. Set aside the juice. Pour over the pulp another pint of vinegar with 2 tablespoonfuls of brown sugar, and 2 or 3 ounces of mixed spices. Stir all together and boil down one half. Strain through cheese cloth and bottle when cold.

Gooseberry Catsup.—Select gooseberries that are ripe but not soft, pick them over carefully, and remove the stems and blossoms with a pair of small scissors. To each quart of gooseberries add 1 pound of brown sugar and 1 ounce of mixed spices. Place in a preserving kettle and boil to a soft pulp or for about 2 or 3 hours stirring constantly. Add for each quart of gooseberries $\frac{1}{4}$ pint of vinegar. Bring to a boil. Fill bottles to overflowing and seal while scalding hot.

Grape Catsup.—Take grapes that are ripe but not soft. Pick them over carefully and add $\frac{1}{2}$ by weight of sugar and to 5 pounds of grapes 1 pint of vinegar, 2 or 3 ounces of mixed spices, and salt to taste. Boil until it thickens. Bottle when cold.

To Preserve Horse-Radish.—Slice the horse-radish in November and December about $\frac{1}{16}$ of an inch thick. Place it in a tin pan, cover and set it in a warm place near the stove to dry; but do not heat it too much, as otherwise it will lose its flavor. When

bone dry grind it in a mortar, place it in suitable jars or bottles, and seal for use.

Or grate the green roots, cover with strong vinegar. Bottle, seal, and store in a cool place.

To Preserve Tomatoes for Soup.—Select all the small cracked or faulty-shaped ripe tomatoes that are unmarketable, wash, trim, and cut them up unpeeled in a preserving kettle. Stew them well, grind them through a flour sieve so as to remove the seeds and skins, reheat and can for soup stock.

Or take the large, sound, ripe tomatoes, wash and drain, halve them crosswise, and pack them with the cut side up between layers of salt in a jar or wooden firkin. Let stand twenty-four hours or until the salt melts. Now pour off and discard the brine and seeds that escape with it. Boil the tomatoes to a pulp, and rub through a flour sieve. Season with

cayenne pepper or paprika, salt to taste and boil to the consistency of cream, stirring briskly. Pour out to a depth of about $\frac{1}{2}$ inch on large platters, and let dry in the sun or a slow oven. Before it dries mark in 3-inch squares with a sharp knife and when fully dry pack tightly in hot, dry glass jars. Seal closely to exclude the air, and store in a dry place. One of these squares will season 2 or 3 quarts of soup, or enough for a large family.

Or the squares may be soaked in warm water and stewed with bread crumbs as tomato sauce.

Or peel large, ripe tomatoes, remove the seeds, pack them in a preserving can with pepper and salt. Let stand twenty-four hours or until the salt is melted, and boil for an hour or more, stirring frequently. Pour into small jars or bottles, as it will not keep well after being opened, and seal when cold.

CHAPTER XXXVI

CANDIES AND CANDY-MAKING

KINDS OF CANDIES—BOILING SIRUP FOR CANDY—THE SEVEN DEGREES—CREAM OR FONDANT—CREAM CANDIES—FRUIT AND NUT CREAMS—BONBONS—TAFFY AND MOLLASSES CANDY FOR CANDY PULLS—SIRUP CANDIES—PASTILS OR CANDY DROPS—CANDIED FRUITS, FRUIT AND NUT CANDIES—CAMELS—KISSES AND MARSHMALLOWS—NOUGATS—POPCORN CANDY—LOZENGES—COUGH CANDIES—TO COLOR AND FLAVOR CANDY—ICES AND ICING—HONEY AND BEESWAX

Candy Making should be taught and acquired as one of the most useful of womanly accomplishments. Like every other art that calls for skill and intelligence, it has an educational value. And the universal fondness for sweets renders the candy maker a popular favorite. Thus the mother who can make good candy and is fond of practicing her skill, or teaches and encourages her daughters to do so, will not only make her home attractive to her own family, but will also acquire an enviable reputation as an entertainer. Then, too, there is a good market in all parts of the country for first class homemade candies. Even in cities where the large confectioners' shops seem capable of supplying every demand, good homemade candies are given preference at the highest prices; while in small towns and rural districts, where cheap candies are the rule, the homemade article, if of good quality, will always find a ready sale. Children may offer a few pounds of homemade candies for sale at a small booth or table placed, in summer weather, on the lawn, and in many localities can thus earn a good many dollars from passers-by. Or after a reputation for the quality

of the product has been acquired, orders may be obtained from local merchants or from neighbors. When any considerable amount of candy is made, the best materials will not cost over 15 cents a pound, and prices ranging from 50 cents to \$1 a pound are the rule for a high grade domestic article. A candy booth, always providing the contents are of the best quality, is usually one of the most profitable features at church fairs, lawn parties, and other entertainments for the purpose of raising money.

Utensils for Candy Making.—The entire outfit of a professional candy maker can be afforded by any one. First in order is a suitable surface on which to pour and work fondant and other candies. A flat or shallow box or tray, 3 or 4 inches deep and of any convenient size, lined with tin or zinc, is used by many confectioners. But a marble slab, such as the top of an old-fashioned center table or bureau, is ideal for this purpose. It should be used wrong side up. A couple of candy scrapers or toy hoes like garden hoes are needed to work cream candy. Or have a carpenter make a spatula or flat scoop of hard wood, 12 or 15 inches long,

shaped like a snow shovel, but having a very thin beveled edge, as shown in the illustration. This is used to lift and scrape the fondant. A good granite or porcelain double boiler, a broad, thin-bladed palette knife, a quantity of waxed paper, a two-tined fork with which to dip creams and bonbons; these complete the necessary outfit. A good pair of scales, a suitable measuring cup or graduated glass should be at hand in the kitchen. And a small stock of fancy molds or starch prints will be found convenient.

Ingredients for Candy.—These are of three sorts: sugar, fruit, nuts and the like, perfume or flavoring, and coloring matter. As to sugar, that known as Confectioners' XXX is the best and is used by confectioners for the finest grades of uncooked candies. Confectioners' "A" sugar is not as good, but is sometimes used for cooked candies. Pure granulated or loaf sugar properly clarified, forms a satisfactory substitute. But if adulterated sugar is used it will not be possible to get satisfactory results. The ordinary powdered sugar sold by grocers is not usually properly refined, and in many cases is adulterated. If the scum which rises is dirty or if the melted sirup has a brownish or purplish tinge, it is not fit for the finest grades of candy. And even the best granulated sugar or ordinary powdered sugar is not suitable for uncooked candies. Hence, if you expect to make candy for sale or are ambitious to secure the best results, ask your grocer to make a special order for Confectioners' XXX sugar, which can be procured of any large dealer in candy or wholesale grocery house at a slightly higher price than ordinary powdered sugar, and use this for uncooked fondant, icing, and the better grades of creams and bonbons.

White sugar must be used for all light-colored candies. But coffee or dark-brown sugar may be used for caramel, dark-colored nut candies, taffy or molasses candy that is to be pulled; or for any candy that is to be colored in dark shades.

Measurements for Candy.—One

pint Confectioners' "A" sugar, Confectioners' XXX or "powdered" sugar equals $\frac{1}{2}$ of a pound.

One teacup or tumbler equals $\frac{1}{2}$ a pound.

One pint of brown sugar equals 14 or 15 ounces; 1 teacup of brown sugar equals about 9 or 10 ounces.

Two tablespoonfuls equal 1 ounce, or 32 tablespoonfuls 1 pound.

These measures are approximate, but are sufficiently accurate for practical purposes.

KINDS OF CANDIES

Among the many sorts of candy turned out by professional confectioners, certain standard makes or kinds may be noted which admit of a general description. One important distinction is between the cooked candies, the basis of which is the clarified sirup boiled to the required degree, and the uncooked candies.

The secret of uncooked candy consists in using Confectioners' XXX or other very finely powdered sugar. Ordinary powdered sugar is not suitable for this purpose, as it will be found if tested between the thumb and finger to have a rough grain, whereas the Confectioners' XXX sugar is as fine as starch. Uncooked candies may be made equal to the finest French cream. They should be allowed to stand twenty-four hours or more before eaten.

Among the standard sorts of cooked candies are fondant or cream, which may be clarified sirup boiled to the soft-ball degree and creamed by dipping or working with a wooden spoon or paddle, or by beating up Confectioners' XXX sugar with white of egg and water or milk. These fondants are the foundation of chocolate and other cream candies, and many others.

Bonbon is a general name for fancy candies, the heart or center of which may be made of nuts, fruits, or any sort of sweetmeats, and afterwards dipped in melted fondant either of plain white sugar sirup, or sirup containing chocolate, coffee, or other flavoring matter, and tinted

with various coloring matters according to taste.

Creams and cream candies are made of simple fondant with the addition of nuts, fruits, or sweetmeats stirred in, or having the fondant poured over them, or otherwise.

Molasses Candy consists of molasses in place of sugar sirup boiled down with or without a mixture of sugar or glucose.

Butter-scotch and Taffy may consist of either molasses or sugar sirup with the addition of butter and flavoring matter.

Pastils or Drop Candy usually consist of simple clarified sirup with a small quantity of water and flavoring extract.

Kisses and Marshmallows are simple sirup beaten up with the white of egg or gum arabic.

Fruit and Nut candies are mixtures of various sweetmeats with simple fondant.

Macaroons and Ratafias consist of almonds beaten up with simple sirup and white of egg.

Pralines or candied almonds are blanched almonds coated by immersion in boiling sirup.

Candied Fruit and other sweetmeats are made by pouring over them the clarified sirup boiled to the feather degree. This is afterwards withdrawn, leaving the sweetmeats coated with sugar in a form which crystallizes after a while.

Caramels are made of hard-baked candy with the addition of various sweetmeats and flavoring extracts.

Degrees for Kinds of Candy.—The following are general rules as to the state or degree of sugar boiling best adapted to the different sorts of candy, but these may be varied more or less by particular recipes which should, of course, be carefully observed:

Ordinary Fondant or French Cream is boiled to the soft ball.

Sugar, Cream, or Molasses Candy for a "candy pull" to the snap or crack.

Taffy and Butter-scotch the same.

Pastils or Drop Candy.—Boil as

little as possible; the candy should merely be dissolved.

Kisses, Marshmallows, and Macaroons are not boiled (except French kisses, which are boiled to the thread), but are beaten up with white of egg and browned in a baking oven.

Sirup for Candied Sweetmeats boiled to the feather or flake.

Pralines boiled to the pearl.

Caramels boiled to the caramel or hard-baked degree.

BOILING SIRUP FOR CANDY

To Clarify Sugar.—To make good candy it is first advisable to clarify the sugar by boiling it to a thin sirup with half its own bulk or more of water and the addition of the white of egg, gum arabic, or gelatin. This precaution will cause the impurities to rise in a scum, which may be removed with a skimmer. The resulting clarified sirup is the basis of all high-grade candies.

Similarly to clarify brown or yellow sugar, add white of egg or a solution of gelatin, isinglass, or gum arabic with water, and boil until the impurities rise to the surface. Dissolve 4 cupfuls of sugar in 1 of warm water and add the white of 1 egg beaten up with 1 cupful of cold water. Boil with gentle heat, removing the scum as fast as it appears.

Or dissolve 4 cupfuls of sugar in 1 cupful of warm water; simmer with gentle heat, and add $\frac{1}{2}$ ounce of gum arabic dissolved in a little boiling water. Remove the scum with a skimmer as fast as it appears.

For white sugars, less of the white of egg is required, but the same quantity of water should be used.

To clarify loaf sugar, 1 white of egg to every 6 pounds of sugar is all that will be required. But add, when boiling loaf sugar, 1 tablespoonful of lemon juice or vinegar to prevent it from graining. As the sirup boils, add a little cold water to prevent it boiling over, and skim as the froth subsides. Do this three or four times, and strain the whole through cheese cloth. Add flavoring matter,

if desired, after the purified sugar has been removed from the fire.

To Clarify Molasses.—To make a fine grade of molasses candy or to purify molasses so that it may be used in place of sugar for candies, cooking, and other purposes, take equal parts of molasses and water, and $\frac{1}{4}$ part of coarse broken charcoal; as, 24 pounds of molasses, 24 pounds of water, and 6 pounds of charcoal. Mix and boil for half an hour over a slow fire. Pour into a large flat pan or vat and let stand until the charcoal settles to the bottom. Strain off the clear molasses through a piece of cheese cloth and simmer with gentle heat until the water is all evaporated and the molasses has returned to its proper consistency. Molasses will lose nothing in bulk by this process, as 24 pounds of molasses will give 24 pounds of clarified sirup, from which the finer grades of molasses candy can be made.

To Clarify Maple Sugar.—To weigh, melt, and clarify maple sugar, break up the cakes and add enough water according to the condition of the sugar—whether hard or soft grain—to dissolve. Place over a slow fire and stir while melting. If the sugar was of a soft grain, add 15 pounds of granulated sugar. Or, if a hard grain, add 15 pounds of best light coffee sugar. Boil to a medium ball. Test by pouring a little in a porcelain-lined saucepan until the grain is cloudy. Leave a little of the grained sirup in the saucepan from the last stirring to make the next grain quicker. Pour in buttered molds, or set the kettle into a tub of ice water to cool and harden. But observe that maple sugar thus mixed with cane sugar must not be offered for sale without a statement of the fact that it has been thus treated.

To Boil or to Candy Sugar.—The art of candy making is very ancient, and the process of boiling sugar for candy has been observed and studied for many generations. Thus it has been observed that the clarified sirup, as it gradually loses moisture by evaporation in the course of boiling down, assumes certain stages in which

it is best adapted for use in making different kinds of candies. For convenience in preparing recipes these stages have been named and carefully defined, so that with a little attention they may be noted by any one. When once observed they will always be recognized at a glance, and the process of candy making will become almost as easy for the amateur as it is for the professional confectioner.

Seven different states or degrees are noted, three of which fall into two different stages. These are called respectively (1) the *lisse* or the thread, which may be large or small; (2) the *perle* or pearl, either large or small; (3) the *souffle* or the blow; (4) the *plume* or feather; (5) the *boulet* or ball, large or small; (6) the *cassé* or the crack or snap; and (7) the *caramel* or hard baked.

To Test Sirup.—The method practiced by professional confectioners to test the state or "degree" of boiling sirup is to dip the tip of the forefinger and thumb of the right hand into iced water, then into the boiling sirup, and quickly back into the iced water again. The operation is much like that of testing a hot flat-iron with a wet finger. If the test is made quickly enough, the ice water will prevent the hot sirup from burning the fingers. There is, of course, a knack in doing this, but with a little practice it can be readily acquired. The thumb and forefinger are brought together in the iced water, to prevent the sirup from running off, and quickly withdrawn, holding a pinch of sirup between the forefinger and the thumb. By spreading them, the state or degree of the boiling sirup can be ascertained.

Another method of testing, which may perhaps be preferred by the beginner in candy making, is to take out a little of the sirup with a spoon, lower it in a cup of cold water, and let a drop fall from the edge on the tip of the forefinger.

Or, to dip the forefinger and thumb in iced water, take out a little of the hot sirup on a small stick or skewer, and test a drop between the thumb and finger.

Candies that are to be pulled may be tested by pouring a spoonful of sirup into cold water and observing if it is brittle enough to break without bending, like a pipestem, otherwise the boiling must be continued.

THE SEVEN DEGREES

To make the experiment of noting the seven degrees in sugar boiling, crush 1 pound of fine loaf sugar, add 3 gills of water and put it on or boil in a clean saucepan over a sharp fire. Have at hand a bowl full of iced water, a suitable skimmer and if desired a small stick or skewer. Remove the scum as fast as it rises to the surface, and after about 2 minutes by the watch make the first test as above suggested either by dipping the thumb and forefinger, first into the iced water, then into the boiling sugar, and back into the iced water again, or by means of a spoon or skewer. Take great care that the sirup does not boil over, and stir frequently so that it may not burn.

The Lisse or Thread.—If on separating the thumb and forefinger with a pinch of sirup between them, a thin, short thread is formed which quickly snaps, the sugar is in the state known as the "small thread." In a few seconds more, when the thread can be drawn out to double its former length without snapping, its state is known as the "large thread."

The Perle or Pearl.—After another minute or two longer, the sugar in boiling will form small round bubbles or globules that look like large pearls. This state is known as the "small pearl." Soon the pearls will cover the entire surface of the sirup, and this state is known as the "large pearl." In the pearl state a pinch of sirup may be drawn out to the full extension of the finger and thumb without breaking. This is the proper degree for most kinds of candy making.

The Soufflé or Blow.—After another minute or two, dip the skimmer in the sirup and jar it sharply by striking it on the edge of the pan. Blow through the holes, and if the

sirup forms small bubbles or globules on the reverse side, the sirup is in the state known as the "blow."

The Plume or Feather.—Again dip in the skimmer, and shake it so as to flirt the sirup from the edges. If it threads and flies from the skimmer in flakes or hangs from the edge in strings it is in the state known as the "feather."

The Boulet or Ball.—Make the next test with the thumb and finger, or by dropping a little sirup into cold water. If it can be rolled between the finger and thumb into a soft, creamy, but not sticky ball, the state is known as the "soft ball." After a few seconds' more boiling, on testing in the same manner, it will be found to be in the state known as the "hard ball."

The Cassé or the Crack or Snap.—The next test is made with the thumb and finger, and if the pinch of sirup is brittle enough to crack or snap, leaving the parts attached to the thumb and finger dry and hard, it is in the state known as "crack." In this state it does not stick to the teeth, and a spoonful dropped into cold water will be hard and very brittle. This is the state in which candy is ready to be pulled.

The Caramel or Hard Baked.—When the sirup begins to brown, it is in the state known as "caramel" or "hard baked." It will then give off a pungent odor and brown rapidly, when it must be at once removed from the fire, as otherwise it will burn to a black cinder.

In this state, if a little sirup is dropped into cold water it will crackle and snap like glass. Care must always be taken not to allow the fire to burn up against the sides of the saucepan, or the sugar may be burned and discolored.

The above are the definitions of the different degrees in sugar boiling noted by French confectioners, who are considered the best in the world.

By others the distinctions between the little and great thread, the small and great pearl, and the soft and hard ball are less noted; the blow and the feather, or the feather and

the ball are often regarded as identical.

Sirup for Candied Sweetmeats.—Boil down clarified sirup to the feather degree, or 35 degrees by a sirup tester. Quickly remove the pan from the fire and set it into a dish of cold water, iced water, if possible, coming up all around the sides so as to cool it as quickly as possible. Lay over the top of the sugar a piece of waxed paper cut to fit the inside of the saucepan. When entirely cold, stir the sirup over the sweetmeats to be candied. A special utensil can be obtained for this purpose, having corrugated tubes at the bottom from which the sirup may be drained off.

Or the sweetmeats may be placed in a small basket strainer and put in the sirup, which may be placed in an earthenware or other round-bottomed vessel slightly larger in size than the strainer. The whole should be covered tightly and placed in a refrigerator, cellar, or the coldest place attainable. A temperature below the freezing point is desirable.

After standing over night, or about eighteen hours in this temperature, the strainer containing sweetmeats should be lifted from the sirup (which should be drained off), and without being removed from the strainer should be placed in a clean vessel and allowed to dry and complete the crystallization.

Sirup for Molds.—To prepare a sirup for lead molds or starch prints, boil together to the soft ball 2 cupfuls of sugar, 1 large tablespoonful of glucose, $\frac{1}{2}$ cupful of water.

Or test by tangling a yard or more of fine wire in a mass of loops, dip this in the sirup, lift and blow through them, when, if the sirup is done, bubbles will be formed and the sirup will be feathery and fly off in flakes. Now pour on a moistened molding board or on a marble slab to cool. When lukewarm, cream with a wooden paddle and set away in an earthenware bowl covered with several folds of wet cloth. Let stand twenty-four hours or more before using. To use this fondant set the required quantity in an earthenware bowl in a double boiler over a

dying fire and stir constantly until melted. But do not let the fire burn up or the sirup approach the boiling point, as if it simmers or boils it will grain. At this stage add any desired flavoring or coloring matter.

Sirup for Crystals.—Boil $1\frac{1}{2}$ pounds of sugar with $\frac{1}{2}$ pint of water to the fine thread, for small crystals, or to the great thread for larger crystals. Remove from the fire and let stand until nearly cold. Sprinkle over the top a little water to dissolve the film which gathers on it. Lay the sweetmeats to be crystallized in shallow pie tins inclined at a slight angle, and pour over them sirup from a ladle until they are covered. Lay on the top of the sweetmeats two or three folds of damp cloth, to prevent a crust from forming, and let stand until the sirup crystallizes, which may require several hours. Drain off the sirup, which may be done by laying on top of the cloth another pan of similar size to keep the candies in place, and tilting the vessel to let the sirup escape at the edge. Lay away the candies to dry, leaving the cloth over them, and sprinkling it with water until it is quite damp. The remaining sirup may be preserved and used again for other sweetmeats.

When the candies are dry, hold a cloth tightly to the edges of the pan, turn it upside down on a smooth surface, and the candies will drop out on the cloth. They may then be separated and wrapped in paper or boxed. They must be kept in a cool, dry place.

CREAM OR FONDANT

To prepare fondant or cream, which is the foundation of the justly celebrated French creams and bonbons, the sirup must be removed from the fire at the soft-ball degree, or just before it is ready to produce taffy or hard candy.

The sure way to determine the right state is by means of the sugar thermometer. The "soft ball" occurs at 238 degrees. The beginner who has mastered the art of making good cream or fondant is in possession of the principal secret of profes-

sional candy making, and may turn his or her skill to good account by making saleable sweetmeats. There are, of course, many recipes for making fondant both with and without glucose. The latter makes a somewhat cheaper candy, and if it is readily obtainable, of good quality, its use in homemade candy is not objectionable.

To Boil Fondant.—To prepare fondant in general, boil the sirup rapidly over a quick fire to the soft-ball degree. Do not stir the sirup while boiling; as this would cause it to grain. When a drop of the sirup cooled in cold water can be rolled into a soft creamy, but not sticky, ball it is done and should be removed immediately from the fire. If on rubbing a little of the sirup with a wooden spoon against the sides of the pan it seems soft and creamy it should be allowed to stand until lukewarm and then creamed, but if by chance it has been boiled too hard, add a little boiling water, return to the fire, and make a new test.

Cautions on Making Fondant.—Never attempt to make fondant when the air is humid, as in rain or foggy weather, or when there is a high wind. Select a clear day with a cloudless sky and still air or a gentle breeze. Sirup tends to grain in windy weather, and fondant cannot be worked properly in wet weather, since the slightest moisture affects it.

Do not add more moisture to the fondant in the form of flavoring matter or otherwise than is absolutely necessary.

After mixing the sugar and water for fondant, stir until the sugar is thoroughly dissolved, but do not stir after it is placed on the stove to boil, otherwise the fondant will grain and it will be necessary to melt it over again. Do not be discouraged if you do not at first succeed.

If the sirup grains or is too soft, add boiling water, stir until it is dissolved, place it back on the stove and boil as before. This may be done a dozen times if necessary. Thus experiment with your first batch of fondant until you acquire the necessary skill or knack. After that the

art of candy making will come more easily.

Oil slightly with pure olive oil the marble slab, or other surface on which you work. But use as little oil as possible.

Do not let the fondant become too cold or hard before commencing to work it. Pour it out on the slab in a rather thin layer so that it will settle in uniform thickness. As soon as it hardens enough on the edges to be lifted and rolled, commence to work from the edges in toward the center of the mass. Do not give the fondant time to harden, but work very briskly, turning the edges in with the scraper or spatula, or working the hoes back and forth until the whole gathers into a solid mass which cannot be readily divided. Then knead with the hands like bread. Work hard until the fondant acquires the proper consistency.

Store fondant in tightly sealed glass fruit jars. Thus it may be kept indefinitely. Or to keep it for a few days only, place in an earthenware bowl and cover with two or three layers of cloths wrung out so as to be moist but not wet.

Let fondant stand twenty-four hours or more before making centers for creams or bonbons and let the centers themselves stand for twenty-four hours or more before dipping. Otherwise they will be melted when dipping into the hot chocolate or other fondant. Again, let the candies stand a day or two to set before they are packed for use or sale.

Do not use more coloring or flavoring matter than is necessary—just enough so that the tint or flavor can be readily distinguished, is a good rule. Do not add flavoring matter to fondant until it has been removed from the fire and is nearly cool. Sprinkle the flavoring over the surface in the process of creaming and it will be thoroughly worked into the mass by kneading.

To Roll Fondant.—Cut off as many pounds of fondant, at least 24 hours old, as you need to make candy. Measure $\frac{1}{2}$ teaspoonful of flavoring extract or less to each pound of candy and add to the fla-

voring extract 1 drop of the appropriate coloring matter. Roll the fondant out thin on the slab, sprinkle the coloring matter over it and thoroughly incorporate it by kneading, the same as when working over bread. Have ready prepared sheets of waxed paper. And have at hand nuts, fruit, or decorations for the candies you are about to make. Cut the fondant into small pieces and roll into the desired shape with the fingers or palms. If fruit or nuts are to be used, add them at once while the cream is moist. Or if the centers are to be dipped, set them in order on waxed paper and let stand twenty-four hours more to harden.

To Dip Fondant.—If the chocolate for dipping fondants becomes too thick, add to it a little coconut oil. This is the natural oil of chocolate, and is, hence, the most appropriate substance with which to thin it. Do not attempt to thin it with hot water, as it will immediately cause the chocolate to grain.

Or use fresh, unsalted butter or olive oil. To dip the centers, use a slender two-tined fork, turn the conical point of the chocolate to the right, downward, dip under in a half circle, remove it point first and hold it upright over the chocolate for a moment or two to drip. Then set it down gently on the waxed paper. Add nuts, fruit, or decorations, if any, while the chocolate is still damp. Dip bonbons in the same manner.

To Cream Fondant.—When the sirup is done set it away from the fire and let it stand until about lukewarm. Now commence to stir with a wooden paddle. Commence to stir round and round, always in the same direction; keep the sirup away from the sides of the kettle so that it will not grain or form in lumps. Presently the edges will commence to show white and dry. The mass must now be laid on a marble slab or a kneading board, which may be dusted with fine flour, cornstarch, or Confectioners' XXX sugar, and kneaded with the hands in the same manner as bread dough until it is of a uniform soft and creamy consistency.

Place the mass of fondant if not re-

quired for use in an earthenware bowl and cover it with several folds of a cloth wrung out so as to be moist but not wet. It may thus be kept for a number of days, and will only require to be warmed at the fire or by setting the bowl in a vessel of boiling water or on a hot soapstone, or on two or three common bricks previously heated in the oven, to be ready for immediate use. Any remnant of the fondant which becomes hard and dry, or a batch of fondant which has been cooked too much, may be softened with hot water and reboiled to the proper degree.

Confectioner's Fondant.—The following recipe is that of a professional confectioner, and the full quantities are given for the benefit of dealers in candy, grocers, or persons desiring to make candy in large quantities for sale at a fair, church bazaar, or otherwise. The quantity of candy here described will require a large kneading board or vat with low sides; but any smooth surface, as a clean kitchen table, will answer. As the mass will be too large to be worked with the hands it is better to take a small garden hoe with a short handle, which should, of course, be scoured clean for the purpose.

Boil down 20 pounds of fine granulated sugar with $2\frac{1}{2}$ quarts of water to the stiff boil. Remove from the fire and sprinkle on top 6 pounds of glucose, but do not stir it in. Set back on the fire and let it boil until the scum boils in.

Note that the glucose must not be added until the sugar is boiled to the hard ball, and must not be stirred, but allowed to boil in of itself. Dust the vat or molding board with Confectioners' XXX sugar, pour out the mass on this as soon as the scum has boiled in, and let it cool until you can lay your hand on it. But it is better to begin a little sooner than to let it get too cold. Take two short garden hoes or cream scrapers, work it flat and sprinkle over it rather less than $\frac{1}{2}$ pint of glycerin. Cream thoroughly with the hoes or scrapers, and let stand over night before using.

When this fondant is first made it will be rather rough and coarse in

texture, but standing twelve hours or more will give it a uniform fine texture and it improves with age, never graining or turning stale. If this recipe is carefully followed, a fine quality of cream for chocolate drops, cream candies, and other fondants can be made at a very satisfactory profit.

Fondant without Glucose.—Boil rapidly over a quick fire to the soft-ball degree 6 cupfuls of fine granulated sugar, 2 cupfuls of water, and $\frac{1}{2}$ teaspoonful of cream of tartar.

Or 3 pounds of granulated sugar, 1 pint of water, and $\frac{1}{2}$ teaspoonful of cream of tartar. The addition of cream of tartar prevents the sirup from graining. Remove from the fire as soon as done, let the mass cool until lukewarm, and proceed as before.

Chocolate Fondant.—Instead of pure melted chocolate, a fondant containing 2 tablespoonfuls of grated chocolate to each pound of cream may be used. Place in a bowl, set in a vessel of hot water, 2 tablespoonfuls of chocolate and when melted add a cupful of clarified sirup and 1 pound of melted fondant. Stir and mix well. In this chocolate fondant dip the hearts or centers of creams or bonbons by transfixing them with a fork or hatpin and dropping them on waxed or buttered paper or sheets of tin to harden. Fruits, as cherries, figs, and the like, are very delicious coated in this way, or mixed nuts dipped and rolled with French cream and thus coated are also excellent.

Bonbon Fondant.—Prepare any ordinary fondant, but cream it with a wooden paddle, and do not knead it as for ordinary fondant. Let it stand twenty-four hours or more in an earthenware bowl covered with several thicknesses of wet cloth. To dip bonbons heat the fondant by setting it on a soapstone or in a pan of hot water over the stove and stirring constantly, but do not allow it to boil. A double boiler may be used for this purpose. Dip the centers by transfixing them with a fork or hatpin, and set them to cool on sheets of waxed paper. This recipe is suitable for all sorts of nuts, fruits, and other

sweetmeat centers. The fondant may be tinted or colored as desired.

Uncooked Fondant.—Beat up the white of egg and mix with the same amount of water by bulk in an earthenware bowl. Whip in Confectioners' XXX sugar to a stiff paste, which will stand when molded with the fingers to any desired shape. Flavor and tint as desired. After molding let the pieces stand several hours to harden, but make up no more fondant than is required for immediate use, as it soon hardens. This fondant may be used as centers for chocolate creams, or for nut or fruit sweetmeats in place of any of the cooked fondants as desired.

CREAM CANDIES

Chocolate Creams.—Mold French cream or any of the fondants into cone-shaped balls with the hands or fingers. Let them stand over night on waxed paper or a marble slab, or until they are thoroughly hardened. If they are allowed to stand twenty-four hours or more all the better.

Coating for Chocolate Creams.—Melt a cake of chocolate in a double boiler, but do not let it boil. When melted add a lump of paraffin as big as a small walnut, half as much butter, and a few drops of vanilla.

Or melt in a double boiler a piece of paraffin the size of a hickory nut, a teaspoonful of lard, and add $\frac{1}{2}$ pound of chocolate. Stir until melted. If a thicker coat of chocolate is desired, add to the melted chocolate to thicken it a little glycerin or a few drops of linseed oil.

Do not attempt to thin dipping chocolate with water or else it will immediately grain and harden.

To Coat Chocolate Creams.—Place the pan of melted chocolate in a larger pan of boiling water on a very hot soapstone. This keeps the chocolate melted. Place the creams on waxed paper at the left, and a sheet of waxed paper to receive the coated chocolates at the right. Take up the creams by thrusting them through with a fork or a hatpin, dip them quickly in the chocolate, and slip them off on the waxed paper.

Or, holding the cream on a fork or hatpin, pour the melted chocolate over them from a teaspoon. Let the creams stand twenty-four hours or more to harden.

Chocolate-cream Candy.—Melt together in a double boiler $\frac{1}{2}$ ounce of chocolate scraped fine, 3 ounces of powdered loaf sugar, 1 pint of sweet cream. Bring these nearly to a boil but remove before they simmer and beat them up with an egg beater. Let cool, adding the whites of 4 or 5 eggs. Again beat up the whole with an egg beater, remove the froth with a sieve, and serve in glasses decorated with the froth on top.

Or dissolve in 6 glasses of fresh milk 1 ounce of grated chocolate and 3 ounces of white sugar. Beat up the yolks of 3 eggs and stir into these the milk and chocolate, stirring slowly one way. Add a few drops of vanilla boiled with milk. Mix well, place in cups in a pan of water, and boil for an hour. Serve cold.

French Cream.—Place in a clean saucepan 2 cupfuls of white sugar, $\frac{1}{2}$ cupful of hot water. Boil 8 minutes without stirring. When done it should fall in threads from the stirrer, and when rubbed against the side of the pan should be of a creamy consistency. A few drops in cold water should roll into a soft ball between the fingers.

It is better to remove from the fire too soon than to cook too much, as if necessary it can be returned to the fire and the cooking continued.

When done pour into a bowl and beat with an egg beater. When cool add any desired flavoring matter. This is a fondant which may be molded or cut into any desired shape, tinted and colored as desired, or made into bonbons by molding into various shapes and decorating with almonds or other nuts pressed into the top or side. Place the pan containing the cream in hot water or on a warm soapstone while molding it to prevent its getting too cold.

Or place in a clean saucepan 2 cupfuls of granulated sugar, $\frac{1}{2}$ cupful of milk. Bring to a boil over a slow fire and boil for 5 minutes. Remove and set the saucepan in a

pan of cold water. Beat up with an egg beater until it creams. Mold into balls with the hands, and arrange in layers with figs, dates, or nuts between, and cut into squares.

Or mold into any desired shape and place the nuts on top. This is suitable fondant for chocolate creams.

French Cream, with Glucose.—Pour over 2 tablespoonfuls of glucose $\frac{3}{4}$ cupful of boiling water. Stir in Confectioners' XXX sugar to make a stiff paste. After standing half an hour knead thoroughly with the hands. Color and flavor to taste.

French Vanilla Cream.—Take the whites of any desired number of eggs and an equal quantity of cold water or milk. Stir in Confectioners' XXX sugar to make a stiff paste, tint and flavor to taste. Form in fancy shapes and place on waxed paper to dry. This is suitable fondant for all bonbons and chocolate drops. About $1\frac{1}{2}$ pounds of confectioners' sugar will be required for the white of 1 egg.

Cream Candy.—Boil together to the hard snap 1 pound of white sugar, 1 cupful of water, $\frac{1}{2}$ teaspoonful of cream of tartar, 2 teaspoonfuls of best white vinegar, 2 teaspoonfuls of vanilla, butter the size of an egg. When it hardens on being dropped in water pour into a buttered pan and when nearly cold pull.

Or boil to the hard snap, or about half an hour over a slow fire, 3 pounds of loaf sugar, $\frac{1}{2}$ pint of water, add 1 teaspoonful of fine pickled gum arabic dissolved in 2 tablespoonfuls of boiling water and 1 tablespoonful of vinegar. Boil until it hardens on being dropped in water, remove and flavor as desired. Rub the hands with unsalted butter and pull until the candy is white. Twist or break it, stretch into ribbons, cut to any desired size, and lay on buttered plates or waxed paper to harden.

Maple Creams.—Beat up together with an egg beater or otherwise the white of 1 egg and 1 cup of pure maple sirup. Stir in Confectioners' XXX sugar to make a stiff paste, mold to any desired shape, and coat with chocolate or fondant.

Or boil to the soft-ball state 1 pound of maple sugar with $\frac{1}{2}$ teaspoonful of cream of tartar and $\frac{1}{2}$ cup of water. Let stand in the saucepan until nearly cold, and stir until it clouds or becomes creamy. Pour into a shallow tin greased with oil of sweet almonds or unsalted butter to cool. When cold cut to any desired shape.

Or mix grated maple sugar with French cream, and stir in dry confectioners' sugar to make a stiff paste.

Peppermint Creams. — Flavor French cream freely with essence of peppermint and shape into round, flat creams.

Wintergreen Creams. — Flavor French cream freely with wintergreen essence and color pink. Shape into round, flat forms or mold as desired.

Neapolitan Creams. — Divide French cream into a number of parts. Tint and flavor these differently, and arrange on waxed paper or a marble slab in the same fashion as layer cake or marble cake. Roll out the mass with a rolling pin or by pressure with the hand to any desired thickness, and the parts will be found to keep their relative positions. Cut to any desired shape.

FRUIT AND NUT CREAMS

Fruit Creams.—Chop up any desired fruit as citron, currants, figs, or seedless raisins very fine and mix with French cream while the sugar is being stirred in. Roll the mass on a suitable slab with a rolling pin, and cut or mold to any desired shape.

Fig Creams.—Quarter small figs with a sharp knife so as to leave the quarters connected at the stem. Color and flavor French cream or fondant as desired, roll flat, cut into strips of the thickness of the little finger, cut off pieces somewhat shorter than the fig and place one in each fig, closing the quarters about it. Dip the whole in French cream or fondant.

Or cut dry figs in strips and wrap the inner seed side around a piece of fondant. Cut to any desired shape.

Chop any desired nut of mixture of nuts very fine, and stir with the sugar into French cream. Mold to fancy shapes and tint or flavor as desired.

Date Creams.—Remove the pits from the dates, split open the end, insert a ball of cream with a clove stuck in the end.

Almond Creams.—Chop the almonds fine and stir with the sugar into French cream, or mold the French cream to fancy shapes and press the almond meat into the side.

English Walnut Creams.—Mold French cream in any desired size and place half an English walnut meat on the top or on either side.

Walnut Creams.—Boil to the hard snap stage 1 cupful of grated chocolate, 1 cupful of brown sugar, 1 cupful of molasses, $\frac{1}{2}$ cupful of sweet milk. When it hardens on being dropped in water stir in butter the size of an egg, 1 cupful of chopped walnuts, or add, in place of milk, pure cream.

Or boil together to the hard snap 4 cupfuls of granulated sugar, 3 tablespoonfuls of glucose, 1 cupful of boiling water. Now add a cupful of cream, $\frac{1}{2}$ cupful of butter, and stir until done; before removing from the fire add 2 cupfuls of finely chopped hickory nuts, stir thoroughly, and pour out to cool. Other nut caramels can be prepared from the same recipe.

BONBONS

To prepare bonbons it is necessary to have suitable lead molds oiled with the oil of sweet almonds, or starch prints of various shapes and sizes. These are filled by means of a suitable funnel with sirup in the state known as the blow.

To test the sugar, dip the skimmer, strike it against the sides of the pan, and blow through the holes. If small bubbles and gleams of light may be seen, it is in the right condition. Add a few drops of any desired flavoring matter, and if coloring matter is desired add the color just as the sugar is taken from the fire. If the bonbons are to be white, let the sugar cool a little, and stir it in the pan

until it grains and shines on the surface.

Allow the molds to cool, and let stand two or three days. As soon as the molds are cold remove the bonbons on waxed paper, and let stand two or three days to dry.

Chocolate and Vanilla Cream Bonbons.—Strain through a piece of muslin 1 ounce of fine picked gum arabic, soaked in $\frac{1}{2}$ gill of hot water. Add a few drops essence of vanilla, and stir in as much icing sugar as it will take, working it into a stiff but soft and yielding paste. About 1 pound of sugar will be required. Dissolve 2 ounces of French chocolate with a tablespoonful of water in an oven. Beat up the mixture, and work smooth, and add to it the white of 1 egg beaten as for icing.

Mold suitable drops of vanilla cream fondant; place these on a sheet of waxed paper or plain paper brushed with fine sugar, and let stand until hard. Dip these creams in the chocolate coating in the usual way.

Almond Bonbons.—Mold almond paste into any desired shape, and dip them into melted fondant.

Cocoanut Marshmallow Bonbons.—Cut fresh marshmallows into quarters or any desired shape, dip in melted fondant, roll in grated cocoanut, and set on waxed paper to harden. The fondant may be of various tints and flavors for variety. Use if possible fresh coarsely grated cocoanut, as if too fine it will not adhere well to the fondant. Or desiccated cocoanut may be used, if necessary, but is not equally good.

Cocoanut Maple Bonbons.—Grate fine 1 fresh cocoanut and stir it into a pound of soft maple cream or fondant. Mix the mass with the hands until thoroughly incorporated. Roll and cut out with a small candy cutter, roll into round balls with the palms, let stand to harden slightly, and dip in cream fondant or chocolate as preferred.

Cocoanut Strawberry Bonbons.—To 1 freshly grated cocoanut add about four times as much, by bulk, stiff fondant, mix thoroughly with the hands, and mold into conical

shapes the size of strawberries. When dry dip into melted fondant flavored with strawberry and tinted pink. Afterwards roll in red sugar sand.

Maple Bonbons.—Use maple sugar instead of granulated to make a cream or fondant in the usual manner.

Or use part maple sugar and part granulated sugar. Form this fondant, when of a soft and creamy consistency, into any desired shape, let stand to harden, dip in melted cream or fondant, and place on waxed paper to harden.

Jelly Cream Bonbons.—Obtain a starch tray having molds with two sections, one smaller than the other. Cook a suitable quantity of apple jelly to a stiff consistency, and with this by means of a funnel fill one half of the mold. Let cool and fill the remainder of the mold with the melted fondant of the consistency of ordinary cream. A variety of different tints and flavors and molds of different shapes and sizes may be used to produce different effects.

Pineapple Bonbons.—Dip in melted fondant pineapples cut into fancy shapes and place on waxed paper to harden.

Walnut Bonbons.—Mix equal parts of chopped black walnuts with a soft fondant, mold to any desired shape, dip in chocolate, maple or cream fondant and arrange on waxed paper to harden.

TAFFY AND MOLASSES CANDY FOR CANDY PULLS

Taffy is a simple candy, which may be made of either granulated, light or dark-brown sugar or molasses. Or both sugar and molasses, with the addition of butter and vinegar, lemon juice or other flavoring substance, as desired.

The ingredients may be boiled together, or the butter may be added when the sirup is nearly done. Lemon juice or other flavoring matter should not be added until the boiling is nearly finished, as otherwise the flavor will be partly lost. Taffy is a good candy for children to make, as

it is simple and easily handled. It may also be worked into various designs, twisted, braided, formed into horseshoes, baskets, and the like. Two or more strands of different colors may be braided together. Baskets in different shapes may be formed by winding strands around the bottom or outside of cups or other dishes, which should be buttered on the outside, adding a suitable handle and setting the whole away to cool. When cold it may be easily removed.

Candy canes may be rolled and twisted on a sheet of waxed paper; or strips of party-colored taffy may be twisted or braided and cut into sticks with scissors. The work must be done quickly as soon as the candy is cool enough to bear the hands, as after it sets it cannot be worked to advantage. When taffy is poured from the kettle use only the quantity that will run freely. Keep the scrapings by themselves, as if they are added to the candy they may cause it to harden and grain.

Molasses Taffy.—Boil in a buttered kettle for 3 hours over a slow fire, or until the sirup ceases to boil, 1 quart of Porto Rico molasses and $\frac{1}{2}$ pound of light-brown sugar. Stir frequently to prevent burning or boiling over. When nearly done stir in the juice of a large lemon. When it hardens in water pour into buttered pans.

Or boil over a slow fire to the ball 1 quart of Porto Rico molasses and 1 gill of cold water. Now stir in 1 tablespoonful of butter, 1 teaspoonful of brown sugar. Boil until it hardens in water and pour in a buttered pan to cool.

Or boil together 1 cupful of molasses, 1 cupful of sugar, butter the size of an egg, until it will harden in cold water. Cool in a buttered pan.

Everton Taffy.—To make this celebrated taffy extract the juice of a large lemon and grate $\frac{1}{2}$ the rind. Mix $1\frac{1}{2}$ pounds of coffee sugar, $3\frac{1}{2}$ ounces of butter, $1\frac{1}{4}$ cupfuls of water, and the grated lemon rind. Boil together over a quick fire, stirring constantly until it becomes hard and brittle in

cold water. Remove from the fire, stir in the lemon juice and pour in buttered tins to cool.

Buttercups.—Make any desired quantity of taffy and pour out about $\frac{1}{4}$ inch deep to cool on a smooth buttered surface. Warm a similar quantity of stiff fondant, and work it near the fire until it is creamy and soft. Pull the taffy as soon as it will bear the hands until it is white, stretch it out in broad, flat strips, lay a roll of fondant in the center of each strip, roll the fondant in the taffy and cut the strips crosswise with a sharp scissors to any desired length.

To Pull Candy.—The best way to pull candy is to grease the hands thoroughly with butter to prevent sticking, or they may be covered with flour. The work should commence as soon as the candy is cool enough to bear the hands. Work with the tips of the fingers until it grows cool. Continue to pull until it is of a light golden color, or white, according to the recipe. Pull smartly, either by the help of another person or over a hook. Finally, draw out in sticks on waxed paper, or other smooth surface, which may be dusted with flour and cut with shears into sticks.

Pulled Taffy for a Taffy Pull.—Either sugar or molasses taffy may be pulled. For sugar taffy, boil together to the soft ball 3 cupfuls of granulated sugar, $\frac{1}{2}$ cupful of vinegar, $\frac{1}{2}$ cupful of water; now add 1 tablespoonful of butter stirred in quickly, and boil until it hardens and becomes brittle in cold water. Add any flavoring extract desired just before removing from the fire. Pour on a buttered platter to cool, turn in the edges as fast as it cools, and when cold enough to handle pull until white and brittle.

Or for molasses taffy boil to the soft ball 1 quart of New Orleans molasses, 1 tablespoonful of granulated sugar. Now stir in 2 tablespoonfuls of vinegar, $\frac{1}{2}$ pound of butter, and boil until it becomes hard and brittle in cold water. Just before removing from the fire stir in $\frac{1}{4}$ teaspoonful of soda dissolved in hot water and pull.

Or boil together to the hard snap $\frac{2}{2}$ cupfuls of brown sugar, 1 cupful of molasses, $\frac{1}{2}$ cupful of water, 1 tablespoon of vinegar. Just before removing from the fire stir in $\frac{1}{2}$ teaspoonful of soda dissolved in hot water. Test in cold water. Add flavoring matter and pull until the color becomes a rich gold.

To Make Molasses Candy.—The simplest way to make old-fashioned molasses candy for a candy pull is to boil the best Porto Rico molasses over a slow fire until it is done, which will require 2 hours or more. Butter a large saucepan which will hold about four times the quantity of molasses to be used. Stir frequently, especially when nearly done, to keep it from burning or boiling over. To test it, pour a spoonful into cold water; if it is hard, brittle, and snaps like a pipstern without bending, it is done, otherwise the boiling must continue. It is, however, quite customary to mix with molasses about $\frac{1}{2}$ as much brown sugar to make it boil more quickly, and some persons add a little butter or glycerin to make it pull easier. Others stir in $\frac{1}{2}$ teaspoonful of baking soda dissolved in an equal amount of water or a little vinegar when the candy is nearly done to make it more brittle. The flavoring matter, if any, should be added just before the candy is taken from the fire and may be quickly stirred in or merely dropped on the top of the mass. Nuts of all kinds may be stirred into the candy just before removing it from the stove, or they may be placed in the buttered pan and the candy poured over them. The flavoring matter will be worked in when the candy is pulled. When done it should be poured out on a large buttered platter on pan so as to be about $\frac{1}{2}$ inch thick to cool. As the edges cool they should be turned in and as soon as it will bear the hands the pulling should commence.

Or boil together in a buttered saucepan over a slow fire for 2 hours, stirring frequently, 1 quart of molasses and $1\frac{1}{2}$ pounds of light-brown sugar. Now stir in the juice of a large lemon and 12 drops oil of lemon, and continue the heat until the sirup

ceases to boil. Test by dropping a little in water, when, if done, it should be crisp and brittle. Pour in a buttered pan to cool.

Or 2 quarts of Porto Rico molasses, 1 pound of brown sugar, the juice of 2 large lemons or a teaspoonful of strong essence of lemon.

Or 2 cupfuls of molasses, 1 cupful of sugar, butter the size of an egg, 1 tablespoonful of glycerin. Test by letting a few drops fall in cold water. If they keep their shape and are brittle it is done, but do not boil too much. Stir in 1 teaspoonful cream of tartar or soda just before removing from the fire.

Butter-scotch.—To make butter-scotch the ingredients may all be boiled together, or the butter and flavoring matter may be added to the sirup after it has boiled about twenty minutes, or when nearly ready to take from the fire. The sirup should boil to the hard-snap stage. To test when it is done, either use the confectioners' test with the fingers, or test by dropping in cold water or on a cold plate, when it will harden if boiled sufficiently.

The following recipes are recommended:

Boil to a hard snap $\frac{1}{2}$ cupful of sugar, $\frac{1}{2}$ cupful of molasses, $\frac{1}{4}$ cupful of butter, $\frac{1}{2}$ tablespoonful of vinegar, $\frac{1}{4}$ teaspoonful of soda, stirring sufficiently to prevent burning.

Flavor to taste, after removing from the fire. Butter a tin and pour out the sirup in a thin layer, which may be checked off in any desired shape when nearly cold with a sharp knife. Wrap in a piece of waxed paper. This is among the best recipes and very easy to make.

Or boil 1 pound of sugar in 1 pint of water to the soft ball, stir in 1 tablespoonful of butter, boil to the hard snap, remove from the fire and flavor to taste.

Boil to the soft ball 2 pounds of light-brown sugar, 2 pints of water. When done it should be crisp and not hard when dropped in water. Now stir in 2 tablespoonfuls of butter, boil to the hard snap, remove and flavor to taste.

SIRUP CANDIES

Sirup candies may be made of any desired flavor by boiling a sirup the same as for molasses candy. Clarify it by adding a little carefully picked gum arabic dissolved in hot water. The impurities which are taken up by the gum rise to the surface and can be removed with the skimmer. Continue to boil and skim until the sirup becomes perfectly clear and is hard and brittle when dropped into cold water. This will require half an hour or more steady boiling over a slow fire. Remove from the fire and as soon as the boiling subsides stir in vanilla, wintergreen, hoarhound, peppermint, rose, or any other flavoring matter as desired. Pour out in buttered tins to cool, and when nearly cold mark into squares or any desired shape with a sharp knife.

The following recipes are recommended:

To 3 pounds of dark-brown sugar add $1\frac{1}{2}$ pints of water and $\frac{1}{2}$ ounce of gum arabic dissolved in a little hot water.

Or boil together 1 quart of sirup, 1 pound of granulated sugar, 1 teaspoonful of butter, 1 tablespoonful of glycerin.

Or 2 pounds of granulated sugar, $\frac{3}{8}$ cupful of water, $\frac{3}{8}$ cupful of vinegar, butter the size of an egg, 1 tablespoonful of glycerin. Just before taking from the fire stir in 1 level teaspoonful of soda and pour 2 teaspoonfuls of vanilla, wintergreen, or any other flavoring matter over the top. Pull until white and glistening, and cut to any desired shape with sharp scissors.

Maple Sirup Candy.—Boil down any desired quantity of maple sirup until it will harden and crack if dropped into cold water. When it is done, and just before removing from the fire, stir in a teaspoonful of butter for each cupful of sirup. This gives a hard candy.

Or it may be made soft and waxy by less boiling.

Or melt down 2 pounds of maple sugar in rather less than a pint of warm water. Boil until it hardens in cold water, and stir in 3 or 4

tablespoonfuls of pure cider vinegar. In both cases pour in buttered pans to the depth of about $\frac{1}{4}$ inch to cool.

Twist Candy.—Boil without skimming over a slow fire $1\frac{1}{2}$ pounds of granulated sugar and $\frac{1}{2}$ pint of water, for half an hour. Remove from the fire and as soon as the hands will bear it pull it the same as molasses candy until it is white and glossy. Work it into fancy shapes and cut it to any desired size with a sharp scissors.

Sugar Candy.—Boil together without stirring 2 cupfuls of white coffee sugar, $\frac{1}{4}$ cupful of good cider vinegar, and $\frac{3}{8}$ cupful of water, until it hardens in cold water. Pour over it any desired flavoring matter, cool on a smooth buttered surface and pull until it is white and glossy, but without twisting. Do not use butter on the hands, but have them clean and dry.

To make nut candy, place the nuts or popcorn in the dish, and pour this fondant over them.

Rock Candy.—A special kettle is required to make fine rock candy. This kettle should be broad and shallow, the width being three or four times the depth. Place in the bottom of the kettle a circular rim of smooth tin about 2 inches high and closely fitting to the inside of the kettle all around. Near the top of this make ten or twelve holes in a circle all around at equal distances from each other, and string across threads from one side to the other on which the candy may crystallize.

Prepare the sirup in a separate vessel, and when it is done pour it into the kettle so that it will reach an inch above the threads. Place the kettle on the stove at a moderate heat and leave it to crystallize, shaking it from time to time. It will require about six days. When the crystals have formed pour off the remaining sirup and dash in a little cold water to clean the crystals from the sediment left in the bottom of the kettle. Remove the rim with the rock candy adhering to the threads, and set it in a clean vessel in a hot oven until it is dry and fit for use.

To prepare the sirup clarify re-

finer granulated sugar, filter and boil until it is ready to crystallize, which will be at 35 degrees on the sirup test.

CANDIED FRUITS, FRUIT AND NUT CANDIES

To Candy Fruits.—Use for this purpose fine white loaf sugar in any quantity desired. Dip each lump into clear soft water and drop the moistened lumps into a porcelain or other saucepan. Boil to the caramel state, removing the scum as fast as it appears. Remove the saucepan from the fire and place it in a vessel of hot water. As soon as the sirup ceases to boil, dip the fruit to be candied, one by one, into the hot sirup, and place it to dry and harden in a cool place. Almost any kind of ripe fruit may be candied in this manner, as ripe grapes, plums, cherries, sections of orange, lemon, or pineapple, etc.

Or make a sirup of 3½ pounds of granulated sugar and 1 pint of soft water or distilled water by boiling 3 to 5 minutes. Remove from the fire, immerse the fruit, and let stand 2 or 3 hours. Strain off the sirup, which may be used for other candies, and let the fruit stand in front of a baking oven with the door open until the moisture is dried out, when the sugar will crystallize.

Candied Peel.—To candy orange or lemon peel, first soak peel in salt and water 4 or 5 days, changing the water frequently as it becomes bitter. When the bitterness has been removed, rinse them in clear warm water and boil in soft water until they are tender. Make a sirup at the rate of 3 pounds of loaf sugar to a pint of water, stir in the peels and boil to the caramel stage. Put them to drain in a sieve, powder them with Confectioners' XXX sugar, and let them dry on the edge of a cool oven with the door open. Store in a cool place to harden.

Candied Orange Marmalade.—Remove the juice and pulp of sweet Florida or naval oranges, taking care to pick out the seeds and inside skin. For bitter marmalade, boil the rinds

at once until they become tender. Or, if the bitterness is not desired, use peels that have been soaked four or five days in advance in salt water, but the pulp must be freshly extracted.

Finally, in either case boil the peel until it is tender. Chop or crush it fine, stir in the pulp and juice, add double the weight of moist loaf sugar and boil over a slow fire to the caramel stage, which will take about half an hour. Preserve in small jars covered with waxed paper.

Fruit Sweetmeats.—Make a clarified sirup of ½ pound of coffee or brown sugar by stirring in the white of an egg and skimming it out as the sirup boils. Stir in 1 pound of sliced fruit, as peaches, pears, or sweet apples, etc., and boil to the thickness of jelly. Or, if desired, place the whole peaches in cold water without peeling them, and bring them to a boil. Remove and dry them on a towel, and immerse them in boiling sirup.

Or dip small fruit, as cherries, raspberries, plums, etc., in white of egg, place them in a sieve, dust with XXX powdered sugar, and shake until well coated.

Orange Straws.—Boil orange peel in soft water in a large saucepan until it is tender, using plenty of water, and changing it frequently as it grows bitter. Place in a sieve to drain, and when cold enough to handle cut into narrow strips with a sharp, thin knife blade. Boil in sirup to the caramel stage and dry in a warm place.

Or cut the orange peel into strips ¼ inch thick; cover with water and boil 5 minutes. Drain off the water and cover again, continuing to do this until the water has been changed three times. Care must be taken not to let the strips lose their form. Now drop them into a boiling sirup of 1½ cups sugar, and ½ cup water, and simmer 10 minutes. Remove, drain, and roll in granulated sugar. These sticks are better after standing several days.—Gertrude B. Day.

Fig Candy.—Boil to the hard ball over a slow fire 1 pound of granulated sugar in 1 pint of water. Stir

in $\frac{1}{2}$ teaspoonful of vinegar, a lump of butter the size of an English walnut, and pour over split figs previously prepared in a buttered pan.

Date Candy.—Remove the pits from any desired quantity of dates, and lay them in rows side by side in the bottom of a buttered pan about $\frac{1}{4}$ inch apart. Pour over these a sirup prepared as for fig candy. Let stand until cold. When nearly cold mark between the rows of dates with a sharp knife blade. When the candy is set cut along these lines and wrap the bars in waxed or buttered paper.

Candy Fritters.—For 4 pounds fondant use 1 pound English walnuts and $\frac{1}{2}$ pound pecans, chopped fine. Melt the fondant slowly in double boiler, stirring frequently. When the fondant is thoroughly melted, add the chopped nuts, flavor with vanilla to taste, and drop from a teaspoon onto waxed paper. Maple fritters may be made the same as above. But use maple fondant and omit the vanilla.—Leona Bates.

Raisin Candy.—Prepare the sirup as for fig and date candy, cover the bottom of a buttered pan with a layer of seeded raisins, pour on this a thin layer of sirup, add more raisins, and so continue until the candy is of any desired thickness. Mark in squares when nearly cold.

Fig Bars.—Boil to the soft thread 4 cupfuls of granulated sugar and 1 cupful of water to which $\frac{1}{4}$ teaspoonful of cream of tartar has been added. Now stir in a pound of finely chopped figs, boil to the hard thread, take off the fire and sift in a half cupful of powdered sugar. Work the whole with a wooden spoon or paddle to a thick, smooth mass, using additional sugar, if necessary. Pour out on a smooth surface, lay over it a sheet of waxed paper and press down smooth with the bottom of a tin pan or any smooth, hard surface. Melt with gentle heat 1 pound of fondant in an earthenware bowl, set on a hot soapstone or in a pan of boiling water. Flavor to taste. Remove the waxed paper from the fig paste, pour over it a layer of the fondant, let the whole harden, reverse

if desired, and pour a layer of fondant on the other side, and when hard cut it into bars and wrap in waxed tissue paper.

Nut Balls.—Melt an ounce of granulated sugar until it turns a pale brown, add an ounce and a half of pecan nuts, chopped quite fine, and stir over the fire for a few minutes. Spread on a buttered dish to harden. When quite cold chop fine, mix with an equal quantity of French cream, flavor with vanilla, rose or orange and roll into marbles to be laid aside till somewhat hardened. Dip these in melted chocolate as for ordinary chocolate creams.—Mrs. Chas. Matthews.

To Candy Nuts.—Boil together 3 cups of sugar and 1 cup of water until it hardens when dropped in cold water. Flavor with lemon, but observe that it must not boil after the lemon is in. Impale each nut meat on the end of a knitting needle, dip, take out, and turn on the needle until cold. If the candy cools and hardens place it on the stove for a few minutes. Grapes and oranges quartered may be candied in the same way.

Hickory Nut Candy.

- 1 cup of hickory nut meats, chopped fine,
- 2 cups granulated sugar,
- $\frac{1}{2}$ cup water.

Boil sugar and water without stirring until thick enough to spin a thread. Flavor with extract of vanilla or lemon. Set off into cold water, stir quickly until white, then stir in nuts, and finally turn into a flat tin. When cold cut into small squares.—Carriedine Morgan.

Ginger Candy.—Boil over a quick fire 1 pound of granulated sugar with $\frac{1}{2}$ pint of spring water. When dissolved mix a spoonful of finely powdered Chinese ginger with 2 or 3 ounces of the sirup and stir it into the whole. Boil to the blow and at this stage stir in the rind of a large lemon, grated, and continue to stir until a spoonful dropped on a cold plate remains stiff without falling. Remove at once and drop from a

pan having a lip or spout, on buttered tins in pieces the size of macaroons.

Fruit Rolls.—Mix seeded raisins, lemons, figs, dates, citron, or any desired sweetmeats, and chop them together. Knead the whole with enough fondant to give consistency to the mass, which should be very rich and nearly all fruit. Roll this on a molding board dusted with flour or confectioners' sugar into a roll $\frac{1}{2}$ inch thick and 1 inch or more in width. Roll out plain white fondant $\frac{1}{4}$ inch thick and 4 inches in width, and roll up the fruit roll in the plain fondant as a cover. Let stand over night to harden, cut into 4-inch lengths, cover with melted chocolate, and lay on waxed paper to cool.

Jelly Rolls.—Make crab-apple, currant, or any other jelly as stiff as possible, and pour out on a buttered tin pan to the depth of $\frac{1}{4}$ inch. Roll out on a molding board dusted with Confectioners' XXX sugar, cornstarch, or flour a layer of plain French cream or fondant $\frac{1}{4}$ inch thick, turn over the pan so that the sheet of jelly will lie upon this, and roll up the two in the same fashion as jelly cake. Let stand to harden, cut into slices.

Fruit Tarts.—Lay ripe small fruit, as raspberries, cherries, plums, and the like, in glass fruit jars and cover each pound of fruit with 6 ounces of powdered loaf sugar. Seal the jar, set it in boiling water up to the neck, and boil for 3 hours. The jars must be kept sealed until required for use.

Fruit Lozenges.—Place any small fruits, as currants, raspberries, cherries, and plums, in glass or earthenware jars set in boiling water. Scald and strain the fruit through a sieve. Add to each pint of juice an equal weight of finely sifted sugar and the white of an egg. Whip the whole to a stiff froth, drop on buttered paper, and place in a slow oven. As soon as they will loosen from the paper turn them and let stand in the oven until quite dry. Cut to any desired shape, pack between waxed papers, and keep in a dry place.

Macaroons.—These popular con-

fections are usually made of sweet or bitter almonds with sugar and the white of eggs, but sometimes with other substances, as nuts, flavoring matter, and the like. To make macaroons blanch and pulverize a pound of almonds, adding a little rose water to form a moist elastic mass. Beat to a stiff froth the whites of 7 eggs, stir in the almonds and a pound of Confectioners' XXX sugar. Drop the macaroons in the desired size on buttered paper from a spoon, and brown on tin plates in a slow baking oven. Set them aside in the pan in which they were baked until cold.

Or pound 4 ounces of blanched sweet almonds with 4 tablespoonfuls of orange flower or rose water. Beat up the whites of 4 eggs to a stiff froth and stir all together with 1 pound of Confectioners' XXX sugar. Brown in a slow oven.

Or to 1 pound of sweet almonds, blanched and bruised with a little water, add $1\frac{1}{2}$ pounds of sugar, the whites of 6 eggs and 2 grated lemon peels. Brown in a slow oven.

Or, for pistachio macaroons, beat up with the whites of 2 eggs 4 ounces of pounded bitter almonds, 12 ounces of Confectioners' XXX sugar, 6 ounces of shelled pistachio kernels, 1 tablespoonful of orange or vanilla sugar. Brown in a slow oven.

Kumquat Candy.—For 50 kumquats use 1 cup sugar, 4 tablespoonfuls water, $\frac{1}{2}$ tablespoonful cream tartar. Cut the kumquats in halves and cook fifteen minutes in a little water. Then drain. Make sirup of the sugar, water, and cream of tartar. Boil until it threads, then add the kumquats and boil until the sirup is all used. Take from the stove, press each kumquat into shape, fill with fondant, and put a nut on top of each.—Glenn Martin.

FUDGE AND DIVINITY

Plain Fudge.—Mix two cups granulated sugar, two squares chocolate and $\frac{1}{2}$ teaspoon cream of tartar with one cup of milk or water, and place over a hot fire. Stir the mixture steadily until it comes to a boil, and

continue stirring at intervals while boiling to prevent chocolate from settling and sticking to the kettle. Boil to the soft ball degree, remove the saucepan to a cool place and let stand until it becomes lukewarm. Add one teaspoon vanilla and beat the mixture until it sets. While still warm pour it to cool into a well buttered tin and before it cools cut into squares to serve.

The secret of making good fudge lies in not boiling it too long and in beating it very thoroughly to make it fine and soft instead of granular. Recipes giving the number of minutes to boil fudge are suggestive but require the use of good judgment. Fudge should always be boiled to the soft ball degree, which may be tested by dropping half a teaspoonful into cold water. If this can be rolled into a soft ball with the fingers without sticking, the fudge is done. It should then be removed from the fire to a cool place, allowed to stand until it becomes lukewarm and then stirred or beaten until the mixture sets. Some actual experience and observation is necessary to know just when to remove the fudge from the fire and also when to cease stirring and pour it into the pan, but with ordinary pains anyone can make good fudge from the following recipes.

A great variety of excellent candies may be made by adding to plain fudge nut meats and other toothsome dainties of different kinds. Several of the best known and most popular recipes for fudge are as follows, but if the directions given for plain fudge are closely followed, these may be altered or modified by experiment in other particulars almost at will.

Smith College Fudge.—Boil for about five minutes or to the soft ball degree, three cups granulated sugar, $\frac{3}{4}$ cup milk, and two squares chocolate. Remove from the fire, let cool until lukewarm, and beat in a piece of butter the size of an egg and one teaspoon vanilla.

Nut Fudge.—Use either of the foregoing recipes, but when stirring in the flavoring add also one cup of any kind or assortment of nut meats.

Peanut Butter Fudge.—Take 2 cups sugar, 1 cup water, white of 1

egg, 1 tablespoonful butter, 3 tablespoonfuls peanut butter. Dissolve the sugar in the water, boil to the soft ball stage and add the butter. Have white of egg beaten stiffly, and gradually beat in the sirup. To this mixture add the peanut butter and continue beating until smooth and creamy. Pour out on buttered tin. Mark into squares. Two tablespoonfuls of cocoa may be mixed with the sugar, if desired.—Lora Gilbert.

Divinity.—Take 2 cups sugar, $\frac{1}{2}$ cup hot water, $\frac{1}{2}$ cup nut meats, $\frac{1}{2}$ cup corn sirup, whites of 2 eggs. Boil the sugar, sirup and water until it forms a hard ball when dropped into cold water. Beat the whites until stiff and pour sirup over them, beat the mixture until it begins to thicken, then add nuts. When stiff enough to hold its shape turn into buttered molds.—Margola Kyle.

Cocoa Fudges.

3 cups sugar,
1 cup milk,
 $1\frac{1}{2}$ tablespoonfuls cocoa,
1 tablespoonful butter,
1 cup nut meats,
1 teaspoonful vanilla.

Mix sugar and cocoa, add milk and cook until it forms a soft ball in water. Remove from the stove, set in a pan of cold water, and add butter, nuts and vanilla. When nearly cool, heat well and pour into a buttered pan.—Mrs. J. E. Anderson.

Divinity Candy.

$\frac{1}{2}$ cup corn sirup,
 $\frac{1}{2}$ cup water,
2 cups sugar,
2 whites of egg.

Boil the corn sirup, water and sugar until it will form a hard ball in water. Beat until somewhat cool. To this add the beaten whites of the eggs, heating constantly until the candy thickens. To this may be added nuts, cocoanut or any dry fruit. Mrs. E. A. Banks.

Penoche Candy.

3 cups dark brown or maple sugar,

1 cup milk,
1 tablespoonful butter.

Boil sugar and milk until it will form a soft ball in cold water. Add 1 teaspoonful of vanilla, and beat vigorously as it cools and thickens. Stir in one or two cups of broken English walnuts, pecans or other nut meats. Turn into buttered pans to cool.—Mrs. E. A. Banks.

Marshmallow Fudge.—Follow either of the foregoing recipes with or without the nut meats and beat in also one cup of marshmallows cut fine. Scatter evenly over a buttered tin in which the fudge is poured out to cool, another cup of chopped marshmallows. Cut into squares to serve.

Fudge Nougat.—Boil together to the soft ball degree, 2 cups granulated sugar, 1 cup milk, 1 tablespoon butter, and a pinch of salt. Remove from the fire, add the juice of half an orange, beat one minute and add one cup raisins, figs, and chopped nuts mixed together. Pour out to cool into a buttered pan, and cut into squares to serve.

Lemon Coconut Fudge.—Boil together for 12 minutes 1 lb. granulated sugar, juice of 2 lemons, grated rind of 1 lemon, $\frac{1}{2}$ cup coconut and a piece of butter the size of an English walnut. Remove from the fire and beat to the consistency of cream. Pour to cool on buttered tins and cut into squares to serve.

Sultana Fudge.—Boil together to the soft ball degree 3 cups granulated sugar, $\frac{1}{2}$ cup milk, 2 cups molasses, and 2 squares chocolate. Remove from the fire and thoroughly beat in $\frac{1}{2}$ cup nut meats and $\frac{1}{2}$ cup Sultana raisins. When the mixture thickens, turn out into a buttered pan and cut into squares to serve.

ALMOND CANDIES

Sugared Almonds.—These bonbons are of two sorts: burnt almonds, sometimes called pralines, and sugared almonds, sometimes called dragees. They consist of whole almonds coated with sugar, which is often colored in various delicate tints.

To make burnt almonds, bring to a

boil over a moderate fire $\frac{1}{2}$ pound of finely granulated sugar in $\frac{1}{4}$ pint of water in a round-bottomed vessel, stirring constantly with a wooden spoon until dissolved. Then throw in 1 pound of fine Jordan almonds shelled and sifted, to remove dust and dirt. Stir in the almonds gently in the sirup until they are heard to crackle slightly. Take them off the fire and stir vigorously so that the sugar grains and becomes almost a powder, and each almond has a complete coat. Pick out the almonds, shake them gently in a coarse sieve to remove the loose sugar, and cover them with a folded flannel cloth to keep them warm. Replace the sugar, add $\frac{1}{2}$ pound of Confectioners' XXX sugar and $\frac{1}{2}$ pint of water with a teaspoonful of any desired coloring matter.

Boil to the soft ball, remove from the fire and stir in the almonds as before. Again sift out the loose sugar and repeat the process until the candies are of the desired size.

Or blanch any desired quantity of almonds and fry them to a light-brown color in butter. Roll them in a napkin to remove the excess of butter, and pour over them a sirup of white sugar boiled to a thread, stirring until they are quite cold. This is a celebrated Indian sweetmeat.

To Gloss Burnt Almonds.—Dissolve 2 tablespoonfuls of gum arabic in 4 tablespoonfuls of water in a double boiler. Drop the burnt almonds in this after they have become cold and hardened, stir them gently and turn them out in a sieve. After the gummed water has dripped away shake the sieve gently over a slow fire until they are dry.

Or pour over a little clean white gum shellac sufficient alcohol to cover it, and let stand over night. Pour off the clear solution from the sediment, dilute with alcohol, and apply to the burnt almonds with a brush.

CARAMELS

To make caramels in general boil clarified sugar until it is very brittle or to the point where it begins to gain more or less color and give off an acrid smell. But care must be

taken not to burn the sugar or darken it beyond a light-brown shade. Then pour the sirup on an oiled marble slab or tin, let cool until nearly hard, mark in small squares or cut out with a mold and lay away on waxed paper to harden.

If no suitable mold is at hand mark off the slab $\frac{1}{4}$ inch deep or more with the back of a case knife and sprinkle slightly with powdered sugar to keep the marks open.

Chocolate Caramels.—Boil in a double boiler 1 cupful of grated chocolate, 1 cupful of brown sugar, 1 cupful of molasses, $\frac{1}{2}$ cupful of sweet milk, until it hardens when dropped in cold water. Now stir in a piece of butter as large as an egg and 1 cupful of chopped nuts of any kind, or any desired mixture of nuts. Pour into a buttered tin pan and cut into squares or mold when nearly cold.

Or boil 1 pound of sugar to the hard snap and stir in 4 ounces of grated chocolate dissolved in a tablespoonful of hot water. Boil until the sirup caramels.

Or boil over a hot fire, stirring constantly, 4 ounces of grated chocolate, $1\frac{1}{2}$ pounds of dark-brown sugar, 6 ounces of butter, and $\frac{1}{2}$ teacupful of milk. Remove from the fire as soon as it becomes hard on being dropped in water, and if wanted hard, pour immediately into buttered dishes. Or stir for a few minutes to give a sugary consistency. Flavor after removal from the fire with lemon, orange, or vanilla either in the form of essences or grated lemon or orange peel.

Coffee Caramels.—Boil to the hard snap 1 pound of sugar, stir in black coffee made from 2 ounces of coffee with as little water as possible. Strain through cheese cloth. Continue to boil until the sirup caramels.

Maple Caramels.—Boil together in a double boiler or buttered saucepan $\frac{1}{2}$ cupful of boiling water, 3 cupfuls of pure maple sirup, 2 cupfuls of coffee sugar, 3 tablespoonfuls of glucose, until the sirup threads or hardens in cold water. Then stir in a cupful of pure cream, $\frac{1}{2}$ cupful of butter, and boil until it caramels.

When it hardens on dropping in cold water pour out to cool.

Lemon Caramels.—Stir into the boiled sirup at the hard-snap stage the yellow rind of a lemon grated and mixed with a lump of sugar dissolved in lemon juice and water. Stir well until the mixture hardens in water, then pour out to cool.

Strawberry Caramels.—Boil to the hard-snap stage 2 cupfuls of granulated sugar, 2 tablespoonfuls of glucose, $\frac{1}{2}$ cupful of boiling water, stirring constantly. Now stir in a cupful of cream and butter the size of an egg. Stir well until it hardens in water, pour out to cool, and while hot sprinkle thickly with grated cocoanut. When cold cut to any desired size. Use for this purpose preferably freshly grated cocoanut, but desiccated cocoanut may be used if necessary.

KISSES AND MARSHMALLOWS

These are made of Confectioners XXX or powdered sugar, stiffened with the white of egg or gum arabic and browned in a baking oven. Baking powder or cream of tartar is sometimes added to make them lighter. To make plain kisses, beat the whites of 4 eggs to a stiff broth and whip in $\frac{1}{2}$ pound of powdered sugar. The harder the mass is beaten the stiffer the candy will be. Lay on wet paper on a piece of hard wood and bake in a moderate oven.

Cocoanut Kisses.—Beat up together the whites of 3 eggs and whip in 2 cupfuls of powdered sugar, 2 cupfuls of freshly grated cocoanut, and 2 teaspoonfuls of baking powder. Brown slightly in a quick oven.

Chocolate Kisses.—Beat up 2 whites of eggs and whip in 2 ounces of grated chocolate, 1 pound of Confectioners' XXX sugar. Bake in a slow oven on wet or buttered paper spread on a piece of hard wood.

French Kisses.—Dissolve 3 cupfuls of granulated sugar in water, using no more water than is necessary, and add a pinch of cream of tartar. Bring to a boil, stir in a freshly grated cocoanut of medium size and boil to the thread. Add a drop or two of blue color and work to a

cream with a wooden spoon or paddle. Drop the kisses upon sheets of clean tin from a pan having a lip or spout, cutting them to the size of macaroons with a sharp knife or wire.

Nut Kisses.—Beat up the white of 3 eggs and whip in 30 teaspoonfuls of pulverized sugar, 3 tablespoonfuls of brandy, and $1\frac{1}{2}$ cupfuls of finely chopped nuts. Flavor as desired. Beat all together to a stiff mass and drop on wet or buttered paper the size of large macaroons. Brown in a moderate oven.

Wintergreen Kisses.—Beat up the whites of 3 eggs to a stiff froth and whip in gradually $\frac{1}{2}$ pound of Confectioners' XXX sugar, and flavor with essence of wintergreen to taste. Beat the whole very light, drop on wet or buttered paper, and bake on a piece of hard wood in a moderate oven to a light-brown color.

Psyche's Kisses.—Boil the sugar to the crack, stir in 2 ounces of apple juice while boiling, remove from the fire and stir in gradually about $\frac{1}{2}$ its bulk of fruit juice, coffee, diluted chocolate, or any kind of liqueur or flavoring matter desired, and set aside to cool. When cool beat up with a wooden paddle, stirring the mass vigorously from the sides and bottom until it becomes soft and elastic. This will be hard work at first, but gradually becomes easier. The longer it is worked the better the kisses will be. Let stand over night and warm with gentle heat 3 or 4 ounces at a time in a sugar boiler with a spout, such as is used for pastils. Stir carefully and avoid burning or overheating. When the mass will pour readily drop from the spout on wet or buttered paper in pieces the size of macaroons.

Marshmallows.—Cover an ounce of carefully picked gum arabic with 4 tablespoonfuls of water, and let stand for an hour. Heat the gum in a double boiler until it is dissolved. Strain through cheese cloth and whip in about $3\frac{1}{2}$ ounces of Confectioners' XXX sugar. Place on a moderate fire and heat for $\frac{3}{4}$ of an hour, or until it comes to a stiff froth. Remove from the fire, beat 2 or 3 minutes while cooling and stir in $\frac{1}{2}$ tea-

spoonful of vanilla. Dust a tin pan with cornstarch, pour in the marshmallow, dust cornstarch over the top and set aside to cool. When cool cut into squares with a knife dipped in cornstarch, roll the squares in the starch and pack away in tin or other tight boxes.

Or dissolve 5 cups granulated sugar in 3 cups water. Boil until it begins to string (slightly). Dissolve 1 small package gelatin in 3 tablespoonfuls water, add to the sugar and water, and beat well for $\frac{1}{2}$ hour. Pour out on a large dripping pan, lined with paper covered with corn starch. Let cool, cut, and roll in cornstarch to keep from sticking. Or use confectionery sugar in place of cornstarch. This will make about 100 marshmallows.—Mrs. Evelyne Conway.

NOUGATS

Nougats.—Nougat is made by melting in a copper sugar boiler granulated sugar with the addition of lemon juice at the rate of a dessert-spoonful to each pound of sugar and twice the weight of the sugar in almonds or other nuts, as filberts, pistachios, and the like, with a little sweet liqueur. The almonds and other nuts should be blanched, drained, and skinned, and allowed to stand for some hours before being used. They should then be placed just inside the oven door to heat them thoroughly, as they must be hot when put into the sirup. Nougat is used either to line molds or in the form of bars protected by layers of white wafer. For lining molds the nougat should be pressed into the mold with a lemon until the inside is covered, and the edge of the mold should be trimmed with a sharp knife before it hardens, as it will then be brittle and likely to break. The mold should be oiled slightly and the nougat turned out as soon as it hardens.

To Make Ordinary Nougat.—Blanch, drain, and skin 1 pound of almonds, and let stand until thoroughly dry before chopping or shredding them. Place the shredded almonds on a pie plate just inside an

open oven door and dissolve in a copper sugar boiler 10 ounces of granulated sugar, stirring with a wooden spoon until it begins to melt. Stir constantly until the sugar comes to the pearl degree. Now add the almonds and stir them in. Have ready suitable molds oiled thinly with olive oil by means of a camel's-hair brush and pressing small pieces of the nougat into the mold with a piece of lemon until they are well coated. Trim the edge of the mold with a sharp knife. Turn out the nougat as soon as it hardens.

Marseilles Nougat.—Melt 8 ounces of honey and remove the scum with a skimmer as fast as it appears. Boil to the crack degree 8 ounces of granulated sugar, stir in the melted honey and $\frac{1}{2}$ gill of orange-flower water, have ready in an egg bowl the whites of 3 eggs beaten to a stiff froth and pour into the egg bowl in a thin stream the melted honey and sirup, stirring constantly. Place the mixture over a slow fire and continue to stir.

While the paste is baking, which will require about 3 hours' constant attention, test by dropping a spoonful of the paste in cold water. If it is brittle enough to be broken across without bending, it is done. Now stir in the almonds, lay out the white wafer on a molding board, and on this spread the nougat about 1 inch deep. Cover with additional sheets of white wafer, lay a clean piece of white paper on top, and on this place a weight having a smooth surface, as a large weighted pan, to level it up. Let stand to cool and harden. Cut into any desired size, strips or bars, for use.

Parisian Nougats.—Boil to the crack 6 ounces of granulated sugar, stir in 8 ounces of chopped pistachio kernels, a few drops of cochineal, and coloring and flavoring matter as desired. Spread out on a sheet of waxed paper, and while hot cut to any desired shapes and sizes with a sharp knife. This nougat may be dusted with granite sugar and cleaned currants if desired.

Peanut Nougat.—Boil to the crack 1 pound of granulated sugar, and

stir in 1 quart of peanuts shelled, screened, and chopped fine, and sprinkled with $\frac{1}{4}$ teaspoonful of salt. Pour out on waxed paper or in a buttered tin and cut into bars for use.

POPCORN CANDY

Popcorn is used as an ingredient of candies in several forms, including the ordinary popcorn balls, popcorn cakes, bars, or nougats, and crystallized popcorn.

Choose for this purpose a quality of popcorn which pops light and tender, and select only the kernels that are fully open, discarding burned or partially opened kernels. Shake the corn in a coarse sieve to free it from dust and chaff. It will be found a great aid in popping corn to swing a wire from a hook in the ceiling having a loop at the right height above the stove through which the handle of the popper can be passed. Thus the popper may be held over an open coal fire with less labor.

To roll popcorn balls, dip the hands into very cold water before forming each ball and work quickly before the candy hardens. To improve the appearance of the balls, and also to prevent them sticking to the fingers, cut out a piece of tissue or waxed paper in circular form by cutting around the edge of a large pie plate, lay the ball on this, bring the edges together and twist them up at the top. Store popcorn balls in a cold place to prevent the popcorn from becoming tough.

To Make Popcorn Balls.—Boil to the thread about $2\frac{1}{2}$ pounds of sugar with $\frac{3}{4}$ pound of glucose and 1 pint of water. Place the popcorn in an earthenware bowl, pour the sirup over it, mix with 2 wooden paddles and form into balls with the wet hands.

Or boil $\frac{1}{2}$ pint of molasses about 12 minutes to the stiff-ball degree. Place 2 quarts of popcorn in a wet earthenware bowl, pour the boiling molasses over it, mix with paddles, and roll with the wet hands.

Or for a better quality of popcorn balls for home use, add to the above a good-sized piece of butter and

flavor with lemon extract or otherwise as desired.

Or boil to the hard snap 1 pint of sugar $\frac{1}{2}$ teaspoonful of butter, 1 tablespoonful of vinegar with about $\frac{1}{4}$ teacupful of soft water. Have ready about 1 peck of freshly popped corn in a wet pan or tub, dip the boiling sirup over it, mix with wooden paddles, roll with the wet hands.

Popcorn Cakes.—Prepare sirup according to any of the above rules, but crush the corn with a rolling-pin. Stir the corn into the kettle when the sirup is at the hard-snap stage, and pour into buttered tins. Lay over the top a piece of buttered or waxed paper, and let stand under pressure to harden. When cold and hard cut into cakes with a thin, sharp knife blade.

Crystallized Popcorn.—Place in an iron kettle or frying pan 1 teacupful of granulated sugar, 1 tablespoonful of butter, or less, 3 tablespoonfuls of water. Boil to the hard snap, stir in 2 or 3 quarts of popcorn and continue stirring until it is entirely dry. This amount of sirup will give a heavy coating of sugar to 2 quarts, or a lighter coat to 3 quarts. A beginner is apt to think that the sirup is not sufficient for the quantity of corn, but with constant stirring it will come out all right. Continue to stir until the corn is dry, but take care that the fire is not hot enough to scorch it. Nuts may be crystallized in a similar way.

COUGH CANDIES

Hoarhound Candy.—Boil the hoarhound in a little water until the juice is extracted, and strain through cheese cloth. Boil any desired quantity of sugar with just enough water to dissolve it and stir in the juice. Work the sugar with a spoon against the sides of the pan until it grows thick and creamy. Pour out in a buttered pan. When nearly cold mark into squares and let dry.

Or boil the sugar until candied and stir in dry and powdered hoarhound. Pour out in buttered tins to cool.

Pine-tree Tar Cough Candy.—To

10 pounds of granulated sugar add 3 pints of water. Boil to the hard snap, pour out and while cooling spread on top 10 drops of tar (made by dissolving 1 tablespoonful of tar in 2 tablespoonfuls of alcohol), 1 tablespoonful of oil of capsicum, $1\frac{1}{2}$ tablespoonfuls of oil of wintergreen. Work together with the hands or a wooden paddle until these substances are thoroughly worked in, keeping the mass warm before the fire, or by means of a soapstone. Roll into round sticks and keep rolling until cold.

TO COLOR AND FLAVOR CANDY

Colorings for Candy.—Coloring matter for candies can be purchased in small jars for a few cents each. These are so intense that a drop will tint a pound of candy. Hence they will last a long time. Red, yellow, orange, light green, violet, maraschino, constitute a good assortment. Some knowledge of color is necessary to a tasteful effect. White cream may, of course, be coated with any other color, but colored cream should be coated only with tints or shades of the same color. Otherwise the center will show through and produce an unsatisfactory effect. The center should usually be of a lighter tint than the coating. A good rule when coating bonbons is, after having formed the centers, to set the fondant away for twenty-four hours. Then melt it with a little added coloring matter to give a deeper shade and coat the centers in this. Thus maple cream may be coated with maple fondant, chocolate cream with chocolate fondant, and the like.

It is customary with confectioners to associate certain coloring with certain flavoring. Almond or pistachio cream are usually tinted green. Orange or lemon flavoring are tinted with those colors. Rose is tinted pink. A good way to obtain suggestions for producing tasteful and artistic effects is to study the display in a good candy shop and imitate what you like best.

To Color Confectionery.—Care must, of course, be taken in coloring

confectionery not to use aniline dyes, mineral pigments, lakes, or any other substance of a poisonous nature. The animal and vegetable dyestuffs are usually harmless in small quantities, but the following combinations are especially recommended:

To Color Red.—Cover 1 ounce of cochineal with $\frac{1}{2}$ pint of boiling water and boil about 5 minutes. Stir in 1 ounce of cream of tartar, $\frac{1}{2}$ ounce of powdered alun, and continue boiling about 10 minutes. Test by letting a few drops fall on a piece of clean white paper. If the color is not sufficiently clear and bright, boil a little longer. When done, stir in 2 ounces of granulated sugar and put up in a stoppered glass bottle for use.

To Color Blue.—Dissolve a little indigo stone in warm water and test with a few drops on a piece of white paper. Continue to add more indigo until the color is bright and clear.

To Color Yellow.—Dissolve a little gamboge in warm water, or the heart of a yellow lily with warm water, until the bright tint is produced.

Or steep $\frac{1}{2}$ ounce of saffron in soft water for 24 hours or more until the proper tint is obtained.

Or for small quantities, a good pinch of saffron in a spoonful of water may be boiled until the water is nearly evaporated. Squeeze out the juice through cheese cloth. This color is an orange yellow, and a few drops will go a long way.

To Color Green.—Cover fresh spinach leaves with boiling water and let stand two or three minutes, or until the color is as strong as desired. Cork tightly to exclude the air.

Or steep $\frac{1}{2}$ ounce of saffron in soft water for 24 hours and steep separately $\frac{1}{4}$ ounce of indigo carmine for the same length of time. Mix the two for use. This mixture can be preserved for a considerable time by adding clarified sirup and preserving in a closely stoppered glass vessel.

Or for a larger quantity, wash a peck of fresh green spinach very carefully in several waters to remove all grit, and while dripping wet pound it with a suitable mallet or any piece of hard wood, to a soft

pulp. Place this pulp in several thicknesses of cheese cloth and wring out the juice, which may be done by twisting the ends of the cloth by means of short sticks or rods. Place the juice over a gentle fire until it begins to curdle or thickens. Strain off the water through a piece of cheese cloth, leaving the thick part of the spinach juice on the cloth. This is the vegetable green or spinach green for confectioners. Care must be taken in drying substances colored with this material, as if the heat is too strong it is likely to take on a yellowish cast.

To Color Pink.—Use a little carmine moistened with rose water.

Granite Sugar.—Crush by cracking it with a hammer a pound of fine loaf sugar into small lumps. Place these on a hard, smooth surface and break them up fine with a wooden mallet or any smooth piece of hard wood. Shake first through a coarse sieve to remove the lumps, and afterwards through a very fine sieve to remove the powdered sugar. The result will be in grains of intermediate size, like coarse sand or gravel, known by confectioners as granite sugar.

To Color Granite Sugar.—Any of the above coloring matters may be used to tint granite sugar to any desired stage. Pour a few drops of the coloring matter in a plate, spread the sugar over this, and dry on a screen with very moderate heat. While drying, rub the sugar frequently between the hands to prevent the corners sticking together. Preserve in a closely stoppered glass bottle in a warm, dry place for use.

Flavorings for Candy.—Buy only the most expensive grades of flavoring extracts for candies. Every first-class dealer has the better qualities or can obtain them on request. This is important for two reasons: the flavor of the candy will be improved and a few drops only will be required. The less moisture added to fondant the easier it is to work.

Or buy the essential oils of rose, wintergreen, peppermint, cloves, and others, drop them on lump sugar, pulverize the sugar with a rolling-pin

and carefully preserve in tightly stoppered bottles until required for use.

To Flavor Sugar.—As a matter of convenience in flavoring candies, it is customary with confectioners to flavor in advance a quantity of loaf or other sugar and have it in readiness to be mixed with sirup to impart any flavoring that may be desired. Flavoring matter should not be added to sirup until the process of boiling is at an end and the sirup is ready to be taken from the fire, otherwise the flavor, which is usually imparted by one of the volatile essential oils, will be evaporated and lost.

To Flavor Orange.—Grate the rind of 1 or more oranges on a suitable quantity of lump sugar and place the whole in a tightly stoppered bottle until the sugar has been thoroughly impregnated and the rind dries and can be readily scraped off. Remove the rind and preserve the sugar for future use.

To Prepare Lemon Sugar.—Grate the rind of 1 or more lemons and prepare in the same manner as orange sugar.

Cinnamon Sugar.—Dry $\frac{1}{2}$ ounce of cinnamon and pulverize with $\frac{1}{2}$ pound of loaf sugar by grinding in a mortar or with a suitable piece of hard wood. Cork tightly and preserve for use.

Clove Sugar.—Pulverize 1 ounce of cloves to $\frac{1}{2}$ pound of loaf sugar and preserve in the same manner as cinnamon sugar.

Ginger Sugar.—Preserve $\frac{1}{2}$ ounce of pulverized ginger in the manner described above for cinnamon sugar.

Vanilla Sugar.—Pulverize 4 sticks of vanilla with $\frac{1}{2}$ pound of loaf sugar and preserve for use.

ICES AND ICING

Icings for Candy and Cake.—Icing, as ordinarily made, consists of powdered sugar beaten up to a stiff froth with white of egg. Gum arabic is frequently used to give additional stiffness. The addition of butter or cream improves the flavor and prevents the icing from drying rapidly or cracking when cut, and various flavoring and coloring matters

are added as desired. Icing may be of two sorts, either boiled or uncooked.

Uncooked Icing.—Beat up the whites of any required number of eggs to a stiff froth and whip into them Confectioners' XXX sugar until the icing is of the desired consistency. Generally speaking, the white of 1 egg will make sufficient icing for a small cake or 2 eggs for a large one. And the white of 1 egg will require $\frac{1}{4}$ pound of sugar, more or less. Some prefer to add the sugar gradually, while the white of egg is being beaten. The addition of a little lemon juice, while beating, will improve the color and flavor. The following recipe is recommended:

Beat up the whites of 2 eggs to a stiff froth, whip in $\frac{1}{2}$ pound of Confectioners' XXX or powdered sugar, $\frac{1}{2}$ tablespoonful of starch, $\frac{1}{2}$ ounce of pulverized gum arabic or less, and 1 teaspoonful of lemon juice. Mix the sugar, starch, and gum arabic together, and sift them into the white of egg. The longer the mixture is whipped or beaten the better the icing will be.

Boiled Icing.—For an ordinary cake, boil a cupful of sugar to the thread. Beat in the white of 1 egg, 1 tablespoonful of cream or 1 teaspoonful of butter. Now stir in, if convenient, 2 or 4 marshmallows and $\frac{1}{4}$ teaspoonful of cream of tartar. Beat the whole until cold.

To Apply Icing.—To ice the top of a cake, but not the sides, dust the top with a little flour to kill the grease, which prevents the icing from running, brush, blow, or dust off the excess of flour and cut a band of white paper long enough to go around the cake and $1\frac{1}{2}$ inches wide, grease the inside with butter, dust it with flour, and pin it around the cake so that the upper edge will be $\frac{1}{2}$ inch or more above the top. Pour on the frosting evenly, when if thin enough it will settle in a perfectly smooth and even surface. Let stand until it hardens, run a thin-bladed knife between the cake and the paper, and take off the paper.

Or, after dusting the cake with flour, spread the icing with a broad

knife blade or thin wooden paddle dipped in iced water, and set it on the edge of an oven to harden, taking care that the oven is not hot enough to brown it.

Or a second coat of fresh icing may be added the following day or after the first layer is hardened. Any ornamentation must be added while the icing is wet, as otherwise it will not adhere.

To Ornament Icing.—For this purpose prepare a special icing by beating slightly the white of 1 egg and stirring in gradually 2 cups of Confectioners' XXX sugar. Add the juice of $\frac{1}{2}$ a lemon and beat the whole until the mixture is stiff and elastic. Now make a paper cone of stiff white writing paper, pinning the side and clipping off the point, so that the icing can come through in a pencil or point of any desired thickness. Small tin cones are provided which may be used for this purpose, but the paper cone will answer. Fill this with the icing $\frac{1}{2}$ or $\frac{2}{3}$ full, fold in the top and press on it with the thumbs to force the icing through the small end of the funnel.

Ice the cake as above, let it stand for fifteen or twenty minutes until the icing is "tacky" but not hard, trace the design on the cake lightly with a lead pencil and follow it with the icing forced through the paper funnel. The icing may be flavored and tinted as desired.

Chocolate Icing.—A quick way to make chocolate icing for cake is to place a few good chocolate creams in a saucepan, add a tablespoonful or less of hot water or milk, and place it in a pan of hot water or over the steam of a teakettle until the chocolates are dissolved. Stir thoroughly and apply.

Or add to 1 pint of boiled icing prepared in the usual way 1 ounce of grated chocolates and the yolks of 2 eggs. Mix and apply.

Or beat up the white of an egg in a bowl, dissolve $\frac{1}{4}$ pound of grated chocolate in 1 cup of milk in a double boiler, stir in a cupful of powdered sugar and 1 teaspoonful of vanilla. Pour the mixture over the white of egg and beat to a stiff froth.

Coffee Icing.—To 1 pint of icing prepared in the usual way add 2 ounces of strong black coffee, $\frac{1}{2}$ ounce of confectioners' sugar, and the yolks of 2 eggs.

HONEY AND BEESWAX

Honey.—Honey is not, as some suppose, produced by bees, but is the sweet material collected from flowers by the honeybee and stored by them as food for themselves and their progeny, hence the aroma and flavor of honey varies with its source, that from white clover or buckwheat usually being regarded as the best. In Turkey and some other countries honey produced by certain plants is poisonous, and that of others is injurious to health. Honey is frequently adulterated with glycerin and glucose, and various imitations of honey can be made of other materials suitably flavored with various essential oils.

Honey is deposited by bees in wax cells known as honeycomb. When pure it consists partly of a sirup of sugar that will not crystallize, and partly of crystallized grains somewhat like grape sugar. The finest quality, called virgin honey, is that which drips freely from the comb. The ordinary quality is obtained by melting the comb and extracting the honey by pressure. It should be noted that if honey is heated in iron or copper utensils it takes on a darker color, hence porcelain, earthenware, or tinware should be employed for this purpose. The proper proportion of water to be added in extracting or purifying honey is equal parts by weight.

To Extract Honey.—First strain the comb through a sieve to free the honey from the wax. Melt it with gentle heat in a double boiler and take off the scum with a skimmer as fast it appears. Let cool, pour into jars and seal with paraffin, waxed tops, or otherwise, so as to be air-tight.

To Preserve Honey in the Comb.—Set aside for this purpose combs that do not contain pollen, stand them edgewise in earthenware jars or tin cans, and cover them with extracted

honey. Cover the tops with paraffin or otherwise to exclude the air.

To Clarify Honey.—Melt down the pure honey in a double boiler of porcelain or earthenware, and strain while hot through a flannel cloth dipped in hot water. This dissolves the crystals and converts the honey into a uniform thick sirup. The test is not as acceptable, but the honey keeps better and is more wholesome.

Or beat up the white of an egg to a stiff froth and whip it into 4 or 5 pounds of honey. Stir in pure water to make a sirup of the consistency of cream, and boil until the white of egg can be removed with a skimmer. Pour out the honey into a milk can or other receptacle having a spigot or faucet at the bottom, and let stand for about a month. Then draw off the clarified honey from the spigot.

Or melt down the honey in a double boiler with clear water to a sirup of the consistency of cream, and stir in 6 ounces of purified animal charcoal to 8 pounds of honey. Simmer with gentle heat for 20 minutes. If the sirup is sour, stir in a little prepared chalk to sweeten it, strain through a flannel cloth dipped in hot water, and let stand over a slow fire until the excess of water it contains is removed by evaporation.

Or dissolve the honey with water in a double boiler, and let it boil up briskly, stirring four or five times at intervals, but not skimming. Remove from the fire, let cool and pour on cloth strainers covered with an inch or more of fresh white sand. After the honey has run through, pour on gradually clear water, to rinse the strainer, and finally with gentle heat evaporate the excess of water from the honey.

Or to clarify on a large scale, mix 9 large fresh eggs with $2\frac{1}{2}$ gallons of water for each half barrel of honey, in a tin-lined vat. Simmer with gentle heat, skim and filter through strong linen strainers covered with about 1 inch of clear white sand. Afterwards evaporate the excess of water with gentle heat.

To Prepare Beeswax.—To prepare beeswax melt the honeycomb in boiling water. Let cool, when the wax

will form a cake on the surface. Remove the cake, scrape off any impurities from the bottom, and repeat if necessary.

To Refine Beeswax.—Add about 5 per cent water to crude beeswax and melt with gentle heat. Raise to a boil, let boil for a few minutes, and add about 1 per cent concentrated nitric acid. Use for this purpose an earthenware vessel set in boiling water, and continue to boil until the fumes of the acid cease to be evolved.

Or when the melted wax has boiled for a few minutes scatter 5 or 6 per cent of sulphuric acid over the surface of the melted wax. It must be done with care. If the vessel is not sufficiently deep the wax will froth up and run over the sides. After adding the acid cover the mixture, remove it from the fire, and before it is quite cool skim it off with a heated ladle. Take care not to disturb the sediment. Scrape the impurities from the inside of the cake. Remelt and strain through cheese cloth. The addition of a little annotto will improve the color of the wax.

To Whiten Beeswax.—Melt up the wax with gentle heat and dip into it thin hard-wood boards, plates, or any suitable flat articles previously dipped in water to prevent the wax sticking. When these are removed they will be covered with a thin plate of wax. Loosen this film of wax with a knife and strip off. Spread these thin sheets upon a white cloth upon the grass and expose them to the sun and air to bleach. Afterwards remelt and form into cakes.

Or melt the wax with hot water and squeeze through a fine linen cloth. Pour in shallow molds and when hard expose to the air, sprinkling frequently with water and turning from time to time until quite white.

To Color Beeswax.—To color beeswax, add bright palm oil. Or as a sufficient quantity of palm oil to color adulterates the wax, color with annotto in the proportion of about 4 ounces to 100 pounds of wax, according to the color required. Shave the annotto in 3 to 4 quarts of soft water, to which add about 1 pound of

wax, let boil until the water is evaporated and the wax is of a deep-orange color. Melt the remainder of the wax, and stir in the colored wax until the proper shade is produced. Test from time to time by cooling a little on a glass plate.

Bottle Wax.—To make wax for sealing corked bottles and similar purposes, melt together $6\frac{1}{2}$ ounces of black rosin, $\frac{1}{2}$ ounce of beeswax, and $1\frac{1}{2}$ ounces of fine ivory black.

Or for red wax, substitute $1\frac{1}{2}$ ounces of Venetian red or red lead for the ivory black.

Or mix 1 pound of beeswax, 1

pound of rosin, $\frac{1}{2}$ pound of tallow. Color with red or yellow ocher or other coloring matter. Melt and stir together.

Or for white wax, substitute bleached wax for beeswax and color with Spanish white.

To Test Adulterated Wax.—Beeswax is sometimes adulterated with spermaceti or Japanese wax. To test for Japanese wax, cover a sample with concentrated solution of borax and bring it to a boil. Beeswax is insoluble in this solution, but Japanese wax dissolves and forms on cooling a milky-white sticky coating.

CHAPTER XXXVII

FIRELESS COOKERY

NATURE AND LIMITATIONS OF THE PROCESS—CONSTRUCTION AND USE OF THE HOMEMADE COOKER—RECIPES FOR FIRE- LESS COOKERY—TIME TABLE FOR FIRELESS COOKERY

The term "Fireless Cooker" is really a misnomer and it is very unfortunate that it has become attached to a device in which cookery is done by the process of retaining heat, once stored. The so-called Fireless Cooker as it exists to-day is an application of the old Norwegian cooking box, which is often referred to in our books of Physics as one of the best illustrations of the use of non-conductive material in retaining heat. The fireless cooker is not a miracle working cookery machine; and it has been handicapped from the start, not only by its misnomer, but by the extravagant claims that have been made for it by its admirers and promoters. Intelligently used it is a highly desirable addition to the kitchen equipment, but it can never entirely supersede the cooking stove, nor is it by any means the most desirable method of carrying on all cookery processes. It will always be necessary for the housewife to employ some sort of a cook stove on which to start the cooking of the food material, but the process may then be finished, if desired, in the fireless cooker.

This device, as was previously stated, is only a means for retaining heat previously applied. The chief essential of its construction, therefore, is that it shall be well insulated, that is thoroughly padded with non-conducting material so that hot things introduced into it shall remain hot, and cold things remain cold. The

principle, in short, is the same as that of the Thermos bottle.

There are various types of fireless cookers on the market, differing in complexity from those containing only one compartment for food, up to much more elaborate devices of a comparatively high price. The most modern cookers are equipped with plates which are heated before being introduced into the compartment where the cooking is to be done. Even baking and roasting processes can be carried on in such cookers; but considerable experience is needed to gain thorough knowledge of the extent to which the plates should be heated before being introduced into the compartment, for much food may be spoiled by being burned to a crisp if too much heat is confined in the cooker.

The fireless cooker is chiefly valuable when a long, slow cooking is required. In the present state of cookery knowledge, however, it is difficult to say just when this kind of process is desirable. Further experiments may show that a higher temperature is necessary for many food materials than is now applied by cooking in the fireless cooker. But until the housewife can be definitely informed regarding the greater desirability of the temperature on top of the stove, she will undoubtedly continue to use the fireless cooker as a convenience when the processes can be extended over a long time and require little

watching. Books of directions are generally furnished with fireless cookers, but with this device, as with many other so-called labor saving conveniences, it is necessary that an intelligent brain be behind it. Unfortunately the cooker has been abused by those who considered it a "silent servant," able to evolve a course dinner, done to a turn, while their interests were otherwise engaged. For the uses for which it is adapted it is invaluable: why should it be required to accomplish the impossible and entirely to take the place of other satisfactory methods of cooking?

Observe that the cooker is as useful for keeping frozen foods chilled as for retaining heat in a hot dish. Hence ice creams and cold drinks may be stored with advantage in the fireless cooker until ready for use.

Several food experts have experimented in constructing practical home-made devices which will serve the purpose of the more elaborate commercial cookers. One of the cheapest and most simple was suggested by Miss Winifred Gibbs, who has made a particular study of low priced menus for people of small incomes. The method of construction is as follows:

CONSTRUCTION AND USE OF HOMEMADE FIRELESS COOKER

<i>Materials Needed</i>	<i>Estimated Cost</i>
Galvanized iron garbage can	
— "No. 2"	\$.25
Sawdust .....	.10
Two yards denim .....	.25
Covered agate pail—2-4 qts. ....	.35
	\$1.95

Method.

Place loose sawdust in bottom of can, so that when food kettle and top cushion are in place all space will be filled.

Fold denim lengthwise, make a long bag, about two inches deeper than food kettle, fill with sawdust, lay flat on table, spread sawdust evenly, and roll bag around food kettle, so that a smooth, firm nest is formed

when bag is placed upright in can on top of sawdust. From remaining denim make a round bag (the material will have to be pieced for this), and fill with sawdust.

Use of Cooker.

Begin all cooking precisely as if it were to be carried on in the ordinary way. When food is at boiling heat, after having boiled the required length of time, place quickly in nest formed by long cushion, cover with round cushion, place galvanized cover over all, and let stand for required time.

The following is a table showing foods best adapted for preparation in the homemade cooker.

<i>Article of Food</i>	<i>Time on Stove</i>	<i>In Cooker</i>
Stew	30M.	15 hr.
Soup (meat)	30M.	12 hr.
Cereals	15M.	12 hr.
Legumes (Beans, Peas and the like)	30M.	15 hr.
Dried fruits	15M.	12 hr.
Pot Roast	30M.	15 hr.
Vegetables	15M.	12 hr.

A practice cooker can be made from a five-cent butter tub which will answer very well for purposes of illustration, but for long continued use the galvanized can is better, as it needs considerable care to keep a wood tub dampened so that it will not fall apart.

One of the greatest advantages of the fireless cooker urged by its advocates is that of fuel economy. It is of course true that a great saving of fuel is effected in those cookery processes that are extended over long periods of time, for it costs only a fraction of a cent to start most of the processes which are later completed in the cooker, whereas it would require an expenditure of several cents' worth of fuel to continue them for a long time on top of the stove. But this fuel economy does not apply to processes which require only a fully as much, if not more, to heat short time. For example, it costs

the fireless cooker plates for baking a loaf of bread as it does to bake the bread in an ordinary gas oven. Unless it can be proved therefore, that the loaf of bread baked in the fireless cooker is a better loaf than

that yielded by the ordinary method of cooking, it will be wise to reserve the fireless cooker for such processes as effect an economy in fuel and also yield a product of more desirable flavor.

MISCELLANEOUS

KIND.	QUANTITY.	WATER.	TIME ON STOVE.	TIME IN COOKER.
Coarse hominy	1 cupful.	6 cupfuls.	30 minutes.	Over night.
Farina	1 cupful.	6 cupfuls.	10 minutes.	3 hours.
Wheatlet	1 cupful.	3½ cupfuls.	10 minutes.	3 hours.
Rice	1 cupful.	4 cupfuls.	5 minutes.	3 hours.
Macaroni	1 cupful.	3 cupfuls.	10 minutes.	2 hours.
Spaghetti	1 cupful.	3 cupfuls.	10 minutes.	2 hours.
Vermicelli	1 cupful.	2½ cupfuls.	5 minutes.	2 hours.

TIME-TABLE FOR SOUPS (FIRELESS COOKER)

SOUP.	TIME ON STOVE.	TIME IN COOKER.
Consommé	15 minutes.	Over night.
Brown Stock	30 minutes.	Over night.
Tomato	10 minutes.	5 hours.
Soup à la Reine	30 minutes.	Over night.
Potato Cream	10 minutes.	2½ hours.
Soup Bègue	20 minutes.	6 hours.
Soup à la Menestra	10 minutes.	2 hours.
Ox Tail	20 minutes.	Over night.
White Soup Stock	30 minutes.	6 hours.
Beef Bouilli	25 minutes.	Over night.
Veal	20 minutes.	5 hours.
Sportsman's Broth	30 minutes.	7 hours.
Purée de Lentilles	20 minutes.	6 hours.
Chicken	20 minutes.	5 hours.
Sheep's Head Broth	30 minutes.	Over night.
Cock-a-Leekie	30 minutes.	Over night.
Friar's Chicken	30 minutes.	7 hours.
Rabbit	20 minutes.	6 hours.
Okra Gumbo	20 minutes.	6 hours.
Beef Gumbo	20 minutes.	5 hours.
Cream of Celery	10 minutes.	3 hours.
Cream of Corn	7 minutes.	3 hours.
Leek	10 minutes.	3 hours.
Hotchpotch	15 minutes.	5 hours.
Cream of Onion	5 minutes.	3 hours.
Soup Normandie	5 minutes.	2 hours.
Soup Maigre	10 minutes.	6 hours.
Purée of Celeriac	5 minutes.	2 hours.
Split Pea	10 minutes.	6 hours.
Green Pea	10 minutes.	3 hours.
Winter Okra	10 minutes.	6 hours.
Corn Chowder	10 minutes.	4 hours.
Dried Bean	15 minutes.	Over night.
Clam Chowder	10 minutes.	2 hours.
Black Bean	20 minutes.	Over night.
Onion Chowder	10 minutes.	2 hours.
Old-fashioned Bean	25 minutes.	Over night.
Herb	10 minutes.	2 hours.

VEGETABLES.

VEGETABLES.	TIME ON STOVE.	TIME IN COOKER.
Beet Greens	10 minutes.	3 hours.
String Beans	10 minutes.	3 hours.
Green Peas	7 minutes.	3 hours.
Lima Beans	10 minutes.	4 hours.
Dried Beans	20 minutes.	Over night.

VEGETABLES.	TIME ON STOVE.	TIME IN COOKER.
Okra	10 minutes.	2 hours.
Squash	15 minutes.	Over night.
Summer Squash	10 minutes.	4 hours.
Tomatoes	10 minutes.	3 hours.
Cabbage	15 minutes.	5 hours.
Cauliflower	15 minutes.	3 hours.
Green Corn	8 minutes.	3 hours.
Onions	10 minutes.	3 hours.
Spring Beets	10 minutes.	3 hours.
Winter Beets	30 minutes.	Over night.
Turnips	10 minutes.	5 hours.
Asparagus	5 minutes.	1½ hours.
Carrots	10 minutes.	4 hours.
Brussels Sprouts	10 minutes.	2 hours.
Spinach	10 minutes.	2 hours.
Kale	10 minutes.	3 hours.
Salsify	10 minutes.	2 hours.
Kohl Rabi	10 minutes.	2½ hours.
Boston Baked Beans	2 hours.	Over night.

MEAT.

MEAT.	TIME ON STOVE.	TIME IN COOKER.
Beef Stew	1 hour.	8 hours.
Boiled Ham	1 hour.	Over night.
Boiled Tongue	1 hour.	Over night.
Year Old Fowl	30 minutes.	6 hours.
Brown Pricasse of Veal	30 minutes.	5 hours.
Chop Suey	10 minutes.	8 hours.
Veal Birds	30 minutes.	5 hours.
Veal Loaf	45 minutes.	5 hours.
New England Boiled Dinner	1 hour.	12 hours.
Roast Loin of Lamb	30 minutes.	6 hours.
Pot Roast	1 hour.	10 hours.
Chicken Curry	30 minutes.	6 hours.
Beef à la Mode	15 minutes.	10 hours.
Beef Goulash	30 minutes.	6 hours.
Tripe	20 minutes.	4 hours.
Stuffed Steak	30 minutes.	6 hours.
Roast Veal	45 minutes.	6 hours.
Boiled Chicken	20 minutes.	6 hours.

PUDDINGS.

PUDDINGS.	TIME ON STOVE.	TIME IN COOKER.
Plum	1 hour.	Over night.
Baked Custard	20 minutes.	3 hours.
Cabinet	20 minutes.	4 hours.
Rice Pudding	10 minutes.	3 hours.
Apple Tapioca	10 minutes.	3 hours.
Fig	30 minutes.	6 hours.
Brown Betty	30 minutes.	4 hours.
Steamed Fruit	30 minutes.	4 hours.
Bread	30 minutes.	2 hours.
Cream Tapioca	20 minutes.	3 hours.

A FEW RECIPES FOR FIRELESS COOKERY

Beef Stew with Dumplings.

- 2 cupfuls cooked or raw beef,
2 cupfuls raw or cooked potatoes,
 $\frac{2}{3}$ cupful tomato,
1 onion, cut in slices,
4 tablespoonfuls rendered fat or butter,

- 1 teaspoonful salt,
 $\frac{1}{8}$ teaspoonful pepper,
 $\frac{1}{2}$ cupful flour,
1 tablespoonful chopped parsley,
 $1\frac{1}{2}$ cupfuls water, or more.

If cooked meat and potatoes are used, cut them in three-quarter inch dice, make a brown sauce of the fat, flour, seasoning, and water, add the

vegetables and meat and enough water to just cover the stew. Place the dumplings on top, boil it for five minutes, and place in cooker for one and one-quarter hours. If the meat is tough it will be better to treat it like raw beef. If raw beef is used, cut it in pieces, bring it to a boil with the water, and put it into the cooker for three or four hours before adding the other ingredients.—Margaret J. Mitchell.

Pot Roast.

- 3 pounds beef rump,
- 3 cupfuls boiling water,
- 1 bay leaf,
- 1 small onion,
- Salt and pepper,
- 2 small carrots,
- 2 sprigs parsley,
- $\frac{1}{2}$ teaspoonful celery seed, or $\frac{1}{4}$ cupful celery, cut in pieces,
- Flour.
- $\frac{1}{2}$ teaspoonful Worcestershire sauce,

Have the butcher bone and roll the meat, dredge it well with salt, pepper, and flour, and brown it on all sides in a frying-pan with a little of the fat from the meat, or one or two tablespoonfuls of beef drippings or pork fat. Put all the ingredients together in a small cooker-pail, let it simmer thirty minutes, set it into a larger pail of boiling water and put into a cooker for nine hours or more. Reheat it to boiling point; strain and thicken the liquor for gravy. Round of beef may be used for pot roast, but it is drier than the rump, which has some fat on it. Four or five pounds of rump will make three pounds when boned. Have the bone sent from the market to use for soup stock. Serves ten or twelve persons.—Margaret J. Mitchell.

Boiled Ham.

If the ham is very salty soak it over night in cold water, put it into the pail in the morning, cover with cold water, put the lid on tightly, and bring to the boiling point. Cook ten minutes hard, then simmer for fifteen more, set it into the cooker, and leave it there over night.

Chop Suey.

- 1 quart lean pork and chicken,
- 1 onion,
- 1 pint celery,
- 2 tablespoonfuls cornstarch,
- 2 tablespoonfuls molasses,
- $1\frac{1}{2}$ teaspoonfuls salt,
- 1 tablespoonful China soy,
- $\frac{1}{2}$ cupful fresh mushrooms.

Cut the pork and chicken into small pieces, put any bones that remain in a cheese-cloth bag, tie it up and drop in pail of cooker. Cover with cold water and let it come very slowly to the boil. Fry out a piece of fat, salt pork in a spider, and brown the meat. Add it to the water in the pail, also the onion, the celery cut in inch lengths, bring to the boiling point, then simmer slowly for one hour. Dissolve the cornstarch in a little water and stir it in. Add the molasses, salt, and soy. Cook ten minutes longer, set the pail, tightly covered, into the cooker; leave it there eight hours. When served, lift out the cheese-cloth bag with the bones. Serve chop suey with boiled rice, Saratoga chips, and toast.

Boiled Dinner.

- 2 pounds lean salt pork, or corned beef, if preferred,
- 3 turnips,
- 4 beets,
- 2 carrots,
- 1 head cabbage,
- 12 potatoes,
- $\frac{1}{2}$ teaspoonful pepper,
- Water to cover.

Wash the pork and gash it in slices; wash and pare the vegetables. If preferred, the beets may be cooked separately, without paring them. Put all, except the potatoes, into the cooker-pail and cover them with boiling water. When boiling let them cook ten minutes on the stove, then put the pail into the cooker for six hours or more. Add the potatoes, reheat it to boiling point, and replace it in the cooker for two hours. If more salt or pepper is required add it when the potatoes are put in. In order to save time the potatoes may

be cooked separately, drained, and added to the dinner before bringing it to a boil for serving. Serves eight or ten persons.—Margaret J. Mitchell.

Steamed Pudding.

- $\frac{1}{2}$ cupful chopped suet,
- $\frac{1}{2}$ cupful flour,
- 1 teaspoonful cinnamon,
- 1 teaspoonful mace,
- $\frac{1}{2}$ teaspoonful salt,
- $\frac{1}{2}$ teaspoonful cloves,
- $\frac{1}{2}$ pound Sultana raisins,
- $\frac{1}{2}$ pound currants,
- $\frac{1}{2}$ pound citron,
- $\frac{1}{2}$ cupful sugar,
- 1 $\frac{1}{2}$ cupfuls soft bread crumbs,
- 3 eggs,
- $\frac{1}{2}$ cupful milk.

Chop the suet fine, mix with the flour and spices, then add the fruit,

sugar, and bread crumbs. Wet with the milk and eggs, stir hard, and turn the mixture into a greased mold. Set it into the pail of the cooker. Surround with boiling water, give it one hour on the stove and all night in the cooker.

Stewed Prunes.

- 1 pound prunes,
- $\frac{1}{4}$ cupful sugar,
- 3 cupfuls water.

Wash the prunes thoroughly, soak for several hours or over night. Cook on top of the stove fifteen minutes in the same water in which they were soaked; then remove to the pail of the cooker, and cook four hours. Cover tightly. Add sugar before serving.

CHAPTER XXXVIII

INFECTION AND DISINFECTION

CONTACT INFECTION — DISINFECTION — STANDARD SOLUTIONS — FUMIGATION OR GASEOUS DISINFECTION — FORMALDEHYDE AND SULPHUR FUMIGATION — ADDITIONAL DISINFECTION

CONTACT INFECTION

Before the germ theory of disease became fully established, a distinction was made between what were called "infectious" as opposed to "contagious" diseases. These words are now used interchangeably. It was formerly supposed that "infectious" diseases could be "caught" by merely breathing the air in the vicinity of the patient. A superstition to this effect still lingers in some localities. Many persons, otherwise well informed, attempt to hold their breath while passing pest houses or dwellings where patients with virulent communicable diseases are quarantined. This notion that the germs of disease are usually communicated through the air has been completely exploded. On the other hand it was formerly supposed that "contagious" in the sense opposed to "infectious" diseases, could be communicated only by actual contact of the diseased part with the body of another person. Some diseases were thought to be both contagious and infectious. Many cases of the transmission of disease were observed, however, which could not be explained upon either of these theories. Hence there was formerly a good deal of doubt, even among medical men, as to the exact way in which certain diseases were communicated.

This confusion of thought is now to a large extent cleared away. The

contact infection theory may be said to be fully established. According to this theory the living bacteria, or germs, which cause contagious diseases are most commonly transmitted from a diseased to a well person within a comparatively short space of time, and through the medium of some solid object or liquid, rather than through the air. Two kinds, or types, of infection are loosely distinguished — direct and secondary. Direct infection is, in general, that which gives rise to new cases in families or on premises that have been previously free from disease. Indirect, or secondary, infection is that whereby a disease is communicated from a patient to his nurse or other attendant, or to other members of the same household. Direct infection is thought to occur chiefly through the contamination of the sources of water or milk supply, or by chance contact with persons in the early stages of a communicable disease, or those suffering from mild cases, or from healthy "carriers." Especial attention has also been directed of late to the part played by insects, especially the house fly, as carriers of disease. The bedbug, the body louse, the various species of fleas, mosquito and ticks have also been found to communicate the germs of disease from certain animals to man and from one person to another.

Direct infection may, and often does, occur from unavoidable acci-

dent. But secondary infection is invariably the result of ignorance or carelessness. The most usual vehicles of secondary infection are thought to be the bed covers or clothing of the patient; his handkerchief; his discharges; remnants of food and drink left by him on the tray, or the dishes or other utensils by means of which he is served; and the person or clothing of the nurse or other bedside visitors. The cardinal principle of preventive medicine is that secondary infection must and shall not occur.

According to the contact infection theory all the germs of disease by which healthy persons are infected had quite recent origin in the body of some diseased person. They left the patient through some of his discharges, as his sputum or excreta, possibly through perspiration, or in the case of smallpox, chickenpox, or scarlet fever, through the scabs or scaling of the outer surface of the body. Thence they were transmitted to the neighborhood of the infected person, through some fairly direct route, by the agency of solid bodies or liquids, and under conditions reasonably favorable to germ life. They then found their entrance into his body through some of its main orifices, usually by being breathed in or swallowed. When these essential principles are well understood and sufficiently considered, they will usually enable the responsible head of a family to trace a case of infection to its source. Steps may then be taken to avoid further infection and prevent the spread of the disease.

The open vault, sink drain, or accumulation of garbage or other filth, so located as to contaminate the soil or the sources of the water supply, and the flies or other insects which feed in and about them, may be compared to an unloaded gun. Their deadly possibilities are latent until they become infested (loaded) with the living germs of typhoid or other communicable diseases. Such germs are not the product of putrefaction. They do not develop spontaneously in fecal or decayed matter such as night-soil, garbage, and kitchen slops.

Nor do disease germs multiply in such locations. Indeed, the bacteria which cause human diseases will ordinarily die out within a comparatively short time when deliberately added to such substances for the purpose of scientific investigation. When a case of typhoid or other contagious disease occurs, through the pollution of the soil or water supply, or through the medium of flies, by contagion from an open vault or drain or similar nuisance, the real source is often overlooked and disregarded, because these nuisances have existed before the patient was taken sick and no one had previously been made ill by them. The explanation of science is that only at rare intervals and as a consequence of direct infection from some diseased person, do these nuisances become active sources of contagion and deadly menaces to the public health. The danger is that this may happen unknown to the responsible head of the family. The result may be an epidemic in which many lives are needlessly sacrificed.

A good illustration may be found in a case reported by a milk inspector of a western city. An outbreak of typhoid was traced to the milk supply from a certain farm dairy. On investigation it was found that two of the dairyman's children were convalescing from that disease. The family water supply used for drinking purposes and also for cleansing milk pails and other receptacles was a dug well in the farmer's yard. It was located not far from an outhouse of the open vault type. The milk inspector suggested that the well water might be contaminated from this source. The dairyman responded that this could not be the case because the water was clear, cold and tasteless. A few days later this farmer called up the milk inspector on the telephone and required if the germs of typhoid fever would make water pink. The inspector responded, No! but that if the well water was pink, it might be due to a quantity of red dye which he had poured into the vault of the outhouse. Later, the dairyman himself succumbed to typhoid fever. The milk supply from this dairy having

been shut off, further spread of the disease among its patrons was prevented.

A practical suggestion may be drawn from this incident for cases where it is suspected that the source of drinking water may be contaminated from open vaults, drains or similar sources. A bushel or more of coarse salt may be deposited in the vault or drain and care taken to observe whether or not the water, especially after the next heavy rain, tastes in the least salty.

But, as the amount of salt that might be transmitted in solution through the soil may not be enough to be detected when diluted by the contents of a deep well, it is safer and better in all such cases to have a bacteriological test of the water made at the State laboratory. The commissioner of health in most States will forward on request a suitable bottle properly packed for mailing, with full directions how to select and forward the necessary sample. In some States such tests will be made free. But in any case the cost will hardly exceed that of a doctor's visit. The result may be the saving of one or many lives.

The bacteria which cause germ diseases are parasites, that is, they do not normally occur in nature outside the bodies of men or other animals. These they regard as their natural home. Hence they can thrive and multiply only under very similar conditions of warmth, moisture, absence of direct sunlight and presence of a supply of food suitable to their necessities. They are so exceedingly small as to be totally invisible to the naked eye, and are without color, taste or odor. Hence the presence in an ordinary well of bacteria sufficient to kill all the inhabitants of a great city could not be detected without the use of a microscope except through their fatal consequences.

It was formerly supposed that the introduction into the human body of one or more germs of any contagious ailment was certain to result in the contraction of a typical case of the disease. The use of the microscope has proved that this is by no means

the case. The germs of pneumonia, diphtheria, tuberculosis and others are often found in the throat and lungs of perfectly healthy persons. The germs of various diseases may be swallowed without injurious results. The likelihood of contagion depends in part upon the number of the bacteria that may gain lodgment in the system, in part upon their vitality, and in part upon the state of health of the infected person. Most germs tend to breed and multiply in colonies. They do not live long outside of the human body, or other living host, except under favorable conditions, and the body when in perfect health has considerable power to resist their invasion.

The vitality of different species, or of the same species under different conditions, varies considerably. The germ which causes consumption, the tubercle bacillus, is among the most resistant. The germs expectorated by the consumptive may be found in a state of full vitality, in the dry sputum of the patient, floating in the air as dust. With this exception, however, it is believed that exposure to dry heat and especially to direct sunlight kills most disease germs or greatly weakens them. The effect of cold is merely to suspend their activities. Freezing for an indefinite time does not injure most germs. But all are destroyed by exposure to heat at or near the temperature of boiling water, or by contact with various substances known as germicides or disinfectants.

The most virulent bacteria will die of themselves within a comparatively short time after they are thrown off from the body of a diseased person, unless by chance they find congenial lodgment in warm, dark places such as open vaults or drains or in another human body.

The germs of diphtheria, typhoid and some other diseases will multiply quite rapidly in fresh milk, although they are commonly destroyed by the lactic acid which forms in milk in the process of souring. They will, however, live for some time in cheese and butter. Hence contamination of the milk supply is one of the most frequent sources of infection. Bacteria

do not appear to multiply in ordinary drinking water. On the contrary, it is believed that the germs of typhoid will die out of wells and cisterns in about a week or ten days if there is no further contamination in that interval. The contamination of water supplies is, however, among the most frequent causes of fatal epidemics of typhoid and some other diseases. The pollution is usually continuous and often increases in amount and virulence until attention is drawn to it by an outbreak of disease.

The discharges of patients suffering from typhoid and similar diseases contain myriads of the living bacteria. When these find their way by seepage, or surface drainage from open vaults to streams, springs, wells and cisterns, or through the outflows of sewage being in too close proximity to the intake of water supplies, the number of germs swallowed is almost sure to bring on the disease in its most virulent form.

Other common sources of infection are vegetables, contaminated by polluted soil, pet cats and other animals, and, in short, anything which may serve as a vehicle to transport the living germs in a fairly direct route from one human body to another.

While a person in perfect health may come in contact with the germs of disease with impunity, especially if they are few in number, and if their vitality has been impaired by exposure to drying heat or otherwise, yet every precaution that science can suggest should be taken to avoid such contagion. Persons in the best of health may become susceptible to the attacks of bacteria by the lowering of tone due to over-fatigue, to a sudden cold, or similar causes. Or the disease may be taken in such mild form that its true character may not be recognized. Such an attack may cause the patient little inconvenience, but may result, in the absence of proper precautions, in the spread of the disease to others in its most virulent form. Indeed, such cases, and those called healthy "carriers" are known to be among the most common agencies in the spread of epidemics.

Healthy "carriers" of disease, in

medical parlance, are patients who have recovered and become immune to the bacteria of a germ disease, but who are still breeding such germs in large numbers in their bodies. Ordinarily, the germs of disease disappear at or near the time of the patient's recovery, but in exceptional cases persons have been known to be "carriers" for many months or even years. Such persons are especially dangerous, because the liability of infection from them is not usually suspected. Yet, in the absence of absolute cleanliness and proper precautionary measures, they may be the means of infecting others, or contaminating sources of water supply. A typical case is that known to medical men as "Typhoid Mary." This woman is known to have infected about twenty-four persons in six different families where she was employed as a cook. Another recorded instance is that of a dairyman, a carrier of typhoid, who caused no fewer than three epidemics in a western city through the contamination of the water supply which was used by him for cleansing milk cans and other receptacles.

Prevention of Contact Infection.— There are two distinct lines of action which must be adopted to insure against infection. The first consists in preventing all possibility of the contamination of the soil, pollution of water supply, or transmission of the germs of disease by flies and other insects. This may be done by abolishing all open vaults and drains and by the sanitary disposition of all slops, garbage, dead animals and other household or farm refuse. Statistics show that such steps, if properly taken, will reduce the likelihood of infection about one-half. Thus, in the city of Springfield, Ill., the death rate from typhoid continued to increase even after the introduction of an efficient water supply and sanitary sewerage. An investigation by the Board of Health disclosed that only about one-third of the property owners were availing themselves of these improvements. Two-thirds of the families were still dependent upon cess-pools and open vaults. When

these were abolished by city ordinance, the death rate from typhoid was reduced about one-half. A similar result was observed in the city of Providence after all cess-pools and open vaults were abolished by municipal ordinance.

The other line of defense consists in the observance of absolute sanitary cleanliness and the proper use of disinfectants, especially in times of epidemic or when there are cases of contagious illness in the family or neighborhood. It has been proved beyond question that, if proper precautions are taken to avoid infection from milk or water supplies, insects and similar causes, and if sanitary precautions are observed, a patient with any contagious disease may be nursed in his own home without infecting other members of the family. In certain high-class French hospitals, patients suffering from all sorts of contagious diseases, such as diphtheria, smallpox, typhoid fever, scarlet fever and others, are treated in the same open wards and waited upon by the same physicians, nurses and attendants. The only separation of one patient from another is by means of low screens or partitions made of cotton cloth. Even these are sometimes omitted and the space allotted to each patient is defined merely by a line of tape or by marks chalked or painted upon the floor. The object of these is simply to call the nurse's attention to the necessity of observing sanitary precautions before crossing the territory of one patient into that of another.

No object which has touched the person of a patient or been contaminated by any of his discharges is permitted to touch the person of any other patient. The nurse and the attending physicians wash their hands in a disinfectant solution each time they touch or handle the patient or anything which has come into contact with him, before approaching the bedside of another sufferer. Under this plan, which is known as the French cubicle system, instances in which a patient suffering from one contagious disease has become infected with another are extremely rare, while all are being

treated in the same room and are breathing the same air.

DISINFECTION

The purpose of disinfection is to kill the germs of contagious diseases after they leave the body of the patient and before they find another victim. This may be done by means of heat by boiling, baking or burning the infected material, or by means of various chemical poisons known as disinfectants or germicides. These are usually applied in liquid or gaseous form. Germs can be killed by heat or disinfectants only under the following conditions: The heat must be sufficiently intense or the disinfectant sufficiently strong; the germs must be thoroughly exposed to the heat or disinfectant; and for a sufficient length of time.

Disinfection by heat may be by fire, boiling water or live steam. No special apparatus is needed if fire or boiling water is used. The infected articles are simply burned or boiled. Articles to be disinfected by boiling should be weighted, if necessary, and kept under the water while actually boiling for not less than half an hour. The addition of common washing soda to the water, at the rate of one moderate tablespoonful to each gallon of water, increases its efficiency.

Steam disinfection, on a small scale, may be accomplished by means of an ordinary wash boiler containing a wooden rack resting upon bricks, or otherwise suspended above the level of the boiling water. Pack the articles to be disinfected closely upon this rack, put the cover on tight and boil briskly at least an hour. Be sure to use enough water so that the boiler will not go dry. Many kinds of clothing and other objects which would be injured by boiling can be safely disinfected in this manner.

All stains should be removed before disinfection by steam or boiling water, as heat tends to fix them.

Disinfection in General.—Most of the so-called disinfection practiced in families is inefficient and useless. The burning of coffee, tar, or other sub-

stances in the sick room or elsewhere in the presence of the patient or others, operates at most only as a deodorizer. Such fumes do not destroy the germs of disease. Open vessels containing chloride of lime, carbolic acid or other disagreeable-smelling substances have no value for disinfecting purposes, unless the infected material is actually immersed in them. If bad odors exist, remove the source and admit an abundance of fresh air. Never use disinfectants not vouched for by reliable authorities. Disinfectants, germ killers, and the like, sold like patent medicines, are most often expensive and worthless. They should never be relied upon. The following solutions are for use during illness and for general family use as directed.

Allow nothing to go from the sick room in case of communicable diseases without having been disinfected with one of these solutions. It should be an unceasing duty of the nurse or other attendants to see that disinfection as here indicated is carried out to the minutest particular.

STANDARD DISINFECTANT SOLUTIONS

Substances recommended as reliable disinfectants for general external use in contagious diseases are (1) chloride of lime; (2) quick lime; milk of lime; (3) bichloride of mercury (corrosive sublimate), either with or without the addition of muriate of ammonia, or permanganate of potash; (4) carbolic acid, and (5) solution of formaldehyde (formalin). Such substances as Lysol, Kreolin, Tri-Kresol and other much advertised patented preparations are no better than the above and are too expensive for general external use in sufficient quantities. The following standard disinfectant solutions are those endorsed and recommended by public health authorities throughout the United States. They are the cheapest, best known and most reliable disinfectants. No others need be employed for general external use. Most of these solutions are highly poisonous. None are suitable for wash-

ing out the mouth, gargling the throat, or other internal use.

No. 1. Standard Solution of Chloride of Lime (chlorinated lime).—This is one of the most effective and highly recommended disinfectants. It is used in the form of an aqueous solution, i. e., dissolved in water, in strength varying from 3 per cent (weak) to 10 per cent (strong) solution. For a 10 per cent solution add 1 pound of good chloride of lime to 1 gallon of water and mix thoroughly. For a 5 per cent solution use $\frac{1}{2}$ pound to the gallon of water, and for a 3 per cent solution use 1 pound to 3 gallons or $5\frac{1}{2}$ ounces to the gallon. Authorities variously recommend from $5\frac{1}{2}$ to $6\frac{1}{2}$ ounces chloride of lime to the gallon of water, or a solution of slightly more than 3 per cent, as a standard solution for free general use.

Chloride of lime is not fully soluble in water. A clear solution may be obtained by filtration or decantation, but the insoluble sediment does no harm and this is an unnecessary refinement. The solution should stand at least ten minutes before using.

The chloride of lime must be of the best quality. It should contain at least 25 per cent of available chlorine. Poor chloride of lime is useless. Prepare only as needed and keep, preferably, in a stone jug with a tight-fitting stopper. Do not depend upon this solution unless freshly prepared from chloride of lime of good quality. This substance ought to be obtained anywhere for about 10 cents a pound retail or about $3\frac{1}{2}$ cents wholesale, making the cost of a 3 per cent solution only about 1 to 3 cents a gallon. Hence, in addition to being among the most effective disinfectants and germicides available for general use, it is also one of the cheapest.

Directions for Use.—Use one quart of the half-strength (5 per cent) solution for each discharge from a patient suffering from any contagious or infectious disease. Mix well and leave in the vessel for an hour or more before throwing into privy vault or water closet. The same for vomited matter. For a very copious discharge, especially in cholera, use a

larger quantity; and for solid or semi-solid matter, use the full strength (10 per cent) solution. Receive discharges from the mouth or throat in a cup half full of the half-strength (5 per cent) solution, and those from the nostrils upon soft cotton or linen rags. Burn these immediately.

As the fecal discharges of the sick are the chief vehicles of communication in many contagious diseases, their disinfection should be thoroughly performed. Especially should care be taken as to their disposal, so that no portion of them can gain access, either directly or indirectly, by surface drainage, percolation, filtration, or otherwise, to any water-supply.

Use a quart or more of the solution full-strength (10 per cent) each day in an offensive vault, and such quantities as may be necessary in other places. Use it in a sprinkler in stables, and elsewhere. In the sick room place it in vessels, cuspidors, etc. Immerse sheets and other clothing used by the patient in a pail or tub of this solution, diluted one gallon of the full-strength (10 per cent) solution to ten of water, for two hours, or until ready for the wash room or laundry. This solution is non-poisonous and does not injure white clothing. It should be used, however, only for white, cotton or linen fabrics. It bleaches colored goods and injures wool, silk and other animal fibers. Body and bed linen thus treated should afterwards be thoroughly cleansed by boiling for a half hour in soap and water and by two or more rinsings.

It may also be used in one-third strength (3 per cent) solution for washing the hands or parts of the body which may have been exposed to infection from excreta, etc.

For a free and general use in privy-vaults, sewers, sink drains, refuse heaps, stables, and wherever else the odor of the disinfectant is not objectionable, this is perhaps the cheapest and most effective disinfectant and germicide available for general use. It should be used so freely as to wet everything required to be disinfected. Its odor does not disinfect. It only covers up other odors.

Chloride of Lime in dry form may also be applied in large quantities to vaults and cess-pools. Dilute it for this purpose with 9 parts of plaster of Paris or the same proportion of clean dry sand to admit of more convenient application.

No. 2. Standard Solution Milk of Lime (quick lime).—Slake a quart of freshly-burnt lime (in small pieces) with $\frac{1}{4}$ of a quart of water—or to be exact, 60 parts of water (by weight) with 100 of lime. A dry product of slaked lime (hydrate of lime) results. Make from this, milk of lime, immediately before it is to be used, by mixing 1 part of this dry hydrate of lime with 8 parts (by weight) of water. The dry hydrate may be preserved for some time if enclosed in a covered fruit jar or other air-tight container.

Or, prepare milk of lime by slaking freshly burnt quick lime in about four times its volume of water, i. e., about 1 pound of fresh unslaked lime to 1 gallon of water. Milk of lime must be used within a day or two after preparation or its value as a disinfectant is lost. It should be kept in some air-tight container, preferably an earthenware jug and closely stoppered.

Air-slaked lime has no value as a disinfectant and should not be used for this purpose.

Quick lime is one of the cheapest of disinfectants, and may take the place of chloride of lime if desired. Use freely in a quantity equal in amount to the material to be disinfected. Use also to whitewash exposed surfaces, to disinfect excreta in the sick room, or on the surface of the ground, in sinks, vaults, drains, stagnant pools and the like.

No. 3. Standard Solution of Bichloride of Mercury (corrosive sublimate).—The most convenient way to prepare this solution is by the use of bichloride of mercury tablets which can be obtained at any drug store. The directions for using these tablets are given on the package. But if large quantities of bichloride solutions are to be used, it will be found cheaper to have a strong solution prepared by a druggist and then add at

home, under his direction, sufficient water to reduce it to the required strength. Two tablets dissolved in 1 pint of water, or sixteen tablets (2 drams) corrosive sublimate to the gallon, makes a solution of 1 to 500. This may be improved by adding 2 ounces of common salt to the gallon of water.

Or, dissolve corrosive sublimate and muriate of ammonia in water in the proportion of 2 drams, 120 grains or $\frac{1}{4}$ ounce of each to the gallon.

Or, dissolve corrosive sublimate and permanganate of potash, 2 drams each to 1 gallon of water.

Or, dissolve corrosive sublimate, permanganate of potash and muriate of ammonia in pure soft water in the proportion of 2 drams each to the gallon.

All the above substances may be obtained at any first-class drug store. The simple solution of bichloride in water first mentioned is a good disinfectant and may be preferred whenever it is necessary to practice economy. But, if the additional cost of such substances as muriate of ammonia (sal ammoniac) and permanganate of potash can be afforded, the solution will be more efficient and will keep better. If permanganate of potash is not used, it is a good plan to add a little blue vitriol or common bluing to color the solution. This lessens the danger of its being swallowed by accident.

Cautions.—All the above solutions or others containing bichloride of mercury (corrosive sublimate) will corrode metals and even tarnish gold. In so doing their disinfecting power is lost. Hence, these solutions must be mixed in a wooden tub, barrel or pail, or an earthen crock. They must be kept in a glass or earthenware receptacle—as a glass fruit jar or earthenware jug—tightly stoppered to prevent evaporation, and labeled "Poison." They should never be poured into metal drains without thorough and repeated flushing. Otherwise they will injure plumbing. Nor should they be permitted to come into contact with the metal fixtures of the bath room. The better plan is to bury them, after using, at least one foot deep in the ground. Rings must

be removed from the hands before they are immersed in the bichloride solutions.

Use any of the above solutions full strength (1:500) to disinfect excreta in the same manner and quantity as the Chloride of Lime Solution No. 1. They are equally as effective but slower in action. Hence it is necessary to let the mixture, disinfectant and infected matter, stand at least four hours. It is best to empty the mixture into a wooden pail and leave it for twenty-four hours. It may then be thrown into a vault or buried. The chief advantage of these solutions over No. 1 is that they possess no odor. Hence they may be preferred for use in vessels, cuspidors and the like, if Solution No. 1 is objectionable on account of its smell. They are not as good disinfectants for vaults, sink drains, sewers and the like as the chloride of lime solution, nor are they trustworthy as a disinfectant of fresh sputum.

Also use any of these solutions one-half strength, that is, diluted with an equal quantity of water (1:1,000), for the disinfection of soiled underclothing, bed linen and other fabrics. Mix the solution well by stirring and immerse the articles for two hours. Then wring them out and boil at least half an hour. Bichloride solutions tend to fix stains. Hence remove stains by appropriate process before disinfection.

Also use one-half strength (1:1,000) of any of these solutions for washing all hard surfaces not metallic, as walls, floors, furniture and the like, and for moistening cloths with which to wipe off dust from the woodwork and furniture. For washing metallic surfaces use disinfectant No. 5, 2 per cent solution of formaldehyde.

Also use this solution one-half strength (1:1,000) for washing the hands and general body surfaces of the attendants and convalescents—the latter, however, only by direction of the physician.

Bichloride of mercury, either in solid form or in mixtures is a violent corrosive poison. One ounce of any of the above solutions, full

strength, contains nearly a grain of corrosive sublimate and will inevitably cause death by poison if swallowed. Hence all these solutions must be labeled "Poison" and kept out of reach of children. Their use should always be under the direction of some intelligent person.

Antidote.—If by accident one of these solutions is swallowed, send for a physician at once. Do not wait, however, until he arrives. Give the proper antidote quickly. Give freely white of egg mixed with water, or if this is not at hand, give wheat flour mixed with water, or give milk. Try to provoke vomiting so as to empty the stomach. For this purpose give mustard and water, or salt and water, or tickle the back of the throat.

No. 4. Standard Solution of Carbolic Acid.—Carbolic acid is one of the most generally useful disinfectants in the sick room, but is rather expensive when properly used and its odor is objectionable to some persons. Carbolic acid may be used dissolved in water in a strength from a 2 per cent (weak) to a 5 per cent (strong) solution. For a 5 per cent solution add 1 pint or pound of either the crude or purified liquid carbolic acid to $2\frac{3}{4}$ gallons of hot water, or about 6 ounces to the gallon. Stir frequently until no red or colorless droplets remain in the bottom of the mixture. The keeping power and efficiency of this solution may be increased by the addition of 12 to 14 ounces of common salt to each gallon, when used for the disinfection of excreta or other uses where the salt is not objectionable. Use this 5 per cent solution in the same way and for the same purposes as Standard Solution No. 1 of Chloride of Lime.

Use one-half strength, i. e., diluted in an equal quantity of water ($2\frac{1}{2}$ per cent solution) for the tub in which body or bed linen is immersed. Also for washing woodwork, floors and other hard surfaces and for the hands and person. Immerse fabrics four hours, then rinse and boil for half an hour.

Antidote.—Carbolic acid, like bichloride of mercury, is a violent cor-

rosive poison. Hence take great care to see that it is properly labeled and kept out of reach of children. In case of poisoning send for a physician at once, but do not wait until he arrives. Diluted alcohol is the best antidote. Give this in the form of whiskey, brandy or cologne water, if pure alcohol is not at hand. Do not use wood alcohol, which is itself poisonous. Epsom salts or glauber salts, in doses of one tablespoonful, rank next to alcohol as antidotes. All cases, however, require the immediate attendance of a physician. Olive oil, castor oil and glycerine are also antidotes for carbolic acid. Try to provoke vomiting so as to empty the stomach. For this purpose give mustard and water, salt and water or tickle the back of the throat.

Pure carbolic acid will burn the skin. Should an accident of this kind happen, immediately apply grain (not wood) alcohol, whiskey, brandy or cologne water.

No. 5. Standard Solution of Formaldehyde (formalin).—Dissolve 12 ounces 40 per cent solution of formaldehyde (formalin) in 1 gallon pure soft water. This mixture contains $6\frac{2}{3}$ per cent of formaldehyde. It should be kept in tightly corked bottles to prevent loss of strength by evaporation of the gas. This solution, while somewhat more expensive, is preferable for the disinfection of clothing and other fabrics, since it does not bleach or injure them. Use full strength for cuspidors, vessels and sputum cups in the sick room. Dilute one-half for the tub in which fabrics are immersed and for washing floors, woodwork and the like. It is especially recommended for washing furniture, woodwork and metallic surfaces and for washing the hands and person of both nurse and patient.

Formaldehyde is a gas. It is sold in a solution containing 40 per cent of formaldehyde either under the simple designation, "Forty per cent solution of formaldehyde," or under the proprietary designations, "Formalin" and "Formal"; always ask for "formaldehyde" else you may pay extra for the same thing. For disinfecting, it may be used either in solution or

in gaseous form. In household disinfection it is generally used as a gas. Formaldehyde tends to fix stains. Hence they should be removed by appropriate processes before disinfection. Formaldehyde in gaseous form does not injure even the most delicate fabrics. It has a slightly corrosive action on polished steel, but does not affect other metals.

Antidote.—If by chance formaldehyde solution is swallowed, give at once one to two tablespoonfuls of solution of acetate of ammonia (spirit of mildererus), or one teaspoonful of aromatic spirits of ammonia, diluted with water; or 10 to 20 drops of ordinary ammonia, well diluted with cold water. Send for a physician at once. The doses stated are for adults. The dose for children must be in proportion to their age. But none of the antidotes mentioned are poisonous, and they can be given in any approximately correct quantity without fear.

FUMIGATION OR GASEOUS DISINFECTION

Preparations.—The sick room in all cases and preferably every room in the house, especially in case of smallpox, diphtheria, typhoid and other virulent diseases, should be thoroughly disinfected by fumigation. This may be accomplished by formaldehyde gas or by the fumes of burning sulphur. During convalescence following cases of scarlet fever, smallpox or measles, the body of the patient should be daily rubbed with vaseline to prevent scales and dry particles of dead skin from being carried by air currents. When sufficiently recovered, the patient should have a warm bath every day until the skin has ceased to peel. When the patient leaves the sick room he should be given a disinfectant bath in Standard Solution No. 3 or No. 5 (bichloride 1:1,000 or formaldehyde 2 per cent). This should be followed by a cleansing bath including a shampoo or thorough washing of the hair and scalp. The patient should then be dressed in clean garments and should not again enter the infected room until it has been disinfected and cleansed. The nurse or

attendant should exercise the same precautions against spreading the infection. After the room has been vacated by the patient and nurse it is ready for final disinfection. This should be done preferably by a duly qualified officer of the Board of Health, but may be done successfully by any one if the following directions are carefully observed.

Fumigation by Formaldehyde.—First send to the drug store for the necessary materials. To ascertain the quantity required measure the room and find the length, breadth and height in feet. Multiply the figures together, disregarding fractions. This gives the cubical contents of the room in feet. Divide by 1,000 (point off three places) to find the number of thousand cubic feet in the room. For example, a room 10 feet square and 10 feet high contains 1,000 cubic feet. Use $6\frac{3}{4}$ ounces crystals of potassium permanganate for each 1,000 cubic feet of room space, or 10 ounces when the temperature is below 60 degrees F. Over these pour 16 ounces of 40 per cent aqueous solution of formaldehyde (formalin) for each 1,000 cubic feet of room space, or 24 ounces when the temperature is below 60 degrees F.

Thoroughly seal the room from within so as to prevent the escape of the gas until disinfection has been accomplished. Carefully close all windows and doors except one door for exit. Leave the windows unlocked so that they may be opened from without. Securely paste wet strips of paper over all registers, transoms, keyholes and cracks above, beneath and at the sides of windows and doors, over stove holes and all openings in walls, ceilings and floor. Use several thicknesses of paper if the openings are large. Gummed paper put up in rolls is made for this purpose. Or adhesive surgeon's plaster may be used. But common newspaper cut into narrow strips will do. It should be thoroughly wet with the Standard Solution No. 3 or No. 5 (bichloride 1:500 or formaldehyde 5 per cent), in order to disinfect the surfaces upon which it is used. Soft soap may be used for pasting paper strips so that they may later be

easily washed off. Or use paperhanger's paste, which may be prepared, and afterwards removed, by methods described elsewhere in this volume. After the strips are in place go over them on the outside with the brush dipped in the paste so as to wet them thoroughly.

Stop up the fire place with a sheet of tin or zinc and paste strips of paper around the edges. Or securely paste large sheets of heavy wrapping paper over the opening so that they cannot be displaced by the draft. There must be no opening through which gas can escape.

Now spread out on chairs, or clothes-racks, all articles that cannot be boiled. Clothing, bed covers and the like should be hung on a line stretched across the room. Open the mattresses and set them on edge. Stretch the window shades and curtains to their full length. Open the doors of closets or clothes-presses. Lift the lids of trunks or chests and remove and spread out their contents. Open one of the long seams of pillows so that the fumes can reach the feathers. Do not pile articles together. Open books and spread out the leaves. In short, arrange the room and its contents so as to secure free access of gas to all parts and to every object. If the room has been properly cleansed and ventilated during the course of the disease and especially if it was stripped of carpets and unnecessary furniture when first set apart as a sick room, the difficulties of disinfection will be greatly reduced.

Humidity.—When all is in readiness make the air of the room damp. This is absolutely necessary for disinfection either by sulphur or formaldehyde. Dampness may be produced by boiling a quantity of water in a wash boiler on a gas or gasoline stove, by pouring boiling water from a tea kettle into a tub, or by pouring cold water onto hot bricks or stones, or dropping hot bricks or stones into vessels containing cold, or preferably hot water. Under no circumstances is efficient disinfection possible without in some way making the air of the room quite damp. The tempera-

ture should be from 60 to 70 degrees F. or over, the higher the better, but there must not be any fire or exposed flame in the room.

Formaldehyde Generators.—Formaldehyde is a gas which may be generated in large quantities by the addition of formaldehyde solution (formalin) to crystals of potassium permanganate in the right proportions. A number of patented generators and processes for disinfection with formaldehyde have been placed upon the market. Many of these are inefficient and the use of any of them is an unnecessary expense. A home-made device equal to the best patent generator ever devised may be arranged by means of a common wood or fiber wash tub, two or more ordinary red bricks and a tin or galvanized iron pail, such as a common milk or water pail, having the seams rolled, not soldered. Place the tub in the middle of the room with the pail inside resting upon two or more bricks standing edgewise. Now fill the tub with water nearly but not quite up to the level of the top of the bricks and the generator is ready for use. If the bricks can be previously heated in a very hot oven and the water poured in at, or near the boiling point, so as to give off a quantity of steam, so much the better.

Before the pail is put in place spread the potassium permanganate crystals evenly over the bottom. Meantime have in readiness wet strips of paper and paste, or adhesive plaster, with which to seal up the cracks of the door immediately on leaving the room. When everything is in readiness and the pail containing the permanganate crystals is in place, pour over them the formaldehyde solution. Leave the room and seal up the door on the outside as quickly as possible. The formaldehyde is promptly liberated in great quantities. Hence the necessity that all preparations be made in advance and that the operator leave the room at once on the combination of the two chemicals. Leave the room closed for at least four hours.

Quantities and Proportions.—Care must be taken not to put too much formaldehyde into a single container.

The reaction is violent and there is great effervescence and bubbling. If the rooms are large, as in the case of school rooms, public halls and the like, more than one container should be used.

The following quantities may be used safely in the containers recommended:

10 or 12-quart milk-pail.
Formaldehyde, 16 ounces,
Permanganate, 6 $\frac{3}{4}$ ounces.

14-quart milk-pail.
Formaldehyde, 24 ounces.
Permanganate, 10 ounces.

A receptacle of ample capacity, yet less than mentioned above, should always be used, as otherwise, the effervescence resulting from the reaction between the two substances may carry the mixture, or some of it, over the sides of the receptacle and stain the carpet or floor. As permanganate of potassium is liable to stain anything with which it comes into contact, use great care in handling it.

Remember that the permanganate must always be put in before the formaldehyde solution.

Conservation of Heat.—If the bricks and water which are placed in the tub are cold, it is a good plan to set the tin pail snugly into a wooden or pulp bucket. Or wrap it tightly with several layers of asbestos paper. This is done to retain within the generator the heat, which is very important to the proper generation of the gas. If the bricks and water are hot this will not be necessary.

Selection of Materials.—The chemicals required for formaldehyde disinfection are not expensive and the best quality should be obtained from a reliable dealer. Secure the highest grade 40 per cent aqueous solution of formaldehyde on the market. An inferior grade may fail to do its work and thus bring about unfortunate results by giving a false sense of security. The fine needle-shaped crystals of potassium permanganate are better than the rhomboid. See that you get this substance in crystals. Do not accept the dust which often contains impurities. Never use for-

maldehyde candles. They are not reliable. Do not rely upon advertised apparatus, disinfectants, and processes. Nothing can be better or cheaper than the plan above set forth.

Formaldehyde Solution.—The fairly rapid liberation of gas may be secured by sprinkling 40 per cent formaldehyde solution over sheets hung in the room requiring disinfection and containing the articles to be disinfected. One pint of formaldehyde should be used for every 1,000 cubic feet of air space in the apartment, if there is not too much opportunity for the escape of the gas through cracks, windows, doors, etc. If the gas can find easy escape, proportionately more of the solution must be used. Since by either the permanganate method or by the sheet method, formaldehyde gas is rapidly liberated, it is essential that all preparations be made in advance for the operator to leave the room promptly. The door should be closed and sealed and the room left closed for not less than six hours, after which the door and windows may be opened and the room aired.

The odor of formaldehyde, if it persists so as to be objectionable, can be removed, or at least moderated, by hanging up towels or sheets in the room and sprinkling them with ammonia water.

Cautions.—Formaldehyde is intensely irritating to the eyes, nose and mouth. It kills the upper layers of the skin if applied in too strong solutions. The inhalation in ordinary quantities of such formaldehyde as is given off while sprinkling sheets in a room about to be disinfected, is uncomfortable, but not dangerous. The discomfort may be lessened by tying a moist towel over the mouth and nose while engaged in such work. Injury to the hands can be avoided by greasing them well before they come into contact with the formaldehyde solution, or by wearing rubber gloves.

Sulphur Fumigation.—Sulphur will be found a thoroughly reliable gaseous disinfectant of considerable penetrating power if it is intelligently employed. To obtain satisfactory results the following essentials of successful disinfection, established by

repeated experiments, must be observed: (a) the infected room, or rooms, must be thoroughly closed, every crack and crevice sealed; (b) sufficient sulphur must be used; (c) there must be ample moisture in the room; (d) the time of exposure must be sufficient. Ten hours is the minimum.

If sulphur is preferred for disinfection, use four pounds of powdered sulphur to every thousand cubic feet in the room. Seal and otherwise prepare the room in all respects as for disinfection with formaldehyde. Place a common wood or fiber tub on a table—not on the floor. In this place an iron pot or earthenware crock supported by two or more bricks placed edgewise. Pour in water to the level of the top of the bricks. The disinfecting apparatus will then be in working order. Now fill the room with steam. Fumigation with sulphur is not efficient unless the air is very moist. Pile the sulphur in the form of a low cone with a depression on top about as large as the bowl of a tablespoon. Fill this with alcohol, turpentine or coal oil, and set it on fire. Immediately leave the room and close and seal the door. The sulphur in burning throws off sulphurous acid gas which, in the presence of steam, kills all infection. Keep the room closed for ten hours at least and preferably for twenty-four hours after starting the fumes. Then open the windows from the outside for ventilation and thoroughly air the room before using.

Sulphur candles can be used instead of crude sulphur but take care to use sufficient candles. The average candle on the market contains one pound of sulphur. Four of these will be required in the disinfection of a small room 10x10x10. Do not use a smaller number, no matter what directions may accompany the candle. The water-jacketed candle is to be preferred. Partly fill the tin around candles with water and place them in a pan on a table, not on the floor. Let one-half pint of water be vaporized with each candle.

Cautions.—There is one serious objection to the use of sulphur, which

must be fully understood. The fumes have a destructive action on fabrics of wool, silk, cotton and linen as tapestries and draperies and tend to injure brass, copper, steel and gilt work. Colored fabrics are frequently changed in appearance and the strength impaired. Hence such articles should be separately disinfected, as hereafter described, and removed from the room before it is disinfected by sulphur.

Sulphur fumigation has the advantage over formaldehyde that it kills insects and thus prevents their conveying the disease. An ideal plan of fumigation is to use first one method and then the other.

ADDITIONAL DISINFECTION

After a room has been fumigated with formaldehyde or sulphur, thoroughly wash the floor and woodwork and all out of the way places, window ledges, picture molding, etc., and thoroughly wet all dust and dirt in cracks with the half-strength Standard Solution No. 3, Bichloride of Mercury (1:1,000). Follow this up with hot soap suds, afterwards rinse with cloths wet in the disinfectant. Do not attempt to mix soap suds with the disinfectant solution. Scrape off and burn the wall paper. Whitewash the ceiling and walls before repapering and open the room to sunlight and air for several days. Apply a fresh coat of paint to the woodwork.

Cotton Fabrics.—Disinfect all cotton and linen fabrics by immersing them in Solution No. 3 (1:1,000); No. 4 (5 per cent) or No. 5 (10 per cent), for four hours, after which boil them for at least half an hour, then launder as usual. Immerse soiled clothing in a disinfectant solution before it is dried. Before transporting dry clothing or other infected material from the sick room to any other part of the house, wrap the articles in a sheet wet in No. 3 (1:1,000), or No. 4 (5 per cent), or in the absence of these wet in water.

Woolen Fabrics.—Disinfect woolen goods with formaldehyde fumigation in an empty trunk, wooden box or wash boiler, or in tight closets or other air-tight enclosed spaces. All un-

washable clothing, bed clothing, mattresses and similar objects may be disinfected in this manner. Place one layer at a time in any air-tight enclosure having a close fitting door, lid or other cover. Sprinkle each successive layer with a 40 per cent solution of formalin, full strength, by means of a sprayer or small sprinkling pot, at the rate of about two tablespoonfuls of the solution to each garment. Protect silks or other delicate fabrics which might be spotted by direct contact with the drops of moisture by means of cotton sheets or towels placed between each layer. Spray the formalin on this protective covering. Now close the receptacle, seal all cracks and crevices by means of wet strips of paper and leave it unopened in a warm room for at least twelve hours. Afterwards expose the articles for a day or more to direct sunshine. If the smell of formaldehyde persists, sprinkle a little aqua ammonia on the articles to remove it.

Or, disinfect by soaking in corrosive sublimate or formaldehyde solutions No. 3 (1:1,000), and No. 5 (6 $\frac{3}{4}$ per cent), in a wooden or fiber wash tub. Afterwards boil for half an hour and launder as usual.

Money, jewelry, letters, valuable papers and similar articles may be disinfected by spraying with a 40 per cent solution of formalin, full strength, by means of a hand atomizer. Place them in a small wooden or pasteboard box with a tight-fitting cover, seal and keep in a warm room for twelve hours. Burn all books, magazines, newspapers and other articles the value of which is not great enough to warrant disinfection.

Bedding.—Throw straw beds out of the window, empty out and burn the straw, and disinfect the tick as for cotton clothing. Disinfect feather beds, pillows, quilts, comforters and blankets in a steam disinfectant when practical, or if not soiled, with formaldehyde in large quantities. If mattresses have been soiled by the patient's discharges and steaming disinfection is not practical, burn them.

Rugs and Carpets.—These should be removed from the sick room before the patient is installed, but if

they remain and become infected, disinfect with steam or by soaking in corrosive sublimate or formaldehyde solutions. If their value is slight burn them.

Lounges, Couches and Other Upholstered Furniture.—Leave in place when the room is fumigated. Strip off and disinfect the covering as for cotton and linen clothing. Burn the filling and replace with new.

The hands of nurses and others who have attended to the wants of the sick should be disinfected with thorough and prolonged washing and scrubbing with hot soap and water, and then immersed for several minutes in a carbolic, bichloride or formaldehyde solution.

Sputum.—Receive on pieces of paper or rag or in paper sputum cups and burn. Or receive in cuspidors containing carbolic or formaldehyde solutions.

Disinfection of the Dead.—Bodies of persons dying of smallpox, scarlet fever, diphtheria, membranous croup or measles, should be wrapped in several thicknesses of cloth wrung out of full strength corrosive sublimate, carbolic or formaldehyde solution and should not thereafter be exposed to view. The funeral should be private and no persons except the undertaker and his assistant, the clergyman and the immediate family of the deceased should attend. Carriages used by persons attending the funeral ceremony should be fumigated. No person should enter the sick room until it has been thoroughly disinfected.

Rules for the Sick Room.—Sunlight kills disease germs and should be admitted freely to the sick room unless the patient is suffering from some condition which renders darkness necessary.

Proper ventilation diminishes the number of disease germs in the sick room by carrying some such germs into the open air. The number of germs likely to pass from an ordinarily well-kept sick room into the open air by means of ventilation is so small that they cannot be regarded as dangerous to people on the outside. Moreover, such organisms

speedily die because they are not adapted to live in the open air. The ventilation of a sick room should not, however, be such as to permit air to pass from the sick room into the rest of the house.

Have all utensils and materials necessary for disinfection placed where they can be used with the least possible trouble. Failure to disinfect is

often due to the fact that proper facilities for disinfecting are not conveniently at hand.

See that every bottle and box containing a disinfectant is properly labeled and see that all such bottles and boxes are kept apart from bottles and boxes containing medicines for internal use. Accidental poisoning may be thus avoided.

CHAPTER XXXIX

PREVENTION OF COMMUNICABLE DISEASE

TYPHOID FEVER—THE SICK ROOM—TUBERCULOSIS OR CONSUMPTION—SMALLPOX—VACCINATION—CHICKENPOX—MALARIA—YELLOW FEVER—HOOKWORM DISEASE—FOREIGN DISEASES—CONTAGIOUS DISEASES OF ANIMALS

Since the rise of the germ theory there has been a complete revolution in the attitude of well-informed persons toward the subject of disease. A large number of the most common and heretofore fatal enemies of mankind are now well known to be absolutely preventable.

The appearance of the first case of any communicable malady may be due to unavoidable accident; the spread of the disease must be attributed to ignorance or to criminal carelessness. In cities, persons ill with contagious diseases are either isolated in hospitals set apart for that purpose, or quarantined in their own homes by law. The necessary sanitary regulations are enforced by trained inspectors under the authority of the Board of Health. The absence of such officials in most rural neighborhoods shifts this responsibility to the head of the family. Unless parents in such localities take the pains to inform themselves so that they can intelligently cooperate with the attending physician, unnecessary death from preventable diseases will continue to occur.

No attempt will be made here to discuss the treatment of contagious or other diseases. In all suspected cases a physician should be promptly summoned. Our purpose here is simply to make clear the causes of preventable disease and to describe the ordinary sources and channels of infection. When these are fully under-

stood and proper preventive measures taken, the likelihood of infection will be reduced to a minimum. Or, if by some unhappy accident a member of a family becomes infected, such knowledge will enable those in charge of the patient to prevent the spread of the disease. A careful study has been made of all the recent publications of Boards of Health of city, state and nation throughout the United States. The most essential knowledge which they impart is here condensed for ready reference. Many of these bulletins, however, contain detailed information on each of the principal contagious diseases which would extend far beyond the limits of the present chapter. Hence, on the appearance of any contagious disease, in any family or neighborhood, address a postal card to the Secretary of the Board of Health at the nearest metropolitan city. Address another to the Secretary of the State Board of Health at the State Capital. Also a third to the Surgeon-General of the United States, Washington, D. C. Name the disease and request copies of all available circular matter relating to it. Three cents thus spent on postal cards will bring back, without charge, full detailed practical information and instruction of great value. Also ask to have copies of these bulletins mailed to the heads of other families where contagious diseases have broken out, or where, through ignorance or neglect, condi-

tions are so unsanitary as to threaten the public health.

No ordinary person would knowingly give poison to the members of his own family or those of his neighbor. Yet, through ignorance, many well meaning persons are permitting the existence of conditions within their control which result directly in the poisoning of others through the germs of contagious diseases.

Contagious Diseases.—The most usual communicable diseases among adults are consumption (tuberculosis), typhoid fever (typhus fever), smallpox, and, in some localities, yellow fever, malaria and hookworm disease.

Several other communicable diseases are most common among children, as diphtheria (membranous croup, diphtheritic sore throat), scarlet fever (scarlatina, scarlet rash), measles (German measles), chickenpox, mumps, and whooping cough. Another class is most prevalent among small infants, as infantile paralysis (anterior poliomyelitis), cerebrospinal meningitis, summer complaint, congenital blindness (ophthalmia neonatorum). The preventable diseases of children are discussed in the succeeding chapter.

There is a small class of virulent contagious diseases the infection from which may usually be traced to immigration from foreign parts. These include Asiatic cholera, bubonic plague and leprosy. Another communicable disease to which especial attention has been directed in recent years is hookworm disease. In addition, pediculosis, trachoma, ringworm, scabies and impetigo contagiosa, are held to be so contagious as to be dangerous to the public health.

Most of the above diseases are known to be preventable. It is confidently believed that all can be controlled and their communication from one person to another prevented, if certain well understood precautions are observed.

TYPHOID FEVER

Typhoid Fever (Enteric Fever, Abdominal Typhus) is an infectious

disease caused by a specific germ known as the typhoid bacillus. This is a low form of vegetable life belonging to the group of bacteria. It was discovered by Eberth in 1880. Each germ is a minute vegetable cell shaped like a cylinder with round ends. Each is equipped with a number of long, leg-like processes called flagellæ which give it the power of swimming rapidly in liquids. These bacteria can be seen only by the aid of the most powerful microscope. They are so small that half a million would scarcely cover the head of a pin. Yet, each is descended from another germ of the same kind, has its own individual life and can be produced in no other way. These germs, under favorable conditions, multiply very rapidly. Each splits into two, each two into four, each four into eight and so on. A single colony of a few score germs may, within forty-eight hours, develop into a billion.

We do not "catch" typhoid, we swallow it. The germs invariably enter the system through the mouth. Thence they pass into the stomach. Here they may be destroyed by the acids present in the gastric juice, a fact which may explain why some persons who are known to have swallowed the germs do not develop typhoid fever. But if not destroyed in the stomach they pass on into the intestine. The conditions present in the lower third of the small intestine seem especially to favor their growth. Here they multiply rapidly and become very active. It takes anywhere from seven days to three weeks to bring on the symptoms of the disease after the germs are swallowed. This is called the incubation period. The average is from ten to twelve days. The germ attacks primarily the glands of the intestines, causing small abscesses by which the intestinal walls are often perforated through and through. It also attacks other organs during the course of the disease and may attack any part of the body.

Typhoid fever exists at all seasons of the year, but is most prevalent in autumn. The greatest number of

deaths occur in September and October.

Symptoms.—Typhoid fever is a very insidious disease since there may be no symptoms whatever during the period of incubation, that is, on an average, for ten to twelve days after infection has taken place. It is often difficult to determine the day on which the disease begins to make itself manifest. Cases are usually dated from the day on which the patient gives up work and takes to his bed. The disease may then have been in existence for a considerable time. In cases known as "walking" typhoid, the patient is never prostrated. The patient and his family may be unaware of the nature of the disease. Yet germs are being given off which may infect others with typhoid in its most malignant form. For these reasons it is advisable to summon a physician promptly in all suspected cases and to treat every case of fever as typhoid until the physician has completed his diagnosis.

Every case of so-called "typhomalarial fever" and every case of doubtful origin continuing more than seven days, should be reported to the local health officer, and due precautions taken.

Painless diarrhœa, or simple "looseness of the bowels," occurring in one who has never had typhoid fever should excite suspicion if the disease is known to exist in the neighborhood. The mild, "walking" cases are by no means uncommon. Hence it is advisable that all diarrhœal discharges should be disinfected especially during the existence of typhoid fever in a community.

As a rule the disease comes on slowly. The first symptoms are headache, with a general sense of fatigue and loss of appetite. The headache may be severe and confined to the top of the head, or may consist of more or less general soreness. Abdominal pain occurs in about one-third of all cases. A low fever is almost always present from the outset. But this may be so slight that the patient is unaware of it. Women or children in the first stages of the disease

often keep up about the house, or they may be compelled to lie down a part of the day. Men frequently give up work for a day or two and after a little rest go to work again. When such symptoms are observed as tiring easily, digestive disturbances, headache, drowsiness, and abdominal pain that cannot be attributed to any special condition, a physician should be promptly consulted.

If the onset of the disease is more sudden, there may be nausea and vomiting, accompanied by a chill and high fever. A slight cough and occasional nosebleed may be present. Whenever there is doubt as to the diagnosis, the attending physician should have a blood test made. The Widal test is made free for health officers and physicians in the public laboratories of most states.

Prognosis.—During the first week of the disease, the symptoms gradually grow worse, fever develops and the patient suffers chilly sensations. The temperature gradually rises to a height of 102 to 105 degrees F. In severe forms of the disease, diarrhœa commences during the first week and is then continuous.

During the second week the above symptoms become more severe. Nervousness and delirium develop. Minute reddish spots resembling flea bites are frequently observed over the chest, abdomen and thighs. These spots disappear after a few days. Then a fresh crop appears in other situations. The bronchial tubes frequently become inflamed. Sometimes pneumonia develops. Bleeding from the bowels is an occasional symptom in the second week of this disease and is highly characteristic.

During the third week, in normal cases, the symptoms gradually abate. The fever lessens. The diarrhœa improves. The nervous symptoms and the delirium diminish. The patient, though much emaciated, gradually returns to a normal condition. Or the symptoms may increase in severity, the patient become profoundly prostrated, the delirium deepen and death occur. The hemorrhage from the bowels in some instances

may be so severe that death is produced even in comparatively early stages of the infection. This is quite as frequent in the mild cases known as walking typhoid as in others; hence the patient should receive equally careful attention.

The mortality varies from five to twenty per cent, depending upon the character of the disease and the nature of the nursing and treatment. A physician should be summoned and his directions implicitly followed. Nothing in this disease is of more importance than careful nursing. It is absolutely necessary that the patient receive only liquid diet until the physician permits other food. Solid food given prematurely will cause death.

Modes of Infection.—There is a common opinion among the laity that typhoid fever is contracted from foul drains and other things which contaminate the atmosphere; this is probably never the case, although such conditions may be injurious to health.

The germs, or typhoid bacilli, can enter the body in no other way than through the mouth. Direct infection is thought to occur most often through contaminated milk or drinking water, but secondary infection—that is, where one member of a family “catches” the disease from another—is believed to occur chiefly by transmitting the germs to the mouth with the fingers. This may come about by handling the patient or something which has come in contact with him, or by means of food or other articles which have been handled by the nurse or others with unwashed hands after coming into contact with the patient. A little reflection will show how easily the virus may get upon cooking utensils, drinking cups, bed linen, door knobs and similar articles, or may be carried from place to place by pets or insects, particularly flies.

The germs leave the patient's body in the discharges of the bowels and bladder, in some cases in the sputum and possibly in perspiration. Especially must it be borne in mind that the urine of a typhoid fever patient

is even more dangerous than the stools.

The germs may be found in very large numbers in these discharges, upon the bed linen, in the water with which the patient is bathed and upon the utensils used in nursing and feeding him. They are probably never carried on dust through the air. If every typhoid germ was destroyed as soon as it left the human body the disease would be speedily eradicated. But this, unfortunately, is by no means the case.

Infection from Water Supply.—Investigation has shown that most epidemics of the disease are caused by the excreta of the patient having been thrown upon the ground or into an open vault or drain, whence by seepage or surface drainage they were carried into a spring, well, or other source of water supply. A well-known instance is an epidemic in an eastern city of about eight thousand population. Within a few weeks there were more than one thousand cases and over one hundred deaths. The water supply of this community is obtained from a mountain brook. It was contaminated by the discharges from a single typhoid fever patient thrown upon the snow, in winter, near the headwaters of the stream. The consequent expense to this small community in loss of wages and care of the sick was estimated as in excess of \$100,000. The annual losses throughout the United States from this disease, which must be regarded as almost entirely preventable, are estimated at many hundred thousand dollars. Investigation shows that milk is usually contaminated indirectly through an infected water supply. Hence due precautions to secure the purity of the water supply is of prime importance in the prevention of this disease.

Well water is frequently a cause of the disease. Too often we find a privy, or rather a hole in the ground containing fecal and urinary discharges, in close proximity to a well, and often upon higher ground. And unless the soil possesses the best of filtering properties, and this is frequently not the case, the well will

certainly become contaminated. Infected discharges thrown on the ground may be washed into the well by the first rain storm.

Water which has a bad taste or odor, or which comes from a source that renders it likely to be impure, is dangerous, but unfortunately the reverse is not true. Dangerously contaminated water may be, and often is clear and colorless and may have no bad taste or odor.

Infected Milk Supply.—Milk is a very common and dangerous source of infection, because it is what medical men call an excellent "culture medium," that is, germs grow and multiply very rapidly in fresh milk. Nor do they cause the milk to become sour or in any other way give evidence of their presence. Milk is never infected when it comes from the cow. It is always infected by man. This usually takes place through washing the milk cans or other utensils with polluted water. Watered milk may contain the germs of typhoid, for a milkman who adulterates milk with water is not usually careful of the quality of his source of supply. The milkers or others who handle the milk may infect it, if typhoid germs are present on their hands or clothing. Or, infected flies may fall into the milk. The germs from infected milk may also be found in butter and cheese. Hence no milk or other dairy products should be sold from a dairy, farm, or house where there is a case of typhoid fever.

Infection from Ice.—The germs of typhoid fever are not destroyed by freezing. Hence ice taken from sewage-polluted rivers or lakes, or ice manufactured from such waters, is unsafe to use.

Infection from Vegetables.—Vegetables often become infected with the germs of typhoid by irrigation with polluted water, by contamination from night-soil used by farmers or market gardeners as a fertilizer, by flies and other insects. Creel, in a careful review of the results of recent scientific investigation, asserts that the typhoid bacillus may retain its vitality in privy vaults or in

night-soil used as a fertilizer for a period of several weeks, or even months, and that plants cultivated in contaminated soil may take up the germs on their leaves and stems in the process of growth. He found living typhoid bacilli on the tips of leaves that to the naked eye appeared free from any particles of soil. He also proved by careful observation that rainfall will not free vegetables wholly from infected material. This source of pollution is especially dangerous in the case of such vegetables as lettuce, radishes and celery, which are eaten raw. The remedy is to thoroughly wash or scrub them free from earth and bacteria by means of a stiff brush. All vegetables should be cleaned in this manner, but the danger of infection is less from cooked vegetables, as most germs of disease are destroyed by boiling.

All fruits, such as grapes, apples, pears, berries and the like, including lemons and oranges, should be carefully washed in at least three waters or for five minutes in running water, especially in times of epidemic disease. Dried figs and dates are very commonly eaten without being cooked or washed, yet they have been exposed for an unknown space of time to all kinds of contagion from dust, flies and dirty hands. Shelled nuts purchased in the market should be washed and scalded before they are used, as they are commonly exposed to similar infection.

The Typhoid Fly.—This term has been applied to the common house fly by L. O. Howard to draw attention to the danger of infection from this insect. Flies cannot become the carriers of disease germs unless they have access to some source of infection. Hence the danger is much lessened by the elimination of all nuisances in the neighborhood of our dwellings. However, since flies may travel from considerable distances, the only assurance of safety against infection from them is to exclude them by screening or destroy them by means of traps and poisons.

Flies having access to privy vaults or sources of typhoid infection else-

where, and then, through unscreened doors and windows, to living rooms, alighting upon food already prepared for the table or to be used without subsequent heating, are a serious danger. Some of these articles, liquid, semi-solid, or with moist surfaces, thus slightly infected, serve as congenial culture media for the rapid multiplication of the infection. A few typhoid germs brought on the hairy feet of flies may increase many fold if deposited in milk or on the surface of boiled potato.

While typhoid is not ordinarily an air-borne disease, care should be taken to avoid the typhoid patient's breath and not to come unnecessarily in his immediate vicinity especially if he has pneumonia, or an explosive cough. The sputum bearing infection may be sprayed into the air during coughing, but the range of possible danger is slight—hardly more than four or five feet.

The disease is also occasionally spread by the dust of dried urine or other excreta, which is carried through the air, thereby contaminating food or water. Some authorities still hold that the disease may be communicated by inhaling these particles by mouth or nostrils. The diarrhoeal discharge, when dry, may preserve the poison as effectually as the crusts of smallpox, the scales of scarlet fever, and the dried membrane of diphtheria preserve the specific poisons of those diseases.

Among miscellaneous sources of infection may be mentioned bread, pastry, confectionery, fruits, vegetables, meats, etc., handled by infected hands in bakeries, stores, markets and slaughterhouses, or the same articles and milk infected by flies recently arrived from sources of filth.

The general filth conditions in the homes of extremely untidy families favor the spread of typhoid infection, and in such homes or in any homes where there is neglect of the greatest possible cleanliness of the sick person, his bedding, clothing and everything else in the management of him, the danger from secondary infection is serious.

THE SICK ROOM

Care of a Typhoid Patient.—As typhoid fever is one of the most common of communicable diseases, full instructions will be given here for the management of the sick room in such a way as to preclude the possibility of other members of the family becoming infected. All of these instructions apply equally to other contagious diseases with the addition of especial precautions in certain other ailments which will be mentioned.

Isolation.—The first and most essential precaution in the case of typhoid or other communicable disease is that the patient should be completely isolated. Unless this is done, other members of the family are almost sure to contract the malady. The safest course is to send the patient to a hospital. When this is not possible, select a large airy room as the sick room. This should be located on the sunny side of the house, and should have a fire place if the weather be cold. It should be as far from living and sleeping rooms of other persons as possible. It is of the utmost consequence that the room have windows and doors by means of which it can be at all times thoroughly ventilated. At all seasons of the year a room on the lowest floor of the house is more satisfactory, since it is warmer in the winter and cooler in the summer. The room should not be uncomfortably cold, though it is much better to have the temperature too low than to have it stuffy. In most diseases ventilation is of supreme importance, and should be secured at any cost. There are no better disinfectants than pure air and sunlight. A temperature of about 70° F., if compatible with thorough ventilation, is generally considered most desirable. The sick room should have its windows always open day and night, and there should be an open fire if possible, otherwise recovery will be greatly delayed, for bad air of itself makes well persons sick. Keep the patient out of draughts.

Preparing the Sick Room.—Be-

fore installing the patient, take up the carpet and remove all rugs, ornaments, curtains, portières, bureau scarfs and hangings of every description. Empty bureau drawers, remove the contents of closets and clothes-presses, in short, take everything out of the room that is not necessary, and especially all sorts of fabrics which may serve as catch-alls for the germs of the disease. The room should contain no more furniture than is necessary. Metal bedsteads, plain wooden chairs and tables, are best. Remove all scarfs from tables and cushions, doilies and the like from chairs. Seal up door cracks and keyholes communicating with other rooms by pasting over them strips of wrapping paper. Suspend over the doorway a sheet reaching from the top to the floor, moistened with full strength carbolic or bichloride solutions No. 3 and No. 4. Tack this across the top and one side, leaving the other side free to be pushed aside to gain entrance. Only such toys, books and the like should be given the patient as can be destroyed after recovery or death.

The floor, woodwork and furniture should be frequently wiped with cloths moistened with half strength Standard Disinfectant Solution No. 3, 4 or 5. Throw away the broom and duster. Use only damp cloths moistened with half strength Solution No. 3, 4 or 5, for cleaning floor and furniture. These should be at once thrown into the disinfectant solution or burned. It is well to wash the floor each day with one of the same solutions.

Cleanliness.—Keep the premises clean. All decaying animal and vegetable matter and every kind of filth in and around the house should be removed, and disinfectants freely used. Surface drains and gutters, areas, outhouses, privies, shelters for domestic animals, fowls, etc., should receive close and constant attention. Use Standard Disinfectant No. 1 or No. 2, freely and regularly, in every such place.

Odors.—Never allow bad smells to exist. If free ventilation, sunshine and cleanliness do not keep out bad

smells, sprinkle diluted formaldehyde, one part formaldehyde to 50 parts of water, upon the floor, or spray it into the air with an atomizer.

Bed and Bedding.—Place the patient's bed in the middle of the room, or at least away from the wall. Do not suffer the bed covers to come in contact with the walls or floor so as to contaminate them. The bed should be narrow. A mattress is much to be preferred to a feather bed. The cover should consist of a sheet long enough to fold back at the head over the other coverings for some distance. Blankets should be used for warmth in preference to quilts. Keep the bed scrupulously clean, and remove the linen and coverings promptly when soiled. The nurse should see to it that bread crumbs do not remain in the bed.

The best way to make up the bed for the typhoid patient is the following: (1) Over the mattress (no feather bed) spread smoothly and tuck in the sheet. Under the sheet have preferably a once-folded sheet or blanket. (2) Next spread a rubber sheet crosswise the bed, the two ends tucked smoothly under the edges of the mattress. (3) A folded sheet (draw-sheet) also crosswise over the rubber sheet. (4) A second rubber sheet. (5) Over that a second draw-sheet.

To Remove Soiled Bed Clothes.—Move the patient to one side of the bed as near the edge as possible, and loosen the sheet beneath him at the head and foot and on the opposite side. Then roll it up toward the patient and push it well up under him, leaving the side of the bed opposite to that upon which he is lying bare. Upon this place the new sheet. Tuck this under the edges of the mattress, and pull the patient back over on it. Now remove the soiled sheet and pull the edges of the fresh one over the portions of the bed still uncovered, and secure in the usual way.

Cleanliness greatly aids recovery, hence the utmost cleanliness of the patient and his surroundings should be the rule. If there is diarrhoea, the mattress should be protected by

an impervious rubber sheet placed under the linen sheet, or by newspaper pads. Oilcloth cracks and wrinkles too badly to be suitable. Provide two or more rubber sheets so that they can be changed and cleaned as often as required. Sponge the rubber sheets with standard carbolic acid solution No. 4 (5 per cent) and dry and air them in the sun for several hours daily. If the condition of the patient makes it difficult to avoid the soiling of his bed, provide smaller squares of rubber sheeting and folded sheets to be placed above the ordinary sheets. Remove all soiled sheets and clothing promptly before drying occurs. (See Disinfection.) Take care to cleanse and disinfect the patient locally with a solution of corrosive sublimate 1:2,000—half a dram to the gallon of water, or one tablet to the quart.

Bathing.—All patients, if the attending physician approves, should have a daily bath, special attention being given to the hair, teeth, mouth and nails. In many cases it is necessary to wash the patient's mouth frequently with some antiseptic wash. But this should only be done on the express instructions of the doctor.

Disinfection.—A pail or tub should be kept in the room, containing a standard disinfectant solution such as No. 3, 4 or 5 for the purpose of disinfecting every article of clothing before it is carried through the house. One of these solutions should be kept standing in the tub and renewed at frequent intervals. All blankets, sheets, towels, napkins, bandages and clothing, used either by the patient or the attendant should be at once immersed in this tub and remain at least three hours. After this they should be boiled for at least one-half hour. The body linen of the patient should be changed daily or oftener if soiled. When removed it should be immersed immediately in this tub. Rags, closet paper or other material used about the person of the patient should be immediately burned.

The discharges from the throat, mouth and nose are especially dangerous and must be cared for at

once. It is well to prepare a number of squares of old soft cloth—old sheets or pillow cases are good—to receive these discharges. These cloths should be burned as soon as soiled. If there is no fire in the sick room, it is convenient to have a small tub containing any strong standard disinfecting solution, to receive these cloths until they can be carried from the room and burned.

The nurse or attendant should wear washable clothing and over all a washable gown, preferably with a hood attachment for the protection of the hair. The gown and hood should be removed and the exposed surface disinfected when leaving the sick room, even though temporarily. A good rule is to consider that everything which has been brought into the sick room has become infected and should be carefully disinfected before it is carried out.

The hands of the attendant should be immediately washed and disinfected after any contact with the patient or his clothing. A good supply of towels and tin or porcelain basins for this purpose should be kept on hand. Probably the best disinfectant for this purpose is standard solution of corrosive sublimate No. 3, consisting of one gram to one quart of water. No one should ever leave the sick room without first thoroughly washing the hands in a disinfectant solution, or with carbolic or other antiseptic soap, with especial care to clean and scrub the finger nails. It is best to then soak the hands for two or three minutes in half strength disinfectant solution No. 3 or 4, and then wash them off in fresh water.

A large bottle of such a solution should be kept in the sick room for this purpose. Otherwise the nurse may handle something outside the room leaving the germs thereon to be picked up by some one else. It is probable that 90 per cent of all cases of secondary infection are brought about in this manner. The nurse should carefully avoid soiling door knobs or anything else which may be touched by others. While typhoid fever is both contagious and infectious there is no danger of contract-

ing the disease if we prevent the germs from getting into our mouths. This can be easily done. The only occasion for a second case occurring in a household must come either from ignorance or carelessness. With proper disinfection of the hands and general cleanliness the nurse or attendant may take her meals at the household table. At all events she should not eat in the sick room.

Food and Drink.—The tray, dishes, and other utensils used in the sick room should be set apart for the exclusive use of the patient. Never wash them in the same pan as other dishes for the family. Use a separate dish cloth and wiping towel. First immerse these articles for an hour in a half strength standard disinfectant solution No. 3, 4 or 5 and then boil for half an hour and keep apart from all other household utensils. It is best to use paper napkins, which should be burned. If cloth napkins are used they should be immersed in the same disinfectant solution as the bed and body linen. All solid food brought into the sick room and not consumed by the patient should be placed in paper bags to be removed by the attendant and burned. Liquid foods should be poured into a disinfectant. Neither the nurse nor any other person should be permitted to eat any portion of the food remaining. Nothing should be eaten by a well person while in the sick room nor should anything which has been in the room be eaten. Nurses and attendants should always wash their hands in a disinfectant solution before eating or putting anything into their mouths. It is absolutely necessary that this rule be scrupulously observed.

If milk is delivered to the house in bottles, never let these be taken into the room of the typhoid case. If you do, these bottles may be the means of carrying the disease to some one else. Keep special bottles of your own for the patient's milk. Empty the milk into one of these as soon as received. Then scald out the dairy bottle and keep it as far as possible from the sick room until it is given back to the driver.

Quarantine.—All unnecessary visitors should be excluded from the sick room. If a nurse can be provided, all members of the family should be kept away. Otherwise, one or two persons should be detailed as attendants and all others should be excluded. Certainly there is no need that all the relatives, neighbors and friends should visit the patient. This can do no good but in the majority of instances will do harm, and they take a chance of getting the disease. The quieter the patient is kept, both during illness and convalescence, the better for him. Children, especially, should be carefully excluded. They have little or no sense of cleanliness and are constantly putting their fingers and other things into their mouths. It has been shown that children contract communicable diseases much more readily than grown persons. If visitors are permitted to see the patient they should touch nothing in the room, or if they do, should wash their hands in a disinfectant solution upon leaving. All visitors, including members of the family, should be cautioned not to shake hands with or kiss the patient. No one should sit for any length of time in the sick room unless compelled to do so.

Removal of Excretions.—The discharges from the bowels and kidneys should be received into a bedpan or vessel containing at least a quart of full-strength disinfectants No. 1 or No. 2. Enough of the same should be added to cover them and be thoroughly mixed by stirring. Solid masses should be broken up with a stick which can be burned, or a glass rod which can be disinfected. See that all lumps are thoroughly broken up. Disinfectants cannot kill germs unless they come in contact with them. They should stand in the vessel for not less than an hour. Where there are sewers they may then be emptied into the water closet, taking care not to soil the seats or covers. In the country it is best to deposit the contents of the vessels in a trench. This must be remote, and, if possible, down hill from the well or nearest watercourse. The

trench should be about four feet deep and two wide. Each deposit should at once be well covered with quicklime and earth well beaten down. When half filled in this manner the trench should be covered in with earth. But care must be taken that none of the excretions from persons afflicted with typhoid are ever emptied until thoroughly disinfected. Under no circumstances should these be poured out in the neighborhood of springs or wells. It should also be remembered that the water in which typhoid fever patients are bathed necessarily becomes infected. This should also be thoroughly disinfected before being emptied out. Vomited matter and the sputum from the patient also contains the germs of typhoid and should receive the same care and thorough disinfection. These precautions should be continued for some time after the patient has recovered. About three per cent. of all cases are carriers of the disease for many months or even years. It is well to request the attending physician to ascertain by means of blood tests whether or not the germs of typhoid have left the system.

A great responsibility rests upon the household in the management of a case of typhoid fever. To pour out the discharges from a patient in the back yard or expose them in open vaults or drains may be, and often is, equivalent to the murder of innocent neighbors by poisoning. Yet this is being done, in many thousands of instances, as the result of ignorance of the fatal nature of the invisible germs of the disease.

Vermis.—Steps should be taken, if necessary, to destroy all such vermin as fleas, bedbugs, lice and especially rats and mice, by means described elsewhere in this volume. The sick room should be carefully screened against flies and mosquitoes. Insects worry sick people and hinder recovery. Above everything else flies should not be permitted to enter the room, or, if they get in, should be killed before they get out. Screens are cheaper than additional cases of typhoid in the family. If flies are numerous in the vicinity a number

of vessels containing fly poison should be exposed in the room. If sticky fly paper is used, it must be burned at frequent intervals. Fly traps may be used if care is taken to destroy the insects with boiling water and to burn their bodies or deposit them in a disinfectant. Or single flies may be killed by means of the ordinary fly swatter and then dropped into a disinfectant solution.

After recovery and during convalescence the patient is to be considered dangerous so long as the intestinal discharges continue to be more copious, liquid and frequent than natural; and these should be disinfected until the attending physician advises that it is no longer necessary.

In the event of death the body must be wrapped in a sheet thoroughly soaked in full-strength Standard Disinfectant No. 3 or 4, and placed in an air-tight coffin. This must remain in the sick room until removed for burial. Public funerals and wakes over such bodies are forbidden.

Quarantine.—It is entirely unnecessary to quarantine a case of typhoid fever, or the premises in which it exists, provided proper care is given to all the details of the sick room, as recommended. The use of placards has been largely discontinued in this disease. If the disinfection is practiced as strictly as it should be, there is no danger of the disease being communicated to others from a given case; but constant cleanliness and disinfection are absolutely necessary to secure such result.

Anti-Typhoid Vaccination.—Typhoid fever in normal cases is a self-limiting disease. That is, unless the patient dies, the body develops within itself the power of resisting the virus. The patient then recovers and regains his health even though the germs are still developed in large numbers in the intestines. In recent years many attempts have been made by scientific men to perfect a serum for anti-typhoid vaccination and a number of different typhoid vaccines are now upon the market. The

use of typhoid vaccine was first publicly advocated in 1896 by Pfeiffer and Kolle in Germany and by A. Wright in England. In 1904 elaborate experiments were made and since that time the results obtained have been very encouraging. The degree of immunization obtained has not yet been equal to that secured by vaccination against smallpox, but statistics indicate that the likelihood of infection is greatly reduced by this means and that the death rate may be reduced at least one-half. It has been shown that, if proper precautions are observed, anti-typhoid vaccination of healthy persons is harmless and that the personal discomfort caused by its application is ordinarily very slight. The duration of immunity is not yet determined, but it is thought to be at least two and a half years and probably longer. It is the most effective method of protection yet devised against the chronic bacillus carrier. Every member of the American army from the Secretary of War down is now required to be vaccinated against typhoid. And this is believed to be the principal cause of the immunity of the troops in recent army maneuvers.

Anti-typhoid vaccination should always be done by a competent physician. The infection often gives rise to slight fever and some painful local and general symptoms. These disappear in from 24 to 48 hours. It may also result in temporarily weakening the power to resist infection. Hence preventive vaccination should be undertaken before the usual time that epidemics appear. Persons vaccinated should take the strictest precautions to avoid the chance of typhoid infection by carefully boiling all water that is drunk and cleansing the food that is eaten and by rigorous personal hygiene and cleanliness. These precautions need only be taken during a period of two or three weeks at most. No one should be vaccinated who has been exposed to typhoid fever or during the beginning of an attack. In such cases vaccination may aggravate the disease. It should be practiced only

upon perfectly healthy subjects, free from all organic or other defects and from local or general ailments no matter what their nature, especially tuberculosis. The vaccination of debilitated or delicate persons should be avoided. Anti-typhoid vaccination is especially recommended for physicians, internes, medical students, male and female nurses in hospitals; persons, members of families in which bacillus carriers have been found; and the population of localities where the disease is frequent, especially young persons of both sexes who have recently come to such localities from more salubrious regions.

MALARIA

This is a germ disease produced by a parasite belonging to the very lowest order of animal life. It attacks and destroys the red cells of the blood. It also produces a toxin or poison that causes the characteristic symptoms of the disease.

Symptoms.—The most common and well-recognized symptoms occur in the cases known as malarial or intermittent fever, fever and ague, or chills and fever. Chilly sensations occur at intervals for several days together with a feeling of fullness in the head and general bodily depression. Then come chills followed by a high fever, with subsequent profuse perspiration. After a few hours the patient returns to a normal condition and feels about as usual until the next attack occurs. The paroxysms of chills and fever occur at various intervals depending upon the particular parasite which produces them. A common form is that which produces a chill every other day. Or there may be a continuous slow fever, or attacks of fever at irregular intervals. In severe cases the brain becomes affected and the malady often terminates in chronic Bright's disease.

Treatment.—Home doctoring is often thought sufficient for malaria, quinine usually being considered a specific. But the constitutional effects of this disease are so serious that a physician should be consulted

and his recommendations implicitly followed.

Prevention.—The germ or parasite which causes malaria can be communicated to man only by the bite of the *Anopheles* mosquito. This species has a body which is placed parallel to and almost on the same plane with the front portions of the insect. Hence, when at rest on walls or other objects, the back portion sticks out almost or quite at right angles with the surface upon which it is resting. The back portion of the common mosquito forms an angle with the front part of its body. Hence both ends of the mosquito point toward the object upon which it rests. There are other differences that clearly differentiate the malarial from the common mosquito, but the one given serves to distinguish between them. The malarial mosquito is preëminently a house gnat. It is scarcely ever seen in the woods or open, but may be found oftentimes in great numbers in all malarial localities, lying quietly during the day in dark corners of rooms or stables. This mosquito practically never bites in the day, but will do so in a darkened room, if a person will remain perfectly quiet. Their favorite time for feeding is in the early part of the night and about daybreak. This accounts for the fact, long observed, that malarial fever is almost invariably contracted at night.

The malarial mosquito bites and then goes back to some dark corner where it remains quiescent for forty-eight hours. Then it again comes out to feed. Contrary to the general opinion mosquitoes bite many times. They frequently remain alive for months. The malarial mosquito, particularly, oftentimes lives in cellars and attics throughout the entire winter. If one of these mosquitoes bites a person with malaria, the parasites are sucked in along with the blood. They pass into the stomach of the gnat and make their way ultimately into the body substance. Here the parasites undergo a series of multiplications. A single bacterium sometimes produces as many as ten thousand young malarial parasites.

After these have developed fully, which requires eight days in warm weather, they make their way into the venom gland of the mosquito. Here they remain until it bites. They are then injected into the body of the individual attacked along with the poison.

After getting into the human blood, each parasite attacks a red blood cell, bores into it, and grows at the expense of the cell until it reaches maturity. It then divides up into from seven to twenty-five young parasites which are liberated and each in turn attacks a new cell. This process goes on until a sufficient number of parasites are produced in the individual to cause the symptoms of malaria. The new subject of the disease thereafter becomes a source of danger to others in the vicinity through the intervention of still other malarial mosquitoes.

Hence the proper way to avoid malaria is to screen houses so that mosquitoes cannot enter them. Persons in malarial districts should not sit on open porches at night. They should also be very careful to sleep under properly constructed nets. If these measures are taken there is absolutely no danger of any one ever contracting the disease. These precautions are not necessary in the daytime.

Those who have the disease are a constant source of danger to people living in the vicinity. Hence they should be doubly careful to avoid being bitten by mosquitoes at night. They should vigorously treat the disease until the parasites are no longer present in their bodies. They then cease to be a menace to others.

Many children have malaria without showing symptoms. If allowed to sleep without being properly covered with a net, they are very apt to infect a large number of malarial mosquitoes. The blood of children in malarial localities should be examined from time to time. If the parasites be found they should be given the proper remedies until a cure is effected.

Almost all negroes in malarial localities harbor the parasites, though

very few of them show symptoms of their presence. It is, therefore, very important that they be treated properly. Their white neighbors should see to it, for their own safety, that negroes do not sleep in houses unprotected by nets.

If the precautions herein detailed were properly carried out everywhere for even a few months, malaria would practically cease to exist. Nor could it recur in any locality until individuals suffering from the disease imported it from other places.

Yellow Fever.—Yellow fever like malaria can be communicated to man only by the bites of mosquitoes, in this case the *Stegomyia Calopus* variety. From the standpoint of preventive medicine the procedure indicated for the two diseases is entirely similar.

TUBERCULOSIS OR CONSUMPTION

A nation-wide campaign has been set on foot for the extermination of consumption—often called “The Great White Plague”—the ravages of which justify the characterization of this disease as “the captain of the men of death.” Several voluntary associations are engaged in this campaign and a number of the great insurance companies are giving their active coöperation. The following is a summary of the latest scientific information upon this subject prepared under the supervision of the Metropolitan Life Insurance Company of New York:

Its Nature.—This disease, known also as “phthisis,” is caused by a living germ, called the “bacillus tuberculosis,” which multiplies with great rapidity. The germ is called “bacillus” because it resembles a little rod, this being the meaning of the word “bacillus.”

Outside of the human body, the germ may live in warm, moist, dark places for a long time. By direct sunlight the germ is killed in a few hours, in a few days by ordinary daylight, and immediately by boiling water. If the germ finds its way into the lungs it rapidly increases in number. A strong, healthy person will

resist the germs, but in an individual who is weak, they rapidly multiply until the lungs are consumed and the person dies.

The germ generally obtains access to the body through the mouth, and most frequently lodges in the air passages of the lungs. It may, however, get into the glands of the neck, attack the throat, the bowels, the kidneys, the brain, or any other organ of the body as well as the bones of the joints. Fortunately, strong, healthy people possess the power of resisting these germs, otherwise it is likely that the disease would kill off whole communities. Nearly everybody at some period of his life breathes in the living germs of the disease, but owing to the power of resistance of a healthy body they are not able to multiply. If they do not immediately die they produce little lumps called “tubercles,” from which comes the name “tuberculosis.” If these form in the lungs, they continue to grow, soften, break open, and are eventually expelled by coughing or otherwise. For this reason, the sputum, or “spit,” of an individual who has consumption is filled with the germs of tuberculosis.

In early stages of the disease the germ is found in small numbers in the sputum, in larger numbers as the disease progresses, and in countless millions in the later stages. Unless this sputum is destroyed by burning or by disinfectants, it may become the most common method of carrying tuberculosis to other individuals.

Not Hereditary.—It is generally believed now that consumption is not inherited. It is true that the children of consumptives are frequently of low vitality and generally of poor physique. This does not mean, however, that they are bound to become consumptives. They will get consumption only if the germ enters their body. Being weak, however, and being unable to resist the action of the bacillus, they are more susceptible than individuals who are physically well and strong. There is no reason whatever why such children, if properly cared for, should

not grow to healthy and well-developed men and women who will never be consumptive.

It is possible to have the disease for some time and not know it or suspect it. An examination of the patient's chest by a competent physician and a microscopical examination of the sputum may discover it, but if both of these tests fail, it does not definitely mean that tuberculosis is not present.

Repeated examinations should be made from time to time if the earlier symptoms of tuberculosis are present. Among these (if they are present, the individual should consult a physician at once) are the following: Slight cough, lasting a month or longer; loss of weight; slight fever, each afternoon; bleeding from the lungs; tired feeling. We repeat, if these symptoms are present, do not delay, but consult a physician at once.

From what has been said above, it will be seen that as consumption is a germ disease, it is a communicable disease and as such a preventable disease. If it is treated properly in its early stages it is a curable disease.

The Extent of the Disease.—Tuberculosis is the great disease of middle life. It causes about one-third of all the deaths that occur between the ages of twenty and fifty years. More deaths result from consumption than from any other disease. It is estimated that two hundred thousand people die each year in the United States from tuberculosis. Between the ages of fifteen and forty-five years, one-third of all deaths are from tuberculosis. Between the ages of twenty and thirty-five, one-half of all deaths are from tuberculosis. During the four years of the Civil War, the total loss of life was two hundred and five thousand and seventy. In the same time, the tubercle bacillus destroyed in the United States alone over seven hundred thousand people.

When we hear of yellow fever, we make every possible effort to stamp out the disease at once. The same is true of smallpox and other so-called contagious diseases, and yet it is estimated that the total number of

deaths from yellow fever in the United States during one hundred years was only one hundred thousand. The annual economic loss from consumption in the United States is \$330,000,000.

The Spread of the Disease.—The great medium for the spread of the disease is the consumptive's spit. When the consumptive coughs or sneezes, he fills the air before him with particles of moisture, almost too small to be seen, which are filled with germs. When he spits upon the floor, or the walk, millions of germs are deposited, and are ready to find their way upon the clothes or hands and thus into the mouths and into the lungs, stomach and intestines of children who play upon the floor, or walk. The careless consumptive's handkerchief, the pocket in which he carries it, the bedding, especially the pillow cover, and the towel used by him, are laden with germs.

When a member of the family has consumption and the spit is not carefully collected and destroyed, the house is apt to become infected and other members of the family take the disease.

When a consumptive removes or dies, and other persons move into the house, some of them are very apt to take the disease unless the house is thoroughly cleaned and disinfected, particularly the floors and walls.

Impure air and deficient sunlight favor the development of the bacillus. For this reason a consumptive is more frequently met with in the crowded parts of cities, where houses are built closely together, air cannot circulate freely, and sunlight does not enter. Overcrowded, poorly ventilated houses, offices and workshops, all tend to spread the disease. Consumption is much less common where people live in separate houses.

Dirt, dampness and darkness are three of the most active allies of the tuberculosis germ. On the other hand, sunshine, pure air and cleanliness are its greatest enemies. It is highly desirable for this reason that you keep your home perfectly clean and constantly remove from it dust and dirt. Every room should have a

thorough spring and fall house cleaning each year. Rooms which have been occupied by consumptives frequently become infected with the germs. Such rooms should never be used without having been previously disinfected. Remember that the most active agent for spreading tuberculosis is the spit of the consumptive. If this is thoroughly burned or destroyed at once, there is little danger of infection.

If the body is weakened by overwork, or by dissipation or by excesses of any kind, the individual is more apt to contract tuberculosis than if he keeps himself strong and well. In fact, healthy persons, living a proper life, when infected frequently get over the disease so quickly and so readily that they do not even know that they have had it.

People addicted to the use of alcohol in any form are more likely to have tuberculosis than others.

The Cure of the Disease.—Consumption is no longer the hopeless disease of the past—it is curable. The earlier it is detected in an individual case, the surer the cure. Therefore, help your friend, your neighbor, your relative, to recognize and treat his disease at the start.

If you should be unfortunate enough to be afflicted with tuberculosis or consumption, first of all get the advice of a reliable physician, and follow his instructions conscientiously and religiously. There is no antitoxin for treating tuberculosis such as is used for diphtheria. The only cure we know for tuberculosis is to increase the bodily strength, so that the body will resist and gradually destroy the germ. This is a slow process. Its principal means are plenty of fresh air all the time, plenty of good food, rest, freedom from worry and out-of-door life. Medicines are of comparatively little use in the cure of consumption. Patent medicines do not cure consumption. Most of them are alcoholic drinks in disguise, which are dangerous to the consumptive.

Sanatoria.—For the best treatment of tuberculosis, so as to afford the patient outdoor treatment as much

as possible, special hospitals, called sanatoria, have been erected in all parts of the United States and Europe. It is highly desirable, in order to cure the consumptive as rapidly as possible, that he be treated in such a sanatorium. There are, however, as yet not sufficient of these to accommodate everybody, and for this and for other reasons it is frequently necessary for the patient to be treated at home. If the latter method be resorted to, it should be done under the advice of a physician.

Home Treatment.—The physician will tell you how to carry on this home treatment in the best manner. A person who has pulmonary tuberculosis, or consumption, is not dangerous to have in the house if he is careful and clean, and if he follows the usual rules laid down to prevent infection of other members of the family. The patient's window should be open day and night and he should occupy the room alone. Preferably there should be no carpet or rug on the floor. The sheets and the body linen should be frequently washed and well boiled. The room should be dusted with a damp cloth, or a damp broom. The food which he eats should be used by him exclusively and should be well boiled.

The Prevention of the Disease.—To prevent consumption, two things are required: (1) the removal of the source of contagion; (2) the removal of the predisposing cause. These can be accomplished, (1) by collecting and destroying the germs in the consumptive's spit, and (2) by keeping the body in good general health, so that it will be able to resist the germs.

The consumptive, if he carefully destroys all his spit, is harmless. He should preferably use paper napkins, which can be burned immediately. They should not be carried loose in the pocket after using. When coughing or sneezing, he should hold one of these before his mouth. If the handkerchief is ever used for this purpose it should be immediately disinfected, by being placed either in boiling water or in a 3 per cent. solution of carbolic acid.

He should spit into a pasteboard sputum cup, which at the end of each day can be burned, or into a vessel which can be easily and completely cleaned daily. The ordinary spittoon is most difficult to clean and should never be used by a consumptive. When the consumptive is at work, riding on the street car, or traveling, he should use a pocket sputum cup or flask which can be kept tightly closed until he can empty it at night.

The Careful Consumptive is Not Dangerous.—Tuberculosis is not contagious by the breath (except when the consumptive coughs or sneezes), or in the same way as smallpox, or diphtheria, or scarlet fever, but through the sputum.

Even though every effort is made to collect and destroy the germ it is probable that every one of us, on account of the prevalence of the disease and the large number of consumptives who are careless or do not understand the importance of destroying their spit, will receive at some time or other the germs in our lungs. It is most important, therefore, that the lungs be in proper condition and that the general health be good.

Thorough ventilation of bedrooms is one of the most important means to this end. Too often the bedroom is small, dark and unventilated, the windows sometimes being nailed shut. To nail one's bedroom window shut is to drive a nail in one's coffin. We spend more hours each day in our bedrooms than in any other room in the house, yet they are usually the smallest, worst lighted, and least ventilated.

Sleeping out of doors is urged upon the consumptive, and it is probable that most of us would be in far better condition to resist tuberculosis if we slept on out-of-door sleeping porches a good portion of the year.

Excessive hours of hard work, whether on the farm or in the factory, lower the vitality. Insufficient food or indigestible food also injures the health. The steady drinking of alcoholic liquors, whether or

not we become drunk, injures the body.

SMALLPOX AND CHICKENPOX

Smallpox is an acute, contagious, infectious disease characterized by the well-known eruption of small boils or pustules all over the body. Varioloid and variola are terms sometimes applied to mild cases of smallpox under the mistaken impression that they are a different and less virulent disease. This is not the case. The mildest cases communicate the disease in its most malignant form. Smallpox is sometimes called by false names, such as Cuban itch, Porto Rico itch, Porto Rico scratches, or elephant itch, to conceal its existence in the community. There are, in fact, no such diseases and this practice is most reprehensible. Smallpox has all the characteristics of a germ disease, but the germ which causes it has not yet been identified. It may occur at any season of the year, but is most prevalent in winter.

History.—No other disease, not excepting the bubonic plague or "Black Death," has contributed an equally interesting chapter to the history of mankind. It is known to have prevailed in the far east many centuries before the Christian era. Europe was first visited with smallpox in the sixth century. Later it was widely disseminated by the crusades. It depopulated an entire colony in Greenland in the thirteenth century, contributed largely to the conquest of Mexico by Cortez in the sixteenth century, and destroyed far larger numbers of the American Indians than did the firearms and fire water of the white man. By the eighteenth century smallpox was distributed throughout Great Britain and the continent of Europe. Over 90 per cent of the population is said to have been affected and about one-tenth of the entire mortality was caused by this disease. More than one-half of all the living are said to have been scarred and disfigured by it. Historians aver that women whose faces were not pockmarked

were the exception. Not a little of the great reputation of famous beauties of this period is said to have been due to chance immunity from this disease. Smallpox before the days of vaccination spared neither high nor low. It spread its terrors alike in the homes of rich and poor, and even penetrated into the palaces of princes. More than a score of deaths in royal families were thus caused. A half dozen reigning monarchs were attacked but recovered. More than once it threatened the total extinction of representative European dynasties. George Washington, during his early manhood, was "strongly attacked by the smallpox" while on a visit to the West Indies.

Smallpox is now a rare malady and is rapidly vanishing. This great change has been wrought in a single century by the discovery of vaccination on May 14, 1796, by Edward Jenner. On that day Jenner performed the first vaccination on a human being. Eight weeks later he fearlessly exposed his patient in smallpox hospitals and brought him into contact with smallpox patients without causing him to contract the disease. Vaccination has been called the greatest discovery ever made for the preservation of the human species. Millions of lives have been saved by it, and a thorough and continuous practice of vaccination will undoubtedly blot out smallpox from the face of the earth.

Jenner's discovery was based on a widespread belief that persons who had become infected with a similar disease of cattle, known as cowpox, were thereafter immune from smallpox infection. A remark made in his presence to this effect by a milkmaid was the "awakening impulse which after years of study and experiment culminated in the discovery which has conferred the greatest benefits upon the human race."

The practice of vaccination up to a comparatively recent date was not always surrounded by proper sanitary safeguards. The vaccine was sometimes impure and sufficient care was not always taken to prevent infection of the sore with the germs

of tetanus (lockjaw) and other diseases. The progress of modern science has now overcome all these dangers. Vaccination at the hands of a competent physician is not only an entirely safe and almost painless operation: it is an absolute preventive of smallpox and the only possible safeguard against its ravages. Vaccination against smallpox is compulsory upon all inhabitants by law in Germany and Japan. In both countries it has been practically stamped out. The vaccination of school children is compulsory by regulation of the school board or board of health in many American cities, but is not enjoined upon the general public by state or national legislation. Hence sporadic outbreaks are constantly occurring. The disease invariably attacks persons who have never been vaccinated and may also attack those who were vaccinated in childhood, but have not been revaccinated after an interval of ten or more years. In such cases, however, the disease assumes a milder form.

Opposition to compulsory vaccination when not due to mere ignorance or prejudice is based upon one of the following grounds: i. e., (1) that vaccination does not protect, (2) that it may transmit other diseases or is otherwise harmful or dangerous, or (3) that compulsory vaccination is an invasion of the rights of an individual. The experience of Japan and Germany, and especially the immunity of the German army as the result of vaccination during the Franco-Prussian war, 1870-1 (when the opposing French army was ravaged by smallpox), and the universal testimony of expert sanitarians, proves that the first of these objections is totally unfounded.

The chance that vaccination may transmit other diseases, or otherwise prove injurious to the patient has now been entirely overcome. Arm to arm vaccination was formerly the custom, i. e., the scab from a successful vaccination was used as a vaccine for others. Occasionally such diseases as tuberculosis and syphilis were transmitted in this way. But this method is a practice of the past.

The only vaccine now employed is prepared from healthy young calves under Government supervision. It is true that there is the possibility of blood poisoning or lockjaw if the sore become infected. But this will not occur if the vaccination is properly performed and protected by a suitable dressing. The danger from this source is much less than that from pricks and scratches from thorns or minute splinters, or the claws of domestic pets. In a word, the possible danger from vaccination is grossly exaggerated. Pure vaccine is harmless and it is doubtful whether a single death has been caused by vaccination conducted in a proper manner.

The notion that compulsory vaccination is an invasion of the rights of an individual might be sustained if a person could suffer from the disease without requiring the care of other members of society, and subjecting them to the dangers of infection. The loathsomeness of smallpox, the helplessness of the sufferer and the necessity of providing pesthouses for the treatment of patients of this disease bring the subject of vaccination well within the police power of state and nation. Every effort should be made to arouse public sentiment in favor of a state and national compulsory vaccination law.

A Vaccination Creed.—Many years ago the Department of Health of Chicago made the following declaration of their faith in vaccination:

“First.—That true vaccination—repeated until it no longer ‘takes’—always prevents smallpox. Nothing else does.

“Second.—That true vaccination—that is, vaccination properly done on a clean arm with pure lymph and kept perfectly clean and unbroken afterwards—never did and never will make a serious sore.

“Third.—That such a vaccination leaves a characteristic scar, unlike that from any other cause, which is recognizable during life, and is the only conclusive evidence of a successful vaccination.

“Fourth.—That no untoward results ever follow such vaccination; on the other hand thousands of lives are annually sacrificed through the neglect to vaccinate—a neglect begotten of lack of knowledge.”

How to Vaccinate.—Vaccination should, as a rule, be performed only by a competent physician, but may be safely performed by anyone if the following instructions are carefully observed: Secure the pure vaccine from a first-class drug store, or if there is no drug store in the vicinity, write or telegraph the state board of health at the capital city of your state, and ask them to forward through the mails enough vaccine for the required number of persons. If buying from a drug store ask for glycerized lymph. It is both safer and more reliable than the vaccine from dried points. A good plan is to make the inoculation on the inside of the arm above the elbow where the scar will be out of sight. But if preferred, the wound may be made on the leg or, indeed, on any part of the body. The part should be thoroughly washed with soap and hot water. Then rinse with a 50 per cent solution of alcohol. But this must be allowed to fully evaporate. Otherwise it may kill the vaccine. The operator's hands should be thoroughly scrubbed with hot water and soap, preferably carbolic or green soap, with especial attention to the finger nails. If the virus comes on bone points, it is best not to use a knife at all. Scrape the parts with the point over a spot about as large as the little finger nail, until the upper layers of the skin have been rubbed away and serum appears and mingles with the virus which thus gains entrance into the system. If a knife is used for scarifying the parts thoroughly disinfect it in standard solution No. 4, carbolic acid (5 per cent) and afterwards rinse free of the antiseptic solution in boiling water. In either case dry the parts thoroughly before the operation is attempted. If the knife is used, scarify very lightly and stop as soon as the serum appears *and before the red blood commences to flow*. If the wound is deep enough to draw blood

there is much more danger of infection and, moreover, the flow of blood tends to wash the virus away.

When the serum begins to run, rub in the vaccine with the knife or vaccine point. If the virus is dry, first dip the point in tepid water which has been freshly boiled. After the virus has been thoroughly rubbed in, leave the scar uncovered until it is dry. Now cover the wound with antiseptic gauze or sterilized gauze, or cotton, and bandage with great care so that the bandage will not get out of place and the wound become infected. The best plan, after covering the wound with gauze, is to cover the gauze and adjacent parts with strips of adhesive surgeon's plaster. The dressing should be changed every day or two until the scab falls off. Sanitary precautions must be taken at every dressing to avoid infecting the wound.

If the vaccination "takes" a small red spot appears at the site of inoculation on the third day. The temperature rises slightly on the third or fourth day, and may continue a little above normal until the eighth or ninth day. On the eleventh or twelfth day the soreness begins to subside and a brownish scab forms over the wound. This becomes dry and hard and falls off on the twenty-first to the twenty-fifth day. It leaves a circular pitted scar. The sore must be kept clean and free from irritation and disturbance. It must not be rubbed or scratched. If, after six or seven days there is an undue degree of inflammation, a physician should be consulted. Practically every case of ill effects from vaccination is due to scratching or picking at the sore, or otherwise handling or dressing it with dirty hands or fingers.

A successful vaccination usually confers immunity from smallpox for life. In other cases the power of resistance seems to decrease with time. Hence adults vaccinated in childhood should be revaccinated if exposed to smallpox or if an epidemic of the disease breaks out in a community. The second vaccination will "take" only on those who need it.

When to Vaccinate.—Every child should be vaccinated during the first year and again at the age of puberty, i. e., twelve or fourteen years of age. If a case of smallpox occurs in the family or neighborhood, or even if it is known to exist in the community, every member of the family should be promptly revaccinated. Inoculation within three days after exposure has been found to give immunity, and if performed as late as the fifth day the attack will be averted or much modified. This is especially the case when revaccination is performed. In one recorded case a mother and three small children were vaccinated after the father was taken down with the smallpox. The wife nursed her husband during the disease and took care of her children, but no other member of the family became infected.

Symptoms.—The period of incubation varies from 7 to 20 days, the average being 12 days. Inoculation shortens the time to 7 or 8 days. During this period the symptoms are very slight. The invasion of the disease is sudden. It begins with a chill which may be followed by others. There is severe aching in the small of the back, sometimes in the limbs, intense headache, vomiting and fever. The pulse is rapid and strong. Convulsions often occur in children. An initial rash in the form of a diffused redness somewhat similar to the rash of scarlet fever occurs in a few cases on the second day. The distinctive eruption appears on the third day on the forehead, around the mouth, and on the wrists. Now the temperature, which has been continuously high, begins to fall. Within twenty-four hours the eruption spreads all over the body, and at this stage the disease strongly resembles measles. On the fourth and fifth days the eruption is papular and a characteristic "shotty" sensation is obtained by passing the fingers over the skin.

In the milder cases commonly called varioloid or variola, the fever falls at once after the appearance of the eruption on the third or fourth day, and the patient feels comfortable. The eruption is slight, scat-

tered, and often limited to the face and hands.

There is danger that this disease may be mistaken for measles, scarlet fever, chickenpox or some other infection. The characteristic symptoms are the severity of the attack together with chills, backache, headache and vomiting. The presence of these symptoms associated with a high fever from 102.2 to 10.8 F. continuing for three or four days and falling on the appearance of an eruption should excite suspicion of smallpox, especially when the disease is prevalent.

The symptoms of measles have been described elsewhere. The eruption occurs about the fourth or fifth day without the fall of temperature which is characteristic of smallpox. In scarlet fever the eruption appears on the second day and gradually fades after two or three days.

Chickenpox (Varicella).— This is a mild disease of children of importance chiefly because the mild cases of smallpox may be mistaken for this disease. Chickenpox is ordinarily confined to children under six years of age. The initial symptoms are much milder than smallpox, although there may be fever, vomiting and pains in the back and legs. The eruption appears during the first twenty-four hours on the back, chest, or face in the form of red pimples which in a few hours become filled with a clear or turbid fluid. In three or four days the eruption dries up into scabs which soon fall off. There is little or no scarring.

Prognosis of Smallpox.— From the sixth to the eighth day after the onset of the disease the vesicles change to pustules with a slight depression in the center surrounded by a red border or halo. The temperature rises again, what is known as the secondary fever sets in, and the general symptoms return. Pustules are especially thick on the face which is much swollen and disfigured. On the twelfth or thirteenth day, about four or five days from their first appearance, the pustules begin to dry up. A few days later the scabs begin to fall off first from the face and

later from other parts of the body. The temperature falls to normal and convalescence begins.

Or, in severe cases such as the confluent form or hemorrhagic smallpox, the symptoms become more severe and death occurs, usually at the state of maturation, about the tenth or eleventh day. When recovery takes place, the process of desquamation, or peeling off of the scales, is usually completed in three or four weeks, but may extend to six or eight weeks.

Modes of Infection.— The virus of smallpox has an extraordinary vitality. Infected clothing and other articles may transmit the disease after an interval of months or even years. Contagion may be direct from contact with the patient, or may be carried from the sick room on the person or clothing of the nurse or physician or by means of bedding and other articles. All who enter the sick room should wear a washable hooded gown. This should be disinfected on leaving the room as elsewhere recommended. After leaving the room the hands, face and hair should be washed in a disinfectant solution. The contagion exists in all the secretions and excretions of the body, and the exhalations from the lungs and perspiration. The pus from the pustules is the most fertile source of contagion and the dust from dried pus scales is the usual medium of its dissemination. The disease is most contagious while the eruption is in active progress, but begins to be contagious before the eruption appears and so continues until the process of scaling is complete.

Quarantine.— As soon as the case is known to be smallpox, convey the patient if practicable to a hospital or pesthouse, or isolate in a sick room prepared in all respects as for typhoid fever. Placard the premises. Vaccinate every member of the family. Allow no one to leave the house until the vaccination "takes" or it appears that the person is immune by reason of previous vaccination. The bread-winners may then leave the premises, after proper disinfection under the advice of a physician or

public health officer, but must board and room elsewhere during the progress of the disease. Do not allow the nurse and other members of the family to leave the premises or mingle with other persons. All members of the family who have been successfully vaccinated and revaccinated at the outbreak of the disease will be immune. They are in no danger from the disease themselves, but should not come in contact with other persons as they may communicate the disease on their person or clothing. Household pets, flies and insects should be rigidly excluded from the premises. No visitors should be admitted under any pretext. Every sanitary precaution described under typhoid fever should be observed with redoubled vigilance on account of the virulence of the germs. All excreta should be thoroughly disinfected and afterwards buried. After the recovery or death of the patient, not only the sick room but every room in the dwelling should be thoroughly fumigated with formaldehyde or sulphur or preferably with both.

Quarantines should be observed until the process of desquamation is complete. The length of time will depend entirely on the individual case. A safe rule is to await the disappearance of the peculiar red specks at the bottom of the pits or scars. As long as these spots are visible the desquamation is going on.

HOOKWORM DISEASE

This disease has existed from time immemorial, but especial attention has been directed to it in the United States in recent years. Investigations by Dr. Chas. Wardell Stiles of the United States Public Health and Marine Hospital Service and those made under the supervision of the Rockefeller Institution, have proved that this disease is widely prevalent, especially in the southern states, and is of enormous economic importance. It is caused by soil pollution. The eggs and larvæ of the hookworm are passed in large numbers in the dis-

charges of infected persons. Thence they may be communicated to others by contaminated food or water or directly from the soil through the skin. This mode of infection is perhaps the most common in rural districts where all children and many adult members of the population go barefoot in summer and are thus more or less constantly in contact with infected soil. In the rural sections of the southern states all the factors necessary for the propagation of this disease are found. The conditions most favorable to its development are warmth, moisture, an open porous soil and infected people who pollute the soil. North of the Ohio and Potomac Rivers the climate is too cold and in the arid west too dry to favor the disease.

The adult hookworm is about one-third or two-thirds of an inch in length and about the thickness of a small hairpin, or a No. 30 thread. Its head bends back on its neck like a hook, hence the name. The mouth is equipped with lances which pierce the flesh and make openings through which the blood can escape. These carry a poisonous secretion from a gland in the worm's head which keeps the blood from clotting. In severe cases, the worms occur in enormous numbers and take large quantities of blood from the system. Much more is lost from constant oozing of the wounds. The secretion injected by the worm is poisonous and causes a chronic inflammation which impairs digestion. The wound also affords entrance for disease-producing bacteria to the system. There is also a general lowering of the body tone which exposes the victim to all sorts of diseased conditions.

The symptoms in general are those of malnutrition and may be mild, medium or severe. In general the patient becomes very much weakened, the body looks bloodless and development is stunted. The proverbial laziness of the Georgia "cracker" and other so-called "poor whites" in southern states is now believed to be the result of hookworm infection.

Treatment and Prevention.—Happily this disease may be readily and quickly cured and is entirely preventable. The following method of treatment is advised by Dr. Stiles, the leading authority on the subject. He says:

“The fundamental principle underlying the treatment of hookworm disease is the same as that which underlies the treatment of all other zöo-parasitic diseases, namely, first treat the parasite, not the patient. After the parasite is treated, attention may be directed to treating the patient.

“Although hookworm disease may occur in persons in any walk of life, it is particularly among the poorer classes that it is found, and the average hookworm patient (children excepted, to a certain extent) can not afford to lose several days’ wages to undergo treatment. It is therefore frequently expedient to conduct the treatment Saturday evenings and Sunday mornings. It will often be found difficult to arouse the interest of a community in regard to the presence of hookworm disease and the need of treatment. This can frequently be done however, if it is borne in mind that the resulting anæmia is, in common with other anæmias, a frequent cause of amenorrhœa.

Warning.—“Notwithstanding that primarily we are to treat the parasite, not the patient, it should be remembered that if too great a quantity of thymol is absorbed by the patient, alarming symptoms and even death may occur. Accordingly, the patient and the patient’s family should be carefully warned not to permit the patient under any circumstances to have on the Sunday during which the treatment is given any food or drink containing alcohol, fats, or oil. Patent medicines should be mentioned in particular, because of the alcohol many of them contain, and even milk and butter should be forbidden. I know of one case of serious thymol poisoning which followed promptly after the patient took a copious drink of milk the day thymol was taken.

Preliminary Treatment.—“On Saturday evening give a dose of Epsom salts. The reason is this: The hookworms are surrounded by more or less mucus and partially digested food. Unless this is removed, the thymol may not reach the parasites, but may reach the patient, and this is contrary to what is desired, as thymol is intended for the parasite, not the patient.

Thymol Treatment on Sunday.—“Position of patient: Instruct the patient to lie on his right side immediately before taking the drug and to remain in that position for at least half an hour. The reason for this is that many of these patients have enlarged stomachs, and if they lie on their right side, the drug has the benefit of gravity in passing rapidly from the stomach to the intestine; but if any other position is assumed the drug may remain in the dilated cardiac portion of the stomach for some hours and result in considerable complaint on the part of the patient and delay of the drug reaching the worms.

“Time of dosage: The time of giving and size of dose should be arranged on one of two plans, depending on existing conditions.

“The plan usually followed is: At 6 a. m., one-half of the total dose of thymol; at 8 a. m., one-half of the total dose of thymol; at 10 a. m., Epsom salts (never castor oil).

“If the case is an especially severe one, or if the patient has, upon the first Sunday’s treatment, complained of burning or other effects of thymol, the following plan is adopted: At 6 a. m., one-third of the total dose of thymol; at 7 a. m., one-third of the total dose of thymol; at 8 a. m., one-third of the total dose of thymol (if unpleasant symptoms, as a sensation of severe burning in the stomach, have appeared this third dose should be omitted); at 10 a. m., Epsom salts (never castor oil).

“Food: No food is allowed until after the 10 o’clock dose of Epsom salts, but the patient is permitted to take a glass or so of water after the thymol, if he desires.

“Thymol: Finely powdered thy-

mol in capsules, preferably in five-grain capsules, should be used.

"General rule as to age: In the table of dosage given in the next paragraph, the maximum dose per day to be adopted as a routine is given for various age groups. In determining the dose, however, the rule should be followed of taking the apparent rather than the real age and of not hesitating to cut down the dose even lower in case of unusually severe cardiac symptoms or other unfavorable conditions. Thus for a boy sixteen years old, who appears to be only twelve years old, or in whom the anæmia is especially marked, resulting in severe cardiac symptoms, the quantity of thymol should be reduced to the twelve or even the eight-year dose. Some authors give the impression that it is useless to give thymol for this disease unless the full dose is administered. This view is not in harmony with my experience.

"Size of dose: The following doses represent the maximum amount to be used during one day's treatment for the age groups in question. It is practically the same table that the Porto Rican Commission has been using:

Grains.

Under 5 years old	7½
From 5 to 9 years old	15
From 10 to 14 years old	30
From 15 to 19 years old	45
From 20 to 59 years old	60
Above 60 years old	30 to 45
Total dose, to be divided as previously indicated.	

Repetition of Treatment.—"The foregoing treatment is repeated once a week, preliminary treatment Saturday evening and thymol on Sunday morning, until the patient is discharged.

Duration of Treatment.—"To recognize whether the parasites are all expelled, and therefore to determine when to end the thymol treatment, either of two plans may be adopted, namely:

"Microscopic examination: On Saturday morning make ten micro-

scopic preparations of a fresh stool. If eggs are still present repeat the treatment; if eggs are not found, discontinue the thymol. It takes about forty to sixty minutes to make this examination of ten slides thoroughly.

"Cheese-cloth method: A much easier way of recognizing the completion of the treatment, and for practical results nearly as satisfactory as the microscopic examination, is the following: Instruct the patient to wash all of his stools Sunday, Monday and Tuesday, through a cheese cloth and to keep the cheese cloth moist and bring it to the office on Tuesday. While the fecal material will wash through, the worms will be retained in the cloth. Continue treatment as long as worms are found in the cheese cloth.

Other Treatment.—"If desired, iron may be administered on the days on which the thymol is not taken. It is a good plan, however, not to give iron during the first week, for it is quite important to convince the patient that the thymol treatment is the one which is really accomplishing the lasting good. If the drug is taken Sunday, the patient is likely to begin to feel some benefit by Wednesday or Thursday; his family is likely to notice it on Thursday or Friday. If iron is given during the first week, the conclusion may possibly be drawn by the patient that it is really the iron which is causing the improvement, and he may discontinue the thymol. Of the two, the thymol is, of course, the far more important, for it reaches the parasite, while the iron reaches only the patient."

The prevention of hookworm disease lies in proper sanitation to prevent soil pollution, and especially in the construction of sanitary privies. State laws to this end, if properly enforced by an adequate system of local supervision, would undoubtedly put an end to the disease within comparatively few years. Those interested in this subject should address a letter or postal card to the Surgeon-General of the United States, Washington, D. C., requesting detailed information.

FOREIGN DISEASES

A small class of communicable diseases sometimes occur in the United States as the result of infection from foreign parts. Notable among these are Asiatic cholera, bubonic plague and leprosy.

Asiatic Cholera.—This disease is native to India. Thence it has spread in epidemic form from time to time throughout the civilized world. It is caused by a specific micro-organism sometimes called the "comma" bacillus on account of its shape. The presence of this is often the only test by which this disease can be distinguished from gastro-enteritis, ptomaine poisoning and other similar diseases. Asiatic cholera closely resembles typhoid fever as regards modes of infection, and should be treated in an entirely similar manner. Like typhoid it may be spread by healthy carriers and communicated by the mild or "walking" cases of the disease. There is an anti-cholera vaccine similar to the anti-typhoid vaccine, by means of which the death rate has been greatly lowered. This disease is entirely preventable if the precautions recommended under typhoid fever are observed. Needless to say a physician should always be summoned even in the mildest cases.

The period of incubation is from one to five days, although it may be greatly prolonged. The symptoms are similar to ptomaine poisoning: vomiting, diarrhoea, sub-normal temperature, loss of pulse, suppression of urine and collapse. They are common to the action of various poisons and can only be distinguished by a competent physician.

Bubonic Plague (Black Death).—This historic disease which destroyed upwards of 50 per cent of the population of England in the fourteenth century has, from time to time, ravaged nearly every part of the civilized world. It is caused by a vegetable micro-organism, the *Bacillus pestis*. Rats and other small rodents are very susceptible to this disease and it is communicated by them to man through the medium of

fleas. There are three types of plague: (a) bubonic, characterized by glandular swelling. This is the form transmitted from rats to man by means of fleas; (b) pneumonic which is very much like pneumonia and which may be transmitted by contact infection in the same manner as typhoid fever; (c) septicemic, in which the patient is literally saturated with plague bacilli. This is transmitted by contact infection. The mortality ranges from 15 per cent up to as high as 50 per cent or 75 per cent. Death in the septicemic type is a matter of hours; in the pneumonic type, of days; and in the bubonic type, of one or two weeks. In rats the disease may become chronic. It is most prevalent among rats when they are shut up in their holes in winter, but is most often communicated to human beings during summer. Then the rats are abroad and the fleas which have bitten the infected rodents are widely scattered through the community. The disease, however, may be communicated at any season of the year. The only remedy is the destruction of rats by means elsewhere recommended.

Leprosy.—Leprosy is a communicable disease of the skin occurring very rarely in the United States, fewer than three hundred cases having been reported. The chief interest in this malady is due to its supposed frequency in Biblical times. An almost insane fear of leprosy has been caused by a general knowledge of what is said about it in the Bible, but its virulence, at least in modern times, is believed to be greatly exaggerated. There are said to be fifty or more lepers engaged in various occupations in the city of London. These are not regarded as dangerous to the public health.

CONTAGIOUS DISEASES OF ANIMALS

There is a small group of contagious diseases of animals which are occasionally contributed to man. These include, notably, anthrax, glanders and rabies. Anthrax and glanders may be communicated by contact

infection, but rabies occurs only from the bite of dogs or other infected animals. A veterinary physician should be promptly sent for in all cases of anthrax, glanders or farcy and his recommendations faithfully observed. Carcasses of animals dead of these diseases should be immediately buried in a grave not less than six feet deep. Eight or ten inches of unslaked lime should be placed in the bottom of the grave and a similar amount spread over the carcass before the earth is filled in. The site for burial should be distant from any stream or other source of water supply and a strong fence should be erected to enclose it. Stables and all objects with which the dead animal has come in contact should be thoroughly disinfected. The germs of these diseases and their spores often retain their vitality for many years. Hence too much care cannot be given to the process of disinfection.

Rabies (Hydrophobia).—This is a specific communicable disease which affects chiefly the canine race, although all warm-blooded animals, including man, are susceptible to it. There is a widely prevalent belief that if persons or animals are bitten by a dog they are liable to become rabid if the dog should contract the disease at any future time. It will be a great comfort to many persons who have been bitten by animals to know that there is no foundation for this impression. Rabies is transmitted only by animals that are actually diseased at the time the bite is inflicted. Every animal or person bitten does not necessarily develop the disease. This depends on the location and size of the wound, the flow of blood produced and other conditions. The nearer the bite is located to the central nervous system and the deeper it is, the greater danger of a fatal result. Rabies is believed to be caused by a specific germ but this has not yet been identified.

Symptoms.—There are two types of rabies: (1) the furious, violent or irritable; (2) the dumb or paralytic. Cases of furious rabies in a dog usually develop between three weeks and three months after the

animal has been infected. A marked change in the disposition of the animal should arouse suspicion. An affectionate dog may become morose and depressed. A snappy, treacherous dog may become mild or affectionate. Then comes an irresistible tendency to roam. A dog will fight or bite at any restraint which interferes with its freedom. He may roam about for several days, aimlessly, in a nervous and irritable condition. He tends to eat or chew indigestible objects such as rags, leather, straw, feathers, sticks and the like. He becomes unable to swallow and his saliva becomes frothy from constant champing of the jaws. But foaming at the mouth is not a reliable symptom, nor is fear of water, since rabid dogs sometimes swim streams. When tired of roving a dog tends to return home and hide in some secluded place.

Paralysis of the throat sets in early. This changes the normal bark of the affected dog to a long, resonant, peculiarly drawn-out cry, like the yelp of a coyote. Later the paralysis extends to the muscles of the jaw. This causes the lower jaw to drop and the tongue to hang out, collect dirt and appear dry and black in color. The pupil of the eye dilates, the paralysis extends to the hind legs and the dumb form of the disease results. Death follows in from four to eight days after development of the first symptoms.

The dumb or paralytic form of rabies in the dog is much more infrequent. The dog is depressed and seeks quiet spots in which to hide. The first symptom observable is often paralysis of the lower jaw, suggesting that the animal may have a bone in its throat. Paralysis quickly progresses and death results in from one to three days.

Rabies in Cattle.—The symptoms are similar to those of the dog. There is loss of appetite, stoppage of the secretion of milk, great restlessness, anxiety, manifestation of fear and change in the disposition of the animal. Then comes excitation or madness, loud bellowing, violent butting, with an insane desire to attack

other animals and sometimes the desire to bite. The paralysis progresses rapidly with loss of flesh and finally the animal lies in a comatose condition and dies, usually in from four to six days. The temperature remains normal or even sub-normal.

Rabies in Cats.—The animal hides in a dark corner and dies unobserved in the course of a day or two, or becomes violent and suddenly attacks animals or persons, especially children. The cat loses its voice or mews hoarsely. It becomes emaciated and succumbs within a few days.

Other animals as horses, sheep, goats, hogs, chickens and wild animals exhibit much the same symptoms.

Rabies appear to be spreading, but can be readily controlled by proper local regulations for licensing and muzzling dogs, since the disease is almost always spread to other animals by dogs. As many as sixteen persons have been bitten by a single small dog, which also wounded a great many other animals.

Treatment for Rabies.— Any wound made by a dog or other animal showing symptoms of rabies should be promptly cauterized. Go to a doctor or drug store, if there is one at hand. Otherwise cauterize the wound with nitric acid, carbolic acid or if necessary red-hot iron. Or tincture of iodine may be used, if nothing better is at hand. The best agent is nitric acid. Carry this on a swab or glass rod to every recess and part of the wound. Carbolic acid and other acids are less efficient; nitrate of silver is useless. A red-hot iron is not as effective as a suitable acid, is very painful and makes a wound more severe than is necessary. Great care must be observed when using strong acids or red-hot iron about the face. Children or very

nervous subjects should preferably be put under an anæsthetic before the cautery is used.

Capture the suspected animal alive, if possible, by means of a lasso or net, or by turning a box or barrel over it. Or snare it by means of a loop of stout cord on the end of a pole. Put the animal into a stout box or pen but take care not to injure or mistreat it, or deprive it of food and water. If it remains alive and well for ten days there is no danger of rabies. But if it dies or the symptoms become unmistakable, send the head to the nearest laboratory for examination.

In killing an animal suspected of rabies avoid shooting through the head or beating on the head. This may interfere with a proper examination. Shoot the animal through the back or behind the shoulders. Cut off the head close to the shoulders, wrap it in a cloth wrung out of a standard solution of bichloride of mercury (1:500), place it in a new tin pail with a tight-fitting cover and pack the pail in a larger bucket or box surrounded by ice. Ship by express to the laboratory and notify the director by telegram of the shipment.

Should the investigation show the existence of rabies, the only method of treatment which offers any protection is immunization by the Pasteur vaccine. This requires about three weeks and usually demands attendance at a hospital or sanitarium, but may be given by any competent physician. The Pasteur treatment, if given in time, is almost always successful. The proportion of failures is less than 1 per cent, whereas from 10 per cent to 15 per cent of untreated persons who have been bitten by rabid animals develop the disease.

CHAPTER XL

PREVENTABLE DISEASES OF CHILDREN

SAVE THE BABIES—HEALTH AND DISEASE—DISEASES OF THE EYES—DIGESTIVE DISTURBANCES—SOOTHING SIRUP—SYMPTOMS OF COMMUNICABLE DISEASES—INFANTILE PARALYSIS—CEREBROSPINAL MENINGITIS—DIPHTHERIA—SCARLET FEVER—MEASLES—CHICKENPOX—WHOOPIING COUGH—MUMPS—PARASITIC DISEASES

SAVE THE BABIES

A normal, well born baby is hard to kill. Nature intends that every such baby shall be well and strong, and grow to maturity. Yet the census shows that of the two and one-half million babies born every year in the United States, one-half die before they reach their twenty-third year. One-fourth never reach their fifth birthday; one-eighth, or nearly one-third of a million, die within the first year of life. One-third of all deaths occur under the fifth year of age; one-fifth, during the first year of life. The chance of living a week is less for a new born child than for a man of ninety. The chance of living a year is less than for a man of four score.

Since the rise of the germ theory of disease, wonderful discoveries have been made by the high power microscope as to the effects of germ life upon human health. It has now been proved that a large part of the mortality among infants is due to preventable causes. Much of this death rate is due to dirt. By this is not necessarily meant uncleanliness in the ordinary sense of dirt which can be seen, but a lack of sanitary precautions in the scientific sense, resulting in dirt invisible to the naked eye but which under the microscope is

seen to contain millions of injurious bacteria. The best proof of the vitality of infants is that so many do live and grow up in spite of the unsanitary conditions with which they are surrounded, and the poisonous milk and other substances they are compelled to swallow.

Now that science has shown that so many deaths among infants are preventable, a nation-wide campaign to save the babies has been set on foot. A special effort has been made to discover the sanitary and other rules that must be followed by mothers to keep their babies well, and cause them to thrive and grow strong. The following is a collection of these rules as laid down by the public health authorities throughout the United States. It contains the latest and most authentic scientific information obtainable.

What Kills Babies?—Out of every hundred deaths under two years of age, thirty-five are the result of improper food and feeding. About ninety-five per cent of these are avoidable. Twenty-six are due to accidents and defects at birth. About one-half are avoidable. Eighteen are caused by impure air diseases (pneumonia and bronchitis); seventy-five per cent avoidable. Two are caused by tuberculosis and six by acute contagious diseases. All of

these are avoidable. The remainder are due to miscellaneous causes, many of which could be and ought to be avoided.

The two principal factors which multiply the deaths of infants are the denial of its birthright—its mother's breasts—and the heat of summer. In other words, the bottle feeding of infants in warm weather is what causes the death rate to run extremely high. Ten times as many bottle fed babies succumb to diarrhoeal diseases as breast-fed babies. When the mother from necessity or convenience takes away the natural food of the child—her own breasts—she takes from it nine-tenths of its chance of life. Hot weather in itself has little to do with the death rate of infants from diarrhoea, as breast-fed children do not show much, if any, increase of death rate during the summer months. The two factors that bring about the high death rate, namely, bottle feeding and the hot season, combine to produce a single condition, namely, milk containing a dangerous quantity of injurious bacteria or germs. When the child takes nourishment from its mother's breast it gets a practically sterile or germ-free food. When it is fed modified cow's milk or other artificial food from a bottle, especially in hot weather, it may be, and often is, swallowing a quick or slow poison. This, however, is wholly preventable if proper sanitary precautions to insure strict scientific cleanliness are observed.

HEALTH AND DISEASE

Fontanelles.—In the middle line from before backwards on the top of a baby's head in the early weeks of his life, are two openings or soft places not yet covered with bony formation. The one in front is called the "anterior fontanelle." This closes in five or six weeks. But the larger one, just back of the forehead, is usually not closed until the child is a year and a half old or a little older. If widely open as the time for closure approaches, or if the closure is much delayed, it may indicate rickets

or other serious diseased condition. In such cases the advice of the family physician should be had.

Respiration.—Trustworthy information about respiration, pulse and temperature are a great help in judging when to send for the doctor. The normal standards are given below. But remember that the action of a baby's lungs and heart is quickly accelerated by exercise or by excitement. And respiration, pulse and temperature are often much affected by causes which are comparatively trivial. Both the pulse-rate and respiration are more regular and slower in sleep than while awake. There is a progressive decrease in the rapidity of the pulse and respiration from infancy to adult life.

Approximately, the number of respirations per minute at different ages are:

At birth,	35 or more
" 1 year,	27
" 2 years,	25
" 6 "	22
" 12 "	20
In adult life,	15 to 17

In serious illness, as, for instance, in pneumonia, young children may breathe as rapidly as 62 to 80 times in the minute.

Pulse.—The rate of the pulse in health at different ages is:

In the first month,	120 to 140
At 1 year,	110 to 120
" 2 years,	100 to 110
" 6 "	90 to 95
" 12 "	80 to 88
In adult life,	72 or lower.

These are the rates while at rest. During infancy a rise of twenty, thirty or more beats per minute is not uncommon as the result of slight effort or disturbance. In the serious acute diseases, as in scarlet fever or pneumonia, the pulse may run to 160, 180, or higher.

Temperature.—A training in motherhood should include the use of the clinical thermometer so that correct observations on the temperature and its variations may reveal indications of the approach of serious conditions.

Buy a good clinical thermometer at your drug store. Or ask your physician to get one for you and explain to you how to use it.

The normal temperature of the human body is about $98\frac{1}{2}^{\circ}$ F. In early infancy, it is slightly higher than from later childhood on. The temperature of 100° indicates the presence of fever; 102° to 103° constitutes moderate fever; 104° to 105° shows a high fever; above 105° means a very high and very dangerous fever.

DISEASE OF THE EYES

Ophthalmia Neonatorum (Infantile Blindness).—About 15 per cent of all cases of total blindness are caused by inflammation of the eyes in new-born babies. This disease is always due to an infection entering the eyes of the baby at the time of, or shortly after birth. It may be almost always prevented by proper care and by early and correct treatment. If precautions are not taken, and the disease develops and runs its course unchecked, the sight is totally destroyed, often within a fortnight.

For All Mothers.—All women during pregnancy should thoroughly perform daily external cleansing with soap and water and a clean wash cloth. Should the pregnant woman have any irritating discharges, or even profuse white discharge, she should be instructed to immediately consult her physician or the nearest dispensary.

For All Children.—Immediately after the delivery of the head, and before the delivery of the body, the eyelids should be carefully cleaned by means of absorbent cotton or a soft linen cloth, dipped into warm water that has been boiled or boric acid (saturated) solution. A separate cloth should be used for each eye, and the lids washed, from the nose outward, free from all mucus, blood or discharges. All wipes should be burned after using. No opening of the lids should be attempted. At this time also the lips and nose should be wiped free of mucus in like manner, and the little finger, wrapped with a piece of moist

linen, should be passed into the child's mouth and any accumulated mucus removed by an outward sweep of the finger. As soon after birth as possible, the eyelids should be again wiped clean of mucus, and two drops of a one per cent solution of nitrate of silver should be dropped into each eye. One application only of the silver solution should be made. Ordinarily no further attention should be given the eyes for several hours.

The silver nitrate solution is best kept in a dark-colored bottle with a ground glass stopper. The neck of the bottle should measure about half an inch in diameter. The glass rod used is six inches long, very smooth and round at each end. The silver solution will keep for many months, but it is best to renew it about once in six weeks.

Each time that the child is bathed, the eyes should be first wiped clean, as above described, with the boric acid solution. The hands of the person charged with the care of the child must be washed with soap and dried with a clean towel before the eyes of the child are touched. Everything that is brought near the eyes must be, in every instance, absolutely clean.

The cotton that is used on the eyes of the child must, in every instance, be immediately burned after using. The water, towels, old linen and the cotton that have been used on the mother must, under no circumstances, be applied to the child. The air of the bedroom must be kept as pure as possible, and the linen should never be dried in the sick room.

Inflammation of the Eyes.—Should the lids become red and swollen, or gummed along their borders, or should a mattery discharge be mixed with the tears as the child sleeps or cries, call an oculist or a physician immediately, or take the child to the nearest dispensary. Each hour of delay adds to the danger. While waiting, bathe the child's eyes every half hour with pledgets of cotton dipped in a warm solution of boric acid. Open the lids wide and allow

the warm solution to flood the eyes and wash out any matter which may have gathered there.

All of those in the home should be warned of the danger of catching the disease by getting the matter into their own eyes. Do not fondle the child. Take care that nothing which has been used about its eyes or face shall be used for any other purpose. Do not listen to those who say it will amount to nothing, or to those who say to bathe the eyes of the child with the mother's milk. Such advice is bad. The milk is a means of spreading the germs of this disease. The slightest delay may result in blindness.

Trachoma.—This is an infectious disease of the eyelids which often results in total blindness. It occurs chiefly among children who are brought up under unsanitary conditions. Contributory causes are lack of cleanliness and lack of proper nourishment. It may be communicated from one person to another by the use of a common towel, by interchanging or lending handkerchiefs, or by the contact of infected hands among children at play. This disease is most prevalent among school children and in institutions, work-shops, army camps and other places where large numbers of persons are herded together and toilet or other facilities are used in common.

Any symptoms of redness, or inflammation of the eyes, or granulation of the eyelids should be brought to the attention of a physician, especially if accompanied by pain, sensitiveness to light, swelling or discharge. About 15 per cent of all cases of preventable blindness are due to this disease. Diligent effort should be made to prevent it from spreading. When a case occurs, all possibility of the infection of other persons should be eliminated. The patient should have separate towels, wash basins and the like set apart for individual use. Children with this disease should be excluded from the public schools until the acute stage is over. Under proper treatment, if taken in its early stages, blindness can ordinarily be prevented.

INTESTINAL DISEASES

Summer Complaint (Cholera Infantum).—This fatal disease which kills thousands of infants every year attends continued high temperature. Excessive heat if long endured profoundly affects the nerves and fretfulness (nervousness) always precedes attacks of cholera infantum. The digestion is depressed by nervousness. Then if the child happens to over-eat, or to be fed unwholesome food, it quickly develops this dreaded disease. The micro-organisms (germs) which cause this and other intestinal diseases of infancy are most numerous and active in hot weather. Thus they are always at hand to attack infants when their powers of resistance have become lessened by a long continued heated term.

Cholera Morbus (summer diarrhoea and dysentery) also occurs principally during the summer and autumn. This is caused by improper food and sudden chilling of the body after exposure to great heat. Certain substances will produce it in certain persons, as, for instance, veal or shell fish. And all dishes cooked with milk such as rice pudding, cream puffs and even ice cream, are dangerous when they have been kept too long. Take care that the baby does not get any remnants of stale food. Under-ripe and over-ripe fruit—especially if taken with large draughts of ice water—will cause this disease. But sound ripe fruit is a natural food in hot weather for children over two years of age, and wholesome. Avoid chills during sleep. In temperate and changeable climates have a light blanket always at hand to draw over an infant, if the weather suddenly becomes cold during the night. Persistent summer diarrhoea is sometimes caused by malaria or impure water. Any conditions liable to contaminate air and water should be carefully sought out and remedied. Water of doubtful purity can and should be rendered safe by boiling. Mosquitoes and flies should be exterminated. As dysentery is often epidemic, it is wise to

consider every case as a possible source of danger to others and to disinfect all diarrhœal discharges with the greatest care.

Symptoms of Intestinal Diseases.—Vomiting of sour and partly digested food (not simple regurgitation or "raising" of milk from over-feeding in young infants) is often the first sign of approaching illness. Vomiting may indicate one of the serious diseases of childhood or, more commonly in hot weather, "summer complaint" or simple diarrhœa. Diarrhœa does not come from teething but from too much food, too frequent feeding, too little water, too little sleep and too much handling. The most frequent cause is over-feeding. This often causes prolonged sickness and finally death. Vomiting due to this cause may be the first sign of trouble. The bowels may not become loose until several days later. A certain symptom of danger is loose, green passages from the bowels, or passages containing mucus or curds. A healthy bottle-fed infant should have at least one and not more than two or three movements of the bowels each day. These should be yellow or "ginger-bread color" and not too hard to be passed easily. If they become greenish, frothy, or otherwise unnatural, and more frequent than two or three a day, consult your doctor. In summer it is dangerous to wait. Any diarrhœa or simple looseness of the bowels indicates the presence of some irritation in the intestinal tract.

These diseases are often mild at the beginning. There may be no fever and the child may show no signs of illness other than diarrhœa or vomiting. Such a baby—often in a few hours—may become dangerously, if not fatally, ill. The simplest cases of diarrhœa and vomiting during the summer must not be ignored. Neglect of the first symptoms of indigestion may lead to infection and inflammation and be followed by the death of the child. If taken in hand promptly, this condition will almost always yield to simple remedies and serious trouble may be averted. If the movements remain

green in color and increase in number to five or six or more in twenty-four hours, the baby is beginning to have bowel trouble or summer diarrhœa.

Causes and Remedies.—When the baby vomits or has diarrhœa the first thing to do is to find and remove the cause. The trouble is probably due to improper feeding or over-feeding. The child may be given too much food, the milk may be too strong for its age, or it may be dirty and unsanitary. A child gets diarrhœa more often in summer than in winter because the heat makes him weak and spoils his food, and because you fail to realize that he needs less food in hot weather. Stop all food at once. Every drop of milk that goes into the baby's mouth after this warning simply adds to the poison that is already there. You will cause serious or fatal illness by feeding your baby after the bowels become loose and the movements green in color. Give nothing but pure boiled water or barley water. Send for the doctor and do not begin feeding the baby again without the doctor's orders. Meantime stop the milk at once. Give only cool boiled water or barley water until the child can be seen by a physician.

Do not give any medicine, except perhaps a teaspoonful of lime water every hour, to modify the acidity of the stomach. If the baby should have a convulsion before the doctor comes, put it in a warm bath and pour cool water on its head. But this must not be done if the convulsion occurs immediately after a meal. Do not give any "cordials" or "teas" or diarrhœa mixtures to stop vomiting or check the bowels. Nothing but harm can be done by such means.

If you cannot get a doctor promptly, give the baby two teaspoonfuls of castor oil to remove the irritating matter from the bowels. Also wash out the bowels with an enema of tepid water containing two level teaspoonfuls of salt to the quart. This should be given from a fountain syringe. Do not hold the bag more than eighteen inches or two feet above the baby, so that the water

will run slowly. Babies under fifteen months almost invariably pass part of the water back by the side of the tube while it is flowing in.

When vomiting occurs give the baby as much water as it will take. This will help to wash the remaining undigested food out of the stomach. After this for eight or ten hours give only one or two teaspoonfuls of boiled water every ten or fifteen minutes, if wanted. A larger amount will be vomited. Give no food for at least six hours after the vomiting has stopped, then give barley water or rice water in gradually increasing quantities, or give broth or white of egg. Later, when the child is entirely well, it may be gradually worked back to its regular food. A weak mustard plaster on the pit of the stomach, left until there is a rosy color, then promptly removed, will assist in counteracting vomiting.

OTHER DISEASES OF INFANCY

Fever.—If the child becomes weak in hot weather, is fretful and especially if it has fever and the skin is hot and dry, take off all its clothes except the diaper and put on a night dress. Sponge it all over with cool water at frequent intervals and do not wipe it quite dry. Let the water evaporate and thus carry off some of the fever. Give it all the cool water it will drink. No matter how high the fever a baby with bowel trouble always does better out of doors in pleasant weather than in a hot, stuffy room. A child with fever will not take cold if you keep it out of strong, cold drafts.

Great care must be exercised in treating for fever. There are two principal kinds. In outer or surface fever, the hands and feet are warm and the skin hot. Place cold applications to the head, hot water bottle to the feet and bathe in cold water. In case of inward fever the hands and feet are cold and the skin cool and pale and mottled. Place cold applications at the head, a hot water bottle to the feet and bathe in hot mustard water to bring the blood to the surface. A sense of

touch is unreliable as to fever. Every mother should have a clinical thermometer and ask her physician to instruct her in its use.

Eruptions.—If the baby has any eruption or breaking out of the skin, consult the doctor promptly. Every rash is not prickly heat. It may be some serious disease like scarlet fever, smallpox or chickenpox and may require the promptest possible treatment.

Teething.—A few words as to baby's teething. The first teeth—the two lower front ones—are usually cut when the baby is from six to seven months old. Some babies cut their teeth with little trouble; others are restless, uneasy and wakeful. The latter is especially the case if the baby is constipated.

The teeth are usually cut in pairs: First the two lower (in the center), next the two upper, then the outside two above, then two below, next to those first cut. These teeth usually are all present by the twelfth month. The cutting, however, does not always follow the above order, and all children do not cut their first teeth by the sixth or seventh month.

Symptoms of difficult teething are fever, restlessness, sleeplessness and, locally, swollen or tender gums. There is often loss of appetite and thirst caused by fever. These symptoms are present only in severe cases. When a child's teeth begin to come, it should be given less food and more water. It will often take more food than it can digest because it is thirsty and the food is liquid. The result is diarrhœal trouble due to intestinal irritation from over-feeding. This is often mistakenly supposed to be due to teething, whereas if babies are properly fed and hygienic rules observed, very few will have any bowel trouble during the first or second year regardless of whether teeth are coming or not.

For the sleeplessness and irritability which so often accompany teething, much can be done by the mother. Drugs should not be given, except under the direction of a physician. A hot foot bath will often have a soothing effect by relieving the congestion

in the head and mouth. Mustard can often be added to the foot bath with benefit. A little castor oil will be beneficial, for a good movement of the bowels will relieve congestion in the gums. The mother's finger dipped in sirup of lettuce can be gently carried over the tender and inflamed gum, and now and then by a little firmer pressure may allow the point of the tooth to free its way through. The baby may be allowed to bite on a small chicken or ham bone, or if over nine months, on a piece of rare roast beef.

Beware of soothing sirups which merely "dope" the baby, and often cause great harm.

Constipation.—If a bottle-fed baby is constipated, wash out the bowels with an enema of tepid water containing salt in the proportion of a level teaspoonful to the pint. Give one or two teaspoonsfuls of castor oil. If this does not afford relief within four hours consult your physician. At this time you will be able to prevent a serious summer complaint with which the baby is threatened.

When the food does not agree with the baby it will fail to gain weight or will be constipated, have colic, "rolling of gases in the stomach" (flatulence), loose stools and diarrhœa. Consult your doctor without delay. Remember the stitch in time. The fact that an infant under one year of age does not gain in weight may show that it needs a different kind of liquid food, but does not indicate that it requires any sort of solid food and under no circumstances should solid food be given to babies under twelve or thirteen months of age. In hot weather reduce the amount of food and give more water. Pour out about one-fourth of the milk, replace with water and make the feedings farther apart, giving water between. These simple rules are intended to help you take care of the baby when it is well and to prevent its becoming sick. But the first thing to do when the baby is sick is to send for your physician. The home remedies above given will help you to check the trouble and keep it under control until the doctor

comes and prescribes the proper course of treatment.

DON'T DRUG YOUR BABY

Soothing Sirups.—There is no such thing as a harmless soothing sirup, teething powder or "baby's friend," as such drugs are ironically called by unprincipled manufacturers. This is a fact which all right-thinking mothers should take to heart and seek to impress upon others who are responsible for the care of infants. Hundreds of thousands of children have been poisoned to death in infancy by such compounds. Other children have survived their use with weakened constitutions, or have become the victims of drug habits in later life from the effects of these mixtures. The chief active agents in most of these compounds are opium, morphine, heroin, codein, chloroform and chloral hydrate—all active poisons and especially deadly to children.

Since the passage of the Pure Food Law, the manufacturers of preparations containing habit-forming drugs, or drugs dangerous to life, have been compelled to print on the label a list of these substances. Hence mothers should read carefully the labels of any cough mixtures, soothing sirups or other preparations recommended for children and discard them if they are found to contain any of these ingredients. You may safely regard with grave suspicion the manufacturer, dealer or physician who tells you that these substances are not likely to occur, in the widely advertised preparations, in quantities dangerous to your baby's health or life.

Mrs. Winslow's Soothing Sirup is a well known preparation with which thousands of helpless infants have been drugged into insensibility by ignorant or indifferent mothers and nurses for more than a generation. It contains opium in the form of morphine sulphate. There is little doubt but that this nostrum has caused the death of many children and has done incalculable injury to others. *Collier's Weekly*—to which much credit is due for its exposure

of the nostrums which are such a menace to the lives and health of the American people — tells the following story: "A prominent New York lawyer was asked by his office scrub-woman to buy a ticket to some association ball. He replied: 'How can you go to these affairs, Nora, when you have two young children at home?' 'Sure, they're all right,' she returned blithely. 'Just wan tay-spoonful of Winslow's and they lay like the dead till marnin'.'"

The great demand for soothing sirup by mothers who wish their babies to "stay put" has produced a rival to the late Mrs. Winslow under the touching name of "Kopp's Baby's Friend." This also contains opium. *Collier's* states that it is made of sweetened water and morphine sulphate. It is well styled "the king of baby soothers," since it is said to contain in each teaspoonful enough morphine to kill an infant. Morphine should be given to a child under ten years of age only in very rare instances and never except under the direction of a physician. Read carefully the following list of such preparations and what they contain. This was compiled by the Bureau of Chemistry of the United States Department of Agriculture:

Mrs. Winslow's Soothing Sirup, *morphine sulphate*.

Children's Comfort, *morphine sulphate*.

Dr. Fahrney's Pepsin Anodyne Compound, *morphine sulphate*.

Dr. Fahrney's Teething Sirup, *morphine and chloroform*.

Dr. Fowler's Strawberry and Peppermint Mixture, *morphine*.

Dr. Grove's Anodyne for Infants, *morphine sulphate*.

Hooper's Anodyne, the Infants' Friend, *morphine hydrochloride*.

Jadway's Elixir for Infants, *codein*.*

Dr. James' Soothing Sirup Cordial, *heroin*.*

Kopp's Baby's Friend, *morphine sulphate*.

Dr. Miller's Anodyne for Babies,

morphine sulphate and chloral hydrate.

Dr. Moffett's Teethina, Teething Powders, *powdered opium*.

Victor Infant Relief, *chloroform and cannabis indica*

To allay the fears of mothers, manufacturers and dealers often print on the label of such preparations statements of the following character: "Contains nothing injurious to the youngest babe"; or "Mothers need not fear giving this medicine, as no bad effects will come from its continued use." All such statements associated with the presence of opium or any of its derivatives — morphine, codein, heroin — chloroform, cannabis indica (hasheesh) or chloral hydrate, are deliberate falsehoods made with the calculated intention to deceive. There is always danger that an undue proportion of these drugs may be present in a given bottle or that an over-dose may be given and the baby put to sleep never to awake again. Numerous such cases are on record. In other instances when the remedy is freely used, the child does not succumb but develops a craving for the drug comparable to a drug habit in adults. As soon as one dose of the drug passes away, the child becomes irritable and fretful with the result that another dose is administered. When the craving is thus met the child is quieted and the mother or nurse feels justified in "recommending" the remedy to her neighbors. Sometimes such children look plump and healthy when, as a matter of fact, their flesh is soft and flabby and they are poorly prepared to withstand the attack of disease.

Don't Dope Colicky Babies.—Soothing sirup is most often recommended and used in case of colic. Purgative, whisky, brandy or soothing sirup are improper remedies for that disease. Colic is often a symptom of some condition which needs attention. Drugging the baby into insensibility, or making it drunk, will not remove the cause of illness. Colic is often due to constipation, in which case an enema of warm water — with the addition of salt at the rate of a level teaspoonful to the pint — is required fol-

* Heroin and Codein are derivatives of opium, the same as morphine, and their action is similar.

lowed by one or two teaspoonfuls of castor oil or other gentle laxative medicine.

Or, colic may come from cold hands and feet. Keep a flannel belly band on a "colicky" baby both summer and winter, but don't dope or drug the baby. When it is sick enough to need soothing sirup, it is sick enough to need a doctor. Proper feeding will usually overcome the trouble. In correcting errors in feeding a physician is your best advisor.

SYMPTOMS OF COMMUNICABLE DISEASES

Mothers, school teachers and other persons in immediate charge of small children should be constantly upon the look-out for symptoms of communicable diseases and other common conditions requiring medical attention. In general, any marked departure from the normal is a danger signal. The most common symptoms of acute contagious diseases are as follows: very red or pale face; red or discharging eyes, ears or nose; unusual dullness or sleepiness; evidences of sore throat; coughing, vomiting or diarrhoeal discharges. Eruptions of any sort demand especially prompt attention. Chronic diseases may be suggested by emaciation; defective vision of one or both eyes; deafness; mouth constantly open; marked odors from the ear, nose, mouth or person; peculiar postures when sitting or walking; frequent requests to go out or to the toilet; pain or swelling, or constant scratching of any part of the body.

The following summary will be found convenient for ready reference:

Symptoms of Fever.—Headache, dullness or sleepiness and indisposition for play or study; languid expression of the eyes; sometimes flushed cheek and other times pallor; heat of skin and increased frequency of pulse, all indicate fever. Take the child's temperature promptly with a clinical thermometer. A normal temperature is between 98° and 99°.

Eruptions.—The rash of scarlet

fever is of a bright color. It usually appears on the neck and chest spreading thence to the face. A very characteristic symptom is a pale ring about the mouth. There is usually sore throat.

The eruption of measles is a rose or purple red. It occurs in blotches about the size of a pea. It appears first on the face and is associated with running of the nose and eyes.

The eruption of chickenpox appears first as small red pimples which quickly become small red blisters.

Colds and Sore Throat.—Symptoms of a cold in the head with running eyes, sneezing and discharges from the nose and sore throat may mean nothing more than coryza or tonsillitis. But very often they indicate diphtheria, scarlet fever or measles. A thin watery nasal discharge which irritates the nostrils and upper lip indicates diphtheria. Weak and running eyes indicate measles.

Coughs.—A cough may mean a simple cold or slight bronchitis. But a spasmodic cough which occurs in paroxysms and is uncontrollable indicates whooping cough. A croupy cough—harsh and ringing—indicates diphtheria. A painful cough indicates diseases of the lungs, especially pleurisy or pneumonia. A long-continued, hacking cough indicates tuberculosis.

Vomiting.—This may mean only some digestive disturbance. But it may indicate the onset of diphtheria, smallpox or scarlet fever.

Quarantine.—All children or other persons exposed to infection from the following diseases should be kept under observation and excluded from schools and other public places during the following period of incubation dated from the latest exposure to such infection: Infantile paralysis (anterior poliomyelitis), 14 days; diphtheria, 8 days; scarlet fever, 8 days; measles, chickenpox, whooping cough and mumps each 14 days. Patients convalescing from any of the above diseases should be isolated for the following periods reckoned from the date of onset or final diagnosis of the

disease, namely: Infantile paralysis (anterior poliomyelitis), 28 days; chickenpox, 15 days and thereafter until all scabs have fallen off; diphtheria, 15 days and thereafter until two successive negative cultures have been obtained from the site of the disease secured at least twenty-four hours apart; measles, 21 days and thereafter until all catarrhal symptoms have ceased; mumps, 21 days and thereafter until all glandular swelling has disappeared; scarlet fever, 42 days and thereafter until desquamation (peeling) is complete and all discharges from mucous membranes have stopped; whooping cough, 35 days and thereafter until all spasmodic cough and whooping have ceased.

Children afflicted with ringworms, scabies or impetigo contagiosa should be kept from school and contact with other persons until the disease is cured, or until a reliable physician can certify that they are not liable to spread infection.

Diphtheria.—This disease often runs a very mild course. A child may hardly feel sick enough to take to its bed. Such cases may, and often do, give other children the form that kills. Hence every case of fever with sore throat in children should be looked on with suspicion. Look out especially for nasal diphtheria marked by a thin watery discharge from the nose which irritates the nostrils and may cause bleeding from the nose and sores about the nostrils and upper lip. Any hoarseness or thickness of the voice should suggest an examination of the throat. If the tonsils, the palate and surrounding mucous membrane are inflamed and swollen, and particularly if there are white patches in any part of the throat, have a culture taken and tested for diphtheria.

Scarlet Fever.—A sudden attack of vomiting, redness of the throat, headache and fever suggests scarlet fever. The rash appears on the first, or more often the second day and extends from the back of the neck to the chest and thence all over the body. It is usually uniformly scattered but may be patchy. The color is a char-

acteristic deep red which may become more livid, approaching purple. A very characteristic sign is a pale ring about the mouth. The eruption lasts from three to five days and fades. Peeling follows in the shape of scales and persists for several weeks.

Measles.—The early symptoms are those of a feverish cold. Observe especially that the eyes are red and sensitive to the light. There is a discharge from the nose, sneezing and a dry hacking cough. Look for Koplik's sign, i. e., minute, pearly white blisters on the inside membrane of the mouth near the molar teeth. This is a sure sign. But observe that these may be few in number and not surrounded by any inflammation. Hence be sure to examine the patient carefully in a good light. The rash comes out the third or fourth day, first on the forehead and face and then over the front and down the sides. As the red spots increase in number they form distinct crescent-shaped figures composed of papules just raised above the skin. In severe cases the color may deepen to purple. The rash lasts four or five days, then fades and is followed by peeling. The disease is highly contagious from the beginning of the symptoms.

Whooping Cough.—A persistent paroxysmal cough frequently accompanied by vomiting is indicative of whooping cough, whether or not there is any distinct whoop. But as a rule, whooping cough comes in distinct spasms. During these the face is puffed and reddened, the eyes congested and watery, and the characteristic whooping sound is made. A paroxysm is often followed by vomiting.

Mumps.—Any swelling of the glands behind the angle of the jaw should suggest mumps. The swelling extends just in front, just behind and below the ear and is extremely painful. A very frequent symptom is swelling inside the mouth and opposite the second molar tooth.

Smallpox.—The first symptoms are severe headache, backache, rapid rise of temperature and vomiting. The eruption appears about the third

day. Then the fever subsides and the patient sometimes feels perfectly well. In mild cases a child may be able to play or return to school. The symptoms in mild cases are very similar to chickenpox. But observe that smallpox cannot occur if a child has been successfully vaccinated. If not, it is best to be on the safe side and promptly call a physician.

Chickenpox.—The symptoms are those of a cold in the head with a slight fever. The characteristic rash breaks out the first or second day in the form of small blisters. A few of these may be seen about the roots of the hair, but they occur mostly on the body. These soon break and produce a drying scab.

Scabies (Itch).—Small pimples are noticed on the back of the hands and especially the spaces between the fingers or on the arms or whole body. These are caused by an animal parasite which burrows in the skin. They are seldom seen on the face or scalp. Itching and an irresistible desire to scratch are the principal symptoms. These become more intense when the patient stands near a hot fire or about the time of going to bed at night.

Pediculosis (Lice).—Intense itching and scratching of the hair and scalp are indications of vermin. Constant scratching may cause inflammation of the scalp and skin of the neck. Look for the eggs (nits) which are always stuck on the hair and not readily brushed off.

Ringworm.—All eruptions of the skin in the form of circles or rings should be examined by a physician for ringworm. This is a vegetable parasitic skin disease which is communicable.

Impetigo.—This is a contagious disease which is often spread by towels, toys and other things handled by children. It is characterized by large or small pustules (boils) or festers upon the skin. These usually appear on the face, neck or hands and occasionally upon the scalp.

INFANTILE PARALYSIS (ACUTE POLIOMYELITIS)

This is a communicable disease which has become epidemic in recent

years and seems to be spreading rapidly throughout the United States. It is due to a germ which attacks the spinal cord and to a less extent the brain. It injures and destroys the tissues, and causes temporary or permanent paralysis of the muscles.

It attacks chiefly young children during the first year of teething, but may also be communicated to older children, and adults are not exempt. Hence the name infantile paralysis is somewhat misleading. The nature and source of this disease were formerly obscure, but recently Flexner has proved it to have all the characteristics of a germ disease and, early in 1913, he announced that the specific germ by which it is caused has been isolated.

If the germs of this disease become as widespread as those of measles or scarlet fever, the result will be appalling. Not only is the death rate high, but the after effects, in about three-fourths of all cases, are more or less severe permanent paralysis of the arms or legs, or other parts of the body. The death rate varies in different localities from 5 per cent to 20 per cent. The disease is most prevalent in July, August and September. In respect to its permanent after effects it has the saddest results of all diseases.

Modes of Infection.—The germs gain entrance into the system through the mucous surfaces of the nose and throat. Infection may be direct by inhaling germs from the breath laden with infection from the mucous surfaces of the patient's nose and throat; or indirect, from the clothing of the nurse, physician, or other bedside visitor, or from objects contaminated in the sick room. There is danger also from the healthy carriers of the disease. Epidemics are probably due to mild cases and to "carriers" traveling, or attending day or Sunday schools, fairs, or other public gatherings.

Symptoms.—The period of incubation is from one to fourteen days. The average is from five to ten days. This is one of the most difficult of all diseases to recognize, unless the physician is put on guard by the pres-

ence of other cases in the locality. It is especially difficult to recognize in the case of children. The onset of the disease is usually sudden. The fever rises to from 101° to 103° in the first twenty-four hours. There is usually malaise, profuse sweating, vomiting and general severe pains in the arms and back, sometimes referred to the joints. Convulsions frequently occur in children. Tenderness, generally in the lower extremities, less frequently in the spine and trunk, but sometimes in the upper limbs and neck, is a frequent and highly important symptom.

Paralysis of one or both legs generally occurs within from twelve hours to three or four days, but the paralysis may extend to any part of the body. The fever lasts from five to nine days, accompanied by delirium, but rarely rises above 104° even in fatal cases. Diarrhœa often sets in on the second day.

This disease often occurs in a milder form without paralysis, and these cases may give the form that kills. A physician should be promptly summoned in suspicious cases, especially if this disease has been reported in the locality. The patient should be isolated until a positive diagnosis can be made.

Prevention.—The work of Flexner gives strong hope of the discovery of an antitoxin for poliomyelitis, but at present there is no certain means of cure. Hence the only safety lies in preventive measures. Children should be kept absolutely away from homes in which this disease has appeared and from association with members of the afflicted families, even though they are apparently well. The patient should be isolated and the sick-room should be prepared in all respects as for typhoid, and every sanitary precaution suggested for that disease should be observed. As the infection is present chiefly in the discharges from the nose and throat, special care should be taken to receive them on soft cloths which should be promptly burned. The nurse and physician should take the precaution to suspend a cloth moistened in a disinfectant solution over their mouth

and nostrils when approaching the patient closely enough to take his infected breath.

The use of a 10 per cent solution of peroxide of hydrogen as a gargle or spray for the throat is advised both for the patient and also for the nurse, physician and members of the family, or others who may have been exposed to the infection. Contact with this substance kills all germs of this disease.

Special care should be taken to disinfect all excreta from the patient. The germs have great vitality, and being extremely small, it is probable they may be scattered through the air on particles of dust. Hence special care should be observed to wash floors, rather than sweep them, and to dust only with cloths wet with a disinfectant. After the death or recovery of the patient, the room should be disinfected with about double the ordinary quantity of sulphur or formaldehyde, and on account of the extreme vitality of the germ, the entire exposed floor and all surfaces, woodwork and furnishings should also be washed with full strength standard solution, No. 3, bichloride of mercury.

Quarantine.—Most boards of health now require all cases to be reported, the premises to be placarded, and strict quarantine maintained. No one except the nurse and physician should be admitted to the sick room during the sickness, or for some months after recovery. There is danger that the patient may continue to carry the germs of the disease. Several epidemics have been stamped out by strict quarantine. The period of infection is not precisely known, but is supposed to be chiefly while the fever lasts—usually about three weeks. The quarantine of the other members of the family than the patient need not extend beyond this period. The bread winners should board and room elsewhere especially during the quarantine period and for three weeks after their last exposure. They should avoid all public gatherings and mingle as little as possible with other persons. Or, preferably, the patient should be removed to a

hospital at the outset of the disease.

CEREBROSPINAL MENINGITIS

This malady, also called spotted fever, or simply meningitis, was formerly one of the most terrible and fatal of all diseases, the mortality in some local epidemics running up to as high as 100 per cent. It is an inflammation of the membrane covering the brain and spinal cord and is caused by a specific germ.

Flexner has discovered a serum which cures this disease and leads to the hope that a similar antitoxin may be discovered for the control of infantile paralysis. The germ of this disease has been identified, and is always present in the brain and spinal cord of the patient, and in the spinal fluid. It may also occur in the nasal passages of the patient and of healthy carriers who have been infected from him. It attacks most frequently children between one and ten years of age. It is most prevalent in the late winter and spring months, especially in March, April and May. It is always present in certain neighborhoods and may occur at any season of the year.

Modes of Infection.—The germ of meningitis occurs in the discharges from the mouth, nose and ears of the patient, and the infection may be spread by direct contact with the patient or healthy carriers, or by objects infected by them. The germ is not thought to live long outside the human body. Hence the spread of the disease is easily controlled by the isolation of the patient and by proper sanitary precautions.

Symptoms.—The first symptoms of infection are those of an ordinary cold. But when the brain is attacked, the onset of the disease becomes very sudden. There is usually a chill with intense headache, vomiting, restlessness, and a great dread of noises and bright light. In many cases the reddish spots appear beneath the skin, which suggest the name, spotted fever. These spots are usually quite tender on pressure. The muscles of the neck become very stiff and con-

tract, drawing the head backward. This is a characteristic symptom. The chill is followed by irregular temperatures, sometimes very high. After a few hours or days, unless the antitoxin serum is injected, the patient becomes unconscious and shortly dies. Or, in mild cases, the symptoms quickly subside and recovery is rapid.

Prevention.—The symptoms of an ordinary cold in the head should be regarded with suspicion during an epidemic of meningitis. A physician should be summoned in all suspicious cases, and the patient isolated in the sick room as for typhoid fever, until a positive diagnosis can be made. This may be done by withdrawing a sample of the spinal fluid from the spinal column by means of a hypodermic needle. This is a simple procedure when performed by a competent physician, and quite free from danger. If the germs of meningitis are present, both local and state health authorities should be promptly notified and the Flexner serum should be obtained and injected into the spinal column by an experienced physician. Prompt action is imperative, as death will occur in most cases within a few days unless this remedy is administered.

The sick must be kept away from the well. All discharges, especially from the nose and throat, must be thoroughly disinfected. The nurse or attendant in the sick room, the physician and all the members of the family who may have been infected before the nature of the disease was recognized, should thoroughly disinfect the nasal passages and throat by a spray or gargle of one part peroxide of hydrogen to three parts of water, or with equal parts of water and liquor antisepticus U. S. P. This should be followed by a spray of menthol, gum camphor and liquid alboline. As an immunizing dose, about 10 c. c. of Flexner serum may be injected for three or four days, twenty-four hours apart, in cases of known exposure.

The use of urotropin in doses of from 5 to 10 grains dissolved in water an hour after meal time, three times a day—under the advice of a

physician—as a preventive, is also recommended. Observe that if this drug is taken too soon after eating, digestive disturbances may result.

These measures with the ordinary sanitary precautions in the sick room, including disinfection of all excreta, have been found to thoroughly control this disease. Fresh air and sunshine quickly destroy the germs.

Quarantine.—Placard the premises and keep the members of the family to themselves until cultures taken from their nasal passages are found to be free from germs of the disease. After recovery or death, disinfect the house thoroughly with formaldehyde or sulphur. The effect of sanitary precautions is proved by the fact that nurses and attendants very rarely contract this disease.

DIPHTHERIA

Diphtheria is a germ disease caused by the growth of the diphtheria bacillus, usually in the throat, nose or bronchial tubes. This bacillus was discovered by Klebs (1883) and shown to be the cause of diphtheria by Loeffler (1884), hence it is called the Klebs-Loeffler bacillus after its discoverers. It throws off in process of growth a powerful poison, or toxin. This is absorbed in the blood and tissues and produces the symptoms of the disease. Adults are not as susceptible to this poison as are children over one year old, nor are all persons equally susceptible. Hence all cases are not equally severe. The germs are often found in the throat or nasal passages of persons who are perfectly well or who may exhibit only the mildest symptoms. But if there is any redness or soreness in the throat and the diphtheria bacillus is present, the disease should be regarded as diphtheria and treated accordingly. These bacilli frequently live and grow for months and even years in the throats and noses of persons who have recovered from diphtheria even after they have become quite well and strong. Recovery from the disease does not necessarily mean freedom from the germs that caused it.

Symptoms.—The symptoms of

diphtheria vary from a mild redness of the throat to the formation, in severe cases, of a thick, grayish-white membrane which may cover the whole throat and cause death by choking. It is extremely important to recognize this disease at the outset, since there is an antitoxin which cures diphtheria if administered promptly. It is the delay in securing treatment that kills. A case treated on the first day very rarely terminates in death. Every case of simple sore throat in children should be suspected as possibly diphtheritic. Call the doctor early. Give antitoxin as soon as a diagnosis of diphtheria is made.

The patient first complains of sore throat. This gradually grows worse and in a few hours fever is observed. But sometimes the throat is not complained of until the fever has appeared. Or nausea and vomiting may be the first symptoms. After the fever appears the child usually becomes sleepy. This condition is brought about by the absorption of the poisonous product of the germs. In severe cases this drowsiness may pass into a stupor from which the child is hard to rouse. The germs do not usually circulate in the blood but grow in masses in the throat. First a small whitish speck will appear on one or both tonsils. The extent of this growth varies with the severity of the disease from small patches to the entire surface of the throat. Any grayish deposit on the tonsils or other part of the throat, if attended with the slightest fever, should arouse suspicion and a physician should be promptly consulted.

The first symptom of membranous croup or diphtheria of the larynx may be a harsh cough or difficulty in breathing. Croupy conditions, not promptly relieved by ordinary remedies, should always be suspected as possibly diphtheritic, especially if there is diphtheria in the community. Diphtheria of the lining membrane of the nose is frequently mistaken for ordinary cold. The discharges, however, are different, being frequently tinged with blood and causing lip sores. Such conditions when

diphtheria is prevalent should be regarded as suspicious.

Diphtheria occurs chiefly in children between the ages of two and fifteen years. Girls are attacked in larger numbers than boys. But adults are not infrequently infected. The disease is most prevalent in late fall. It prevails more in winter than in summer. It develops in from two to seven days, oftenest two days after exposure.

If a child or adult has sore throat with the formation of a thick gray-white membrane in any part of the mouth, throat or nose, the disease is diphtheria. The sick room should be made ready, as recommended under typhoid fever, and the patient promptly isolated. If there is no membrane formation, but the patient appears to be stupid, drowsy or much prostrated, the case may be diphtheria and should be isolated until a positive diagnosis can be obtained. A "culture" should be taken from the throat of all persons who have come into contact with the patient before he was isolated. If the germs of diphtheria are present they should be protected by an immunizing dose of 1,000 units of diphtheria antitoxin.

Prevention and Disinfection.—Isolate the patient in a sick room prepared as recommended for typhoid fever and observe all the precautions therein suggested to prevent secondary infection. The germs are most numerous in the discharges from the nose and throat. Hence take especial care to receive the sputum on soft rags which should be promptly burned, or in a sputum cup containing disinfectants No. 4, carbolic acid (5 per cent), or No. 5, formalin (5 per cent). The nurse and attending physician should wear a gown of washable material, preferably with a hood, to avoid carrying the infection in their hair and clothing. After the recovery or death of the patient, the sick room should be thoroughly disinfected by formaldehyde or sulphur fumigation.

Quarantine.—Quarantine the entire household as recommended under scarlet fever. Keep children from day and Sunday school. Keep the

members of the family indoors and arrange for the bread-winners to board and room elsewhere. Quarantine must be continued until the diphtheria bacilli disappear from the throat of the patient. This will ordinarily require about four weeks after recovery. "Cultures" should then be taken by the physician and quarantine should not be lifted until the bacilli are found to be absent from two successive "cultures." Remember that the mild cases and well persons who are carrying the germs of the disease are the most dangerous sources of infection. The only sure precaution is the bacteriological test made by a competent physician and the isolation of all infected persons until the bacillus disappears.

SCARLET FEVER

Scarlet fever has all the characteristics of a germ disease, though the specific germ which causes it has not yet been identified. Hence there is no antitoxin against scarlet fever and no efficient method for its control. Scarletina, scarlet rash, canker rash, fever rash and Duke's disease are merely other names for scarlet fever. They are often applied to the mild cases under the mistaken belief that these are a different and less dangerous malady, but this is not the case. The mild cases will give the form that kills. Scarlet fever is highly contagious, but, like other germ diseases, is wholly preventable. It is, or should be, among the most dreaded of all the acute diseases of childhood. It attacks chiefly children between the ages of one and 10 years, although about 5 per cent of all cases occur in adult life. The death rate is about one out of every fifteen or twenty cases.

Occasionally parents expose a child to a mild case from the mistaken notion that all children must have the disease and that it is best to have it light. Parents frequently permit children suffering from mild cases or convalescing to play about the house or even run about the neighborhood at will. Such contacts of infected with healthy children are of great assistance in spreading the disease.

Persons who knowingly permit them often cause cases of death, and with the increase of sanitary knowledge the law will undoubtedly recognize such crimes and visit them with appropriate penalties. After childhood the liability to take the disease is very much lessened. Many persons who escape the disease in childhood have been immune to it although many times exposed in later life. Two-thirds of all deaths occur in children under five. When the disease does not kill it frequently leaves its victim crippled for life. The commonest after-effects are inflammation of the kidneys, heart, ears, glands and joints. Deafness sometimes results. Hence although one attack usually renders a patient immune, the utmost care should be taken to protect all children from exposure.

Symptoms.—The period of incubation after exposure varies from one to fourteen days. Hence, a child exposed to scarlet fever should be carefully watched during the following two weeks. Upon the first symptoms of shivering, lassitude, headache, frequent pulse, hot, dry skin, flushed face, furred tongue with much thirst and loss of appetite, the sick room should be prepared as for typhoid fever and the patient isolated until a positive diagnosis can be made by a physician.

Vomiting is usually among the first positive symptoms. Other symptoms are sore throat, intense fever with headache or backache, and the characteristic scarlet rash. This usually appears in from twelve to twenty-four hours, first upon the lower part of the neck and adjacent parts of the chest and afterwards gradually spreading over the entire body. This disease, like typhoid or diphtheria, appears in varying degrees of severity. It may cause death within twenty-four hours or may be so mild that the patient does not feel sick enough to stay in bed. There are many true cases of this malady with a very low fever and without vomiting or other acute symptoms, or even without the characteristic rash. A child with a sore throat is under suspicion of scar-

let fever or diphtheria and should be kept away from school and from other children until a positive diagnosis can be made.

Running Ear.—During the third or fourth week of the disease, it is possible that the ears may become diseased and lead to what is known as a "running ear." The child by this time has had no fever for a number of days. He suddenly becomes more or less feverish and restless, and complains at the same time of pain in the ear. This is a danger signal and calls for immediate action by the doctor. If this condition goes untreated, it may result in a running ear which sometimes lasts for years. With proper treatment, however, most of these cases are soon cured.

Acute Nephritis, or inflammation of the kidneys, develops, at times, in the third to the fifth week of the disease. The child, who has seemed to be almost well, suddenly develops a fever. He complains of headache, usually vomits and may have convulsions. The amount of urine passed is small. The patient may complain of trouble with the eyes, and of not being able to see distinctly. Should any of these symptoms develop, the doctor should be called immediately.

Modes of Infection.—This disease is spread through carelessness. Every case comes directly, or indirectly, from some previous case, either by direct infection from inhaling the breath of a scarlet fever patient, or by secondary contact infection. Most cases of direct infection are due to neglect of mild cases and carelessness of those recovering from the disease. If every case could be thoroughly isolated — quarantined — the disease would disappear from the face of the earth. The only safe course to pursue is to isolate the patient and to quarantine and disinfect the sick room in all respects as for typhoid fever.

The nurse and attending physician should wear a hooded gown of washable material to avoid carrying infection from the sick room upon the hair or clothing. On leaving the sick room this gown may be disinfected by sprinkling it with one or two tablespoonfuls of 40 per cent solution of

formaldehyde and packing it in a small valise or other tightly closed receptacle. Both the nurse and physician should avoid direct infection from the patient's breath. No one else should be permitted to enter the sick room.

The chief danger from contact infection is from scales from the skin, the spittle from the throat and mouth and the nose and ear discharges. But all the discharges of the patient should be disinfected as for typhoid fever. By confining the patient absolutely to the sick room until the danger of infection is passed and by proper and efficient disinfection, as elsewhere recommended, the spread of the disease can be absolutely prevented.

The germs of scarlet fever are very long-lived. They may communicate the infection after many months and at long distances by means of clothing, playthings, books, magazines, bedding, towels or any articles of household furniture or other objects on which the contagion from the patient may have lodged. Hence nothing should be removed from the sick room without having first been thoroughly disinfected.

Quarantine.—Most cities require strict quarantine in cases of scarlet fever. Keep the children from both day and Sunday school. Take care that the nurse and all members of the family remain indoors. Arrange for the bread-winners to room and board elsewhere during the course of the disease. Have milk and groceries left at the door and disinfect all articles even including letters and postal cards. This may be done by baking them in a suitable receptacle at a temperature of about 250 degrees.

Or, place the articles in an airtight receptacle with a closely-fitting cover, sprinkle them freely with a 40 per cent solution of formaldehyde, cover tightly and leave the receptacle in a warm room for at least four hours. No milk or groceries should be sold in, or accepted from, premises quarantined for scarlet fever. Milk from infected dairies is a frequent source of contagion.

Desquamation or "Peeling" is a

highly characteristic phase of scarlet fever. After the rash begins to fade the fever disappears and the patient usually feels good and is anxious to get out and play. The skin affected by the rash now begins to scale or peel from all parts of the body, sometimes in large or small flakes, but often in the form of a dry mealy powder. This is charged with the virus of the disease in its most infectious form. The process of peeling occupies a variable time from ten days to six weeks and this is the most contagious period of the disease. The infectious dry skin is easily spread about the room and may be carried elsewhere upon the clothing of members of the family, or other objects. Or it may remain attached to articles of furniture, or as dust in out-of-the-way places, to infect others with whom it may come in contact. To prevent all this, the patient must be confined to the sick room and bathed daily, under the advice of the attending physician, with soap and warm water. Bathing with disinfectants is not advisable. But the water used for the bath must afterwards be thoroughly disinfected.

After the bath the patient should be anointed with sweet or olive oil containing a little oil of eucalyptus, or 3 per cent of carbolic acid or with 2 per cent carbonized vaseline, or a boracic acid ointment at the discretion of the attending physician. This will not only allay the itching from the rash, but will confine the dry scales to the body and bed linen and facilitate the work of disinfection. This should be continued until the skin is entirely smooth. The soles of the feet and palms of the hand are usually the last to peel.

Duration of Quarantine.—The length of time during which a scarlet fever patient is dangerous to others differs widely. Isolation must be enforced until all peeling or scaling off of the skin is completed, and until there is no further discharge from the ears, nose, throat, suppurating glands or inflammation of the kidneys. The time required for scaling varies from four to eight weeks. The soles of the feet and palms of the hands are

the last to peel. Mild cases with very little scaling and without ear, nose, throat, kidney and glandular complications, should be isolated not less than four weeks, and severe cases not less than six weeks. This period must be prolonged if the ears, nose, throat, glands or kidneys continue to be diseased. The advice of a reliable physician should be followed in all cases.

Disinfection.—After death or recovery disinfect the sick room and its contents thoroughly as elsewhere described.

MEASLES

Measles is the most contagious eruptive disease of childhood. It is probably a germ disease, but the germ by which it is caused has not yet been identified. German measles — more properly *Rotheln* or *Rubella* — is not a form of measles nor is it a mild type of scarlet fever. It is a distinct disease. Black measles — the malignant type of the disease — is very fatal. The black color is due to hemorrhages in the skin. Measles may occur at any time during the year, but is most prevalent in the fall and winter months.

Symptoms.—The period of incubation is from ten to fourteen days after exposure. The symptoms for the first two or three days are very much like those of an ordinary cold in the head. The eyes become red and watery and are sensitive to light. The nose is stopped up or there is a discharge from the nose, with sneezing. The throat is sore and there is a dry, hard, high-pitched cough. The tonsils may be swollen or red, headache, fever, loss of appetite, drowsiness and irritability are usually observed.

Occasionally the disease comes on suddenly with vomiting and high fever, but usually the fever is not very high. It may disappear on the second or third day with improvement of all the other symptoms. Then the temperature again rises and continues very high until the fourth day when the eruption appears. The disease is contagious from the outset of the earliest symptoms. Hence any

one suffering from these symptoms should be isolated and kept under observation for three or four days, especially if measles is prevalent. Children should be kept from both day and Sunday school.

The characteristic skin eruption appears on the fourth day on the face and neck and thence over the whole body as dull red blotches a little raised, and later running together. It gives the skin a peculiar mottled appearance. Before this occurs one cannot be positive that the case is one of measles. But generally there is an eruption of some light red spots on the inside of the cheeks two or three days before the external eruption. If care is taken to be on the lookout for this symptom the nature of the disease may be determined early. The eruption lasts usually four or five days and disappears as the other symptoms improve. It is followed by a fine bran-like desquamation or peeling, which is usually complete in about a week.

Prognosis.—Measles is quite commonly regarded as a slight and trivial disorder. Hence parents not infrequently expose young children to this malady from the mistaken notion that they are certain to contract it some time and the sooner it is over the better. It is true that the disease is more severe in adult life. But on the other hand it is a very fatal disease among young children. It causes about three times as many deaths as smallpox and nearly as many as scarlet fever. Measles and whooping cough together cause nearly as many deaths as diphtheria. The mortality from measles is much higher than is generally supposed. Ninety-five per cent. of all deaths occur in children under five years of age, and far more deaths occur under than over two years of age. The death rate from measles in times of epidemic ranges from 4 per cent to 6 per cent and not infrequently exceeds that from scarlet fever.

The danger from measles is chiefly due to complication with other diseases, such as whooping cough and bronchial pneumonia, or to after-effects, such as consumption, paralysis,

meningitis, diseases of the skin and nervous disorders. Inflammation of the ear is a not infrequent complication of measles. This often leads to deafness or worse. Latent tuberculosis in a child often becomes active after an attack of measles. If a child "seems to have caught cold" after measles consult a doctor at once. Hence exposure to infection should be avoided and every case should receive skilled medical attention.

Practically every one is susceptible to measles. One attack usually protects a person against others, but this rule is by no means invariable. The course of the disease is usually more severe in adult life, hence in the management of the sick room observe all the usual sanitary precautions.

Modes of Infection.—Measles is contagious from the beginning of the symptoms—usually three or four days before the eruption occurs. It is during this first stage of the disease, when the symptoms can hardly be distinguished from those of an ordinary cold in the head, that direct infection is most often communicated. The disease is usually conveyed to others by direct exposure but may be conveyed by the discharges of the nose and throat and possibly from the fragments of skin thrown off from the surface of the body during peeling. Infection may be carried by the clothing of the patient, or those who come in contact with him, and by other objects. But the germs are not nearly so long-lived as those of diphtheria and scarlet fever. Hence the danger from secondary infection is much less. Mild cases may give the disease in its most malignant form and are equally as contagious.

Quarantine.—When measles is prevalent and especially if there is likelihood that exposure has occurred, children should be kept under close observation for ten days to two weeks and promptly isolated on the appearance of the first symptoms. If red spots are not observed on the inside of the cheeks within two days, or if the eruption does not break out within four or five days after the first feverish symptoms, the case may be

regarded as a simple cold in the head. But if there is any evidence of eruption, however mild, isolate the child in the sick room prepared as for typhoid fever and promptly summon a physician.

Isolate promptly all suspicious cases, especially during periods of epidemic. Placard the premises. Keep all visitors out of the sick room. Protect, especially, children under five years of age and adults who have never had the disease. The disease is communicable until the peeling is complete, which will be, as a rule, within three weeks from the onset of the malady.

The quarantine must be continued until the patient's temperature has been normal for forty-eight hours. Persons exposed to measles and who have never had the disease should be quarantined for two weeks from time of exposure. Adults who have had the disease may go about their ordinary business, providing they keep entirely away from the sick room. But no person from a home quarantined for measles should attend school, church, theater, or other public gathering. Everything coming from the patient's room should be disinfected. After recovery or death the sick room should be thoroughly disinfected with formaldehyde or sulphur as elsewhere recommended.

WHOOPIING COUGH

This is a highly contagious disease characterized by severe inflammation of the bronchial tubes and accompanied by a peculiar cough ending in the familiar "whoop." It has all the characteristics of a germ disease but the germ which causes it has not yet been identified. Persons of all ages are liable to the attacks of this malady but practically all deaths occur under the age of five years. One-half of these occur under one year of age. The average age of death is one and a half years.

Whooping cough, when severe, is a debilitating disease at any time of life. It lasts for several weeks and is not infrequently complicated with pneumonia. It often leads to chronic

invalidism from exhaustion, with heart and lung changes which may be permanent. The disease may occur at any time of the year but the greatest mortality is in July and August. Children should never be knowingly exposed to whooping cough and great care should be taken to protect children under five years of age from infection. After this period the likelihood of infection is much lessened and the danger of death from this disease is practically over. Many persons escape this malady altogether.

Symptoms.—The period of incubation is from four to fourteen days after exposure. The symptoms for the first few days are those of an ordinary cold or simple catarrh but with less fever than measles. The cough is more severe than the other symptoms seem to warrant and grows harsher from day to day. After a week or ten days the characteristic whoop develops. This continues with varying degrees of severity for a month or six weeks. Then the paroxysms cease, often leaving a simple catarrhal cough which may last indefinitely.

Modes of Infection.—Infection is ordinarily by direct and fairly intimate contact between the infected and healthy person. The virus of the disease is not as long lived as that of diphtheria or scarlet fever and hence not so likely to be conveyed from the sick room on the hands and clothing of the nurse or by means of other objects. The disease is probably not spread through the air except within the range of the fine spray thrown from the mouth of the patient while coughing.

Quarantine.—Isolate the patient in a sick room prepared as recommended for typhoid fever, especially if there is an infant in the family under two years of age. Keep on the safe side by observing all the sanitary precautions recommended for the sick room in other communicable diseases and disinfect the sick room after the death or recovery of the patient.

MUMPS

Mumps is a glandular swelling in the angle between the jaw and the

ear. It is a highly contagious but wholly unnecessary and preventable disease. It chiefly affects children, but may attack older persons who have not become immune from having had the disease in childhood. It usually develops in from two to three weeks after exposure.

Symptoms.—The early symptoms are fever with pain below the ear on one or both sides. A slight swelling below one ear may be first noticed. Within two days there is great enlargement of the neck and side of the cheek. The other side usually becomes affected within a day or two. The swelling persists from seven to ten days then gradually subsides. A second or even a third attack may occur and troublesome complications are quite common. It is always advisable to consult a physician.

Quarantine.—Isolate the patient in the sick room and exclude other children and adults who have not had the disease. Keep children from school for a period of three weeks following their last exposure.

PARASITIC DISEASES

Pediculosis (Lice).—There are three varieties of these parasites which infest human beings, the head louse, body louse and crab louse. A single family of children so infested may communicate them to many others through the contacts of outer clothing hung up in school dressing rooms, or in play, or otherwise. In most states such children may be excluded from schools until these parasites have been exterminated. The following methods of treatment for killing parasites and nits are recommended:

Add two teaspoonfuls of chloronaphtholeum disinfectant to a pint of warm water. Wet the hair with this mixture. Put a towel around the head and let it dry on. When the hair is dry comb with a fine comb. Repeat this two or three times until the head is clear of vermin. The nits may be removed by combing the hair after it has been moistened with vinegar.

Or obtain half a pint of crude pe-

troleum at a drug store and wet the hair thoroughly with this. Keep it wet for three hours. Then wash the whole head with warm water and soap. Repeat this process on three successive days. The nits may then be removed by combing the hair very carefully with a fine-tooth comb wet with vinegar. Repeat the combing for several days until no more nits can be found. To make the treatment easier and more thorough, the hair may be cut short, if there is no objection.

All the children in a family are likely to be affected, and should also be treated as above.

Brushes and combs should be cleansed by putting them in boiling water for a few minutes.

Or head lice may promptly be destroyed with common kerosene. Pour a little into a small dish. Moisten a small rag with it. After squeezing the rag somewhat, moisten the hair with the kerosened rag. Do this in the afternoon, after the children return from school, or in the evening. Before morning the oil will have evaporated so that little or no odor will remain. Or remove both oil and odor with soap and water. Or to disguise the odor of kerosene, pour a small quantity into a vial, and add an equal amount, or less, of oil of sassafras. Shake until there is a complete mixture.

Or, dip a small, clean hairbrush into kerosene oil or oil of sassafras poured into a shallow dish. Then brush and moisten the hair with it.

Make these applications by daylight and be very careful not to let the children go near fire or lights. For the night, cover the head with a cap, which can be improvised by knotting the corners of a handkerchief, or wrap a cloth around it. Repeat this treatment several times to ensure complete destruction of the lice and nits. Applied as recommended, kerosene is not in any way injurious to the scalp or hair.

Body Lice (Pediculus Vestimentorum).—This parasite belongs to the same family as head lice but is somewhat larger. It is found commonly on the body, where it goes only

for the purpose of feeding. In the adult form it can be differentiated from the head louse by dark transverse bands across the back. The parasite lives and reproduction occurs chiefly in the various folds and seams of the clothing, and especially where the skin is most conveniently reached. Hence the various lesions are to be found most often around the neck, across the shoulders, the upper part of the back, around the waist and the outside of the thighs.

Treatment should be directed to the infested clothing where the parasite and nits are to be found. In order to destroy these, all garments should be thoroughly baked, boiled or lightly sprinkled and gone over with a very hot iron.

However, it has been observed that some of the ova or nits are attached to the fine hairs (lanugo) of the body surface. Hence a general tub bath disinfected with corrosive sublimate is advisable. Eight tablets of bichloride of mercury to a tub of water makes a strong enough solution. After the bath, flush the tub thoroughly to avoid injury to the plumbing and fixtures.

Or clothing, beds and bedding, and the like may be rid of these insects and parasites of all other kinds, by fumigation with sulphur.

Crab Lice (Phthirus Inguinalis).—These are a smaller species of the same family as head or body lice but are quite distinct on account of their shape. They are nearly as wide as long. Their strong legs, spread out laterally, give them the appearance of crabs. They are of whitish color, somewhat shaded on the shoulders, and the legs have a slightly red tinge. Each is about one-tenth of an inch in length. They are to be found on the various hairy regions of the body other than the scalp. They do not thrive among the fine hairs of the head, though they have often been observed in the eyebrows.

Treatment.—Repeated washings with vinegar or diluted acetic acid will free the hairs of ova. This should be followed by a careful daily shampoo of all the regions involved. After the shampoo, apply freely a

solution of corrosive sublimate containing one tablet to a pint of water. If not desirable to use the mercury wash, apply a lotion consisting of tincture of larkspur, $\frac{1}{2}$ ounce; commercial ether, 8 ounces. Or use a stronger solution, consisting of equal parts of the two ingredients. Afterwards cover the parts with a closely applied dressing.

Cautions. — Corrosive sublimate (bichloride of mercury) is a powerful poison. Ether is highly inflammable.

The Itch Mite.—This is a minute bug which gives rise to the condition commonly known as "Itch," "Seven-Year Itch," "Army Itch," "Jackson Itch" and many other synonymous names. The female burrows into the superficial skin forming a tortuous or, at times, a straight, dotted, slightly elevated line. This varies in length from one-eighth to one-half inch. The burrow is dark gray or blackish in color, thread-like, and may be slightly more elevated at one end.

This mite is transmitted from one individual to another by occupancy, either of the same bed, or of one on which the sheets have not been changed. It may also be transmitted by the use of a common towel and by shaking hands. It is commonly found in the moist surfaces of the body, such as between the fingers, on the hands or folds of the wrist, in the folds under the shoulder, the lower portion of the abdomen and about the neck. Its entire existence is spent on its human host. It is believed not to have any power to transmit disease, but may be inimical to the health of the individual from secondary infection of the burrows or of the excoriations produced by scratching. There may be also varying degrees of papular or pustular lesions over the infected regions.

These mites usually thrive best in unsanitary conditions. To destroy them, thoroughly boil or bake all bed linen and clothing used by the infected individual. If woollens are in use, bake them or sprinkle lightly and thoroughly iron them with a very hot iron. Take a hot bath, and rub down with a coarse washcloth or

brush. This opens up the burrows and exposes the eggs for destruction. After the bath, rub in an ointment made up as follows: Sublimed sulphur, 1 dram (1 teaspoonful); balsam of Peru, 1 dram (1 teaspoonful); vaseline, 1 ounce (2 tablespoonfuls). Repeat morning and evening from two to four days. In particularly serious cases, repeat this entire treatment at the end of one week.

Or use either of the following preparations:

(1) Mix equal parts of balsam of Peru and lard. Rub these together thoroughly in a shallow plate with a steel table knife to form an ointment. Or use vaseline in place of lard, or still better, lanolin.

(2) Or mix flowers of sulphur, 1 tablespoonful; balsam of Peru, two tablespoonfuls; lard or vaseline, 8 tablespoonfuls. Make into an ointment.

Take a hot bath and give the whole body a thorough scrubbing with soap and hot water. Dry the body well. Now with the palm of the hand, rub one of these ointments thoroughly into every part of the body from the neck downward, or, at least, anoint all parts of the body which are affected. Sometimes the only parts affected at first are the hands and the arms to the elbows. To make sure work, particularly in bad cases, make two or three applications within twenty-four or thirty-six hours. Take another hot bath twelve hours or so after the last application. Thorough scrubbing and cleanliness go a long way toward effecting a cure.

To avoid reinfection put on clean clothes, particularly underclothing, and change sheets and blankets, particularly after the last soap and water bath. Deposit all infected clothing and bed linen in a standard disinfectant solution of carbolic acid (5 per cent), or formaldehyde (3 per cent), or boil in soap and water at least one hour.

Balsam of Peru is sometimes painted on pure, or mixed with an equal amount of glycerine. To make this mixture fill a bottle half full,

heat by putting the bottle in moderately hot water and shake vigorously.

Contagious Impetigo.—This eruption first appears on the exposed surfaces of the body, particularly on the face, hands or wrists. It takes the form of a simple-looking pimple or pustule. This enlarges in size and

the patch becomes covered by a brownish or yellowish crust. Other patches then appear caused by conveyance of the infection by the fingers or otherwise. Medical advice should be promptly taken. Contagious impetigo sometimes spreads rapidly in schools, but it can be readily cured by medical treatment.

CHAPTER XLI

THE CARE OF BABIES

BEFORE THE BABY COMES—THE NEW BORN CHILD—SAVE THE BABIES—GENERAL RULES—BREAST FEEDING—ARTIFICIAL FEEDING—MILK MODIFICATION—MATERIALS FOR MILK MODIFICATION—BOTTLE FEEDING—ARTIFICIAL FOODS—OTHER FOODS FOR INFANTS—PASTEURIZED AND STERILIZED MILK—CARE OF MILK IN THE HOME

BEFORE THE BABY COMES

A poorly fed or sickly mother cannot give birth to a vigorous, healthy infant and successfully nurse it. Such a mother rarely carries her baby for the full nine months. A woman who has had repeated miscarriages or whose previous labors have come on before time should, early in pregnancy, consult her physician in order that the underlying cause may be cured or alleviated. During pregnancy and especially in the latter months, the expectant mother must have abundant rest and spare herself as much as possible. An extra amount of sleep is required and daytime rest for an hour or two is desirable. Select and consult your physician early in pregnancy. Keep yourself in good health. Hard household labor or factory work during the latter months tend to bring about miscarriages or the birth of puny and undersized children.

Exercise.—Exercise in the open air in the form of walks should be taken throughout the entire course of pregnancy. Violent exercise in any form should be prohibited. Unnecessary stair climbing must be avoided in the latter months. The sewing machine must not be used towards the end. Should labor be threatened before the proper time, go to bed at

once and remain perfectly quiet until the danger is well passed.

Care of the Breasts.—Small, flattened or depressed nipples should be drawn out with the forefinger and thumb and held for five minutes night and morning during the two months before the baby is born. The nipples should also be carefully anointed each night with white vaseline. This will soften and remove the milky substance which is secreted at this time, and which may otherwise form hard crusts, and ulcerate the soft tissues beneath. Wash the nipples every day with castile soap and water and put boracic acid solution on them, a heaping tablespoonful to the pint of water. Or better, use warm water, two-thirds, and alcohol, one third. Proper attention to the care of the nipples will make nursing a pleasure and satisfaction, instead of a pain and discomfort.

After the baby comes, always wash the nipples carefully both before and after nursing, in pure, cold water containing a teaspoonful of baking soda to each pint of water. This will prevent them from becoming tender.

Food for the Baby.—No food is as good for a baby as its mother's milk. This is why so many more bottle babies are sick and die than breast babies. One or two feedings a day

from the breast are a great deal better than none at all. Hence keep the body well nourished before the birth of the baby in order to secure a good supply of milk. Exercise, freedom from excessive worry and massage of the breast and nipples before the child is born will, in nearly every instance, insure the child being nursed. Every mother should expect and plan to nurse her child.

Diet.—The diet should be carefully regulated, but abundant. A full, wholesome and liberal diet is essential. What to eat, however, will depend largely on individual tastes and habits, as food which agrees with one will not agree with another. Highly seasoned or very rich food should be avoided as well as fatty foods and coarse vegetables.

The following dietary is recommended during pregnancy and nursing:

Soup—Any kind.

Fish—Fresh fish, of any kind, boiled or broiled. Raw oysters and raw clams.

Meats—Chicken, beef, ham or bacon, veal, lamb, tender lean mutton. Red meat in moderation but only once a day.

Cereals—Hominy, oatmeal, farina, cream of wheat, rice, mush, shredded wheat biscuits, etc.

Breads—Stale bread, corn bread, Graham bread, rye bread, brown bread, toast, crackers.

Vegetables—Potatoes, onions, spinach, cauliflower, asparagus, green corn, green peas, beans, lettuce or other salads, with oil.

Desserts—Plain puddings, custard, junket, ripe raw fruits, stewed fruits, ice cream. No pastry.

Drinks—Tea and coffee very sparingly, never more than one cup a day. No alcoholic beverages, beer, or liquors. At least two quarts of water a day. Milk, buttermilk, cocoa, malted milk.

At least one satisfactory movement of the bowels should take place daily; if there is any difficulty about this, consult the doctor. But observe that strong medicines must not be used to open the bowels. Costiveness

can be avoided by sufficient exercise and suitable food as brown bread, stewed vegetables, fruit and abundance of water.

Work.—The expectant mother may do her usual work, but should not work hard enough to get very tired. Work in stores and mills is not good. It should be stopped as soon as possible, at least four weeks before the expected birth of the child. She should go out of doors every day, but must not run for cars, or jump, or over-exert herself in any way.

Once in four weeks, at the times when the woman would have been unwell, if she were not to have a baby, she should be even more careful than usual about over-exertion, because at these times there is more danger of miscarriage.

Clothing.—All clothing should be loose. As soon as she begins to show her condition, the mother should leave off her corsets, and have nothing about the waist that is at all tight. A loose corset waist should be worn. To this attach side garters instead of wearing circular ones about the legs.

Baths.—It is important to keep the skin in a healthy condition, and this is best done by frequent bathing. Sea-bathing is not good, however, because it is too violent.

When the Baby Comes.—Send for the doctor when the labor pains begin. He prefers being called too early than too late. A sudden gush of water signifies that the membranes have ruptured and the mother should go to bed at once.

The bed should be prepared as follows: Place a rubber sheet or several thicknesses of newspapers next to the mattress and over this a clean sheet. Next place three thicknesses of newspapers over the middle and edge of the side of the bed and cover with a folded sheet and then cover with a clean sheet. This top layer of papers and sheets can be easily removed after the labor and the mother will lie on a clean, dry sheet.

Everything should be in readiness for the reception and care of the baby. Have at hand a warmed flannel blanket in which to place the

baby after birth, and hot water bottles with which to surround it if the room is cold. Expose the baby as little as possible during the bath. The clothes and diapers should be warmed. Everything that comes in contact with the baby should be scrupulously clean.

The mother should insist that a drop of silver solution be placed in the baby's eyes. This will prevent blindness. If the baby weighs less than four pounds it can best be taken care of in incubators which are to be found in any well-equipped hospital. Your physician is required to make a prompt report of the birth to the registrar or local board of health. This is a matter of great importance. Don't let him forget it. The mother should remain in bed for at least two weeks after confinement. The womb does not return to its normal state for five or six weeks and no hard work or active exercise should be taken during this period.

THE NEW BORN CHILD

If a new born infant is to live its first requirement is air, its second warmth. It is extremely sensitive to cold and may be seriously or fatally injured by slight exposure to cool air. Wrap up the child quickly and carefully and do not expose it, except momentarily, to a temperature below blood heat. Do not handle the baby during the first few days more than is required to insure local cleanliness.

The death rate among infants is at its highest point the first week. The second week it drops enormously. Many babies die thus early because the care which they receive within the first few hours or days is not intelligent. The first bath coming too early kills many. A full bath should not be given before the child is ten or twelve days old. The first cleansing of the skin can be done much better with olive oil or even lard. Apply this to only a small portion of the body at a time, then wipe it off with pieces of old, soft cotton or linen.

Next to air and warmth among the life needs of the new born child is sleep. After it has had its initial cry, see that the breathing is well established and the child is made comfortable. Then let the infant sleep undisturbed during the first two or three days, eighteen or twenty hours out of the twenty-four.

Immediately after birth of a child two drops of a 1 per cent fresh solution of nitrate of silver should be placed in each eye by the nurse or attending physician. This preparation costs about two cents and will prevent blindness. The eyes should be carefully shielded from the light until they gradually become accustomed to it. The need of food is not immediate. Nature does not usually provide a supply of food for the first two or three days and sometimes not for the first five or six days. Hence it is safe to infer that a preliminary fast is the best and safest for the baby. Observation shows that feeding within this time is most often injurious.

When a baby is well it will sleep twelve hours or more in every twenty-four, without being rocked. It will nurse every three or four hours during the daytime, and after the sixth month will be satisfied without nursing in the night. It will gain about six ounces in weight every week. It will have a movement of the bowels every day, soft and yellow in color, without the aid of medicine or other help. It will be happy and contented. It will cut its first tooth at about the sixth month; sit up without aid at the seventh or eighth month; creep at the ninth or tenth month; walk at from the twelfth to the fourteenth month, and talk at about the fifteenth month of age.

To keep a baby well you must satisfy its needs in respect of the following essentials, namely: food, clothing, fresh air, bathing (with sanitary cleanliness of both the baby's body and clothing), sleep at night and naps in the daytime with all the rest and quiet possible. The following simple rules sum up a world of practical wisdom on this subject.

Give the baby pure outdoor air both night and day. Give it no food but mother's milk or milk or food from a clean bottle as directed by the physician. Let the baby alone when not feeding or bathing it. Whenever it cries or is fretful, don't offer it food, but give it water. Be sure that it gets sleep and at least two naps during the day. Don't wake the baby to feed it. Don't put too much clothing on it. Bathe it in a tub every day.

Why Babies Cry.—Because they are tired of lying on one side and are unable to turn over. Turn a baby once in a while. Because their diapers are wet or soiled and therefore uncomfortable. Because their hands or feet are cold. Because they are thirsty. Babies must have water (boiled and cooled, but not iced) to drink. Because they are too warm (sweating) and possibly irritated by "prickly heat." Because they are sleepy and wish to lie down and be let alone. Because the air of the room is foul and smelly. Babies require lots of fresh air. Because their clothes are too tight, or perhaps a pin is sticking into them. Because crying is the only way they have to tell you something is wrong with them.

Of course babies cry when in pain from colic or other cause, but you should find out if it is not some of the above stated causes before deciding that it is pain which is causing the crying. *Above all else, get the notion out of your head that every time the baby cries it is hungry.* If you are sure that none of the things spoken of above are the cause of the crying, then the most probable cause is intestinal indigestion and the quickest way to relieve it is by an enema of salt solution (a level teaspoonful of salt in a pint of warm water).

Children often cry when put down to sleep. If they are let alone they will soon stop crying and go to sleep. Don't get nervous about it. Don't fear that the crying child will rupture itself. Crying is one way in which children learn to develop their lungs. If children were let alone

and allowed to have their cry out, instead of being tossed and petted and hushed, they would be far better for it.

Many babies suffer because they are used to amuse older people and are tossed about and excited when they should be resting or sleeping. Try to have people leave the baby alone. Think how tired and irritable you get yourself on a hot day and shield the baby as much as possible from excitement and "attention."

Kissing.—There are many serious objections to babies being kissed by other children and by older people. Tuberculosis, diphtheria, and other dangerous diseases may be communicated in this way.

GENERAL RULES

Clothing.—The clothing of infants should be simple, warm, light in weight and not too tight fitting. For the first four or five months provide an abdominal band of thin, soft wool or flannel about six inches wide and twenty inches long. This will prevent serious effects from sudden changes of temperature. It should be only wide enough to cover the belly and should be wound two or three times around the body, according to the season of the year. This bellyband, or pinning blanket, should be wound smooth and free from creases or folds, and fastened with safety pins, or preferably with a few stitches of soft darning cotton. It must not be pinned so tightly as to interfere with the movements of the child's bowels or it will tend to cause diarrhœa. Nor should it be wide enough to impede the free movement of the legs, else it will prevent proper exercise and make the child fretful. All the baby's clothing should at all times be loose enough to allow it to breathe and move its limbs easily and to admit of the free circulation of blood. Never use clothing with tight waistbands. Skirts should be supported from the shoulders by straps. Never, for appearance sake, put starched, stiff or uncomfortable clothing on a baby.

Infants are very susceptible to

changes of temperature. The clothing should be modified with each change in the weather. Either overheating or sudden chill tends to produce stomach or intestinal complaints. Healthy infants are, however, warm blooded and need less covering than adults, especially in hot weather. Cool outdoor air will not harm them even in winter or in cold climates, if they are well wrapped up, protected from changes of temperature and kept out of drafts.

More babies are made sick by being wrapped up too warmly, especially in summer or in hot climates, than by taking cold. Babies feel the heat more than grown folks. Keep them cool in summer. They will not take cold. All through the hot season dress the child very lightly and keep it cool. Unless the baby is very delicate, limit its clothing in hot weather to a shirt, petticoat, cotton dress, narrow bellyband of thin wool, and the diaper. During the height of summer one thin piece, as a loose muslin slip or gauze shirt, is enough both day and night, in addition to a narrow bellyband of light wool and a diaper. On very hot days take off all the clothing but the diaper, unless the baby is under four months old, or is delicate or colicky, in which case the bellyband should be worn.

A baby with fever should never be wrapped up. It will not take cold. Remove nearly all the clothing and give a sponge bath every two or three hours. If the baby breaks out with nettle rash or "prickly heat" add to the basin of water a teaspoonful of baking soda or a tablespoonful of vinegar. After bathing with this mixture leave a slight moisture on the skin. Remove all clothing except the diaper and lay the baby in a cool place, but not in a draft. Keep the feet warm, the head cool. It is a mistake to suppose that babies must be kept wrapped up in flannel at all seasons of the year.

The Diapers.—Use great care in the selection of the baby's diapers at all times, and especially during the summer months when it is so easy to overheat and irritate the bladder

and the bowels. Make the diapers of the softest cotton cloth. Change them promptly when wet or soiled and keep them in a bucket or other receptacle containing water in which baking soda has been dissolved in the proportion of about one teaspoonful to the pint. Cover tightly to prevent odors and to exclude flies. A big lard pail or tin cracker box is suitable. Remember that summer diarrhœa and cholera infantum are infectious diseases and contagion may be carried to other children or grown persons by flies. Wash soiled diapers as soon as possible with pure refined soap or, preferably, in hot soda water. Rinse, air and dry thoroughly before using again. Never dry and use a diaper a second time before washing it. Boil all diapers at least once a week. Diapers freshly washed should never be put on a child suffering from diarrhœa. If there are no more at hand which have been washed several days previous, go through the house and gather all the clean soft pieces of old linen and muslin you can find. Cut these into proper shape for temporary use. If the supply is still insufficient, borrow from some one else. In summer, diarrhœa diapers must never be used until they have been exposed several days to sunlight and fresh air to kill the germs which they contain.

After every movement of the bowels change the diaper promptly. Babies often get sick from being left with soiled diapers on. Wash the baby well and pay especial attention to the creases in the flesh. The baby may become sore and chafed because it is not well washed, or because baby powder is put on when it is still dirty, or because the diapers are not washed out but only dried and used again. If the baby is chafed apply to the irritated surfaces a little zinc oxide ointment, sweet oil or olive oil instead of powder.

Clothing worn during the day which is to be worn again should be hung up to air, preferably out of doors, weather permitting. Garments worn at night should be hung up to air during the day. Both the baby and its clothing should be kept at

all times clean, sweet and free from odor.

Bathing.—Give the baby a tub bath every morning, preferably at a certain regular hour. A clean baby is happier and healthier than a dirty baby. A daily bath helps the baby to stand heat and, in hot weather, it may be well to bathe the baby twice or three times a day. Never bathe within an hour after feeding. A good plan is to give the baby its bath, then its bottle and then a nap. The first full bath should not be given for a week or ten days after birth. The water should not be below blood heat, which is between 98° and 99°. Or, better, make the water one or two degrees warmer than your own or the baby's temperature. If the infant is vigorous, the temperature may gradually be reduced to 95° at six months, to 90° at one year of age, and to 80° at the age of two and a half years.

Every mother should have a clinical thermometer. This can be obtained at any drug store. If you have one, use it when preparing the baby's bath. If not, test the water by putting your face in it. Never test it by the arm or hand. Until the infant is able to sit up unsupported, it should have only a sponge bath, but do not use a sponge. They cannot be kept clean. Use instead pieces of soft old toweling, or cheese cloth which can be balled up in the hand. As soon as the baby can sit up, obtain a small bath tub or use a wash tub. If the water is neither too cold nor too warm, the child will always enjoy its bath. The reason that some children do not like the bath is because they have been put into water that is too hot or too cold. Remember that an infant does not react quickly from a cold bath and is depressed or injured by water that seems only slightly cool to an adult. Children's skin is very sensitive and the baby must not be permitted to take cold. It should be bathed in a room warmed to a temperature of at least 75° and carefully guarded against drafts.

A cold bath indoors or outdoor fresh water or surf bathing, should

not be permitted under three years. A child of two years may be allowed to run about on the sand with its bare feet and occasionally step in the water, but much harm has been done by immersing young babies in cold water. It is a good plan to sponge the neck and feet of a baby over twelve months old with cold water at night and follow with brisk rubbing. This in many cases will prevent its taking cold.

Take good care of the baby's skin. If it is irritated the baby will be uncomfortable, and will tend to become fretful and unhealthy. Buy only the purest kind of soap for the baby's bath and use it sparingly. The green castile Zanti soap is the best and can be procured through your druggist. If this is not available, white castile soap is the next choice. Do not use soap if the skin is irritated or raw. Place a cheese cloth bag containing a teacupful of bran in the baby's bath and squeeze it until the water becomes slightly milky.

On very warm days, sponge the baby two to four times with lukewarm water in which dissolve a little salt in the proportion of a teaspoon to each pint, or use a like amount of alcohol (not wood alcohol) instead of salt. For nettle rash or "prickly heat" bathe the affected skin with water containing a teaspoonful of baking soda or a tablespoonful of vinegar, but remember that roughened or inflamed skin may be the sign of infectious disease. If it does not yield to this treatment consult your physician.

If the baby has fever, sponge it in cool vinegar water every two or three hours and place cool wet cloths on its head. Sponge the baby whenever the diapers are changed. Take especial care to cleanse the creases of the body, particularly after movements of the bowels. Dry the skin thoroughly after sponging and if talcum powder is used, buy only the unscented.

Don't let the baby crawl on a dirty floor where it may pick up the germs of tuberculosis or other disease and transmit them to its mouth. Keep

the floor clean and wash the baby's hands after crawling.

Care of the Mouth.—Wash out the mouth at least twice a day with a soft clean cloth wet in water containing a teaspoonful of borax or baking soda to the pint, but never put your fingers in the baby's mouth without first washing them. Don't let the baby put dogs or cats close to its mouth.

Fresh Air.—Fresh air is as important to the baby's health as fresh food. Children, like growing plants, thrive best in the open air. Keep the baby in the largest, coolest, best ventilated room you have. Screen the windows and doors against flies and destroy those that get in. Also protect the baby from flies, mosquitoes and other insects by screens and mosquito netting. Insects often carry the germs of malaria, typhoid and other contagious diseases. Keep the room clean and free from garbage, soiled clothes and rubbish. Even in winter and in cold climates, the airing of the baby's room may be begun when he is not more than a month old. Thereafter the windows may be kept open for a gradually lengthened period of time from a few minutes to an hour or several hours at a time depending on the weather. Protect the baby when thus exposed to the fresh air by putting on his bonnet and coat the same as for an airing out of doors. If thus habituated to fresh air the baby is much less liable to colds than if reared in foul or stagnant air.

In summer keep as little fire as possible. In very hot weather keep the doors and windows wide open night and day. Always keep one or more windows open in the baby's sleeping room winter and summer, night and day, and whether the baby is sick or well, as soon as it has been properly accustomed to fresh air. Some ignorant persons have a superstition that "night air" is injurious to health. Night air is the only kind of air there is at night and fresh outdoor air is far more wholesome than that which has been shut up in the house and breathed over and over again. In summer sleep

out of doors with the baby if you can.

Keep the baby out of the kitchen or other overheated rooms, especially if you are cooking or washing. Take it out of doors in the early morning when the air is free from dust, and if the weather is good keep it out of doors, if you can, all day. Avoid the sun on hot days. Keep on the shady side of the street, under the trees, or in some shady place. Walk and move around slowly. Have a basket for the baby to sleep in, which you can hang up outdoors in some shady place away from dust and sudden winds. But when you place the baby in the shade be very careful to alter its position as the sun moves around. Be careful not to let the sun shine on the baby's eyes. Its sight may be injured if it is left staring up into the hot sun. During the fly season see that the baby is covered with a suitable net. Keep it away from crowds and crowded places. Babies are very susceptible to the germs of contagious diseases.

A trip to the country for city babies, or any change to a higher altitude or cooler climate, may save the baby's life if summer complaint or diarrhoea should set in during the heat of midsummer. Choose preferably some place near a large body of water. An ideal spot is a heavy wooded region on the banks of a lake or bay. Too much sunshine is harmful—natural shade is necessary to health and comfort. Even a few hours in the park every day or two may save the life of a baby living in a crowded city. When traveling with a sick baby, carry sufficient food—cow's milk, condensed milk or other manufactured foods—to last the baby during the trip. Also carry a supply of pure or boiled water for the baby to drink and for use in mixing its food. There is a traveling basket on the market lined with metal and felt, or mineral wool, which contains chambers for ice and milk bottles. In this, milk can be kept the same as in a refrigerator. This basket will also carry an alcohol stove and supply of alcohol, ex-

tra nipples, brushes and other accessories to the nursing bottle.

Sleep and Rest.—Under no circumstances should a baby sleep with its mother, nurse or any other person. Very young babies have often been smothered by their mothers overlying them in sleep. There is also a temptation to frequent nursing at night which is harmful to both the baby and mother. If there is no crib, a bed for the baby may be made up on a couple of chairs at the mother's bedside. The baby will be much more comfortable in such a bed and will neither disturb others nor be disturbed. The backs of the chairs will keep the baby from falling. A Morris chair makes a good substitute for an infant's crib and can be utilized during the daytime. Lay the back down flat with something under it for a support and use the cushions as a mattress.

The Baby's Bed.—The best kind of a bed for a baby is a mattress made of excelsior covered with cheese cloth. A good quality of excelsior may be obtained at any furniture store or factory for a few cents, and cheese cloth may be found in any dry goods store at three or four cents a yard. Such a bed is always cool, clean and comfortable. It helps the child to keep strong and well and free from colds and coughs. Should it become soiled, the excelsior can be removed, the cover washed and another cover stuffed with excelsior substituted. This bed is highly recommended for sick children, especially in summer months. If an ordinary mattress is used it should be firm and hard.

Never put a baby to sleep on a feather pillow or lay it on a rubber cloth or oil cloth upon a bed. Such beds overheat the baby's back and head, so that when taken up it is wet with sweat, and very apt to take cold. Never use feather pillows. Provide a crib for the baby and let it sleep alone at night. Keep the bed and bed clothes scrupulously clean. Change them promptly if they become soiled. Cover the bed or crib with mosquito netting. Flies not only make the baby restless, but may

communicate the germs of malaria, typhoid, or other contagious diseases.

Sleep and Naps.—Let the baby sleep all it will. Authorities differ as to whether or not a well child should be awakened from its nap to be fed at its regular feeding time. The prevailing opinion seems to be that the child should be allowed to awaken naturally, but that, if put down for its naps at regular hours and not handled or disturbed, it will sleep about the same length of time each day and can thus be trained in regular habits of sleep which will not interfere with the regularity of its feedings or turn night into day. Babies under three years of age should have regular two-hour naps morning and afternoon. Up to six months old they should have eighteen hours' sleep and thereafter at least twelve hours' sleep at night, besides the daily naps. Older children should have at least one nap during the day. The want of sufficient sleep is a very serious hindrance to the child's growth and development. Get the baby into the habit of going to sleep without being held or rocked. This is much better for the baby and saves time for the mother or other members of the family. Lay the baby down in a suitable place and let it alone. Children often cry when put down to sleep. If they are let alone and not handled or talked to they stop crying and go to sleep. Don't fear that the baby will rupture itself by crying. Don't keep a child at the breast or bottle while putting it to sleep.

Handling.—When the baby is awake don't get it into the habit of being held by its mother or other children. Most babies suffer because they are used to amuse older people and are forced to laugh or are tossed about and excited when they need to rest or be quiet. Constant holding and passing from one arm to the other tend to make the baby fretful, cross and sick. No man or woman would like to be held, tossed or tumbled around for several hours daily by a much larger person. This is just what frequently happens to

the child. He likes to play by himself. Therefore, let him alone with some one to watch him, and don't handle him.

Quieting the Baby.—Never give a child soothing sirup to make him sleep. Such preparations contain some form of opium or other poisonous, habit-forming drugs. Don't let it suck a nipple, "comforter" or "pacifier." All artificial devices for quieting babies are harmful. Pacifiers often cause thrush or other infections of the mouth. Their use causes a constant flow of saliva which interferes with digestion. They sometimes cause deformities of the mouth and teeth, and may lead to the habit of sucking the fingers. They are wholly unnecessary and their use should be discontinued.

Standing and Walking.—The free use of the muscles is essential to health even in early infancy. Do not swathe the baby's limbs so closely as to prevent their movements. Even in the early months it is a good plan, under proper conditions of warmth, to take off babies' outer wraps and let them kick. It is good for them. Do not encourage the baby to stand or try to teach it to walk. It will walk when it gets ready. The bones of an infant are plastic and if its weight is thrown upon them too soon there will be danger of bow-legs or other deformities. It is a mistake to encourage a child to stand or walk too early. Few babies can walk at twelve months and none should be allowed to do so.

BREAST FEEDING

If you love your baby nurse it. Its chance for life will be nearly ten times greater than the chance of the bottle-fed baby. Nursing will also lay the foundations of a good constitution with which to resist the attacks of summer complaint, consumption, convulsions and rickets (bow-legs), and the contagious diseases of infancy. Children never fully recover from the effects of a lack of proper nourishment during the first few months of life. The chief advantage of breast feeding over bottle

feeding is that breast milk is the cleanest milk obtainable. Taken directly from the maternal breast to the stomach of the infant the natural food of infancy is not exposed to anything that might contaminate or pollute it. Careful observation shows that it is not the hot weather itself that causes the high mortality among infants in summer, for breast-fed babies do not die excessively in hot weather. The difference is due to the freedom of breast milk from the micro-organisms, or germs in dirty cow's milk, which cause intestinal disease. Even the difference in the composition of breast milk and bottle milk seems to play a very minor rôle in the high summer death rate, because in the winter there is very little difference in the death rate as between breast-fed and bottle-fed babies.

There is no perfect substitute for mother's milk. The milk of the cow, goat, and other animals, condensed milk, and the artificial manufactured foods so widely advertised, are unnatural and unsatisfactory make-shifts. Even the milk of the wet nurse will not agree with the infant as well as that of its mother. All of these substitutes have been often analyzed and the difference between them and the natural food of infancy is clearly understood. The milk of the she ass and the mare most closely resemble that of women through their percentage of casein. Cow's milk comes next. Goat's milk holds only the fourth place. It has no advantage over cow's milk. Condensed milk contains too much sugar, and not enough fat. None of the manufactured foods most commonly used contain sufficient fat; some contain too much starch, others too much sugar. At times some of these substitutes may be used to advantage, but none of them can take the place of mother's milk, nor be safely used alone.

Almost every mother can nurse her baby if she will. Even though there is but little milk at first, don't become discouraged; be patient and try, try again. There are very few mothers whose breast will not give suf-

ficient milk if they will encourage the baby to suck. This keeps the milk flowing and increases the flow. Even though you feel weak, you can nurse the baby without danger to yourself. Only a few serious diseases forbid nursing. If you are in doubt, consult your doctor. His advice is better than that of your neighbors or relatives.

Even though the breast milk is scanty, you should cherish it as you value your baby's life and health. A single swallow of such food is better than nothing. In such a case do not alternate the breast with the bottle feeding. This will tend to let the breasts dry up. Nurse regularly to the extent of the supply, and if required, immediately make up the shortage at each feeding from the bottle.

Care of the Nursing Mother.—A nursing mother must keep herself well in order to keep her baby well. Breast-fed babies often vomit or have diarrhœa because the mother is sick or tired out, or because the milk is poor. Causes which weaken the mother and injure her milk are improper food, irregular meals, exhaustion from over-work or lack of sleep, and too frequent or prolonged nursing. Mothers must not overwork, worry, or get overheated. They should sleep as much as possible, and preferably outdoors, or in rooms with windows wide open. The above causes may render the milk less nutritious or even dangerous. They act especially in hot weather. If you feel that you cannot nurse your baby or think that you ought not to do so, consult your doctor before using any kind of artificial food. There are cases in which it is better to remove the baby from the breast, but the dangers are such that the mother should not assume this responsibility but should be guided by the doctor's advice.

Nursing mothers should therefore keep themselves well and their milk in good condition, by eating at regular hours three plain, well-cooked meals a day, consisting of milk, meat, vegetables and cereals. They should drink freely between meals of pure

cold water. The notion that large quantities of tea, coffee and beer improve the quality of the mother's milk is a mistake. Beer and tea are always harmful and large quantities are positively dangerous. Mothers should keep their bowels regular. Constipation in a nursing mother often causes colic in her child. If the mother is ill or run down, or the baby has diarrhœa and vomiting, she should consult a doctor at once, and before giving the baby other foods or bottle feeding.

Diet of the Nursing Mother.—Both the quantity and the quality of the mother's milk may be improved by improving her health and by modification of her diet.

The first rule of a good diet for the nursing mother is that it must agree with her and keep her in a good state of health. Hence a diet adopted to increase the quantity or quality of the milk must not be adhered to unless it proves wholesome to the mother. Some foods, as tomatoes, strawberries and lettuce, which may be eaten by some nursing mothers without affecting their babies, cannot be eaten by others. For most mothers these fresh foods are of great value and may be eaten freely. The mother must be in good health to produce good milk.

The quantity of the milk may be increased by the use of liquid foods. Drink plenty of pure water and good rich milk. A quart or more of milk a day may often be taken to advantage. The diet may be varied by the use of tea, coffee (taken sparingly), cocoa and soup, in addition to milk. Take care not to brew tea and coffee long enough to extract from them the tannin, caffeine and other harmful substances they contain. Never boil tea or put the teapot over the fire. Simply put in the tea and pour boiling water over it. Pour as soon as it is strong enough, which will be in about three minutes. Do not allow coffee to boil. Use preferably a coffee percolator and remove from the fire as soon as it begins to boil. Drink freely of pure water, but avoid all sour, salt or highly spiced foods and alcoholic drinks of all kinds.

Also avoid saline purgatives (salts)—they are highly injurious.

Quality of Mother's Milk.—If the breast milk is plentiful and of good quality, yet fails to nourish the infant, a change of the mother's diet and habits will be found to give excellent results. The richness of the milk may be increased by eating plenty of meat, eggs, animal broths, and other animal foods; or decreased by omitting or decreasing these foods and by eating freely of fruits and cereals. If the infant does not increase in weight, the use of fats and oils by the mother will soon cause improvement.

Roth's Rules for Influencing Breast Milk.—To increase the total quantity, increase proportionately the liquids in the mother's diet and encourage her to believe that she will be enabled to nurse her infant; or to decrease the quantity, decrease the liquids proportionately.

To increase the total solids, shorten the nursing intervals and decrease the exercise and the proportion of liquids in the mother's diet. To decrease the total solids, prolong the nursing intervals and increase the exercise and the proportion of liquid diet. To increase the fats, increase the proportion of meat in the diet and of the fats which are in a readily digestible form. To decrease the fats, decrease the proportion of meat and fat in the diet. To increase the proteids, decrease the exercise; or to decrease the proteids, increase the exercise up to the limit of fatigue for the individual.

When to Nurse.—The mother's milk does not always come immediately after the birth of the child. Sometimes it is unusually late in coming. In these cases, the rule should be to wait and be sure before resorting to bottle feeding. Take the advice of the family doctor. This is too serious a matter to be settled off-hand and without the best advice. Sometimes a good flow of milk is not established until the fourth, fifth or sixth day. Some young mothers make the serious mistake of giving other food to their babies during this time. It may be taken for granted

that nature's method cannot be improved upon. The baby will not starve. If it is given anything except the mother's milk, it may be seriously injured. Put the child to the breast every six hours the first day, and every four hours the second day after birth, or oftener if it fails to nurse or obtain nourishment. But do not awaken it to nurse. Undisturbed rest is what it needs. In the interval between nursings give it a clean linen rag moistened with pure, boiled water to suck. After the milk comes, usually from the third day on, the frequency of nursing during the first year is shown in the following table from Holt:

Period.	Nursings in 24 hours.	Interval by day.	Night nursings (10 P. M. to 6 P. M.)
1st and 2d day ..	4	6 hrs.	1
3 days to 6 wks..	10	2 "	2
6 wks. to 3 mos....	8	2½ "	2
3 to 5 months....	7	3 "	1
5 to 12 months....	6	3 "	0

After the third day and for the next six weeks, nurse the baby every two hours during the day time, and not more than twice at night, or a total of not more than ten nursings in the twenty-four hours. The healthy child will take one or more naps each day. It should not be awakened for feeding, but aside from this should be fed regularly every two hours.

The interval between nursing may be increased from the sixth week to the third month to two and one-half hours with one nursing at night, or a total of eight nursings in twenty-four hours. The interval may be further increased to three hours during the day time with one nursing at night from the third to the fifth month. From the fifth to the twelfth month the times of feeding remain the same, but the night feeding should be discontinued. If the child wakes up in the night, give it a drink of cooled boiled water, or thin barley water without milk. It needs nothing more. After a short time, if it is well, it will sleep through the night.

It is easy to get the baby into good habits, and hard to get it out of bad habits. By adopting regular habits of nursing, the mother is given more freedom and more rest and is in better condition to take good care of her child. Form the habit of nursing your baby by the clock. It will soon learn to expect its nursing at the proper time, and not at any other time. It is a good plan to write on a slip of paper a memorandum of the hours for nursing with the date on which the hours are to be changed to longer intervals, and also which breast is to be used at each nursing. It is much better to use but one breast at each feeding alternating, than to let the baby nurse at both breasts at each feeding. Such a memorandum during the first six weeks would read:

Right, 5 A. M.; Left, 7 A. M.; Right, 9 A. M.; Left, 11 A. M.; Right, 1 P. M.; Left, 3 P. M.; Right, 5 P. M.; Left, 7 P. M.; Right, 9 P. M.; Change to 2½ hours between nursing on (date).

Do not nurse except at the regular intervals. It is a great, but very common mistake to put the baby to the breast every time it cries. It is more likely to be thirsty or suffering from over-feeding than to be hungry. Give it a drink of water, but do not nurse it until the regular time. If you nurse oftener, your milk will become unfit. Babies when nursed too often or whenever they cry get indigestion and then cry harder from pain. If a baby is not sick or uncomfortable from heat or from the pricking of a pin, it will get no harm from crying. Indeed, every baby should cry during the day. It helps to develop its lungs. Crying, especially during the first few days of life is perfectly natural, and often beneficial. It does not necessarily indicate illness or hunger at any time, and food or medicine should not be given merely because the child cries.

The nursing should not last more than twenty minutes. Never let the baby go to sleep with the nipple in its mouth. Never nurse the baby when you are very tired or very much wrought up with grief, anger, or other very strong emotion. Your

milk under such conditions will often be unfit for food. It may give the baby convulsions. In such cases it is often better to draw off the milk and give the infant some other food until you regain self control. Do not take drugs while nursing your baby, except by the direction of your physician. Opium, senna, rhubarb, and some other drugs may affect the milk so as to poison the child.

Care of Nursing Bottles.—If the baby must be fed from a bottle absolute sanitary cleanliness is the price of safety. A baby cannot get clean milk out of a dirty bottle or through a dirty nipple. Sore mouth, colic and summer complaint often come from improper care of bottles and nipples. It is true that some babies have lived in filthy surroundings and survived dirty food, but it is equally true that others have been killed by them. The only safe course is to take no chances. It is better to be safe than to be sorry.

Clean the nursing bottle immediately after each feeding. First rinse with clear cold water. Hot water changes the casein of milk into an insoluble glue which is very hard to wash off. Stale milk curds sticking to the inside of the bottle become poisonous after a few hours and may contaminate fresh food. After rinsing, put the bottle to soak in soda or borax water or soap suds. Finally, scrub the inside with a clean wire or other bottle brush; rinse with hot water and boil for twenty minutes. Turn the bottle upside down in a clean dish without wiping, and place in a clean place to dry and cool. Or, preferably fill the bottle with clean boiled water and a little piece of cooking soda the size of a pea and let the water stand in the bottle until the next feeding. Never let the bottle stand with milk in it. Never try to save what is left from one feeding until the next.

Nursing Bottles.—Never use square or paneled bottles. Sour milk and dirt cannot be removed from the corners. This filth remaining will afterwards contaminate the fresh food. Also avoid nursing bottles with tubes of either glass or rubber. They may

be handy for you, but they are death to your baby. Indigestion and bowel complaint are the result. Their use cannot be too strongly condemned. They cannot be properly cleaned and milk taken through them, especially in hot weather, soon becomes filthy and absolutely poisonous to the infant. Square bottles and nursing tubes are baby killers and their sale has been forbidden in many states by law. Select bottles with round corners and with the kind of nipple that fits over the neck and can be turned and washed both inside and out. Nipples of black rubber are better than those of white or red.

No person ailing or sick with a contagious disease, or who is known or suspected of having been exposed to such diseases, should be allowed to touch or come near the baby's milk or other food, or any of the utensils in which it is prepared or served. A small cluster of bacteria from a contaminated finger may develop to a colony of several billions in a bottle of warm milk within a short time.

Care of Rubber Nipples.—Use the kind of nipple which is slipped over the neck of the bottle. Have at least two nipples, or preferably buy a half dozen at a time and keep some on hand to replace those that are lost or injured. After each feeding, turn the nipple inside out, rinse with cold water, and scrub with a brush kept for that purpose. Wash thoroughly with hot water inside and out, and drop into a cup containing about a teaspoonful of soda or borax to the pint of water, until needed for use. Boil the nipple at least once daily for twenty minutes while the milk bottles are being boiled. Rinse the nipple in boiling water before using it. Don't put it into your mouth to find out whether the milk is warm enough, nor let the nurse do so. To test its temperature, let a few drops of milk fall on your wrist.

Weaning.—Ask your doctor how long you ought to nurse your baby. It will depend partly upon your state of health, and partly upon the season of the year. Some mothers ought to wean their infants at six months, others may nurse them a full year.

The average is about nine or ten months. Nursing the child too long is an unnecessary drain upon the mother. There is also great danger of injury to the child. Don't wean your baby as long as he is gaining in weight, and never do so except by the advice of your physician. His advice is better than that of your neighbors. If the baby remains well but stops gaining weight, don't conclude that your milk does not agree with it. Consult your physician about the use of some artificial food to help you out. Wean gradually by giving one breast meal less each week and teach the baby to drink from a cup or bottle. This is better for the baby. Sudden weaning is apt to cause serious illness.

With the advice and consent of your physician, you may begin during the fifth or sixth month to teach the baby to take food and water from a bottle. Thus the baby will be fed for some time with both breast milk and artificial food, and there will be time for his stomach to adjust itself to the change. This plan will materially decrease both the difficulties and dangers of weaning. It also helps you to extend the period of nursing. Every drop of breast milk the baby gets adds to his health and strength as no other food ever can.

In changing from breast milk to cow's milk, the milk used first should be very much diluted and modified unless the baby has been given a bottle in addition to the mother's milk. In weaning a six months old baby give the milk usually given to an infant one month old. If the baby is ten months old, give the milk usually given to a three months old baby.

Wet Nurses.—A true foster mother in good health and spirits and equally as devoted to the welfare of the child as though it were her own, would be the ideal substitute for an infant deprived of its mother's milk. In practice, there are so many objections to the employment of the wet nurse that this plan is by no means as popular as in years past. The cost for board and wages is considerable and the difficulty of finding a suitable person is very great. The

mother who yields her natural function to another must remember that if the nurse is not perfectly healthy she may infect the child with disease; if careless and ignorant, she may cause the death of the child through neglect; and if her own baby should chance to suffer through her employment, she may grieve or become so nervously excited as to make her milk unwholesome. She may also leave at any moment without warning. Hence, a wet nurse should never be hired unless she is known to be reliable and of good moral character and is pronounced by a competent physician to be free from disease. Inquiries should be made as to the circumstances surrounding her own child. Reasonable assurance should be had that she is likely to be free from anxiety or worry.

The same care should be devoted to the nurse's habits of life and diet as the nursing mother should exercise in her own behalf. As a rule it is necessary that the nurse should have the sort of food and the amount of exercise to which she has previously been accustomed, rather than that she be fed upon rich foods and suffered to lead a life of idleness.

ARTIFICIAL FEEDING

All doctors of experience agree that the problem of the artificial feeding of infants is one of the most serious which they are called upon to face. Some babies have to be put on the bottle at birth or during the first few weeks or months of life. All must be weaned sooner or later. Hence, this is a problem which must be worked out for every single child. There are certain facts and principles which every mother should know, because they are of equal importance in all cases. But every mother should clearly understand that no set of rules can be laid down which will be adapted in all respects to any child. Each baby needs a combination suited to his digestion. The mixture upon which some other baby is thriving may be too strong or too weak for your baby. The only way to learn what food will agree with your baby

is by experience. The facts and principles herein stated are condensed from the official publications of boards of health throughout the United States. They may be relied upon as the consensus of the best medical opinion. But if your baby does not thrive upon artificial food prepared as here suggested, you should consult your family physician and be guided by his advice.

It is much better for her own health as well as that of the child for the mother to nurse her own baby. It is also much easier and cheaper. Milk and other artificial food is expensive and so is the ice to keep it properly. And much time and trouble is required for preparing the food. Hence it is almost a criminal folly for a mother to refuse to nurse her baby, unless the physician advises her that it is unsafe for her to do so. Good artificial food is, however, better than bad breast feeding. Sometimes the mother or the infant may be actually unable to nurse. The milk may continue to disagree with the infant; it may be insufficient in quantity or deficient in quality properly to nourish the child; or the health of the infant's mother may require weaning.

If the milk is good in quality, but insufficient in quantity, it is far better to continue the breast feeding and to give the baby some artificial food in addition, to help the mother out. Mother's milk is not only the most easily digested and the most nutritious of all baby foods. It contains a ferment such that a very small quantity helps to digest a larger quantity of cow's milk. It also contains certain antitoxin substances which afford a large degree of protection against diarrhoeal diseases, the ordinary infectious diseases, and some others. Hence, even if the supply of breast milk is not sufficient for the total nourishment of the child, this partial supply is of such great value that it should be kept up as long as possible.

Even when the mother's milk has nearly disappeared it may sometimes be brought back. If the inclination of the child has not been spoiled by

feeding from a cup or spoon it will, by regular application to the breast, help to stimulate the secretion of milk. The flow can also be encouraged by proper attention to the diet. But if the mother is suffering from disease which impairs the healthfulness of the milk, breast feeding must be wholly discontinued and artificial food adopted.

When Not to Nurse.—When the mother is consumptive or suffers from any other chronic disease or is very delicate, nursing may be too severe a drain upon her and may be unwholesome for the child. Nursing a consumptive mother is not only dangerous to the child; it may hasten the progress of the mother's disease and make fatal its termination. Breast feeding is also out of the question when serious complications follow the child's birth, such as severe hemorrhage, childbed fever, blood poisoning, kidney disease, or when the mother suffers from epilepsy or St. Vitus Dance, or other chronic nervous affliction.

Contrary to common opinion the nursing mother may become pregnant, in which case her baby should be promptly weaned. The milk is then deficient in quality and to continue nursing may work irreparable injury to both mother and child. The importance of this fact cannot be over-estimated, as some mothers from a mistaken opinion to the contrary nurse their children for several months after they should be weaned and suffer the most unfortunate consequences.

The menstruation of the mother does not affect the milk as much as usually believed. It may cause slight indigestion, but is not sufficient reason to stop nursing. Extreme sensitiveness of the breasts to the point of intense pain in nursing is not a good reason for discontinuing. Persistence for a few days will allow nature time to effect a cure.

MILK MODIFICATION

Cow's milk undiluted and unmodified is entirely unfit for infants under one year old, but when properly

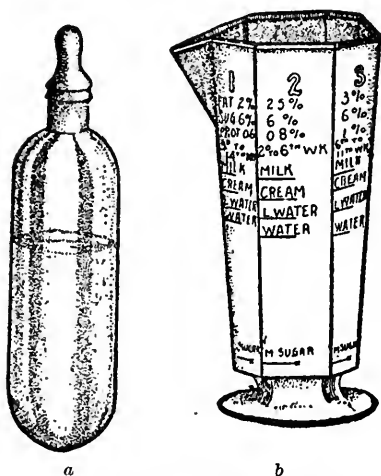
diluted and mixed it is the best substitute for mother's milk. Cow's milk must be diluted on account of its richness in curds. The cheesy matter it contains forms large curds in the child's stomach which are harder to digest than the smaller curds in mother's milk. Hence it is necessary to dilute the cow's milk, both to lessen the amount of cheesy matter and to break up the curds into small particles so that the child can digest the milk more easily. When diluted, however, it contains too little fats and sugar. Hence after dilution, it is necessary to add cream and sugar to the milk. This process imitates the milk of the mother as nearly as can be done. It is commonly known as milk modification. Milk so treated is called modified milk. This is now accepted by all authorities as the best food for the infant deprived of breast milk. Cow's milk can be diluted either by water, by decoctions of cereals such as barley or oatmeal, or, toward the end of the first year, by beef or mutton broth. Both oatmeal and beef broth have a tendency to loosen the bowels. Changes have to be made from time to time to suit the infant's digestion. Your physician will advise you as to how this can be done.

Good cow's milk contains four per cent of butter fat and may be called 4 per cent milk. After standing until the cream rises to the top, the upper third of a bottle of good milk contains ten per cent of butter fat. This is called ten per cent milk, or cream. The upper half contains seven per cent of butter fat and is known as 7 per cent milk. Always buy whole milk, i. e., 4 per cent milk, never skimmed milk.

Materials Required for Milk Mixing.—It is good economy to equip yourself at the outset with a full set of proper utensils for mixing the baby's milk. The best are none too good. The whole cost will hardly equal the doctor's fees which may result from a single illness due to improper feeding. You will require an eight-ounce glass graduate, a glass funnel, a cream dipper, a dozen nurs-

ing bottles, a half dozen black rubber nipples, and three bottle brushes for washing out the bottles. If you buy milk in bottles and measure it in a glass graduate you will not need to use pitchers, cups, or other measures. But whatever utensils you do use for mixing the baby's food should be kept by themselves, washed separately, boiled and drained without wiping, and not put into the dish water or wiped with a dish towel in the ordinary way.

The Materna Measure.—This is a sixteen-ounce measure with six panel



(a) Best style of nursing bottle; (b) materna measure.

sides. It affords a simple means of milk mixing in the home. On each side is marked the exact amount of sugar, lime water, water, milk and cream to be used in feeding. The six panels are labeled to measure the food suitable to as many ages of infancy. If your druggist does not carry this measure in stock ask him to order one for you. It will help you to avoid making mistakes.

All utensils used in preparing baby food should be of glass, china, porcelain or granite-ironware. These will not rust nor present crevices for the accumulation of dirt. Never use vessels or utensils which are cracked or

have rough edges or surfaces. Select nursing bottles with round bottoms and free from angles. The best bottles are marked with a scale of ounces so that the exact amount given may be measured at each feeding. It is advisable to purchase a dozen bottles because it is much more convenient to mix in the morning the food for the entire day. Put enough for each feeding in a separate bottle and then place the bottles on ice. Ten feedings will be required for small infants and it is well to have extra bottles on hand in case of breakage. Fewer bottles may be used, but no mother should attempt to get along with less than two. It is better to have plenty of bottles so that the same bottles will not have to be used too frequently.

MATERIALS FOR MILK MODIFICATION

Water.—The purity of water with which infants' food is diluted is equally as important as the purity of the milk. The benefits of clean milk are entirely lost if it is diluted with dirty water. Pure spring water, which can be purchased in bottles in many localities, is to be preferred for diluting infants' food, but if it is necessary to use water from cisterns, wells, or streams of doubtful purity, boil the water for half an hour and store it in clean glass bottles stoppered with cotton wool or antiseptic gauze. Do not allow it to stand over six hours.

Lime Water.—Lime water is used to overcome the acidity of cow's milk and to lessen the consistency of the curd. There are some infants with whom it does not agree, and if used too freely it may cause constipation. Vichy water is a good substitute for lime water and should be used if the latter does not agree. Either can be obtained from a druggist. But in buying material of any kind for infant feeding, patronize only druggists in whom you can have confidence. Some unscrupulous druggists sell ordinary unfiltered tap water for lime water.

Sugar.—Sugar is not added to

cow's milk to sweeten it and make it more palatable, but to make it conform as nearly as possible to mother's milk. Milk sugar is best if you can get a pure article from a reliable druggist. But milk sugar often contains impurities. Hence, unless you are very sure of the reliability of your dealer, use cane sugar; this is rarely adulterated or impure. Loaf sugar is the purest form of sugar and among the purest of all foods. Use only half the quantity of cane sugar that you would of milk sugar.

Barley Water.—This is often used in diluting milk for infant feeding to make the curds of milk more easily digestible. Barley flour* is preferable to pearl barley. To make barley water use two tablespoonfuls of barley flour or meal, and a small pinch of salt, to a quart of cold water, stir and boil fifteen to water. First stir the barley flour with a little of the water into a thin paste. Then add the remainder of the water, stir and boil fifteen to twenty minutes. If pearl barley is used it must be thoroughly cooked. Place two tablespoonfuls in one quart of water and boil from two to three hours. Add more water from time to time so that the quantity in the end will be one quart. Strain through a clean piece of cheese cloth sterilized by baking in a hot oven. Barley water should not be kept from day to day, but should be made fresh every morning.

A prominent physician of northern Illinois, who has been practicing for thirty-two years, says: "My food for babies is invariably one heaping tablespoonful of pearl (store) barley, ground in a coffee-mill, and boiled in one quart of water, down to a pint. Strain, add the same quantity of milk, and let the baby have it. Hundreds of mothers have used this preparation on my direction, and the result has been healthy, growing, fat babies. I think that Professor Jacoby recommended this many years

* Robinson's patent barley or the prepared barley of the Health Food Company are standard preparations of barley flour and can be obtained at almost any drug store.

ago. At any rate I always use it, and with constant success."

Oatmeal Water.—This is used in the same way as barley water, especially if a laxative effect is desired. To make it, stir two tablespoonfuls of oatmeal with a pinch of salt in a quart of boiling water. Cover and let simmer for two or three hours. Replace the water as it evaporates so that there will be a quart when done. Strain the same as for barley water and make fresh every day.

Or, for oatmeal or rice water, put three tablespoonfuls of oatmeal (H-O) or rice into a quart of water. Soak three hours or overnight. Then boil steadily for two hours keeping the quantity up to a quart with more water as needed. Add a pinch of salt and strain as for barley water. Keep in an ice box or other cool place and make fresh daily.

BOTTLE FEEDING

The best plan is to prepare each morning enough food to last for twenty-four hours and place the required quantity for each nursing in a separate nursing bottle. Plug the bottles with baked absorbent cotton, cotton wool or antiseptic gauze.

Or, if you do not have enough nursing bottles, prepare enough food for twenty-four hours and place it in a clean, freshly boiled fruit jar with a glass clamp top. Do not use the screw-top jars. They are not so easy to keep clean. Do not use the rubber ring, it is hard to keep clean and is not necessary.

Get together all the necessary utensils, and put them in a saucepan, preferably of agate ware. Cover them with cold or luke-warm water, and bring them slowly to a boil. Clear off a table top to work on and cover it with a freshly laundered towel or other clean cloth. See that everything that comes in contact with the milk is absolutely clean. Wash your hands with soap and water and scrub them with a stiff brush with especial attention to the finger nails. Put the water to be used in mixing the food on the fire in a covered saucepan. Bring it to a boil and

keep it, until ready for use, in the same vessel in which it was boiled. Now mix the food exactly as the doctor directs, or in accordance with the formula you have adopted. Always mix it exactly the same way. As soon as the food has been placed in nursing bottles or fruit jar, and stoppered properly, put these on ice or in the coolest place you can find. Work quickly and do not let the milk or prepared food stand in a warm room any longer than is necessary.

Or, if the milk is not perfectly fresh, or has not been freshly pasteurized, it may be pasteurized after it has been prepared and placed in the nursing bottles. This is perhaps the safest course, as it avoids all possibility of contamination from the time the food is prepared until it is fed. After the nursing bottles are filled stand them up on a plate in the bottom of a saucepan filled with luke-warm water up to within two or three inches of the tops of the bottles. Bring the water slowly to a boil. Then remove the saucepan from the fire and let the bottles stand in the hot water for fifteen or twenty minutes. Now cool the water surrounding the bottles by pouring in cold water. But take care not to cool the bottles so quickly as to crack them. As soon as they are cold enough to handle, plug with cotton stoppers and put them on the ice.

Or, if you have no ice, springhouse or other means of keeping milk cool, especially in summer weather, it is better to sterilize the milk absolutely by leaving the saucepan on the fire and keeping the water just at the boiling point for 20 minutes. Then chill thoroughly with cold water. Plug with cotton and keep as cool as you can. Such milk is not as wholesome as pasteurized or fresh milk would be if kept on ice, but it contains no living germs and is therefore safer than unsterilized milk which cannot be kept cool at 40 degrees F. or under.

Feeding the Baby.—Keep the food on ice until ready for use and heat it when the baby needs it. Never let the bottle stand in a warm room with milk in it. Be sure not to heat

a bottle when you go to bed and keep it in bed until nursing time, because you do not want to go to the ice box for it. This is certain to make the baby sick. Do not attempt to keep milk at a luke-warm temperature at night or any other time in a thermos bottle or by any other arrangement. Such a device simply acts as an incubator for germs which, at this temperature, quickly grow to enormous numbers and render the milk dangerous.

Place the nursing bottle in hot water when needed and warm the food to about body heat. Do not give the baby cold milk. Do not give the baby hot milk. Make the temperature just right. Wash your hands in soap and water before adjusting the nipple. Never put the nipple in your own mouth to find out whether the milk is warm enough. Try it on your wrist. Taste a little from a spoon. If the milk is not sweet do not give it to the baby. Shake the bottle before using it.

Don't feed a baby under six months of age from a cup or spoon. Sucking is the natural way by which a baby takes its food. It needs the sucking action of the lips, mouth and tongue to mix its food with the fluids of the mouth, and for the proper development of the mouth and teeth.

How and When to Feed.—In feeding your baby from the bottle follow as nearly as you can the same rule as feeding from the breast. Write down on a slip of paper the hours for feeding and feed by the clock at regular intervals. Break away from night feedings as soon as possible. Hold the baby in the same position as for nursing at the breast and take care to tip the bottle so that the neck is always full. The baby should not take its food in less than ten minutes. If it sucks too rapidly, withdraw the bottle occasionally for a minute or two, or use a nipple with a smaller hole. But do not prolong the feeding over fifteen or twenty minutes. Never let the child suck the empty bottle. Do not let it go to sleep with the nipple in its mouth. If you start right and get the baby into the habit of nursing at regular inter-

vals, it will not cry for food at other times. If the baby cries, look at the clock, if not feeding time the trouble is something else. Infants and children are frequently fretful from thirst.

How Much to Feed.—Measure the food and give regular amounts at each feeding. Never coax the baby to take more food than it wants. Too much food and too frequent feeding does greater harm than too little. It over-taxes the digestion and leads to stomach and intestinal disturbances. Regurgitation, or the “raising” of the milk after feeding indicates over-feeding. Cut down the amount and avoid digestive troubles and diarrhœa. If the baby does not take the whole feeding throw it away. Do not attempt to save it for the next time.

During days of extreme heat give not more than half the usual food at each feeding, but give the baby all the cold boiled water—not ice water—that it craves. At all seasons take care to give the baby water at frequent intervals in sufficient quantities to quench its thirst.

Feeding Problems.—If a bottle-fed baby does not thrive the difficulty may be that the food is too rich, or not rich enough; that the amount fed is too much, or too little; or that the food spoils before it is fed from not being kept clean and cold. The food must be kept clean and cold to be wholesome at any age. But the quality of the food, the amount to be given at each feeding, and the frequency of the feeding must be modified and adapted to the needs of the growing child. It is usual to give rules for feeding according to the age of the child, but regard must also be had to its weight in pounds. There is a relation between the weight of the baby and size of the stomach. Large babies require more food than small babies. Most authorities agree that a child should not be fed oftener than once in two hours, nor more than ten times in each twenty-four hours during the first few weeks of life, and that the intervals between feedings should be lengthened and the number of feed-

ings decreased progressively up to the end of the first year. The exact time to make these changes must be determined in each case by the state of the baby's health, but the tables on the opposite page may be taken as a fair general average and will be found helpful and suggestive.

It is best to begin with a weak food, as the first milk mixture in the accompanying table, for babies from birth to three or four months of age. The food should be increased gradually both in strength and quality. Do not increase the quantity more than half an ounce at a time. Never increase both the quantity and the richness of the food at the same time. Never feed oftener than suggested by this table. The child's stomach needs some rest. Too rich food or too much food at the beginning makes later feeding difficult. Over-feeding at any time will upset the baby's digestion and may lead to serious illness.

Weight and Height.—The age of a child alone is not a trustworthy guide as to the amount or strength of the food which it should have. The weight is a much more correct index. Weigh the baby every week, measure its length (or height) and keep a record for future reference. Compare this record with the following standard table of the growth and development of a normal infant.

This will show you at once whether or not your baby is enjoying a normal development. The average weight of a child at birth is 7 or 7½ pounds. During the first week there is a loss of a few ounces. Thereafter the normal gain is about six ounces a week for the first three months, and after that about four ounces a week to the end of the first year.

All weights during the first year should be taken without any clothing. Loss of weight is a danger signal which must not be ignored. If your baby does not gain weight every week consult your doctor and be guided by his advice. In doubtful cases the weighing should be daily or every other day. Use suitable baby scales and record the weight for continuous reference. The weighing of

TABLES FOR FEEDING BABIES

TABLE OF TIMES AND AMOUNTS FOR INFANT FEEDING FOR THE FIRST YEAR

AGE	Hours between feeding	Number of feedings between 10 P. M. and 7 A. M.	Number of feedings in 24 hours	Ounces to each feeding	Ounces in 24 hours
3rd to 7th day.....	2	2	10	1-1½	10-15
2nd to 3rd week.....	2	2	10	1½-3	15-30
4th to 5th week.....	2	1	10	2½-3½	25-35
6th week to 3rd month.....	2½	1	8	3-5	25-40
3rd to 5th month.....	3	1	7	4-6	28-42
5th to 9th month.....	3	0	6	5-7½	30-45
9th to 12th month.....	4	0	5	7-9	35-45

FEEDING ACCORDING TO BABY'S WEIGHT, THE BEST WAY, OR BY AGE

Child's Weight in Pounds for Age in Mos.	Total Amts. for 24 hours			At each feeding			How Often	In 24 Hours	From 6 A. M. to 6 P. M.	From 6 P. M. to 6 A. M.
	Milk	Water	Teaspoonfuls Sugar	Milk	Water	Teaspoonfuls Sugar				
6, 7 and 8 up to 2 Mos.	8 oz.	16 oz.	5	1 oz.	2 oz.	½	1 bottle every 2 hours	8 bottles	6 bottles	2 bottles
9 and 10, 2-3 Mos.	12 oz.	20 oz.	5	1½ oz.	2½ oz.	½	1 bottle every 2 hours	8 bottles	6 bottles	2 bottles
11, 12, 13 and 14 3-6 Mos.	18 oz.	18 oz.	6	2½ oz.	2½ oz.	¾	1 bottle every 2½ hours	7 bottles	5 bottles	2 bottles
15 and 16, 6-8 Mos.	24 oz.	18 oz.	7	3½ oz.	2½ oz.	1	1 bottle every 2½ hours	7 bottles	5 bottles	2 bottles
17 and 18, 8-10 Mos.	30 oz.	12 oz.	6	5 oz.	2 oz.	1	1 bottle every 3 hours	6 bottles	5 bottles	1 bottle
19 and 20, 10-12 Mos.	48 oz.			8 oz.	0	1½	1 bottle every 3 hours	6 bottles	5 bottles	1 bottle

Two tablespoonfuls make one ounce.

children. often brings surprises. Loss of weight indicates that the milk is insufficient in quantity or in nutritive value, or there are faults of digestion and assimilation. Weighing of a breast-fed baby just before and then just after nursing will show the quantity of breast milk obtained.

The growth of the child in length (or height) is another important aid in proper feeding and care of infants. A normal increase of weight does not prove a normal development. An unsuitable food, such as condensed milk, may increase the weight rapidly enough, or even fatten the baby too much, yet the development may be faulty and the degree of resistance against disease low. Hence both weight and height should be taken into consideration.

LENGTH AND WEIGHT OF A NORMAL BABY

Age	Length	Weight
At birth	19.5 in....	7 lbs.
1 Mo.....	20.5 in....	7½ lbs.
2 Mo.....	21. in....	9½ lbs.
3 Mo.....	22. in....	11 lbs.
4 Mo.....	23. in....	12½ lbs.
5 Mo.....	23.5 in....	14 lbs.
6 Mo.....	24. in....	15 lbs.
7 Mo.....	24.5 in....	16 lbs.
8 Mo.....	25. in....	17 lbs.
9 Mo.....	25.5 in....	18 lbs.
10 Mo.....	26. in....	19 lbs.
11 Mo.....	26.5 in....	20 lbs.
12 Mo.....	27. in....	21 lbs.

The character of the stools is a most important guide in infant feeding. Foul smelling, frothy or greenish passages indicate illness and may be the forerunner of fatal sickness. When the stools are unnatural in character or more frequent than four a day, a physician should be promptly called.

Milk Mixtures.—The following method of preparing the milk mixtures given in the accompanying tables is recommended by the Illinois State Board of Health as the most convenient and satisfactory for those using bottled milk.

Set apart a separate quart of milk for the baby and do not shake it or pour any milk out of it until after the baby's food has been prepared. Then what is left may be used by

others. The top part of the milk, the upper third, or upper half, as required, may be taken off with a spoon by tilting the bottle gently without shaking, and dipping from it with care not to lose sight of the cream line. But it is much better to order through your druggist the inexpensive little device, known as the Chapin cream dipper. It holds just one ounce and is convenient both for dipping and measuring. If a spoon is used, remember that eight teaspoons are equivalent to one ounce, or four dessertspoons, or two tablespoons.

The 10 per cent milk required by the table for milk mixtures from birth to three or four months of age, may be secured from the upper third of a bottle of good 4 per cent milk, or by mixing two parts of good whole milk with one part of cream. The 7 per cent milk required by the table from the third or fourth month to the end of the ninth or tenth month may be secured from the upper half of a bottle of whole milk, or by mixing three parts of whole milk with one part of cream. A pinch of salt may be added to the food if desired.

The milk sugar required should always be dissolved in hot water. It sours quickly when dissolved, so do not prepare more than one day's supply at a time. Or, use one-half the quantity of pure granulated or, preferably, lump sugar. Dissolve in hot water and thoroughly mix.

The quantity given in the first table is twenty ounces. This is the amount that will be used by an average baby during the first four weeks of life if fed every two hours at the rate of about two ounces each feeding. It is easy to estimate the quantities required for larger amounts. For a twenty-five ounce mixture add one-fourth more of each ingredient. For a thirty ounce mixture, add one-half more of each ingredient. If the baby is fed artificially from birth, begin with mixture No. 1 in the first table. Substitute the succeeding mixtures gradually until the third or fourth month. Observe carefully how the baby thrives and especially any change in weight. After the

fourth month the above mixtures are not strong enough and those given in the second table should be substituted.

When weaning older infants use the mixture suited to its age from one of the accompanying tables.

Other Mixtures.—For mothers who cannot get milk in bottles and who have difficulty in using the mixtures given in the above tables, the following are recommended by the Illinois State Board of Health. They are easily prepared and prove satisfactory for most healthy infants.

For a new-born baby, or one a month or two old, take one ounce of fresh milk; three ounces of water; one ounce of fresh cream, and two level teaspoonfuls of milk sugar. This makes about five ounces. For twenty ounces use four times as much of each ingredient. This closely resembles mother's milk.

For older babies, take two ounces of fresh milk; two ounces of water; one ounce of fresh cream; two level teaspoonfuls of milk sugar and a teaspoonful of lime water. Larger quantities may be made by increasing the amounts of each ingredient in proper proportion. More milk and less water will be used as the infant increases in age.

If cream disagrees with the infant its use should be stopped temporarily. The following is a good substitute for mother's milk suitable for an infant of three months or less: Pure milk, cupful; water, two cupfuls; sugar of milk, one heaping tablespoonful; lime water, one tablespoonful.

The following table contains the milk mixtures recommended by the Providence (R. I.) Health Department:

For Babies Under One Month.—Milk, 5 ounces; lime water, 1 ounce; boiled water, 15 ounces; milk sugar, 1½ tablespoons.

Dissolve the sugar in the boiling water and then add the milk and lime water. Keep in a cool place. Give the baby 2 ounces every 2 hours during the day and once at night. In all 10 feedings. Add a little more milk to the whole mixture every few

days and give the baby a little more in each bottle.

One Month to Three Months.—Milk, 12 ounces; lime water, 1½ ounces; boiled water, 24 ounces; milk sugar, 1½ tablespoons.

Dissolve the sugar in the boiling water and then add the milk and lime water. Keep in a cool place. Give the baby 3½ ounces every 2 hours during the day and once at night. Ten feedings. Add a little more milk to the whole mixture every few days and give the baby a little more in each bottle.

Three Months to Six Months.—Milk, 1 pint; lime water, 2 ounces; boiled water, 1½ pints; milk sugar, 2 tablespoons.

Dissolve the sugar in the boiled water and then add the milk and lime water. Keep in a cool place. Give the baby 5 ounces every 2½ hours during the day and once at night. Eight feedings. Add a little more milk to the whole mixture every few days and give the baby a little more in each bottle.

Six Months to Ten Months.—Milk, 1½ pints; lime water, 2 ounces; boiled water, 1½ pints; milk sugar, 2 tablespoons.

Dissolve the sugar in the boiled water and then add the milk and lime water. Keep in a cool place. Give the baby 6 or 7 ounces or about 1 cupful every 3 hours during the day. Seven feedings. Every few days put 1 tablespoon less water and 1 tablespoon more milk into this mixture.

Use of Barley Water and Oatmeal Water.—Some authorities recommend the use of barley water from birth in place of the plain water used for the dilution of infants' food in the above mixtures, and in the same proportions. But others who have made a special study of feeding infants, think that the use of barley water or oatmeal water is not advisable until after six months of age. The use of barley water has been found, in practice, to enable some young infants to digest the curds of milk who would otherwise have been unable to do so. But as a rule it is probable that these cereal waters are not required until after the sixth or seventh month.

TABLE FOR MILK MODIFICATION PREPARED BY STATE BOARD OF HEALTH OF ILLINOIS

Milk Mixtures.—(From Birth to Three or Four Months of Age.)

1. Milk-sugar, 1 oz. (3 level tablespoonfuls.)
Lime water, 1 oz.
Enough hot * water to make 20 ounces. After the milk-sugar is dissolved add two ounces of upper third milk (10% fat.)
This is a suitable modified milk for the infant immediately after birth.
2. Milk sugar, lime water and water same as for No. 1, with the addition of 3 ounces of upper third milk.
3. Milk sugar, lime water and water as in No. 1, with the addition of 4 ounces of upper third milk.
4. Milk sugar, lime water and water as in No. 1, with the addition of 5 ounces of upper third milk.
5. Milk sugar, lime water and water as in No. 1, with the addition of 6 ounces of upper third milk.
6. Milk sugar, lime water and water as in No. 1, with the addition of 7 ounces of upper third milk.

(From the Third or Fourth Month to the end of the Ninth or Tenth Month.)

1. Milk sugar, 1 oz. (3 level tablespoonfuls.)
Lime water, 1 oz.
Enough hot * water to make 20 ounces. After the milk sugar is dissolved add 3 ounces of upper half milk.
2. Milk sugar, lime water and water as in No. 1, with the addition of 4 ounces of upper half milk.
3. Milk sugar, lime water and water as in No. 1, with the addition of 5 ounces of upper half milk.
4. Milk sugar, lime water and water as in No. 1, with the addition of 6 ounces of upper half milk.
5. Milk sugar, lime water and water as in No. 1, with the addition of 7 ounces of upper half milk.
6. Milk sugar, lime water and water as in No. 1, with the addition of 8 ounces of upper half milk.
7. Milk sugar, lime water and water as in No. 1, with the addition of 9 ounces of upper half milk.
8. Milk sugar, lime water and water as in No. 1, with the addition of 10 ounces of upper half milk.
9. Milk sugar, $\frac{3}{4}$ oz.
Lime water, 1 oz.
Enough hot * water to make 20 ounces. After the milk sugar is dissolved add

Of the above formulas, it is seldom necessary for the healthy infant to use a mixture of less strength than No. 5. Nos. 1, 2, 3 and 4 are of value, however, during temporary disturbances of digestion when it is desired to relieve the digestive organs of as much work as possible.

The infant which can take Mixture No. 9 of the above formulas without difficulty is usually able to begin on No. 5 of the following formulas, in which whole milk (4%) is used.

* Not boiled.

Milk Mixtures.—(For the latter part of the First Year.)

1. Milk sugar, 1 oz.
Lime water, 1 oz.
Enough hot * water to make 20 ounces. After the milk sugar is dissolved add 5 ounces of whole milk.
2. Milk sugar, lime water and water as in No. 1, with the addition of 6 ounces of whole milk.
3. Milk sugar, lime water and water as in No. 1, with the addition of 8 ounces of whole milk.
4. Milk sugar, lime water and water as in No. 1, with the addition of 10 ounces of whole milk.
5. Milk sugar, $\frac{1}{2}$ oz.
Lime water, 1 oz.
Enough water to make 20 ounces. To this add 12 ounces of whole milk.
6. Milk sugar, lime water and water as in No. 5, with the addition of 14 ounces of whole milk.
7. Milk sugar, lime water and water as in No. 5, with the addition of 16 ounces of whole milk.

* Not boiled.

They should not be fed to very young infants except under the direction of a physician.

The late Prof. A. Jacoby of New York, an author of international reputation, stated that if he were restricted to the use of any one food in addition to cow's milk, it would be barley meal or oatmeal water, and that he preferred barley water to oatmeal water for a steady diet because the latter tends to relax the bowels. Hence after the sixth or seventh month use barley water to dilute the baby's food in place of plain water unless you find from experience that it does not agree with your child. When the infant is constipated, substitute oatmeal water for the barley water. As the barley water is added the amount of sugar should be reduced.

ARTIFICIAL FOODS

Condensed Milk for Infants.—Condensed milk is the artificial food most commonly used, especially among the poor, but is not easily digestible especially by very young and frail infants. Its effects are not satisfactory. It contains too much sugar and not enough fat. Babies fed on condensed milk alone are often fat but seldom strong. A fat baby is not always a healthy baby. Practically every baby raised on condensed milk alone shows signs of rickets or other disease. It may serve a good purpose when traveling or at other times of emergency when pure, fresh milk cannot be secured. Between dirty, impure and stale cow's milk and condensed milk, choose the latter. When traveling or when the milk supply fails, condensed milk may be used to tide the infant over a period of danger, but do not use it any longer than is really necessary. It should never be used without the addition of fats—fresh cream if possible. Or, if good cream cannot be had, give cod liver oil at the rate of five to twenty drops at each feeding. If you use condensed milk get the best that can be had. Borden's Eagle Brand is known to be well prepared and reliable.

Manufactured Foods.—Do not be misled by the statements of any manufacturer of condensed milk or other artificial food that his product is a perfect substitute for mother's milk. All such statements are false. There is no perfect substitute for mother's milk, nor is there any artificial food that is equally as good as pure fresh cow's milk properly modified. The most commonly used foods upon the market may be classed as milk foods, malted foods and farinaceous foods. Horlick's, Borden's (malted) milk, and Mellin's are examples of the second class, and Eskay's of the third. None of these foods contain sufficient fat. Some of them have an excess of starch which makes them unsuitable for an infant until the latter part of the first year. Some contain too much sugar. None of these foods should be used alone. Some authorities claim that they are harmful and that certain diseases have followed their prolonged use. Others consider them of considerable value. Many advocate combining their use with the breast milk to help the mother out during the latter part of the nursing period, especially after the fifth or sixth month.

Notwithstanding the difference of opinion regarding the value of these foods, they are recommended by competent physicians and are used to seeming advantage by many infants, although they do not agree with others. They should be used under the advice of a physician, if at all, and mixed with diluted cow's milk for the purpose of breaking up the tough curds and rendering the milk more digestible. Barley water and oatmeal water are used for the same purpose, but do not contain all the food elements to be found in the best types of prepared foods.

The manufacturers of Horlick's Malted Milk assert that it does not require the addition of cow's milk; that it is composed of pure, rich cow's milk reduced to dryness and combined with an extract of malted wheat and barley. This food may perhaps be used alone, temporarily; but for continued use, milk should be added.

Mellin's Food is said to be a dry extract from wheat and malt, and free from cane sugar and starch.

Eskay's Food, according to the manufacturers, contains the more easily digested cereals combined with egg albumen.

An analysis of Horlick's Malted Milk shows that it contains less fat than mother's milk and more sugar, and that it is free from starch. Mellin's Food alone has practically no fats or starch and much more sugar than mother's milk. It should be used with milk.

Eskay's Food, when properly mixed with milk, resembles breast milk very closely, except that there is some starch present. It is stated, however, that this starch is thoroughly broken up and easily digested, and that the egg albumen contained is more easily digested than similar amounts of the albumen or curds of milk.

OTHER FOODS FOR INFANTS

Keep your baby largely on milk until well into the second year. This is the chief secret of successful infant feeding. There is far less necessity for a mixed diet of ordinary foods than is generally supposed. No other food than properly modified milk should be given until the end of the sixth or seventh month, except on the order of a physician. The appearance of teeth at a moderately early age is simply an evidence of health. It is not an indication that the baby should be taught to eat solid food. When the teeth appear very early and in rapid succession, nutritive and nervous disturbances are apt to occur and the use of solid food may then lead to serious illness.

As a rule no solid food whatever should be given during the first year. After the seventh month, gruel made with barley, arrowroot or oatmeal may be given, beginning with very small quantities. At first four ounces of thick strained oatmeal and one-half ounce of orange juice may be added to the daily allowance of food. The quantity of gruel may be gradu-

ally increased as the child grows older. The addition of a pinch of salt will make the food more palatable.

After the ninth month pure whole milk may be allowed in some cases and the child may have a crust of bread, or a small piece of zwieback.

After the tenth month beef, mutton or chicken broth thoroughly strained may be substituted for or added to a child's regular food.

Soups and broths for infants should be very carefully prepared so as to be free from any excess of fat or bits of meat. They should be very sparingly seasoned. Fresh beef juice may be given in the latter part of the first year and in some cases even earlier in quantities of not over two teaspoonfuls a day.

To prepare beef juice cut a half pound of fresh lean beef into small pieces and put them into a clean dry pan. Place the pan over a slow fire and turn the pieces of meat with a fork until the outside is gray. Broil very lightly. Express the juice with a lemon squeezer or meat press into a clean cup. About one to one and a half ounces should be obtained from a half pound of meat. Keep on ice, or in a cool place, until ready for feeding. Then raise to blood heat by placing the cup in warm water. Always use the same day.

Beef tea made from the extracts of beef found on the market may be given in small quantities after the first year. But remember there is no nutrition in beef tea and do not give it in place of regular food. Many practitioners advise the use of beef juice and beef tea much earlier than here stated, especially if the milk disagrees or fails to nourish the infant. They regard it as especially valuable when the teeth are slow in development or rickets are threatened.

Orange juice in such cases is of the greatest value and will agree perfectly with most children. It is a safe precaution, especially if pasteurized or cooked milk, or condensed milk or manufactured infants' food is given, to feed half an ounce of

orange juice each day to all children over six months of age.

Meat Broth Plain and Thickened.—Chop into small pieces one pound of lean beef, chicken or neck of mutton including some of the bone. Add a quart of water and let stand for two hours, then add salt and boil slowly for two hours down to one pint. While boiling add two tablespoonfuls of crushed barley, rice or oatmeal. Strain through muslin, cool and skim off the grease.

Egg Water.—This may sometimes be used to advantage in case of intestinal disturbances, such that the baby cannot digest milk. To prepare, stir the white of a fresh egg into one pint of boiled water. Add a pinch of salt, shake thoroughly and strain. Keep in the ice box or other cool place and use the same day.

Whey.—Warm one pint of milk to blood heat and add one teaspoonful of essence of pepsin or one junket tablet. Let stand until it jellies, then break up the curds with a fork and strain through muslin. Whey is sometimes used to advantage when the baby cannot digest cow's milk.

Solid Foods.—The cutting of the eighth incisor or front teeth, which occurs usually during the twelfth month, may be taken as nature's indication that the child requires other food than milk. At this time if the infant is well and strong, a little stale bread, at least one day old, may be given with fresh milk in place of one of the regular feedings. This may soon be supplemented by a small quantity of well cooked hominy, oatmeal or cornmeal mush. But keep in mind constantly the fact that milk is the most important article of the diet, and that these foods are merely supplementary. Do not feed the baby any of the ready-cooked or pre-digested breakfast foods. Buy the natural cereals and cook them at home. Cereals should be cooked at least three hours in a double boiler, or preferably over night in a fireless cooker. They should be strained through cheese cloth or muslin.

If the above foods are taken without difficulty and no bad results are observed, give stale bread liberally

buttered. This satisfies the infant's desire for solid food and also affords an easily digested and nourishing form of fat.

At fifteen months, a soft boiled egg may be given as the noon feeding. About the middle of the second year, or when sixteen teeth have developed, other and more solid foods may be given. But throughout the entire period of infancy, food other than milk should be selected and prepared with the greatest care and given in moderation. During the second year children are almost invariably over-fed.

Diet of Older Children.—Between one and a half and two and a half years of age a child may have bread and butter, orange, potatoes and certain other vegetables, certain fruits and certain meats. The bread should be at least one day old and may include toast, zwieback, graham, oatmeal and gluten crackers. Porridge may be oatmeal, rice (cooked three hours), hominy (cooked six hours), farina (cooked one hour), cornmeal (cooked two hours), barley meal or wheaten grits. All should be thoroughly cooked for the time stated, or over night in a fireless cooker. Strain through cheese cloth or muslin and serve with certified or pasteurized milk. The meat may be rare roast beef, fresh cooked mutton or chicken. All should be finely minced. The vegetables may be well cooked spinach or potato. The latter should be fed in small quantities, freshly baked and lightly broken up and salted. Potato is a starchy food and hard for an infant to digest. It is much more wholesome baked than boiled. The fruit may be ripe apples (better baked), grapes, freed from the stones and skins, stewed prunes and orange pulp, freed from the fibrous portion. Fruit should be given in great moderation, if at all, in summer. Other suitable foods are baked custards or junket.

A piece of rare roast beef to suck, bread with dish gravy (not the heavy thickened and highly seasoned gravy) and soft boiled or poached eggs may form additions to the dietary which may be extended gradually to meet

developments as the baby grows into childhood. But either for an infant or a child, overfeeding is far more injurious than underfeeding.

Improper Foods.—Hundreds of infants have been killed by the mistakes of parents in giving them other and improper foods. Never feed the baby at the table from the food prepared for other members of the family. The table foods may be poisonous to the infant. Never give a child under two years of age ham, bacon, or pork in any other form; cabbage, pickles or other succulent vegetables; coffee, tea, beer, wine, cider or any other alcoholic liquor of any kind; bananas, berries or other fruit except orange juice or pulp, prune juice and stewed or baked apple. Do not give pie or pastry, nuts, cake, candy, ice cream, or any other kind of sweets. Above all never dope your baby with drugs, nostrums, or patent foods of any kind, relying upon the statements of unprincipled manufacturers, druggists or other vendors, or those who have "tried and can recommend them." Such advice is often as ignorant as it is well intended. The kind of medicine or food preparation which may agree with your neighbor's baby may totally disagree with yours. Don't experiment with your baby. If you think it needs medicine or a change of food consult a competent physician to find out what is the matter. Then be guided implicitly by his advice.

PASTEURIZED AND STERILIZED MILK

Home Pasteurization of Milk.—Pasteur, the French chemist (whose name has become a household word from his discovery of a treatment which prevents hydrophobia), was once employed by the French Government to study the causes of fermentation in wines and beer. He found that these changes were brought about by the action of microorganisms (germs). He further discovered that these germs could be destroyed at the comparatively low temperature of 140° F. by maintain-

ing this degree of heat for twenty minutes. Hence this process is called "pasteurization."

The germs which cause fermentation or souring of milk or other food products can be destroyed more quickly at or near 212°, the temperature of boiling water. This process is called "sterilization." But this destroys much of the flavor and nutritive value of milk as food. The advantage of pasteurization, when properly conducted, is that neither the flavor nor the food value of the milk is affected.



Home pasteurization of milk. Courtesy State Board of Health of Wisconsin.

To pasteurize milk in bottles, place a saucer in the bottom of a small tin pail and stand the bottle of milk on this with the cap on. Now fill the pail up to within three or four inches of the top of the bottle with hot water—but not so hot as to break the bottle—and then stand the pail and its contents on the stove. The instant the water begins to boil (not simmer) remove

it from the pail and cool it as rapidly as possible.

Milk properly pasteurized is not injurious to infants, although it is not considered quite so good as clean, pure unpasteurized milk. Most doctors think it is entirely wholesome. Others suspect that its prolonged use may tend to cause scurvy or rickets. If such results are feared, orange juice, or its equivalent, may be given as a preventive. The dangers from pasteurized milk, if any, are slight in comparison with those from unpasteurized milk of doubtful origin, especially in summer where milk has to be transported any considerable distance before delivery. Pasteurization, if the milk is afterwards kept clean until used, will certainly eliminate all danger of diarrhoeal or other intestinal trouble. But observe that this process merely kills the living bacteria then present in the milk. It does not eliminate dirt, nor any chemical poisons cast off by germs which the milk may contain. Nor does it prevent the milk from afterwards becoming contaminated with other bacteria. Pasteurization, in other words, is not a panacea for making dirty milk wholesome. Nor is it a substitute for painstaking cleanliness in the home. It is a makeshift at best, but nevertheless should be adopted whenever the milk delivered at your door is known or suspected to be warm, stale or dirty. As a rule unless you can afford to buy certified milk, it is better to pasteurize the milk and be on the safe side. But it is a good plan, before doing so, to consult your physician.

Sterilization of Milk.—Pasteurization is always to be preferred over sterilization, provided milk can afterwards be kept clean and cold. Sterilization makes milk harder to digest and decreases its food value. The prolonged use of such milk leads to stomach and intestinal diseases, rickets, loss of weight, failure of bones to grow properly, and other harmful conditions. But between dirty milk and cooked milk, sterilization is the lesser evil. Those who cannot obtain ice, and especially those who are obliged to live in unsanitary condi-

tions such that the milk is sure to become contaminated, would better sterilize rather than pasteurize the milk, especially in summer. In winter the milk can be kept cool by means of a window box. This will afford the baby some relief from the evil effects of sterilization.

To scald or sterilize milk which comes in bottles place the bottle on a saucer in the bottom of a tin pail as for pasteurization. Leave the cap on. Fill up the pail to within three or four inches of the top and bring to a boil. The instant the water begins to boil (not simmer) remove the boiler from the stove. Take care that the milk does not boil. If it should boil, throw it away. Boiled or over-heated milk, if fed to a baby for any considerable length of time, will produce a most distressing type of scurvy. Remove the boiler from the stove and let the bottle of milk stand in the water for about twenty minutes. Then cool as quickly as possible.

Or, if milk is bought in bulk, pour it into a sterilized glass fruit jar as recommended for pasteurization and proceed as for bottled milk.

Observe that sterilized milk is more susceptible to contamination from germs than raw milk. Hence take care that everything that comes in contact with scalded milk is scrupulously clean. Remember that the ice box cannot be cleaned too often.

When to Pasteurize or Sterilize.—Certified milk or good fresh milk which has been kept clean and cold needs no preservative. Do not "scald," or sterilize or pasteurize such milk. But if milk is dirty, or sours quickly, or if there is other evidence that it has not been kept clean or cold, the sooner it is pasteurized or sterilized after it comes into the house, the better. If the milk is to be kept in the original bottle or in a glass fruit jar or similar receptacle during the day, and the baby's bottle is to be filled from this as required, the best plan is to pasteurize or sterilize the milk as soon as it is received and before it is put into the ice box. But if milk is to be modified, and especially if there are enough bottles

so that a separate bottle can be prepared for each feeding, the better plan is to pasteurize or sterilize the modified milk or prepared food after it has been mixed and placed in the baby's bottles or other receptacles in which it is to be kept for the day.

Adulteration of Milk.—There are still some dairymen and dealers who think it is cheaper to kill the bacteria in dirty, warm, stale milk by means of germicides than to adopt means to keep the milk clean, cool and sweet. Such adulteration is forbidden by law in many states, and all offenders should be vigorously prosecuted. Keep a sharp lookout for adulterated milk and occasionally test the milk you receive for boric acid, borax, formaldehyde or bicarbonate of soda by methods elsewhere recommended. Or request your physician, or the health officials of your community, if any, to test it for you. Never use such preservatives yourself, nor buy milk from a dealer who uses them. You can never tell how much he has used, nor how much may have been used by others before the milk came to him. Preservatives are never harmless and if present in large quantities may be very injurious or even poisonous.

CARE OF MILK IN THE HOME

If the milk producer and the milk dealer have done their duty there is daily left at the consumer's door a bottle of clean, cold, unadulterated milk. By improper treatment in the home the milk may become unfit for food, especially for babies. This bad treatment consists in placing it in unclean vessels; in exposing it unnecessarily to the air; in failing to keep it cool up to the time of using it; and in exposing it to flies.

Milk absorbs impurities — collects bacteria — whenever it is exposed to the air or placed in unclean vessels. If there is a sediment in the bottom of the container, after the milk has stood an hour or two, it indicates filthy habits on the part of the producer. The remedy is, change milkmen. This sediment is almost invariably fecal matter (manure) that has

fallen into the milk pail from filthy cows. Most farmers who allow this matter to get into the milk are careful to strain it out, but they cannot strain out the unmistakable flavor which it imparts to milk. Remember that clean, pure milk is nearly free from taste or odor. If milk tastes or smells of the stable it is probably dirty.

To test milk for dirt place a good-sized button in the bottom of an ordinary tin funnel and upon this a piece of dampened absorbent cotton about the size of a twenty-five cent piece and about one-sixteenth of an inch in thickness. Carefully pour the entire contents of the milk bottle into this funnel and let it filter. The cotton will catch every particle of sediment or dirt which the milk may contain. Remove the cotton and place it upon a piece of white paper near the stove to dry. If much dirt is shown, ask your milkman to take a look at it. Or, if you live in a city mail it, with a complaint, to the Board of Health.

The danger to health from dirty methods of keeping and milking cows, dirty milkers and dirty milk vessels increases with every moment milk is allowed to stand in a temperature over 40° or 45° F. Injurious spores and bacteria remain dormant or increase very slowly at lower temperatures, but as the temperature rises up to 60° or 70° F., or thereabouts, they develop and multiply with astonishing rapidity. A bottle of dirty milk standing in the sun for an hour or two in the early morning may breed millions of injurious bacteria and become totally unfit for human food.

The feeding of cow's milk to infants, to be at all safe, entails the following tedious and never-ending operations: Securing fresh milk every day; home pasteurization; sterilization of all milk containers including boiling of feeding bottles, nipples, etc., for each and every feeding; refrigeration — storage in scrupulously clean ice boxes — and milk modification, all to be carefully performed and varied according to age or condition of the child.

Even if the milk is clean, fresh and

cool when it is delivered at your door, or if you then kill the germs which it may contain by home pasteurization, it may afterwards become unfit for food, especially for babies, by improper treatment. This may occur if you place it in unclean vessels, expose it unnecessarily to the air, or fail to keep it cool up to the time of using it. Hence the following suggestions.

Buy bottle milk, at least for your baby, if you can. Keep milk in the original bottle till needed for immediate consumption. Carefully wipe or rinse the bottle, especially the mouth, before pouring any milk from it, so that dust or dirt which may have gathered thereon or on the cap will not get into the milk. Do not pour back into the bottle milk which has been exposed to the air by being placed in other vessels. Keep the bottle covered with a paper cap as long as milk is in it and when not actually pouring from it. If the paper cap has been punctured, cover the bottle with an inverted tumbler.

The sanitary containers that are used but once and then destroyed are preferable to those of glass but the consumer seems to object to them because, not being transparent, no cream line can be seen. When their value from a health standpoint is understood the sanitary containers will be universally adopted as they already have been in some cities.

Dipping milk from large cans and pouring it into customers' receptacles on the street, expose it to contamination from the air and otherwise. Drawing milk from the faucet of a retailer's can is objectionable for another reason. The milk is not thoroughly mixed. Hence some consumers receive less than their due proportion of cream. But if you must buy dipped milk, do not set out over night an uncovered vessel to receive it. Cats, dogs or tramps may contaminate the milk by drinking from it. At best it will collect thousands of bacteria from street dust before morning. Have the milk received by some member of the family if possible, or set out a bowl covered with a plate, or better still, provide yourself with several glass preserving

jars kept for this special purpose. Use jars with the clamp glass top. Avoid the screw tops. Omit the rubber band. They are difficult to keep clean. Do not use a pitcher. It cannot be tightly covered on account of the projecting spout.

Take the milk into the house as soon as possible after delivery, particularly in hot weather. Sometimes milk delivered as early as 4 a. m. remains outdoors until 9 or 10 o'clock. This is wrong. If you cannot receive the milk as soon as delivered provide a small wooden box or other shelter to protect it from the sun and insist that the milkman use it.

The best way of serving milk on the table, from a sanitary standpoint, is in the bottle or fruit jar in which it is received. At all events, pour out only what is needed for immediate use and keep the rest in the original receptacle. Never pour the milk into a bowl or pitcher for storage, nor pour back into the bottle or jar milk which has been exposed to the air. In fact, do not mix milk—the mixture always descends to the quality of its worst part. Milk deteriorates by exposure to the air of the nursery, kitchen, pantry or refrigerator in two ways: by contamination from germs and by absorption of odors. Cover milk when not actually pouring from it by turning over the jar or bottle a small bowl or tumbler, or use a cork or cap of sterilized gauze or cotton wool, both of which are germ-proof. Never expose uncovered milk in a refrigerator containing any kind of food, especially strong-smelling foods like fish, cabbage or onions.

Milk cannot be properly kept without ice. If you have a refrigerator put the milk into it promptly. Unless it comes into actual contact with the ice, it will keep best in the bottom of the ice box. The cold air descends. If you can get ice but have no refrigerator, you can make a cheap ice box that can be operated for less than three cents a day in which to preserve a baby's milk, as follows:

A Cheap Ice Box.—Secure an ordinary wooden box, 13 by 18 inches, with a depth of 11½ inches, from

your grocer. In the bottom of the box place a substantial layer of sawdust. On this set a tin pail or can, 8 inches in diameter and high enough to hold a quart bottle of milk. Care should be taken that the pail rests on sawdust—not on the wood bottom of the box. Around the pail place a cylinder of tin a little larger than the pail, then pack sawdust about the cylinder—not between pail and cylinder—up to top of the cylinder. On the cover of the box nail about fifty layers of newspaper. Set the milk bottle in the pail and pack broken ice about the bottle. A refrigerator of this description will hold two quart bottles of milk, or four eight-ounce feeding bottles. It can be operated for about two cents per day. To prevent rusting, a little soda may be placed in the can each day. The little expense involved is nothing as compared with the cost of sickness and death.

A Window Box.—Most families discontinue taking ice for the refrigerator during half the year or more. During such times, if milk is allowed to stand in the pantry it quickly becomes warm and unfit for infants' food. Yet the outdoor temperature would keep the milk sweet for some time. A window box may be constructed with sides made of old blinds, slats, or boards perforated with auger holes for ventilation, and provided with a solid bottom and tight slanting roof. Attach this outside the pantry window where it can be reached by simply raising the sash. Line with wire netting to keep out insects, especially flies. Such a box costs next to nothing, and serves to keep not only the baby's milk, but butter, meat and other provisions when the refrigerator is not in use.

Or stand a deep dish or pail of water by an open window away from the sun. Put a narrow board or wire screen across the top and on this stand the milk bottles or jars. Wrap

the bottles in a wet cloth and let the end of the cloth extend to the bottom of the water. The cloth will be kept wet by capillary attraction and the water, by evaporation, will cool the milk.

By some such method you must keep the milk and cream cool until used if you desire to safeguard your baby's health.

Care of the Ice Box.—Keep the refrigerator sweet and clean. Personally inspect it at least once a week. See that the outlet for melted ice is kept open and the space under the ice rack is clean. Scald the place where food is kept every week with a strong sal soda solution. A single drop of spoiled milk or small particle of other neglected food will contaminate a refrigerator in a few days.

Care of Milk Bottles.—As soon as a milk bottle is empty, rinse it in clear lukewarm or cold water until it looks clean and set it bottom side up to drain. Do not use it for any other purpose than holding milk. Never return filthy bottles. Rinse, wash and scald all utensils with which milk comes in contact every time they are used. Do not wash them in dish water or wipe with an ordinary dish towel. This will only serve to smear them with an invisible coating of grease. Boil them in clean water containing a little borax or washing soda and set them away unwiped. If a case of typhoid, scarlet fever or diphtheria breaks out in a family do not return any milk bottles to the milkman except with the knowledge of the attending physician and under conditions prescribed by him. Never accept milk from any family, dairyman or dealer when you know, or suspect, that there are contagious diseases in his family, or that they have recently been exposed to such contagion. The above suggestions apply to cream as well as to milk.

CHAPTER XLII

FIRST AID TO THE INJURED

GENERAL HINTS IN TIME OF ACCIDENT—FIRST AID IN TIME OF INJURY—POISONS AND THEIR ANTIDOTES—FAINTING—HOW TO TREAT A BRUISE OR SPRAIN—TREATMENT OF SPECIAL PARTS—CUTS AND SCRATCHES—POISONED WOUNDS—POISON IVY AND POISON OAK—BURNS—BLEEDING—DISLOCATIONS—FRACTURES—DROWNING—PRONE PRESSURE METHOD

Health Hints.—It is much better to prevent disease than to cure it. Health depends upon strict adherence to a few simple rules. Most of the sickness of to-day is preventable, and is due primarily to carelessness in living habits. It is not enough, however, simply not to be ill. Many people who are not sick, still are not well. To really enjoy life, one should be at his best and know the thrill of abounding health and the joy of well-being. Many people never experience this, and the slightest change in their environment makes them uncomfortable; yet they would not say they were ill.

Plenty of fresh air, a sane and simple diet and regular exercise, combined with a care-free state of mind, are the secrets of a normal, healthy life. They are so simple that people overlook them.

Fresh Air.—Sleep with the windows open, but be protected from the direct wind. Night air is not only not harmful, but absolutely healthful. See to it also that you work under conditions of fresh air; it will prove a tonic. Bad air depresses all the organs of the body. Houses, working places, offices, hotels, trains, are abominably ventilated. Keep on the lookout or you will be constantly poi-

soned. Tenting out in the summer time or sleeping on a screened porch or roof will prove to the tired worker who is run down a wonderful restorer. *Make friends with the fresh air.*

Exercise.—Just this simple but important suggestion: Each person must have during each day a fair amount of rather vigorous exercise of the large muscles of the body. By this I mean the muscles of the trunk. These muscles are closely related to the most important organs of the body and the latter depend upon the muscles for their vitality. Bending the body forward and backward at the hips and sideways and twisting at the waist are very valuable exercises. Walking and slow running are exceedingly important, especially if indulged in until they cause deep breathing and perspiration. Of course outdoor exercise is best. Hill climbing is splendid, especially for a weak heart, if done with frequent intervals of rest. Everyone should have a favorite outdoor recreation aside from and different from his daily work. Baseball and tennis for the vigorous, golf and horseback riding and wheeling for the more mature, are excellent. A medicine ball used with a variety of movements is fine for ex-

ercising the large muscles referred to. The great increase in the so-called organic diseases, namely, diseases of the heart, lungs, digestion, and kidneys, reveals the need for systematic exercise. People who are inclined to obesity, in particular, should select some helpful forms of exercise. Exercise should be taken in such a way as to be real fun, not work; it should be pleasure and not stern duty.

Bathing.—The day's work should be followed by a short, refreshing bath. Nothing will prove so cheering as this. When depressed or irritable, a bath will oftentimes drive dull care away. People with weak hearts must be cautioned in using very cold water, as it is quite a shock to the nervous system. The average person, however, will find a quick, cool sponge bath decidedly stimulating. Many prefer it on arising in the morning. If one's work causes the skin to be moist during the day, it will be more refreshing to take it at the close of the day's work, possibly, and best before the evening meal, allowing some time between.

Returning for the moment to the subject of exercise, may I hold out one word of warning? Housewives and men on farms are particularly liable when alone without help near by to often lift an object or move it which in the act demands great effort. This is exceedingly dangerous, as in efforts of strain the blood pressure increases and harm may result. Don't attempt to lift or move any object requiring great effort.

Diet.—What one eats is closely related to how one feels. Most people undoubtedly eat too much. This is true particularly of people who work indoors and do not exercise much. Such people should eat meat but once a day, as meat is only required in quantities by persons who work vigorously with their muscles. I do not believe people should be faddists in reference to eating. To eat well-cooked foods, plenty of vegetables, liberally of fruits and cereals and sparingly of meat and pastries, all well masticated when eaten, is the wisest course. It is foolish to be too fanciful in the choice of foods and to

punish oneself in eating raw foods and unpalatable mixtures.

Just a simple word of counsel as to what *not* to eat: Any food which is tasted an hour or more after eating is being digested with difficulty. This will differ as to effects in different people. Such foods should be eliminated. Some people find radishes, onions, cucumbers, and sausage very difficult of digestion, while others thrive upon them. The latter can eat them with impunity, while the former must do without them, or uncomfortable and even serious results will follow. Salads and highly seasoned dressings should be eaten with caution.

Fatigue.—This is a day when men and women are constantly overworking. Some housewives and many business men never know when to stop. Consequently, they constantly overwork and never get fully rested. They are tired and often don't know it. They wonder why they are peevish and irritable. The truth is their blood is filled with fatigue products, their nerves are tired and insensible. Nothing but complete rest will help. Under such physical conditions a housewife cannot be a good mother nor a man a good father. Working habits must be adjusted so as to permit of rest, or living becomes miserable. The housewife should learn to regulate her working hours just as workmen do, or health will pay the penalty.

A further and final word in reference to health: Consult a doctor frequently. Many people call the doctor as a last resort. This is wrong, and many a serious illness results which otherwise might have been prevented. The eyes, teeth, and throat, should be examined occasionally, especially when they are sensitive, as diseases of these are peculiarly related to the depression of the whole body and affect temperament as well. This is particularly true of children.

GENERAL HINTS IN TIME OF ACCIDENT

Keep cool. Try and keep others cool. This is the great need. In

time of panic, or fire, or accident, serious results may be avoided if some person is calm enough to take charge of things and inspire confidence. It is well for one to get accustomed to the sight of blood. Many cannot control themselves under such circumstances. It is a good practice to witness an operation occasionally, or to assist in dressing a wound for the purpose of schooling oneself. Always send for a surgeon immediately in time of accident. In doing so, explain as fully as possible what the difficulty is, or probably may be, so that the physician can come prepared. Always see that the patient is made comfortable in a quiet place. Keep curious people away. Loosen collars and corset, especially all clothing about the neck and chest. If the face of the injured or unconscious person is pale, lower the head. In sunstroke, or where the individual's face is flushed, have the head high. Do not do too much. Do not touch affected parts with the hands. Moisten clothing in removing from wounds. In many instances it will be best to cut off the clothing to prevent further injury.

How to Dress Wounds.—The first essential is to thoroughly cleanse the wound and remove all foreign material. This can be done with clean water which has been boiled for at least ten minutes. The hands and arms to the elbow should be cleansed. The water can be applied with sterilized absorbent cotton. After the wound is thus cleansed, use a mild antiseptic wash. A saturated solution of boric acid (not borax) may be used. By saturated solution is meant as much boric acid as water will contain in solution.

If the wound is a smooth cut, it will bleed profusely, as the blood has difficulty in securing a hold in order to clot. After the wound is cleansed, the edges of it can be brought together by means of adhesive plaster. Where this cannot be done, a surgeon will be required to stitch the edges together.

If the head be injured, the patient should lie down with the head resting

upon a pillow or cushion covered with a clean towel, taking care that the injured part be kept from contact with surrounding articles.

If the arm be injured, it should, as a rule, be brought across in front of the chest and supported in a sling.

If the lower limb be wounded, it may be supported in a comfortable position by resting upon a cushion or blanket.

In wounds of the chest, the head and shoulders should be raised by one or more pillows until the patient is able to breathe comfortably.

If the abdomen be wounded, the patient should be made to lie down, with his knees drawn up, and turned over toward the uninjured side; or upon the back if the wound be in front.

Before dressing the wound the nails should be thoroughly cleansed with a brush and rings removed from the fingers. After cleansing the hands, do not touch anything not absolutely clean. All vessels used should be cleansed with boiling water before using.

If the wound is jagged, the dead pieces of tissue must be removed and extra precaution taken to remove all foreign particles; the latter can be removed with pincers. Never close up a wound until the bleeding has been stopped, as a small artery may be ruptured, and this must be controlled first. If the wound is covered with grease or soot or dirt, it can be removed by using gauze moistened in turpentine or benzine.

A punctured wound, such as an injury produced by stepping on a nail or from the penetration of the point of an ice pick is dangerous, because the wound closes and excludes the air, thus making the wound favorable to the development of the lock-jaw germ. This is all the more likely to occur if one steps on a rusty nail in the vicinity of a stable, as the lockjaw germ, or tetanus germ, is a dirt germ and thrives in such localities.

The best treatment for a closed wound is to open it and let the air in, and keep it thus exposed, as the lock-jaw germ cannot thrive in the pres-

ence of air. Of course the wound when thus opened should be cleansed the same as any other wound.

If a needle or splinter has been the cause of the wound, see that not a particle remains.

In removing a splinter, see that a fair amount of the splinter is exposed, so that a good hold can be got on it by inserting the blade of a penknife under it, and press down upon the flesh around the top of the splinter with the thumb nail and draw it out gently. Sometimes it is necessary to enlarge the wound some to get at the splinter or other object. If the splinter is under a finger nail, it may be necessary to pare away much of the nail in order to expose the splinter.

After wounds are ready for final dressing, cover the wound with felted cotton, then apply bandages. Fish hooks usually have to be pushed through the tissues, as they cannot be withdrawn. The eyelet of the hook will have to be filed or cut off to allow it to pass through.

FIRST AID IN TIME OF INJURY

The only excuse for acting in time of injury is the absence of a physician. Always send for a doctor and do the *necessary* things during the interval of his coming. Of course there are occasions when a doctor is not available; then, of course, more thorough treatment and action is necessary and permissible.

Before entering into the consideration of specific treatment of conditions, it may be wise to say a word or two in reference to equipment. It will be well to have handy in the house, or in camp, or when on a tramp, a medicine case containing at least the following remedies:

Whisky.—Whisky of a good quality is valuable for many conditions, especially in case of snake bite, when it is a specific. Care should be used in giving it to children.

Tincture of Peppermint is splendid for relieving colic, bowel troubles, and is a remedy for vomiting. The dose is 10 to 20 drops on sugar.

Tincture of Ginger is also good

for similar conditions, and the dose is 10 to 40 drops in sweetened water.

Aromatic Spirits of Ammonia is an indispensable remedy to have about. It is a strong stimulant as an inhalant and can also be administered internally, the dose being 10 to 30 drops in sweetened water. It is efficient in restoring people in a fainting condition by letting them use it as a smelling bottle.

Ammonia Water is quite a different remedy, and is not for internal use. It is good for insect bites of any kind.

Tincture of Arnica is used for bruises, wounds, and cuts. Cloths wet with it and applied to bruises are valuable helps.

Witch-hazel likewise is helpful as a lotion for sprains, wounds and contusions.

Spirits of Camphor is also valuable for smelling purposes and for inflammations. The internal dose is 1 to 20 drops on sugar. It is good to overcome gas in the bowels.

Bicarbonate of Soda, namely baking soda—not washing soda—is a good powder for burns and is an antidote for acid poisoning of any kind.

Vaseline is a salve which can be put to many uses in treating burns, wounds, chafing, and scalds.

Antiseptic Solution.—In addition to the above it is very important to have a good antiseptic wash with which to cleanse wounds of all kinds.

Carbolic Acid Solution is good in the strength of 1 part of carbolic acid to 25 of water.

Corrosive Sublimate is good, but there is more danger from poison, as it contains mercury. Tablets can be secured from druggists which can be used in a pint or quart of water, according to the strength. There are a number of popular prepared antiseptic solutions, such as listerine, which are very convenient to have in the house for ready use.

In addition to the above, a few roll bandages of various sizes should be secured as well as adhesive plaster and a good-sized package of sterilized absorbent cotton. In a camp, or in places where accidents occur fre-

quently, this should be supplemented by some splints of pliable wood. Good, complete first-aid outfits, containing most of the above, can be secured from such firms as Johnson & Johnson, of New Brunswick, N. J., or from the National First Aid to the Injured Society of Boston, or the New York First Aid Society of New York City.

POISONS AND THEIR ANTIDOTES

In treating this important subject, much could be said, but as it might prove confusing, I shall try and condense the information in the smallest possible space and make my suggestions very simple and clear.

In cases of poisoning, one must act quickly and keep cool. If the person affected is unconscious, an empty bottle or burns upon the mouth may reveal the cause of poisoning.

There are several things to be done in the treatment of poisoning: (1) Eliminate the poison from the stomach; (2) neutralize the poison by giving an antidote; (3) treat the general symptoms produced by the poisoning. Get these three things clear in the mind in acting.

The material is eliminated by being vomited. Vomiting can be induced in the following ways: use mustard and warm water, beginning with a glassful and repeating if necessary. If ipecac is in the house — and it is a good thing to have it about — give about a teaspoonful of sirup of ipecac to a child or a tablespoonful to a grown person every few minutes until vomiting is induced. Tickling the throat by inserting the forefinger in it usually brings quick results. In irritating poisons, like carbolic or mercury, it is wise not to produce vomiting, owing to the lacerated condition of the walls of the stomach. In most instances, however, it is wise to induce vomiting. Frequently the poison itself produces it.

Antidotes.— In nearly all cases of poisoning, olive oil, if available, can be given in large doses, namely, a pint or more, as it neutralizes most poisons except phosphorus. This can be followed by the whites of two

eggs. When in doubt, use the oil followed by the eggs.

In giving antidotes, two general principles should be observed: namely, that acids tend to neutralize alkalies and alkalies neutralize acids.

For poisoning from acids, such as muriatic, oxalic, acetic, sulphuric (oil of vitriol), nitric, or tartaric, use soapsuds, magnesia, limewater, whiting, plaster scraped from the wall, milk, oil, and baking soda. Also by vomiting. In feeding the patient do so by the rectum, as the stomach will be sore.

For poisoning from alkalies, such as ammonia, potash, or soda, use acids as an antidote, such as vinegar, lemon juice, and orange juice, followed by large doses of olive oil, castor oil, and emetics.

Another group of poisons are the narcotics. In this class are chloroform, chloral, ether, and the opium preparations, such as opium, morphine, laudanum, paregoric, and soothing sirups. Provide plenty of fresh air, induce artificial breathing, apply ammonia to nostrils, give cathartics and stimulants, such as coffee, brandy, and strychnine. Compel the patient to move about. If unconscious, keep head low.

The following poisons are mentioned specifically with their treatment:

Carbolic Acid and Creosote.— Use powdered chalk, Epsom salts, white of egg, milk, glycerin, and oil. Empty the stomach.

Alcohol (Treatment).— Keep the patient active by pinching, slapping with wet towel, or hot and cold douches to head and spine; give plenty of strong coffee; inhale ammonia cautiously, and use artificial respiration if unconscious.

Poisonous Mushrooms (Toadstools).— Give emetics, castor oil, stimulants, and apply heat. Use same treatment for poisoning caused by eating mussels or fish.

Belladonna (Deadly Nightshade).— This drug is contained in cough mixtures, liniments, ointments, and plasters. Its active principle, atropine, is used in eye ointments and washes.

Treatment.—Give emetics, stimulants, apply warmth to extremities and mustard plaster to feet. If insensible, use artificial respiration.

Foxglove (*Digitalis*).—Give emetics, strong tea, apply mustard plaster over the heart and calves of the legs, and give stimulants.

Phosphorus.—Poisoning frequently occurs as the result of sucking or swallowing the heads of matches.

Treatment.—Give emetics, followed by magnesia, white of egg, and olive oil.

Zinc.—Bicarbonate of soda (baking soda) in water, milk, eggs, strong tea, or warm drinks.

Tartar Emetic (*Antimony or Stibium*).—Give warm water freely, and stimulants, strong tea, or coffee. Apply heat.

Corrosive Sublimate (*Bichloride of Mercury*).—This substance is used in solution and tablet form for disinfection as a surgical antiseptic, etc. It is a highly active and dangerous poison.

Treatment.—If seen immediately after swallowing, give an emetic; also at once abundant doses of white of egg, milk, mucilage; or mix up an arrowroot gruel, barley water, or flour and water, and give all that the patient will swallow.

Lead (*Red Lead, Sugar Lead, White Lead, Paints*).—These poisons cause cramps, paralysis, convulsions, giddiness, stupor.

Cause vomiting, give large doses of Epsom or Glauber salts, apply mustard plaster to extremities, and give stimulating drinks. In acute attacks of lead colic the same treatment may be pursued, except to omit the vomiting.

Prussic Acid, a violent poison, is sometimes taken by children in eating the pits of stone fruits or bitter almonds, which contain it. The antidote is to empty the stomach by an emetic and give water of ammonia. Apply cold water all over the body, followed by warm-hand friction. Apply a bottle of smelling salts to the nose, dash cold water on the face, and give stimulants, as whisky, etc.

Vegetable Poisons.—Known or unknown herbs such as hellebore, bitter-sweet, poke berries, hemlock, Jamestown weed, tobacco, etc. The most of these cause vomiting, intoxication, stupor, etc. It is a safe rule to cause vomiting, give warm drinks, and stimulants.

Iodine or Iodoform.—Give freely starch or flour mixed in water, chalk, magnesia, and stimulants, if necessary.

Blue Vitriol, Blue Stone (*Sulphate of Copper*).—Copper poisoning, due to substances which have been cooked in copper vessels. Give large drinks of warm water, emetic; raw eggs, milk, stimulants.

Nux Vomica (*Strychnine*).—Strong tea, animal charcoal, inhalations of chloroform or ether, artificial respiration.

Aconite.—This drug is commonly found in liniments and ointments. Give emetics; use stimulants, ammonia, and brandy; apply warmth to extremities; mustard plaster over heart and calves of legs. If unconscious, use artificial respiration.

Arsenic.—This is a frequent cause of poisoning. It is found in insect powders, rat poison, and Paris green, and is also used in coloring wall paper and artificial flowers.

Give emetics promptly; large amounts of magnesia, lime scraped from the walls or ceilings, castor oil, sweet oil, or equal parts of sweet oil and limewater, or limewater alone, raw eggs, milk, stimulants.

Dialyzed iron may be obtained at nearly every drug store. This is a prompt and perfect antidote to arsenic.

Another class of poisons is known as the Irritating Gases—carbonic acid, chlorine, nitrous acid, and hydrochloric acid. To overcome the effect from these gases provide plenty of fresh air, inhalations of ammonia, ether, the vapor of hot water, or if handy inhale amyl nitrate or nitroglycerin. Produce artificial respiration if unconscious.

NOTE.—Poison ivy, snake bite, etc., are treated under "Poisonous Wounds."

FAINING

Loss of consciousness often causes considerable alarm, and, in fact, should not be treated as a light matter, because it may be a preliminary to a grave illness.

The first thing to discover in the case of insensibility is the cause. Notice the surroundings. The condition may be due to a fall, fright, loss of blood, drunkenness, or poisoning. Convulsions would suggest epileptic fits, hysteria, or kidney disease. If, however, the cause of the injury is known, then a systematic examination of the body should be made. The presence of a wound or bruise or bleeding would throw light upon the cause. Examine the eyes. If they are sensitive to the touch, brain injuries may be eliminated. If the pupils are contracted, it is indicative of opium poisoning, while unequal contraction is a sign of brain lesions. If the face be drawn to one side, it would suggest paralysis. A bloated face or the odor of liquor would be the sign of intoxication.

Treatment.—Lay the patient on his back. If the face is white and bloodless, have his head lower than his body. Let him have plenty of fresh air. Loosen the clothing. Apply cold water to the face. This in most cases will bring a return to consciousness. Aromatic spirits of ammonia is a good thing to use as a smelling salts and to give internally when consciousness returns.

The above treatment is applicable in all cases of simple fainting due to weakness, mental emotions, and close, warm atmosphere of crowds.

In the event of fainting from shock following an accident, there may be more marked symptoms, such as coldness of the skin, dilation of the pupils, and weak heart action.

In addition to the above treatment, the skin should be rubbed briskly, bleeding, if any, controlled, wounds dressed, and broken bones bound up. Hot-water bottles, flatirons, or plates should be applied to the extremities. Hot coffee is a good stimulant.

The temperament of the injured person is an important factor in de-

termining the amount of shock. Some people go into hysterics over a very simple thing. I have known people to faint at the very sight of blood. One experience comes to my mind of a young lady who was the sweetheart of a member of a volunteer regiment. He had violated some rule of the regiment and was placed in the guard-house for twenty-four hours as a penalty. The young lady was told of the circumstance, and was so overcome that she fell in a dead faint. She was picked up from the street and carried into a store. Seizing a glass of water from the counter in the store, I soaked a handkerchief in it and applied it to her face. She immediately revived. She seemed composed for a time, but suddenly she seemed overwhelmed with the terrible thought that her lover was imprisoned behind iron bars unjustly, and that she would not be able to see him nor hear his familiar voice for twenty-four long hours. She ran down the street toward the armory, but fell in a dead faint in the middle of the car tracks. I rushed out, and dragged her from in front of a rapidly approaching car. Again I applied the wet cloth, and she immediately revived. This time I held on to her wrist and gave her a good talking to. This proved a very effective means of treatment.

Stunning.—A condition of the mind extending from bewilderment to insensibility, due to shaking of the brain by sudden violence. Concussion of the brain. Pilcher mentions three varieties:

(1) *Slight Stunning.*—After a blow or fall, the patient is confused and pale, and the pulse weak for a few moments. Treatment: Rest, lying down, and apply wet cloth to head.

(2) *Moderate Stunning.*—Patient insensible and immovable, skin cold, pulse weak, eyes closed, pupils contracted. May be aroused, but returns to unconsciousness. Then comes a period of returning consciousness and restlessness; vomiting often occurs on return to consciousness. Treatment: Rest, lying down, quiet of body. Apply heat to feet and lower part of body, and cold to head.

(3) *Severe Stunning*.—Serious. Patient cannot be aroused. Pulse very weak and irregular. Skin cold and clammy. Recovery is very slow, and death often occurs. Liability to excessive reaction and complication of congestion of the brain.

No stimulants of any kind are to be given where the brain is affected.

In all cases of complete shock, such as may come from those cases mentioned in this and other articles, and in cases of apoplexy and compression of brain, the treatment outlined above should be pursued. The patient must be kept quiet, placed in a comfortable position, the head kept cool, and the extremities warm. This to be done until the physician arrives, who should be called immediately.

Insensibility from Sunstroke.—The attack is usually preceded by giddiness, weakness, and nausea; eyes bloodshot and contracted; skin hot and dry; subject unconscious, breathing quick and loud; heart rapid and tumultuous.

Treatment.—Place patient on back in a cool place with head raised. The chief object is to reduce his excessive heat. Remove clothing, pour cold water all over the body. Pilcher says to hold the vessel four or five feet above the patient and pour first on the head, then on the chest and abdomen, and then on the extremities, and to repeat until conscious. Bags of cracked ice may be applied to the head and under armpits. The patient should be wrapped in cold sheets or placed in a tub containing cold water. Continue until patient is conscious or the heat greatly diminished. Repeat if symptoms return.

In prostration from excessive heat—not sunstroke—place the patient on his back, with his head on a level with his body and loosen clothing. Apply heat to the surface of the body and extremities. Bathe the face with warm water into which a little alcohol or whisky has been poured. In prostration from drinking too much ice water when overheated, loosen clothing, place on back with head slightly elevated, give hot drinks, apply heat to the spine and extremities. Don't

give any alcoholic stimulants. Tea, coffee, or warm milk may be used.

In exhaustion from heat due to hard work and confinement in close, hot atmosphere, cover the body with blankets and apply heat to the extremities. Send for a physician.

Electricity Accidents.—Proceed as follows: (1) Shut off the current or release the injured person from contact with it. (2) Don't touch the person affected or the live wire with the bare hands. If rubber shoes and gloves can be secured, well and good. Stand on a dry board and cover the hands with woolen cloths or paper. If a tool of any kind is used, it should have a wooden handle.

After shutting off the current, lay the patient down, keep him warm, and apply artificial respiration.

Lightning Accidents.—To prevent accident: (1) Avoid standing under trees to escape from the rain during a thunder storm, but boldly expose yourself to the wet; it will preserve you from the lightning. (2) Avoid standing close to any metallic bodies, as lead pipes or iron railings, etc. (3) When indoors during a thunder storm, sit or stand as near to the middle of the room as convenient. Avoid standing at the window or sitting near the wall.

HOW TO TREAT A BRUISE OR SPRAIN

A bruise is a wound under the skin and is usually caused by blows, falls, squeezes, or pinches. Bruises are often referred to as black-and-blue spots. The part affected swells, then changes color, at first red, then blue, fading out to a greenish brown, and, lastly, to a dirty yellow. Severe cases may be accompanied by symptoms of shock. Where the case is severe, treatment should be administered by a physician.

The best treatment, in my judgment, is the application of hot water to the parts. While it is true that very cold and hot water act pretty much the same, yet my experience in the treatment of bruises has led me to have greater faith in hot water. It relieves the soreness, contracts the

blood vessels, assists in carrying off the collected venous blood, and diminishes the inflammation.

Just a word about the proper way to apply the hot water. Most persons, as a rule, apply a towel wrung out in hot water; when it cools, they remove it, leaving the part exposed while they are renewing the towel. This is not the most effective way, as the wound is chilled between applications.

The way to get the best results is to have two or three towels in service. While one is applied to the wound, the other is made ready; the removal of the one being followed immediately by the application of the other. In this way the hot water is kept on the bruised parts continuously, giving the best results.

The next step is absolute rest. The part should be bandaged in such a way that it is kept absolutely quiet. Frequent bathing with tincture of arnica, camphor, and witch-hazel will assist in reducing the swelling and promoting absorption.

Where the bruise involves a large area, or has been severe, the softer tissues may be seriously involved, and in such cases surgical interference is necessary.

The above treatment pertains to the bruise with which we have to deal most frequently. The same treatment is applicable in most cases of sprain, except the bandaging occupies a more important place. The foot should be immersed in a bucket of hot water and more hot water added from time to time, so that it can be kept as hot as can be borne for fifteen or twenty minutes, after which a firm bandage should be applied and the foot elevated.

In sprains of the wrist, a straight piece of wood should be used as a splint, covered with cotton or wool to make it soft, and lightly bandaged and the arm carried in a sling.

BULLET WOUNDS

Treat as other wounds. Do not probe for the bullet. Usually there is considerable shock accompanying the accident. In severe cases apply

warm blankets and heat to the extremities and spine by means of hot irons or hot bottles. Hot drinks should be given. It seems needless to suggest that a surgeon should be sent for immediately.

TREATMENT OF SPECIAL PARTS

Rupture of Varicose Veins.—Elevate the limb, loosen garters, and apply bandage below the wound and also over it. Blood clots help to stop the bleeding and should not be removed.

Bleeding of Hand, Wrist, or Arm.—Elevate the arm. In arterial bleeding, make pressure on the inner side of the arm, midway between the elbow and the armpit.

Forearm.—Raise the forearm above the head. In addition to the pressure on the wound or above it, place a hard pad, such as a small bottle or stick, in the front of the elbow, then bend the forearm at the elbow and bandage firmly to the upper arm.

Fingers.—Pressure may be made at the wrist by using a rubber band. If a single finger is affected, a band on the finger, close to the hand, will suffice.

Palm of Hand.—A hard, round object, like a billiard ball or a hard apple covered with gauze, grasped tightly in the hand will prove effective in stopping the hemorrhage. The hand can be bound down upon the ball.

Armpit.—Pack the armpit with a hard substance, such as a rolled or knotted towel, and then press the arm upon it; or if the latter is severed, bind the material tight to parts by running a bandage about the body or shoulder. Pressure should be made upon the artery which lies back of the collar bone.

Thigh and Legs.—In bleeding of the lower limb, pressure should be made on the inner side of the thigh near the groin, over the femoral artery. This can easily be found. Pressure can be made by the fingers, elastic bands, or tourniquet. Remember always that such pressure must not be kept on too long.

Bleeding below the knee can also be arrested by placing a stick back of the knee and doubling the leg back upon it tightly, binding it with a bandage.

Elevation of the leg assists in overcoming the blood flow in all wounds of the lower leg.

Nosebleed.—Packing the nose with gauze usually is effective in severe cases. If bleeding continues, summon a surgeon.

Internal Bleeding.—Apply iced cloths to abdomen. Have the patient lie quietly. If faint, lower head. If bleeding is from lungs or stomach, give lumps of ice and apply iced cloths to chest or stomach. In accidents, bleeding from tongue or cut lips may sometimes deceive one, and it may be thought to come from the lungs or stomach. The mouth should be examined carefully. It seems needless to remind one that in internal bleeding a surgeon should be sent for at once.

Bleeding of Neck and Face.—Bleeding of the neck is very dangerous, as it is near the large trunk blood vessels. Pressure with the thumb should be made at the base of the neck, outside the windpipe and near the collar bone. Make the pressure against the spine. For bleeding of the face, pressure can be made underneath the lower jawbone. A little notch can be found about midway between the chin and back part of the jaw, on its lower portion, through which this artery passes and which supplies the face. Pressure on it shuts off the supply.

Bleeding of the Temple can be readily suppressed by pressure on the temporal artery, which can readily be seen on the outer side of the forehead.

Scalp.—Bleeding of the scalp can easily be stopped, usually by direct pressure upon the bleeding point.

Chest and Abdomen.—All that can be done is to apply direct pressure by means of a large supply of gauze, holding it there with the hand until surgical help comes, or possibly binding it on the wound by running the bandage about the body.

CUTS AND SCRATCHES

For ordinary cuts and scratches precaution should be taken to wash the part with an antiseptic solution. It is good to have collodion in the house, or handy, and apply to such abrasions, thus excluding dirt and making a bandage needless.

POISONED WOUNDS

Insect Bites.—For mosquito bites, stings from gnats, wasps, bees, and spiders, ammonia is the best treatment. Oil may follow, or the parts washed in salt water. Baking soda dissolved in warm water is also good. The sting should be removed. Benzine is said to be good for bites of harvest bugs. Camphor is a good preventive of bug and gnat bites.

Snake Bite.—Act quickly. When bitten by a snake the first thing to do is to prevent the poison from getting into the general circulation. This can be done by immediately sucking the wound. Precaution must be used in seeing that the mouth is not sore or the poison swallowed. Shut off the circulation from the part by bandaging the limb—if such it be—tightly, or if in another part, by pressure over the vein. Open the wound with a knife blade and let the blood flow freely, and squeeze the poison out. Some advise use of a cupping glass. Wash the wound with an antiseptic. If a caustic can be had, burn out the wound with it. This can be done also with a hot iron. Keep the bandage on several hours, and when releasing it do so gradually.

Whisky is recommended as a stimulant.

Dog Bite.—The same treatment as used for snake bite can be used for dog bite. People frequently get very much excited over a bite from a dog. Hydrophobia is rare. I would advise, if the dog shows no signs of being mad, that it be not killed, but penned up and watched. This will, if the dog is normal, relieve the patient and his friends from anxiety. Later when the patient's condition is absolutely known, such measures may be taken with the dog as may assure the

protection of society. In cities where antihydrophobia serum is provided, this may be used as a preventive measure.

All animal and rodent bites should receive the same attention as has been recommended for dog bites.

POISON IVY AND POISON OAK

Sumac, Etc.—When poisoned from these plants an irritating rash appears and is frequently accompanied by a painful swelling of the parts affected. A strong solution of baking soda is good. Zinc ointment is also recommended, or in the absence of these plain vaseline is good. Several authorities recommend bathing the parts two or three times a day with sweet spirits of niter.

Foreign Bodies in the Nose.—Blow the nose hard while holding the opposite nostril closed. Excite sneezing by tickling the nose or by giving snuff. Instruct the patient to take a full breath and close the mouth, then give a sharp blow in the back between the shoulders. The best way to remove a foreign body is with a syringe, but this should be done by an experienced physician.

Foreign Bodies in the Throat.—An obstruction can generally be carried down by swallowing pieces of bread or potato slightly masticated, or, better still, a raw egg, fresh from the shell and with its original consistency broken as little as possible. Slapping on the back sometimes helps. Sometimes the obstruction will go down too far to be reached by the fingers. In such cases copious draughts of water should be swallowed rapidly, and if this fails to remove it, give mustard water, or any other emetic. Should vomiting fail to bring up the obstruction, then mechanical means must be tried. Take a long spoon, bend it slightly, make the patient throw his head well back, and push the handle boldly down the throat. If it is kept well to the back of the throat no harm can be done. The same operation may more conveniently be performed by a bit of sponge attached to a bit of whalebone. Occasionally, substances will

get into such a position in the throat as to necessitate a surgical operation.

BURNS

Burns are caused by contact with fire, the rays of the sun, very hot bodies, or chemicals. Pilcher divides them into three classes, according to their degree of severity: (1) Mere painful redness; (2) formation of blisters; (3) charring. In severe burns there may be considerable destruction of tissue and great shock.

To treat a burn: first remove the clothing by cutting it away with a pair of scissors. If it sticks, do not pull it off, but flood it with oil.

If blisters are present, let the water out by pricking them with a needle after passing it through a flame to sterilize it. Take care not to break the blisters, so as to avoid exposing the tender surface to the air.

Promptly exclude the air by applying a compress wet with water, in which is dissolved a liberal amount of baking soda. Apply any oil, such as olive oil, sweet oil, fresh lard, unsalted butter, vaseline, etc. One of the best oils to use is a solution of equal parts of linseed oil and limewater.

In the absence of oil, dust boric acid over it or apply clay. Cover the wound with cotton or some soft material. If the wound is wet, always see to it that oil has been used freely before using cotton, as when dry the latter will stick and reopen the burned surface when an attempt is made to remove it.

Burns caused by acids should be thoroughly washed with water, then with a solution of baking soda and water, and then treated like an ordinary burn.

Burns caused by alkalis, such as caustic potash, caustic soda, or ammonia, should be washed with vinegar or some other dilute acid.

Treat shock as explained under "Fainting."

Cover severe burns as quickly as possible, so as to exclude the air. An application should be ready to apply immediately. Do not expose the wound, as it may prove fatal. If burn

is extensive, dress but a small portion at a time.

The bicarbonate of soda and oils are best applied by dipping cloths into them, ointments by spreading on cloths and then applying.

In burns of the mouth or throat, apply the oil or white of an egg by drinking them. If caused by chemicals, the mouth and throat should be rinsed by the proper antidote—vinegar or dilute acid in case of caustic soda, potash, ammonia, or lye, and a solution of baking soda for acid burns.

In severe burns summon physician at once, as there may be considerable destruction of tissue and danger of great shock. Burns often heal slowly and are frequently attended by fearful scars and deformity.

Sunburn is a burn of the first degree and should be treated as such.

A person whose clothing is burning should be made to lie down—if necessary, thrown down—as the tendency of the flames is to rise upward. When the patient is lying down the flames have less to feed on, and there is not so much danger of their reaching the face or inhaling the fumes. The person should be quickly wrapped in a shawl or blanket of wool, not cotton, and the fire smothered by pressing on the burning part.

BLEEDING

To be efficient in stopping a hemorrhage, it is necessary to know that blood comes from two sources, namely, arteries and veins. It must also be remembered that blood in an artery comes *from* the heart, and that blood in a vein is on its way *to* the heart. Thus, in stopping the bleeding from an artery, pressure must be made between the heart and the wound, while in bleeding from a vein pressure must be made on the distant side of the wound.

It is not difficult to determine whether the bleeding is from an artery or a vein, as in an artery the blood spurts and pulsates, while blood from a vein oozes and flows without pulsation in a steady stream.

Bleeding from an artery, especially

one of considerable size, is very serious, and prompt efforts must be made to stop it.

General Rules for Treatment.—Send for a physician immediately. Have the injured person lie down and elevate the wounded part. This can be done readily if an arm or leg is affected. Remove clothing from the affected part—it may be necessary to cut it off. Keep the patient as quiet as possible. Apply pressure directly upon the bleeding point by pressing the finger, covered with gauze, upon it. If the bleeding is from an artery, make pressure above the wound, that is, between it and the heart. This can be done with an elastic band, a pair of elastic suspenders, or tightly wound bandages. In severe cases a tourniquet must be used. This can be made by first strapping the limb with a bandage, making a knot in it, which should be placed at a point above the wound directly over the artery supplying the bleeding point. The artery can be located with the index finger, as its pulsations can be detected. When the knot is made, a loop should be made also directly over it, through which a small stick can be placed. This can be twisted, and thus pressure is brought to bear upon the artery until the bleeding ceases. The bleeding point must be watched in the event that the flow may recur. Such a tourniquet must not be left on the arm or leg for too long a time. In minor wounds the bleeding will be arrested in 15 to 20 minutes, when the pressure can be reduced. In severe cases of bleeding, apply cold by means of ice bandages; in ordinary bleeding, pressure by means of gauze upon the wound is sufficient to stop it.

In excessive bleeding, general treatment of the patient is needful. The patient may faint or become very weak. In the latter case heat should be applied to the extremities and blankets secured. To overcome the fainting, see directions for this purpose.

After the bleeding has stopped, treat as a wound. Apply gauze which has been saturated in a mild antiseptic solution, then apply absorbent cot-

ton and dress with bandages. Absolute cleanliness must be observed. There are some popular ideas that cobwebs, tobacco, and salves are good to stop bleeding. They should never be used, as they may cause blood poisoning.

DISLOCATIONS

In dislocations the patient cannot move the limb; there is deformity, shortening and pain. It is usually an easy matter to diagnose a dislocation, whereas it is often very difficult to always detect a fracture.

Treatment.—Send for a physician immediately, and while awaiting his arrival place the patient in as comfortable a position as possible. Support the injured part with pillows or bandages, and apply hot towels to the part to reduce the pain and inflammation. Dislocations are not so serious if reduced immediately before inflammation has begun seriously. Long delay makes the work of adjustment very hard, and in severe cases the swelling must be reduced before the dislocation can be treated.

Yet, while this is true, unskilled handling may prove very serious, and where it is possible to secure a surgeon the dislocation had better remain untouched until his arrival. Where, however, a surgeon cannot be secured for several hours, an attempt may be made to correct the dislocation, and a few hints are given how to act.

The most common dislocation, no doubt, is that of the fingers. This occurs very frequently in games of baseball. Often the first joint of the finger is thrown out of place and is turned upward and backward. The first act in the treatment is to grasp the tip of the finger firmly. Then increase slightly the deformity in order to loosen the impaction; at the same time press the dislocated end into place and pull forward firmly but not roughly. When reduced, it would be wise to use a small stick as a splint and bandage the finger, making it absolutely immovable. Frequent baths in water as hot as can be borne will help to soothe and heal.

A very embarrassing dislocation is that of the lower jaw. This occurs usually in consequence of extreme yawning or sometimes in laughing. A friend of mine, an intern in a Jewish hospital, was called several times each week to a home for the Jewish, to reduce the dislocation of the lower jaw of an old Hebrew who had the happy faculty of dislocating his jaw at very frequent intervals and often at very inopportune times. We are surprised that this occurs as frequently as it does, but really it is still more remarkable that it does not occur with greater frequency among the members of the opposite sex, especially at the high-school age.

Where such an accident occurs the victim is found with his mouth wide open, with the saliva dripping from its corners, and unable to speak distinctly.

To reduce the inflammation, wind a handkerchief thickly around both thumbs, padding them well, to avoid injury by the sudden closing of the mouth when reduced. Place the thumbs on each side of the lower jaw, inside the mouth and as far back as possible. Then press firmly downward and backward, when the jaw will be felt to slip into place. When in place, bandage to hold in position.

FRACTURES

Broken Bones.—A layman should not attempt to set a bone. For general purposes we recognize two kinds of broken bones: First, those which do not break through the skin and, second, those in which the bones do protrude through the skin.

The thing to do in a fracture is make the injured person comfortable, and keep the injured part perfectly at rest. Handle the fractured limb very carefully, cut off the clothing, lay the limb on a splint, placing enough cotton or soft material underneath the injured part to make it comfortable, then bandage lightly to prevent the edges of the bones from moving upon one another.

In compound fractures, dress the wound and cover with gauze, cotton, and a bandage.

In a fractured hand the splint should extend from the elbow beyond the fingers. Remember to pad the splint, having a thick wad of padding under the palm of the hand. Place the arm in a sling.

In fracture of a finger a splint should be placed against the finger on the palmar surface and extended from tip of finger to the wrist. Pad the splint and bind to the finger, and support it by placing the arm in a sling.

A broken wrist should have a splint extending well up the forearm.

Broken Forearm.—Usually both bones are broken. I would advise placing two splints padded evenly with plenty of cotton, on the arm from elbow to tips of fingers, then bandage and place in sling.

Upper Arm Fracture.—Place splints on each side of the arm and bandage to the body. If the fracture is high up toward the armpit, place a pad of folded lint in the armpit and extend under the arm; then bind the upper arm to the side of the chest and place the elbow in a sling.

In fractures of the collar bone or shoulder blade, bring the hand up across the chest to the opposite shoulder, and bandage the arm to the chest.

In fracture of the ribs, if it is necessary to move the patient, strap the affected side with strips of adhesive plaster from the spine to the chest bone.

In fracture of the jaw, put the bones in place and bind a bandage across the head, relieving the bones of all strain. All that can be done in fracture of the nose is to pack the nose with gauze and stop the bleeding.

DROWNING

(1) Loosen clothing, if any. (2) Empty lungs of water by laying the body on its stomach and lifting it by the middle so that the head hangs

down. Jerk the body a few times. (3) Pull tongue forward, using handkerchief, or pin with string, if necessary. (4) Imitate motion of respiration by alternately compressing and expanding the lower ribs, about twenty times a minute. Alternately raising and lowering the arms from the sides up above the head will stimulate the action of the lungs. Let it be done gently, but persistently. (5) Apply warmth and friction to extremities. (6) By holding tongue forward, closing the nostrils, and pressing the "Adam's apple" back (so as to close entrance to stomach), direct inflation may be tried. Take a deep breath and breathe it forcibly into the mouth of patient, compress the chest to expel the air, and repeat the operation. (7) Don't give up! People have been saved after hours of patient, vigorous effort. (8) When breathing begins, get patient into a warm bed, give warm drinks, or spirits in teaspoonfuls, fresh air, and quiet.

PRONE PRESSURE METHOD

A new method of producing artificial respiration has recently been discovered by the noted physiologist, Dr. E. A. Shafer. He calls it the "prone pressure method" because the patient lies at full length face down, and pressure is made with the hands of the operator on the back over the lower ribs and then relaxing the pressure. This is continued alternately about twelve times a minute. Thus the air is forced out and sucked in, making a frequent exchange of air in the lungs. The advantages mentioned for this method are that it is very efficient, is exceedingly simple, can be done by one person and without fatigue, and that because of the position of the patient allows the tongue to fall forward and the mucus and the water to escape from the mouth and thus not block up the throat.

CHAPTER XLIII

WHAT THE HOME NURSE OUGHT TO DO

WHAT AN INVALID MAY EAT — WHAT AN INVALID MAY DRINK — ADDITIONAL SUGGESTIONS.

When a rubber hot-water bag is not at hand, a very good substitute is a stone bottle with a perfectly tight cork. The hottest water can be put into it without fear of cracking, and it will retain heat the greater part of the night. Even a glass bottle can be used in an extremity; for occasionally, during a severe chill, a doctor orders hot applications put all around the body, and it is impossible always to find enough hot-water bags to supply the demand. The greatest care must be exercised in seeing that the corks are perfectly tight. If the bottles are too hot, slip them into stocking legs, tying them at each end.

Simple as the task of making poultices is, a certain knack is needed: Mix flaxseed with boiling water, stirring constantly with a palette knife. When the mixture is thick enough to drop from the knife, lift it from the fire, beat well to make it light, and spread, a quarter of an inch thick, between old soft muslin or surgeon's gauze. Turn over the edges, lay it on a hot plate, cover with another plate, and carry it to the sick room as hot as possible. Before laying it on the patient, test its temperature by holding it against your own cheek. If it is too hot for you, it requires cooling before applying. When put on by degrees, as it were, letting down one small piece at a time, it will not feel as hot as if put on all at once. No poultice should remain on longer than an hour; by that time it is not as warm as the body. After removing, wipe the skin dry, and rub the sore place with oil or vaseline.

Fomentations are not easily applied, unless one knows exactly how to handle them. In every household which has due care for emergencies, there ought to be a set of fomentation cloths; three large ones of heavy blanket flannel, about three quarters of a yard square. These are necessary in cases of pain in the stomach or abdomen, or in any extended ache in the body. Smaller fomentation cloths of a thinner flannel are necessary in an attack of neuralgia, pain in the muscles of the neck, toothache, or pains about the head. These cloths should be about eight or ten inches square. Some a few inches smaller are handy for pain in the ears or eyes. The way to use a large fomentation cloth is to carry into the sick room on a tray a kettle of water which has been taken off at the boiling point. Fold the large cloth four times. Hold the ends, dipping the center of the cloth into the hot water, but keeping the ends dry. Then twist the flannel into a rope-like roll until every drop of moisture is squeezed out. It will be very hot, still almost dry. Lay this on the aching part of the body, folding it quite smooth, and applying it gradually, keeping the hand beneath to save from a sudden shock of intense heat. Over the fomentation cloth lay a second square of flannel, dry and warm, to keep in the heat. If this is bandaged loosely around the body, a fomentation cloth will retain its heat for ten or fifteen minutes. Pain may sometimes be relieved with one application. If it continues, take the other flannel

square and wring from the water in the same fashion. An easy way to wring the smaller cloths used about the head is to fold them into a square and lay in a potato ricer. Dip the ricer into boiling water and squeeze the cloth dry, covering it with another flannel to keep in the heat. After these squares have been used, launder them and lay away, ready for another emergency.

A very handy thing to have in the sick room is a small nursery refrigerator; but when it cannot be obtained, you can keep ice with small amount of waste by a simple, homemade contrivance. Get a large flower-pot with a saucer a size or two bigger than the pot. On the saucer set a wire trivet. Put the ice on this, and over it turn the flowerpot upside down, stopping up the hole in the bottom with a wad of absorbent cotton. Cover with a piece of flannel, and uncover only when ice is needed. The quietest thing to use for an ice pick is a strong hat pin; stick it in the ice, pick with a small hammer, and break off a piece as large as you want.

In the summer when the range fire is allowed to go down and there is no gas stove, or where the sick room is some distance from the kitchen, it is a good plan to have some way of heating water in the sick room. Do not use a stove which burns kerosene or gasoline; in spite of the utmost care, it will exude odors. The use of gas is no better, as it consumes oxygen, and it is seldom that a pipe can be attached tightly enough to prevent all odor from the gas. The best arrangement is an alcohol lamp. If that is not in the house, you can manage with a five-o'clock teakettle or a chafing dish, which over a hot alcohol flame will boil a pint of water in a few minutes.

The instructions that a doctor lays down about medicine, feeding, or any sort of treatment must be carried out to the letter. The best plan is to write his instructions concisely during every visit. If he orders medicine to be given every two hours, do not trust to memory, but reckon the

time ahead and write it down — medicine at ten, twelve, two, four, or whatever the case may be. Be perfectly accurate in measuring, using a medicine dropper for drugs and the average-sized teaspoon for a teaspoonful.

A small clock is a necessity in the sick room; but frequently its ticking will irritate a nervous patient. The best way to overcome this is to cover it with a glass shade. In this way it can be seen but not heard.

Occasionally a doctor orders an application of hot spirits. This is a process which must be very carefully carried out, as the alcohol is liable to take fire. The best way to heat it is to set the whisky into a cup, put in a chafing dish, pour hot water around it, then put on the lid. Afterwards light the flame of the lamp and let the water boil gently for a few minutes. Fold old muslin or gauze into the shape required, dip it in boiling water, and press dry in a potato ricer. Dip it again in hot whisky, squeeze as dry as possible, apply it as hot as can be borne, and cover with a piece of dry flannel. Keep the whisky hot as long as it is needed, and have two bits of muslin, so one can be changed while the other is on the patient.

When it is necessary to change a nightshirt or nightgown, and the patient is too sick to sit up in bed, draw it well up under the arms, slip off a sleeve at a time, and push it up toward the neck, getting it over the head as deftly as possible. Roll the skirt of the fresh nightdress into a coil till it reaches the sleeve, slip the patient's arm into the sleeve before lifting the head from the pillow, and the nightdress can then be pulled down over the neck very quickly, afterwards straightening the skirt. The easiest plan in severe sickness is to have a nightdress which is open all the way down the front. It can be easily changed by turning the patient on one side and adjusting the nightdress from head to foot, then doing the same on the other side.

The patient's hair should be combed twice a day at least. If it is a

woman's, part it in the middle and back, brush and comb one side at a time, and make it into two neat braids.

When a patient is allowed to sit up for the first time, it is a good idea to make it half an hour at meal time. It is much easier to eat when in a comfortable, upright position, as the food tray can then be put in a more convenient place. Besides, the novelty of being able to sit up and eat is apt to create a new relish for food. If it can be obtained, a handy thing to have in a sick room is a one-leg adjustable table, which can be set high or low, as needed, and be used for various needs—to serve a meal on, to place the basin on, for the patient to wash his face and hands, or during convalescence to hold a book or for a game of solitaire. Although it is not quite as handy, a good substitute for this useful bit of furniture is an ordinary sewing table. Unfold two legs, set it on the floor beside the bed, leaving the other legs tucked under. To prevent the weight of the table from resting upon the patient's body, put a couple of props under it on the bed. If nothing else is handy, a few books or wooden blocks will serve to keep it steady.

Occasionally, the doctor orders an ice compress for the head. To make it, fold two large handkerchiefs (to be used alternately) so they will not be so wide as to come over the eyes or wet the hair or pillows, and turn in the edges. Put a block of ice with a little water about it in a basin, wring out a handkerchief and lay it on the ice until very cold; then apply, keeping one on ice, the other on the patient's head.

Occasionally, a room is situated so that it is almost impossible to let the air sweep through it as it ought without blowing on the patient. Arrange a little tent by placing around the invalid a low clotheshorse with three panels. Over this spread a sheet or blanket. If the air is very cold, put a hot bottle at the feet and cover the lower part of the body with extra clothing. In this way there will be no danger of the patient catching cold.

The Medicine Closet.— Even in the household where every member is strong and healthy, there ought to be in reserve all sorts of simple medicines and emergency requirements, which are ready at the moment needed. The medicine closet should be high enough to be out of the reach of children's hands. If made of wood, enamel it white inside and out, thus making it very easy to keep clean. Put a secure lock on the door and keep the key where it can be found instantly by any one in the household. Divide the shelves into different departments for all sorts of needs. In one side store everything that is poisonous, or in any way dangerous. In another, keep rolls of antiseptic gauze, absorbent cotton, sterilized linen, bags for poultices, lint, surgeon's plaster, finger stalls, rubber bandages, and court-plaster. Reserve one shelf for such common, everyday remedies as calomel, camphor, castor oil, cascara sagrada, Epsom salts, Jamaica ginger, glycerin, paregoric, ipecac, limewater, magnesia, sweet spirits of niter, oil of peppermint, quinine, rhubarb, senna, sulphonal, flowers of sulphur. Upon another keep such drugs as are used for cleansing wounds or bruises and healing burns, also things to be used in cases of emergency, as alcohol, boric acid, alum, carbolic acid, arnica, borax, charcoal, collodion, witch-hazel, iodoform, turpentine, dioxygen, listerine, and peroxide. There ought to be a corner for poultice and plaster necessities. There one would find mustard, flaxseed, oil silk, bran, linseed meal, and antiphlogistine. Here, too, have small supplies kept together of such things as might have to be looked for in different parts of the house: carbonate of soda, ammonia, whisky and brandy, olive oil, sweet oil, camphorated oil, limewater, and oil liniment.

Save every morsel of old linen as it comes from the laundry, for emergencies. Cut it into strips two to three inches wide and join them, laying one end upon the other, and sewing around the edge. Cut off ravelings, then begin at one end and roll

up. Make as many of these rolls as will go into a wide-mouthed fruit jar. Fill the top with absorbent cotton, set the jar upon a trivet in a kettle of cold water deep enough to have the water come nearly to the neck, and allow it to come almost to the boiling point. The jar will need a weight laid across the top to hold it steady. Keep the water about 180° F. for three hours. Lift off the kettle, and let stand until water becomes cold. Then take the jar out, screw on the top tightly, wipe, and put away. The linen will then be so perfectly sterilized that in using it there will be no possible danger of infecting a fresh wound. Save old pocket handkerchiefs and bits of soft linen and lawn for poultice bags, making them of different sizes — some as large as an eight-inch square, others just big enough to poultice a boil. Stitch them around three sides on the machine, then they can be tied tightly at the neck. When they are wanted fill the bag half full of whatever the poultice is made of and press it into shape between the palms. When poulticing a boil, lay over it first a scrap of thin sterilized linen moistened with olive oil and on top of that place the hot poultice. When poultices must be applied very hot, fill three bags and keep them in the oven, where two can be kept as hot as possible. After putting the poultice on, cover with several folds of old flannel, which helps to retain the heat. In making mustard plasters, mix with the white of an egg instead of water, as it has all the drawing power necessary, yet it never blisters the skin. Use half mustard and half flour, then cover the top of the plaster with thin old linen.

The Sick Room.— Perfect ventilation, a sunny exposure, and, if possible, a fireplace, which has much to do with keeping the air pure, are necessary for the sick room; which should be kept perfectly neat and clean in every detail. A bare floor with a few small rugs, which can be taken up and shaken, is very much better than a carpet, or even matting. A string mop, used noiselessly about

the floor, carries away all the dirt without raising dust. The bed should be placed so the patient can be shut off from any draughts, also in a position that will not allow the sun or a gas light to glare in his eyes. A single bed is far better than a double one, for various reasons. The best frame is of iron or brass with a woven wire or national spring, both of which can readily be kept clean and free from dust. It ought to be set on strong, noiseless casters, so it can be moved quietly and easily whenever necessary. The higher the bed the better, as it is much easier for a nurse to lift a helpless patient when not obliged to bend very low. If obliged to use a double bed, try to have the patient sleep on one side during the day, leaving the other side comfortable for night. A good hair or felt mattress is a necessity, and it ought to be in one piece, as steady use of a divided mattress is liable to make it slip around and become very uncomfortable. Cotton sheets are superior to linen, even in summer, when coolness is desired, because cotton is not a quick producer of heat, and it does not absorb perspiration, as linen does, afterwards chilling the body. Wool blankets, light or warm, according to the season of the year, are much better than a comfortable. A dimity covering or linen sheet is more comfortable than a heavy Marseilles counterpane. The pillows are better thin and narrow than thick and square.

The furniture of a sick room should be as simple as possible; all heavy draperies and upholstered chairs being removed. Thin muslin curtains add to the cheerfulness, and a dark shade, if there are no outside shutters, is almost a necessity during long summer days, when the chamber has to be darkened during sleeping hours. A small table that is steady on its legs and light enough to be easily lifted, is a necessary article of furniture. Do not allow it, however, to get piled up with all sorts of useless things. Keep it covered with a clean towel and reserve it for the necessary articles which should be

found there: the thermometer in its glass of borax water, a pad and pencil, which may be needed during the doctor's visit, and a movable hand screen, to use on occasions when the patient wishes to be shaded from the light. A small night lamp, which burns with a dull glow, is frequently a necessity. If sick nursing has to be done during cold weather, when artificial heat is necessary, try to alleviate the dryness of the atmosphere. This can be done by keeping a basin of water upon the radiator, or setting before the register a three-fold screen of cheese cloth, which should be kept constantly wet. A light screen is another sick-room necessity. The best is one of plain bamboo, which does not hold dust, the panels made of some washable stuff run on rods, so they can be quickly changed for laundering. If possible, have no plumbing fixtures in a sick room, and when it opens into a bath room keep the adjoining door closed as much as possible.

An excellent way to admit fresh air to a sick room in winter, when a window is near the bed, is to open it the desired height, then stretch a piece of cheese cloth over the opening and tack it fast. A still more convenient way is to put the cheese cloth on a small frame that will fit into this opening; it can then be removed at any time.

A valuable remedy for proud flesh, an obstinate outgrowth of flesh from small sores, consists of alum. A lump of alum is placed upon a stove just hot enough to enable it to turn to dry powder. The powder placed on the affected part repeatedly and covered with a bandage can be relied upon to effect a speedy and inexpensive cure. It has never failed to cure when even the services of a physician were vainly resorted to.

Another good remedy: use *powdered resin*. Apply as above; do not heat the resin, however.

If there is an invalid in the family who must be fanned, have your "handy man" make wooden handles for several large palm-leaf fans. These should be longer than the stem

handles, nicely polished, and nearly as large as that of a broom. The center of the stick is hollowed, then the stem of the fan is inserted and fastened firmly with glue. These handles may be made at home by using the hollow end of a window-shade roller. The wooden handle, on account of its size, does not cramp the hand as does the small stem.

All winter, keep in the medicine closet a small jar of turpentine and lard, melted together in equal quantities. If one shows signs of hoarseness, give the neck and chest a vigorous rubbing with this homemade liniment.

For jammed fingers, immerse the hand in water as hot as can be borne and rub vigorously. Do up in sweet oil or vaseline. If the bruise is on the face, apply a cloth wrung from hot water, to prevent the blood from settling; afterwards apply the oil.

A cure for eczema is to take yellow carrots, scrape them, and fry slowly in fresh lard till brown. Drain off the lard and melt in it 1 tablespoonful of powdered resin. Stir well, put in a jar, and when it is cool mix in 1 teaspoonful of sulphur. Apply each day; the cure will be speedy.

Castor oil will not be objectionable to children if put in a bottle with an equal quantity of pure glycerin, heated and shaken well. Each drop of oil will be coated with glycerin and rendered almost tasteless.

WHAT AN INVALID MAY EAT

Sick-room diets are classified as liquid, light, and convalescent. The first consists wholly of liquid food, and is given in cases of typhoid fever and other severe illnesses. In typhoid, nothing is allowed for some time except milk, but during the run of other diseases gruels, beef tea, and broths are prescribed to keep up the strength. In fevers, a large number of cooling drinks, characterized as acid, starchy, or albuminous, are frequently ordered. Cocoa, hot milk, and various malt preparations are given at night to produce sleep, while occasionally doctors prescribe drinks

containing rum, sherry, or brandy, when the patient is in need of such stimulation.

A "light diet" is the term used for the food that is given when a patient who has been very sick is beginning to improve. It includes almost everything that is found in the liquid diet, and, in addition, soft-boiled eggs, soups, broths, raw oysters, toast, delicate cream soups, chicken broth, soft custard, fruit, gelatines, light puddings, and a small amount of poultry, game, or tender meat.

Convalescent diet includes all the dishes which have been already spoken of, only as the patient grows stronger the amount grows a little larger day by day, and includes more nourishing foods, with a larger variety. Baked potatoes begin to appear on the tray, beefsteak, broiled mutton chops, sweetbreads, broiled chicken, sponge cake, boiled rice, small pieces of broiled fresh fish, a slice of tender rare roast beef, and ice cream.

The utmost daintiness is a necessity when a tray for the sick room is being set. Food that is tempting in appearance will often create an appetite where none existed. You must remember that an invalid's recovery depends as much upon the diet as upon medicine. Therefore, everything that is taken into the sick room must be of the best quality—eggs that are really fresh laid, the best of butter, the tenderest chicken and meats, and milk that is perfectly sweet. If the physician orders food served every three hours, carry the tray into the room on the stroke of the hour. He knows when the stomach requires nutrition, and unless you have been sick you can never understand what a terrible sinking sensation the patient experiences when the lunch hour is forgotten for even fifteen minutes. By making each menu just a little different from the one before, you can keep your invalid guessing. Anticipation creates appetite. If the tiny meal is delicately cooked and daintily served, it will probably be eaten with a relish. Never offer a sick person as much as is required by a healthy appetite.

For the most nourishing kind of beef tea, choose a piece of meat from the lower part of the round. There is more juice in a piece of the animal which has been toughened by steady exercise than in a very tender cut. If we wish to keep in the juices, the meat should be seared on the outside by exposing it to a strong heat, as in roasting, broiling, or boiling, but in this case the fiber should be rejected.

Free from fat, put through the finest knife of the meat chopper, and cover with a pint of cold water. Heat slowly in a double boiler. In two hours the juices will be drawn out and the fiber left bleached white. A square of wet cheese cloth may be doubled and spread over a strainer, and through this the chopped meat be wrung perfectly dry. The juice ought to be red. If it cooks long it will turn brown; then the albumen, which we wish to preserve in liquid form, would coagulate, taking from the beef tea most of its nutrition. If the patient objects to the uncooked look of beef tea, serve in a red tumbler which is well heated, because the liquid cannot be brought to the boiling point.

Occasionally, a patient is found who has such an aversion to milk that he will not take it as a liquid. Then try to include it in the menu in every possible form, that is, if the doctor prescribes it. It can be prepared as junket and clabbered milk; in custards, oyster and cream soups, egg-nog, gruels, milk toast, cocoa, and blanc mange; in the shape of cream served with cereals and soft puddings, and if chilled foods are allowed, give ice cream.

Kumiss, for which a recipe is given in another chapter, is very nutritious and easily assimilated. In fact, it can be retained by a stomach which refuses almost every other sort of nourishment. It is invaluable in diseases where the patient is badly emaciated, and in dyspepsia, chronic vomiting, and diarrhea it is especially useful. If given the last thing at night to any one suffering from insomnia, it often produces sleep. The recipe given in another chapter makes

enough for a four-days' supply, and if it is to be steadily used, it ought to be made fresh every three or four days, as it will not keep longer.

Scraped Beef.—Tack down to a meat board with a couple of skewers $\frac{1}{2}$ pound of steak cut from the top of the round. With a sharp knife scrape it and lift off all the meaty substance, laying it on a platter. When one side is scraped bare, turn over and get all that is possible off the other side; when finished there will be nothing left but tough fiber. Mold the scraped meat with a knife into a little cake, and broil it over the coals for a few minutes. Season with pepper and salt, and serve on buttered toast.

Chicken Broth.—Cut up a small fowl, wash it thoroughly, and skin it; also cut away all the fat possible. Pour over it a quart of cold water, set it back far enough on the stove to take at least half an hour to come to a boil. Simmer very gently. When the meat begins to get tender, lift it out, strip it off the bones, and put the carcass back to simmer until all the good is out of it. Allow the soup to cool, and skim off the fat. Reheat, when needed, with a little rice, and serve quite hot. A nourishing veal soup may be made from a shank of veal in the same way.

Creamed Toast.—Two slices of bread; $\frac{3}{4}$ cupful of rice milk; $\frac{1}{2}$ tablespoonful of butter; 1 teaspoonful of cornstarch; dash of salt.

Toast the bread a delicate brown and butter slightly. Scald the milk, thicken slightly with cornstarch, season with salt, and pour over the toast. A very tasty dish of toast may be made from $\frac{1}{2}$ cupful of clam juice, taken fresh from steamed clams, and poured without thickening over toast.

Broiled Oysters.—Choose the largest oysters possible, pour a little water over them, and rinse in the liquor before lifting out; then drain in a napkin till dry. Dip into melted butter, then into cracker crumbs which have been seasoned with pepper and salt, and lay them between the wires of an oyster broiler. Move gently over a clear, hot fire until the

juice begins to run out. Lay them on toast and serve hot.

Creamed Oysters.— $\frac{1}{2}$ pint of oysters; 1 tablespoonful of butter; $1\frac{1}{2}$ tablespoonfuls of cornstarch; pepper and salt; 1 cupful of thin cream.

Put the oysters in a bowl, add a little water, and rinse carefully, lifting each one out separately. Dry in a napkin. Make the cream, butter, and cornstarch into a smooth sauce, season with pepper and salt and drop in the oysters. Cook until they begin to curl up at the edges, then pour over buttered toast.

Scalloped Oysters (*Individual portion*). $\frac{1}{2}$ cupful of oysters; $\frac{1}{2}$ cupful of cracker and bread crumbs mixed; 1 tablespoonful of butter; pepper and salt; 1 tablespoonful of cream; 1 tablespoonful of strained oyster liquor.

Wash the oysters and lift them from the liquor. Mix the crumbs with the melted butter; scatter a layer of crumbs over a deep saucer; then a layer of oysters; sprinkle with salt and pepper, and cover with the rest of the crumbs. Pour over the cream and oyster liquor. Bake until the top is delicately browned. Serve hot.

Broiled Squab.—Singe a squab, wash, and wipe dry; then, with a sharp knife split it down the back from the neck to the tail. Lay it open and clean the inside; cut through at the joints, releasing the tendons. Brush over inside and out with melted butter, season with pepper and salt, and dust with flour. Broil over a hot fire ten minutes. Serve on hot buttered toast and garnish the little dish prettily with parsley. Quail or any small bird may be cooked in the same way.

Broiled Chicken.—Prepare a tender chicken in the same fashion as directed for squab. Unless it is exceedingly small, half a portion will be enough to cook for an invalid; and if the appetite is only equal to very dainty meals, the tender little breast may be sufficient. Season with pepper and salt, brush with melted butter, put in a greased broiler, and cook for twenty minutes, turning the broiler frequently. Keep the flesh

side longer over the coals than the bony portion. When the chicken is delicately browned, put it in a pan and set in a hot oven for ten or twelve minutes. Serve hot with toast.

Creamed Chicken.— $\frac{1}{2}$ cupful of thin cream; $\frac{1}{2}$ tablespoonful of cornstarch; 1 tablespoonful of butter; pepper and salt; $\frac{3}{4}$ cupful of cold chicken breast.

Make a white sauce from the cream, cornstarch, butter, and seasoning. Cut the chicken into cubes, and heat in the sauce. Serve on buttered toast with a baked potato. The meat which is taken from the bones when preparing chicken broth may be utilized for this dish; or, if desired, and if the patient can digest it, it can be made into a chicken salad.

Broiled Sweetbreads.—*B e f o r e* sweetbreads are prepared in any way, they have to be parboiled. When they come from the market, put them into ice water and let them stand an hour, then drop in boiling salted water to which a tablespoonful of lemon juice has been added. This preserves the white color of the sweetbread, and keeps the flesh firm. After cooking slowly for twenty minutes, drop them in ice water and pull off the skin, fiber, and all waste scraps, divide into pieces, and they are ready to serve as desired. They make a very savory dish for the invalid's tray when broiled. Do not separate them when cooking this way, but cut in slices, sprinkle with salt and pepper, brush with melted butter, and broil a delicate brown. Season with pepper, salt, and lemon juice, and, if the doctor allows it, a tablespoonful of tomato sauce.

Sweetbreads are delicious when creamed. When served in this way they are simply reheated in a white sauce, as directed for creamed chicken, and poured over buttered toast. If you have a small portion left of both chicken and sweetbread, it makes a delicious dish blended with cream sauce. They are also nice reheated in a cup of strong chicken stock with a dash of lemon juice for seasoning.

Golden-rod Eggs.—Prepare a white sauce as given in the recipe for

creamed chicken. Add to it the white of a hard-boiled egg, chopped. Pour the mixture over a slice of toast, and on top scatter the hard-boiled yolk rubbed into tiny strings through a sieve. Serve very hot.

Egg Sandwiches.—Boil an egg hard and chop fine; add salt, mustard, a few drops of vinegar, and a dash of pepper for seasoning. Soften $\frac{1}{2}$ tablespoonful of butter, beat to a cream, and mix the egg with it till it is a paste. Butter slices of bread, spread on the mixture, and make into a sandwich.

French Chops.—Trim from the bones of tender, little lamb chops all the fat and skin, leaving nothing but the tiny round of meat at the end. Brush with butter, dust with pepper and salt, and broil over a hot fire. Slip little paper frills on the bones, and serve with a spoon of green peas. A delicious way to cook chops for an invalid is to broil them inside paper cases. Make an envelope of thick glazed note paper and rub it with butter. Slip the chop inside. Fold the paper so there are two sheets covering the meat, put the little case between the wires of the broiler and move about over a clear, hot fire. If it is turned quickly and often, there will be no danger of the paper taking fire. A chop ought to cook in this fashion in five or eight minutes. It is constantly basted in the butter and its own juices, and is very sweet and tender. Turn out onto a hot plate, being careful that all the gravy is saved. Chicken or birds may be cooked in the same fashion.

Creamed Asparagus.—Wash a few stalks of asparagus and cut off the white part. Divide the tender green portion into pieces an inch long. Cook in boiling salted water until tender. Arrange on a piece of buttered toast, seasoning with pepper and salt, and pour a little melted butter over it. If the invalid desires, a few tablespoonfuls of white sauce may be used instead of the butter.

Gum-gluten Biscuits.—1 cupful of self-raising gum gluten; dash of salt; 1 tablespoonful of butter; milk.

Sift the dry ingredients, rub the

butter into the flour, and add enough milk to make a soft dough. Roll it out, cut into little biscuits, and bake quickly.

Bran Muffins.—1 cupful of flour; 2 cupfuls of bran; 1 teaspoonful of soda; 3 tablespoonfuls of molasses; 4 tablespoonfuls of butter; 1½ cupfuls of sour milk; dash of salt.

Mix the dry ingredients, rub the butter between the fingers, add the molasses and sour milk; beat hard for five minutes. Pour into greased, hot pop-over irons, and bake in a quick oven.

Raw-beef Sandwiches.—Meat is often served in this fashion to a patient whose stomach will not retain it when cooked. Take about 2 tablespoonfuls of the raw meat prepared as described in scraped beef, season lightly with pepper and salt, spread it between two slices of buttered bread, and toast the outside delicately. Be careful not to allow the meat to reach the edges of the bread or it may nauseate the patient.

Oyster Broth.—1 pint of oysters; 1 cupful of cold water.

Mince the oysters fine, put in cold water and let simmer for fifteen minutes over a slow fire; skim, strain, and season.

Clam Broth.—6 clams; 1 cupful of boiling water; 1 teaspoonful of powdered cracker; 1 teaspoonful of butter.

Let clams stand in boiling water until the shells open; drain off the liquor, add cracker, butter, and seasoning.

Tapioca.—2 tablespoonfuls of minute tapioca; 1½ cupfuls of boiling water; 1 cupful of cold water.

Cover tapioca with cold water and let soak ten minutes; put into boiling water and boil until clear; sweeten, and add nutmeg or wine, if desired.

Junket.—½ cupful of milk; a few drops of vanilla; ½ tablespoonful of sugar; ½ junket tablet; grating of nutmeg.

Heat the milk till lukewarm, add vanilla, sugar, and tablet, which has been dissolved in a teaspoonful of water. Mix well, pour into a sherbet cup, cover, and stand in a warm place

till the mixture jellies. Grate nutmeg over the top, and keep in a cold place till ready to use.

Invalid's Ice Cream.—¼ cupful of cream, ¼ cupful of milk; 1½ tablespoonfuls of sugar; ½ teaspoonful vanilla.

Mix ingredients in a baking-powder tin. Put on cover, set can in a pail or dish and surround with crushed ice and salt. Turn the can around often, occasionally take off the cover, scrape the cream from the sides as it freezes, and beat it well. When frozen, pour off the brine, beat cream with a spoon, pack it evenly in the can, and put on the cover. Let stand till ready to serve. Put more ice around the can if needed.

Lemon Ice.—½ cupful of water; ¼ cupful of sugar; 1 lemon.

Boil sugar and water together with a thin piece of lemon rind for three minutes. Cool, add lemon juice, and freeze like ice cream.

Orange Ice.—½ cupful of water; 2 small oranges; 3 tablespoonfuls of sugar.

Make and freeze like lemon ice.

Prune Jelly.—1 cupful of prunes; 1½ tablespoonfuls of gelatin; 3 tablespoonfuls of sugar.

Stew prunes in sufficient water to cover them well. When tender, press through a potato ricer, add gelatin previously soaked for half an hour in a little water, return to the fire, add sugar, reheat, and pour in molds to cool.

Apple and Custard.—1 large apple; 1 tablespoonful of sugar; 1 teaspoonful of cornstarch; yolk of 1 egg.

Pare and core apple, fill the cavity with sugar, put a little water in the bottom of a dish, and bake. Make a custard of a cupful of milk, sugar, cornstarch, and egg. Flavor to taste after boiling thick and pour around the baked apple. Use the white for a meringue. Eat cold.

Slip.—1 tablespoonful of cornstarch; 2 cupfuls of boiling water; ¼ cupful of sugar; juice and rind of 1 lemon; white of 1 egg.

Boil the cornstarch till thick in water, add sugar and lemon, and pour into a baking dish. Beat the white of egg with a tablespoonful of pow-

dered sugar, spread on top, brown slightly, and serve cold with cold boiled custard.

Egg Cream.—2 eggs; 2 tablespoonfuls of sugar; juice and rind of $\frac{1}{2}$ lemon.

Separate yolks from whites of eggs and beat the yolks with sugar in bowl until well mixed, then add lemon, and place bowl in a dish on the stove. Stir slowly until the mixture begins to thicken, add the beaten whites of eggs, and stir until it is like thick cream.

WHAT AN INVALID MAY DRINK

Irish-moss Lemonade.—2 cupfuls of boiling water; $\frac{1}{4}$ cupful of Irish moss; $\frac{1}{2}$ cupful of lemon juice; 3 tablespoonfuls of sugar.

Soak the Irish moss over night, then pick it over very carefully. It is generally full of sand and all sorts of foreign matter, and can never be made palatable unless it has been through a number of waters. When clean, put it in a double boiler, pour boiling water over it, and let it steep until dissolved. Strain through a square of cheese cloth, then add the lemon juice and sugar. Serve very hot. This is one of the most soothing drinks to give a patient who is suffering from a sore throat or lung trouble.

Grape Water.— $\frac{1}{2}$ cupful of boiling water; 4 tablespoonfuls of grape jelly; $\frac{1}{2}$ cupful of cold water; 1 teaspoonful of lemon juice; 1 tablespoonful of sugar.

Pour boiling water over the jelly and stir until dissolved. Then add the cold water, sugar, and lemon juice, and a piece of ice sufficient to chill it thoroughly. Another delicious drink may be made in the same way from red-currant jelly. Blackberry, barberry, and black-currant jelly are also excellent for this refreshing drink.

Cinnamon Punch.—1 stick of cinnamon; 1 cupful of rich milk; 2 teaspoonfuls of sugar; 1 teaspoonful of brandy.

Put the cinnamon with the milk in a double boiler and steep till the flavor is all soaked out. Add the

sugar and brandy. It may be used hot or ice cold, as desired.

Barley Water.—2 tablespoonfuls of barley; 4 cupfuls of cold water; $\frac{1}{2}$ teaspoonful of salt.

Wash the barley thoroughly and let it soak over night in cold water. In the morning set on the back of the stove where it will merely simmer, and cook for three hours. It ought to be reduced one half and be as thick as cream. Season with salt, and, if the patient likes it, a little sugar. Pour through a fine strainer, and drink hot.

Oatmeal Gruel.— $\frac{1}{4}$ cupful of oatmeal; 1 quart of cold water; 1 teaspoonful of salt.

Cook in a double boiler two hours. Press through a strainer, dilute with cream, reheat, and serve. The well-beaten white of 1 egg or a few tablespoonfuls of thick cream stirred into the gruel adds nutrition.

Cornmeal Gruel.—2 tablespoonfuls of cornmeal; 1 tablespoonful of flour; 1 teaspoonful of salt; $\frac{1}{4}$ cupful of cold water; 3 cupfuls of boiling hot water or milk.

Mix meal, flour, and salt; stir into the mixture enough cold milk or water to make a thin paste, and pour this into the hot milk or water. If water is used, cook one hour in a saucepan; if milk, three hours in a double boiler. Serve hot, diluted with cream.

Egg Gruel.—1 egg; 1 teaspoonful of sugar; 1 cupful of hot milk (not scalded); nutmeg or lemon juice to flavor.

While the milk heats, beat the yolk of the egg till thick and light colored, the white still stiff. Stir into the yolk the other ingredients in the following order: sugar, milk, beaten white, and flavoring.

Eggnog.—1 egg; 2 teaspoonfuls of sugar; $1\frac{1}{2}$ tablespoonfuls of lemon juice; 1 or 2 teaspoonfuls of wine; nutmeg.

Beat the yolk till thoroughly foamy; stir in the other ingredients. Nutmeg may be omitted.

Lemon Whey.—1 pint of hot milk (not scalded); juice of 2 lemons.

Add the lemon juice to the milk; when the latter has curdled, strain it,

through cloth. Serve the whey hot or cold in a glass.

Toast Water.—1 slice of stale bread; 2 cupfuls of boiling water; 1 slice of lemon.

Have bread $\frac{1}{2}$ -inch thick, toast brown, pour upon it boiling water, cover closely and cool; strain it. A slice of lemon may be added.

Barley Water.—2 ounces of pearl barley; 3 cupfuls of water.

Wash barley in cold water, boil twenty minutes in a covered dish; strain, sweeten, and add lemon, if permitted.

Apple Water.—6 sour apples; 2 tablespoonfuls of sugar; 1 quart of boiling water.

Slice apples, add sugar and boiling water. Cover closely and cool; strain.

Bran Tea.—2 cupfuls of bran; 1 quart of boiling water.

Steep bran in water for an hour; strain and season to taste.

Lemonade.—1 lemon; 1 tablespoonful of sugar.

Squeeze lemon, add sugar, mix with ice water and strain; rub the rim of the glass with a slice of lemon peel and allow it to float.

Egg Lemonade.—2 tablespoonfuls of sugar; 1 egg; 3 tablespoonfuls of cold water; 1 lemon.

Beat sugar and egg thoroughly, then mix cold water and the lemon juice; put chipped ice in the glass, and fill with ice water.

Egg and Coffee.—1 egg; 1 tablespoonful of sugar; $\frac{1}{2}$ cupful of boiling coffee.

Beat egg and sugar together and add the boiling coffee gradually; stir, and add hot cream.

Possett.—1 cupful of milk; 1 tablespoonful of molasses.

Let milk come to a boiling point, add molasses, stir well, strain, and serve.

Pick-me-up.—1 tablespoonful of powdered sugar; 1 egg; dash of salt; 1 tablespoonful of brandy.

Separate the egg and beat the yolk until thick and lemon-colored, add the powdered sugar and brandy, beat again, then blend with white of the egg whipped to a stiff froth. This is

so thick that it may be eaten with a spoon.

Rum and Milk.—1 cupful of rich milk; 1 egg; 1 tablespoonful of powdered sugar; dash of salt; 1 tablespoonful of rum; scraping of nutmeg.

Separate the egg, beat the yolk until quite thick, add the powdered sugar, then the nutmeg, salt, rum, and, last of all, the white of the egg beaten thick. Put in a shaker with a few pieces of ice and shake till cold, then strain into a glass.

Mulled Wine.—1 cupful of port wine; 2 tablespoonfuls of powdered sugar; 1 egg; 1 stick of cinnamon; $\frac{1}{2}$ cupful of water.

Pour the water over the cinnamon and let it steep in a double boiler for ten minutes, add the sugar, beat the egg stiff, pour over it the flavored water, lifting out the cinnamon, add the wine, pour it all into a shaker and shake hard till the drink is thoroughly blended. If liked cold, add a bit of ice to it; if hot, set the shaker in boiling water for a few minutes.

Flaxseed Lemonade.—2 cupfuls of cold water; 1 tablespoonful of whole flaxseed; 2 tablespoonfuls of sugar; juice of 1 lemon.

Wash the flaxseed, put in a double boiler, pour the water over it and steep for an hour. Sweeten, add the lemon juice, and strain. This is a valuable remedy in a case of hoarseness or inflamed throat.

Slippery-elm Tea.—4 teaspoonfuls of slippery-elm powder; 2 cupfuls of boiling water; 2 tablespoonfuls of sugar; juice of one lemon.

Pour the boiling water over the slippery elm; when cool, strain, sweeten, and flavor with the lemon juice.

Ice Chocolate.— $\frac{1}{2}$ cupful of milk; $\frac{1}{4}$ cupful of Apollinaris 2 tablespoonfuls of chipped ice; 2 tablespoonfuls of chocolate sirup; $\frac{1}{3}$ cupful of whipped cream.

Put these ingredients into a shaker and shake till frothy. Strain into a tumbler.

Kumiss.— $\frac{1}{2}$ cake of yeast; $\frac{1}{4}$ cupful of sugar; $\frac{1}{4}$ cupful of water; 3 quarts of milk.

Boil the sugar and water for a few

minutes, dissolve the yeast in 2 tablespoonfuls of water, heat the milk till lukewarm, add the yeast and water, and stir. Put into thoroughly clean beer bottles, set them upright for twelve hours in a warm room, then lay on their sides in a refrigerator. When the kumiss is twenty-four hours old it is ready to drink.

Rice Milk.—2 tablespoonfuls of rice; 2 cupfuls of scalded milk; 1 teaspoonful of sugar; dash of salt.

Soak the rice over night in cold water. Next morning put in a double boiler with the milk and seasoning, stir occasionally, and let it steam for an hour and a half. Rub through a sieve, grate a scraping of nutmeg over it, and, if desired, put a tablespoonful of whipped cream on top. Serve hot or cold.

ADDITIONAL SUGGESTIONS

Elsewhere in this book are many foods and drinks of which a convalescent may partake. Instead of repeating again the recipes which have been already given, one may easily refer to the index. In the chapter on beverages are cocoa, afternoon chocolate, frozen punch, lime punch, raspberry and currant punch, raspberry vinegar, egg lemonade, black-currant cup, fruit cup, currant punch and fruit beverage.

Among soups are found a number of recipes for this light and nutritious form of food for an invalid. While a convalescent is trying to gain strength, it is possible that the doctor may order soup for him every day. Among some best suited for such a diet is consommé, tomato soups, mutton, Du Barry, veal, chicken, cream of corn, cream of celery, asparagus cream, clam, Scotch mutton broth, and oyster soups.

From the egg chapter one may choose eggs soft boiled, steamed, baked, egg nest, poached, shirred, poached in milk, eggs in ramequins, or any of the delicious omelets.

Until convalescents are well advanced, a doctor allows few vegetables, except, perhaps, a baked potato or cream asparagus. Later come

such food as carrots, green peas, spinach, or some of the wheat pastes, such as macaroni or spaghetti cooked in a cream sauce.

Although for some time after an illness toast is the bread usually served on an invalid's tray, a variety of breads takes its place during convalescence. Entire-wheat bread is considered nourishing for certain diseases, gum gluten bread is often rigidly adhered to, or a bread made of bran. Then Boston brown bread, cornmeal gems, popovers, and baking-powder biscuits are allowed as the stomach grows stronger.

It is some time after a sickness before salads take their place as a diet, then usually the crisp green things are served with a French dressing instead of mayonnaise. Where a mayonnaise is desired, the boiled dressing, blended with an equal quantity of whipped cream, often proves quite digestible. Among these salads may be numbered chicken salad, Waldorf salad, sweetbread-and-tomato salad, and salads made from hard-boiled eggs.

When one comes to desserts, there are an endless variety of delicious things which an invalid enjoys besides the few given in this chapter. Among them may be enumerated boiled and baked custards, chocolate custard, caramel custard, soufflés, fruit whips, meringues, all sorts of junkets, blanc mange, boiled rice, plain rice pudding, tapioca cream, fruit tapiocas, plain bread pudding, chocolate bread pudding, cracker pudding, and almost any of the delicate desserts made from gelatin. Sponge cake is allowed, and sometimes a plain gingerbread, while ice cream of the plainer sort, fruit sherbets, and fruit ices are allowable.

Gruels are more tempting to the sick if whipped to a froth with an egg beater before serving in a pretty cup.

Beef tea is wanted frequently when there is little time to prepare it. It can be made quickly in the following manner: take a lean piece of beef, run it through a food cutter, using the finest cutter; cover with cold water and set at the back part of the

range to heat. Do not let it boil, as that coagulates the albumen. Stir thoroughly, strain, and squeeze dry in a potato masher. This will extract all the juice of the beef quickly and easily.

As a "pick-me-up," nothing is more nourishing than the white of a fresh egg beaten to a froth, slightly sweetened, and blended with the juice of a sweet orange.

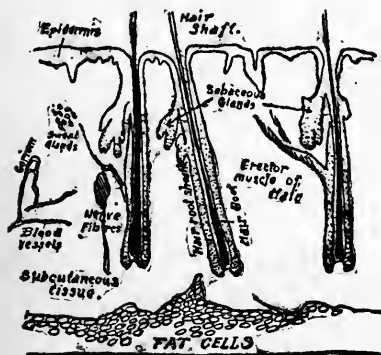
CHAPTER XLIV

THE TOILET AND BATH

THE SKIN—BATHS AND BATHING—KINDS OF BATHS—THE TOILET—THE HANDS—MANICURING

THE SKIN

The Human Skin has two principal functions: to protect the body, and to remove, by perspiration, the products of certain bodily changes. The skin consists of two layers, as may be clearly seen when blisters form. The upper layer or outer skin shows a tendency to form cells of a horny substance, such appendages as the



"The Anatomy of the Skin."

hair, nails, and corns being a continuation of this process. These horny substances have the property of absorbing a certain amount of water. This softens them and causes them to swell. It is well known that the skin becomes soft by immersion in a hot bath or by having the hands for a considerable time in suds or dishwater, and that this softening extends to the nails, corns, and calluses. After a warm bath a considerable

quantity of the horny scales of the skin can be removed by the use of a rough towel. Nails, corns, and the like when wet can be readily cut or scraped off. A considerable amount of water remains in the skin after bathing, and unless care is exercised it tends by rapid evaporation to remove heat and to cause colds. But normally a certain amount of water should remain in the skin, and if too much of this evaporates, the skin chaps and cracks.

The permanent color of the skin is due to certain pigment granules found in its inner layer. The transient red color, as in blushing, depends upon the amount of blood in the blood vessels and the thickness of the epidermis or outer skin, most of the blood vessels themselves lying in the inner skin.

The skin contains sweat glands which secrete perspiration, and sebaceous glands, which secrete a fatty substance that tends to keep the skin smooth and to prevent it from drying by too great evaporation. This fatty substance also gives the hair its natural gloss. Obstruction of the sweat glands gives rise to pimples, blackheads, and the like. These are the principal facts regarding the anatomy of the skin, which should be understood by those who seek to improve its appearance.

There is a direct and reciprocal action between the condition of the skin and the general bodily health. The two watchwords in the campaign for the preservation or improvement of the complexion are, therefore,

cleanliness and hygiene. Plenty of outdoor exercise, good ventilation, a well-regulated appetite, and a cheerful habit of mind are essential. As to diet, an excess of butter, fat meat, and greasy food should be avoided. All stimulants, as coffee, tea, wine, and spirits, should be given up or used with great moderation. Fruit and vegetables should be the staples of diet; sweets, cake, and pastry, and also pickles and acid foods, should be dispensed with. If these instructions, with those given under baths and bathing, are followed until they become the habits of a lifetime, the bloom of youth can be preserved far into old age.

Hardening the Skin.—The power of the skin to adjust itself to changes in temperature varies greatly. It can be increased by measures which improve the circulation of the blood, as nourishment and exercise; also by what is sometimes called the "hardening process." The skin may be hardened by living an out-of-door life, wearing light but sufficient clothing with woolen next the body, sleeping with open windows but avoiding draughts, and taking daily baths, first with warm, afterwards with cold water. These steps should be taken gradually, and increased in severity as the body becomes accustomed to them.

Nervous persons, especially children, may be overstimulated by these measures, which may thus lead to lifelong nervous difficulties. The danger is minimized by giving the warm bath first. Cold baths alone should not be taken except by persons of strong constitution. The air bath in various temperatures and currents of air is also a valuable means of hardening the skin. This hardening process tends to prevent colds and their consequences.

Diseases of the Skin.—No general treatment can be suggested that will apply to all diseases of the skin. Eruptions and rashes are often symptomatic of diseases of the blood and other grave conditions. When a strange eruption suddenly appears on the skin a physician should, as a rule, be promptly consulted. There

are, however, a number of common disease conditions which yield to simple remedies. Among these are tan, sunburn, freckles, moth patches, pimples, blackheads or flesh worms, moles, etc.

Blackheads or "Flesh Worms."—The fatty substance which exudes from the sebaceous glands of the skin, if not removed by washing, sometimes hardens and corks up the gland itself. As the gland continues to secrete this substance it accumulates and causes a hard lump or swelling. When these blackheads are numerous they become very unsightly. The best treatment is to press out the contents between the fingers or press the hollow end of a watch key over each speck. The entrance to these glands is in spiral form like a corkscrew. Hence the contents when pressed out have a vermiform appearance, and are supposed by many to be small animal creatures, hence called "flesh worms," but this is not the case.

A warm face bath twice a day, and gentle friction from a soft towel, as above directed, is the best preventive and remedy for this condition. Specifics for blackheads are the sulphate of zinc or of copper, or common potash properly diluted.

To use, mix 20 grains of sulphate of zinc or copper in 1 pint of distilled water or rose water, or mix 1 dram of fluid potash with 1 ounce of oil of sweet almonds. Then add 6 ounces of pure soft water. First press out the contents of the blackhead, rub with a rough towel, and apply this lotion with a camel's-hair brush or soft rag.

Freckles.—Freckles are discolorations formed in the deeper layers of the skin by the action of sunlight. Hence to affect them directly it is necessary to work through the outer layers of the skin with a remedy that will change the deposits of coloring matter. Freckles, accordingly, offer great resistance and are not amenable to ordinary treatment. Some authorities are of the opinion that indigestion may result in a deposit of carbonaceous or fatty matter beneath the skin, which, when acted upon

by sunlight, will produce freckles. Hence, as a preventive, attention should be paid to diet and exercise to promote the normal secretions. The skin should be kept scrupulously clean by daily bathing, and the activity of the pores should be promoted by friction with a coarse towel. These methods are safer than the use of astringents or mineral emulsions, and the latter should never be employed without the advice of a competent physician. The only certain preventive is the wearing of a brown veil whenever the complexion is exposed to sunlight.

Moth Patches.—Apply a solution of common baking soda to the patches with a soft rag or camel's-hair brush several times a day for two or three days. Allow this to dry on. This treatment is usually sufficient. Afterwards cleanse the face with a bran bath and the skin will usually be found clear and brilliant.

Or keep alum at hand and rub occasionally on the moth patches. This will usually cause them to disappear.

Moles.—Depilatories advertised for sale for the removal of moles are dangerous and their use is not recommended. They frequently continue eating into the flesh until an ulcer is formed, and occasionally blood poison sets in. Some moles are of the nature of tumors, and too much care cannot be exercised in treating them. Concentrated acetic acid applied by means of a hair pencil will sometimes do the work. If this succeeds once it can be used again, but it will not prevent the blemish from returning. Care must be taken that the acid does not extend to surrounding parts.

Moles can sometimes be destroyed by the use of a burning glass. The patient must take his place in the clear, strong sunlight, and focus the burning glass on the affected part for about five minutes at a time daily, until the mole has been destroyed. Needless to say, this is a painful process, but it cannot be regarded as dangerous.

The electric needle in the hands of a competent physician is a thoroughly

safe and reliable method of treatment.

Pimples.—The immediate cause of pimples is usually an excess of fatty matter in the skin. They are very common in young persons from fourteen to twenty years of age. They are often caused by constitutional conditions, and when very numerous are often persistent until the general health is restored. Exercise, attention to the diet, and general hygienic measures are recommended. A warm face bath with a heaping teaspoonful of borax in the water will be found helpful.

Or bathe the face often with a lotion consisting of one tablespoonful of carbolic acid in one pint of rosewater but take care that this does not get into the eyes.

Scars.—Little scars are often left on the face after eruptions. A course of electric massage treatment soon effaces them. For home treatment, every night apply to the face a cold compress, keeping it on until the flesh becomes pink, then anoint the little spots with ointment of zinc oxide.

Ointment for Wrinkles or Relaxed Skin.—To 10 grains of camphor add 2 ounces of prepared lard and 1 fluid dram of rectified spirits of wine. Apply a little of the ointment at night, previously washing the face, and strengthen the body by means of tonics and nourishing diet.

Or bathe the parts where the wrinkles appear with alum and water. This will tighten the skin.

Or fresh butter, 2 drams; essence of turpentine, 2 drams; mastic, 1 dram.

BATHS AND BATHING

Historians say that the civilization of a community can be estimated by the quantity of soap it uses. Similarly the refinement of a family is indicated by the amount of water it consumes.

Records of cities show that the amount used each day on an average by each person runs from seven or eight gallons among the poor, where there is only one faucet in the house,

to about sixty gallons in the homes of wealthy persons. The average of an ordinary family in cities may be taken as about twenty gallons daily for each member. More water is used in the summer than in the winter—which is an argument in favor of a bathroom, even where there is no furnace in the house. About ten barrels of water would be required every day on this basis by a family of ten persons.

The human skin contains millions of pores. The business of these pores is to bring to the surface the waste materials of the body, which otherwise pass off principally through the kidneys. If the pores become clogged by the accumulation of effete matter they are unable to fulfill their proper functions, and the kidneys are obliged to do extra work, which may bring on chronic diseases of those organs.

Colds are caused by lack of proper contraction of the pores of the skin when the body is exposed from draughts or otherwise. As a result the blood is cooled too rapidly and has a tendency to chill and congest the internal organs, as the mucous surfaces of the head and nose, and also of the alimentary canal, the kidneys, etc. The resulting symptoms show in acute form the bad effects of neglect of bathing. In fact, frequent bathing is almost a sure preventive of colds. If the pores are kept clean they are active, and resist the chills which tend to produce cold. If they are not kept clean they are sluggish and inactive, and in no condition to offer normal resistance to sudden changes in temperature.

Certain portions of the body, as the armpits, the feet, and the groin, have many more pores to the square inch than the rest; hence these perspire more freely and should be cleansed often. The feet especially should be very frequently washed. There is no better practice from the health standpoint than a daily footbath.

The Bathroom.—Bathrooms are no longer a novelty in small towns and farmhouses. But it must be understood that to enjoy these in winter, requires almost of necessity a range

or furnace. Pipes in kitchens may be kept warm by stoves, and bathrooms adjoining the kitchen may be warmed by leaving the door open between or the bathroom may be over the kitchen, and a drum or smokepipe from the kitchen stove arranged so as to heat the pipes in the bathroom. But it is usually better not to have running water in the bathroom in winter until a furnace is put in. It pays, however, to partition off a bathroom near the kitchen and put in a bath tub, if there is running water or a hand pump in the bathroom, with drainpipes to carry away waste—even if it is necessary to carry cold water to the tub from the kitchen sink and hot water from the stove in pails. A good bath tub is not a luxury, but a necessity to comfort, cleanliness, and health.

If the bathroom is near the kitchen, the tub can be filled by bringing hot and cold water in pails; and if the tub is elevated slightly, the water can be drawn off in pails and carried to the drain after the bath; or, if a tub is used which does not have a faucet for drainage, the waste water can be easily removed by using a small piece of rubber tube as a siphon, or by a dipper and large bath sponge. Every household should be provided with a full-size tub, even if it is only of tin. Portable rubber tubs which can be folded and put away when not in use are also obtainable. But a cast-iron tub is preferable and not too expensive.

The entire cost of plumbing for a bathroom, including supply pipe, hot-water pipe, and all necessary fixtures, provided you have a water supply in the house, will not exceed \$150. This sum can be reduced by doing some of the work yourself.

Even if there is no furnace, the bathroom can be used from early spring to late fall, and especially through the summer season, when it is above all essential to health and comfort. Every family should make the necessary sacrifices to put in and enjoy this great convenience.

To Paint an Iron Bath Tub.—Mix the paint to a proper consistency with best coachmaker's japan var-

nish. For white-lead paint, use half turpentine and half coachmaker's japan. It will not darken much. Venetian red is best for a first coat for any color but white.

Temperature of the Bath.—The temperature of the bath for cleanliness should be about 95° F. A cold shower bath or douche to follow the warm bath should be about 77° F. A cool bath should be about 77° F., but the temperature at the start may be lowered for those who are accustomed to it.

The water for a person in ordinary health should be drawn about as hot as is agreeable; but care should be taken not to remain too long in a hot bath. This applies especially to persons who are thin-blooded, nervous, or neuralgic. After the body has been thoroughly cleansed, it is a good idea to gradually introduce cold water into the tub until a perceptible chill is felt.

If there is running water in the bathroom, a shower bath may be had by obtaining the detachable rubber tubes and fixtures used for this purpose, which come very cheap. The shower bath is the best means of cooling the body after a hot bath. When this is done, or after a cold bath, a reaction should be brought about by a vigorous rubbing with a Turkish towel until the body is in a warm glow. This practice would almost certainly prevent all colds and many fevers, with their fatal consequences.

KINDS OF BATH

Cold Sponge Bath.—Many persons make a practice of taking a cold sponge bath every morning, followed by vigorous rubbing with a coarse towel or flesh brush. The best method of doing this is to fill a washbowl or basin with water and let it stand in the room over night, so as to acquire the same temperature as the air in the room. Rub with the bare hands rather than with a cloth or sponge, wetting only a small portion of the body at a time and rubbing that portion until a reaction is experienced. Washing the face and head,

next the arms, the back, the lower portion of the chest, and the lower limbs, in the order mentioned, is a good rule for cold-water bathing. After the rub-down with a coarse towel, the skin should be pink, all in a tingle, and the whole surface of the body should be in a warm glow. Some persons cannot endure this regimen, although it is highly beneficial to others. A few days or weeks of experience will test its expediency. This is worth trying, because it often results in a life habit which is exceedingly beneficial. Those who are less robust may obtain some of the benefits of the cold sponge bath by a vigorous rubbing with a towel or flesh brush each morning when the bath is not taken. When bathing in winter, the shock from cold water is lessened by standing a minute in the cold air after removing the clothing and before applying the water.

Footbath.—This bath may be taken for cleansing purposes or for the purpose of drawing the blood from other parts of the body. Congestion of blood in the head may be relieved by a footbath in cold water. If convenient, the patient may walk for a few minutes in a brook or stream reaching about to the ankles. This may be followed by a brisk rubbing and some exercise, as walking. Or the patient may first put his feet in hot water for from three to five minutes and then plunge them for half a minute into cold water. Afterwards the feet should be rubbed dry and the person should take exercise by walking.

Salt-water Bath.—Add 4 or 5 pounds of sea salt, which can be purchased of any druggist, to a full bath at the temperature of 65° F. The patient should remain in this bath from 10 to 20 minutes, and afterwards should rest for half an hour in a recumbent position. Such baths are useful in general debility produced by wasting diseases, as scrofula and other diseases of the skin, anæmia, etc. Sea salt should not be used for children. It does not penetrate the skin, but acts as a stimulant.

Mustard Bath.—The addition of 3

or 4 tablespoonfuls of powdered mustard to a hot footbath in cases of chill is a preventive against taking cold, and is also useful in the early stages of colds to induce perspiration. The feet should be taken out of this bath as soon as the skin reddens and begins to smart. The parts bathed should be carefully cleansed, rinsed, and wiped dry. Great care should be exercised in giving mustard baths to children, else the skin may become badly blistered.

The Bran Bath.—Make a decoction of wheat bran by boiling 4 or 5 pounds of wheat bran in a linen bag. The juice extracted, and also the bran itself, should be put into the water. This is for a full bath at a temperature of about 90° F. This bath is of service in all skin affections accompanied by itching.

THE TOILET

The Complexion.—The object of attention to the complexion should be to preserve the skin in its normal condition of health, and to remove all abnormal effects and conditions. Among these may be mentioned excessive dryness or evaporation, by exposure to dry and biting winds, of the water normally contained in the skin; the opposite extreme of excessive perspiration; and the obstruction of the pores by dirt or grime or other causes, which is the parent of various eruptions and other skin diseases. These subjects are taken up in turn in the following pages, and the principal standard remedies are cited.

Many persons regard attention to these matters as evidence of vanity and light-headedness, and others go to the opposite extreme and give much more time and thought to the niceties of the toilet than is either wise or necessary. Doubtless the wise and sane course lies between these two extremes. The normal condition of the skin resulting in a firm, smooth, and soft texture and a clear pink-and-white complexion, not only contributes to personal attractiveness, but also to the sense of comfort, included in the general term "good health."

Women (and men, too) have a natural right to a good complexion. The contrary is evidence of some improper or diseased condition, and it is perfectly natural and proper to seek and apply suitable remedies.

Beauty Doctors.—On the other hand, we earnestly advise against the patronage of so-called "beauty doctors," many of whom are unquestionably quacks and charlatans, and we urge the use of homemade preparations. Many of the standard preparations widely advertised for sale contain the most injurious mineral drugs, such, for example, as mercury, arsenic, lead, bismuth, etc. These are freely used by many "beauty doctors," and most unfortunately recipes containing them have been published without caution in many books of household recipes which have had a wide circulation. All such preparations have been carefully excluded from this volume. Approved recipes have been given which will accomplish every desirable object without the possibility of any injurious consequences.

Homemade Toilet Preparations.—Many toilet preparations advertised for sale contain organic substances which deteriorate by decaying, and in this condition poison the skin. Moreover, most proprietary articles are very expensive. We feel safe in assuring the most careful and conservative mothers that the compounding at home and use of any of the preparations herein recommended will be a perfectly safe and innocent employment for their daughters or themselves. Any disposition to do so should, we think, be encouraged. A few vials of essential oils as perfumes, small quantities of almonds and other required ingredients, may be bought at the drug store for less than a single bottle of a proprietary article can be purchased, and all interested will have the satisfaction of knowing that the materials are fresh and of good quality, and that no harmful consequences from their use need be feared.

Country Girls should have the best complexions in the world, but this is not always the case. Those who have

not been favored by nature in this respect very often envy their city cousins' supposed advantages of easy access to "beauty doctors" and the large department stores and drug stores where toilet preparations of all sorts are for sale. The country girl has, in fact, a pronounced advantage over her city cousin if she has the wit to utilize it. Many of the most effective agents and remedies for the toilet are to be had in every farmhouse, and it is safe to say that the country girl can stock her dressing table with a full line of toilet preparations if she so desires, of better quality than her city cousin can purchase. And she can do so much more cheaply and conveniently.

To Preserve the Complexion.—To prevent the excessive evaporation of water normally present in the skin, it is well to rub a small quantity of cold cream over the face before going out in the hot sun or wind. Just enough should be used to cover the surface without its being noticeable. In hot climates the use of similar preparations to prevent the drying of the skin is practically universal.

A veil is also a desirable protection against bad weather. Chiffon or other material of the finest mesh should be preferred. Frenchwomen of the middle and upper classes never think of going out without a veil. Englishwomen and the inhabitants of warm climates generally carry parasols.

To Wash the Face.—When the face is red or dry from exposure to sun and air, or grimed with dirt or smoke, it is well to put on it a quantity of cold cream and rub thoroughly with a soft cloth. After the irritation has been somewhat lessened, the face should be thoroughly washed and cleansed. Fill a basin two thirds full of fresh soft water. If your source of water supply is hard water, put a teaspoonful of powdered borax into the basin. Dip the face in the water, and afterwards the hands. Soap the hands well, and rub with a gentle motion over the face. Dip the face a second time, rinse thoroughly, and wipe with a

thick, soft towel. After the bath a slightly astringent lotion is very refreshing.

The application of alcohol will further cleanse and stimulate the pores.

The use of a good cleansing cream before the face bath and a suitable lotion afterwards has a really wonderful effect in improving the complexion. The effect of a clean face, however, is itself altogether delightful. Such a bath tends to rest and refresh the bather and put her in a good temper. Many a bad complexion is due to neglect of a proper cleansing process. If more faces were kept really clean, a great improvement in the complexion would be noticed.

Face Cloth.—The hands themselves, in the judgment of many persons, are the most effective means of washing other portions of the body. To those who prefer face cloths we suggest scrim as the most sanitary material. Scrim is porous and free from lint, so that the air circulates through it freely. It is so thin that it can be quickly washed and dried.

The Toilet Sponge.—The wash rag and the sponge, while convenient and regarded by many as indispensable, are often sources of injury to the skin. Children, especially, are prone to take a sponge from dirty water and squeeze it dry without rinsing. The decaying organic matter caught in the pores of the sponge gives rise to certain acids and ferments very injurious to the complexion. Both the sponge and the wash rag should be thoroughly cleansed and rinsed after use. To clean a sour sponge, put 1 teaspoonful each of ammonia and borax into a basin of warm water, wash the sponge, rinse in clean soft water and hang in the air, exposed to sunshine if possible, until dry.

Toilet Soaps.—Pure soaps do not irritate the skin. There are two principal kinds of soaps: those containing free alkali in the form of potash or soda lye, and the so-called neutral or fatty soaps. The former increase the swelling and softening of the horny parts of the skin. When these are removed, they of course take the dirt with them. The latter are better

adapted to persons of sensitive skin, although their detergent effects are not so marked. Among these are castile, glycerin, curd soaps, and the like. Medicated and highly colored or scented soaps should rarely be used, and we recommend purchasing for household use only well-known soaps which have an established reputation for purity and general satisfaction. It must be borne in mind that toilet preparations which may give good effects on one skin are sometimes injurious to another. Glycerin is said to burn some skins, and benzoïn cannot be used by some persons. This shows how important it is for a woman to know what ingredients are used in making up her toilet preparations. It is not always safe to "try" some compound, the contents of which are unknown, because it is highly recommended by others.

On the other hand, the difference in results obtained by two women may often be attributed to the difference in the method of use. One woman will cleanse her face thoroughly as above indicated, while the other will merely apply a cream or lotion when the skin may be covered with grime and the pores filled with dirt. The result may be to still further clog the pores and produce an eruption of pimples and blackheads. No preparation can give satisfactory results in the absence of absolute cleanliness.

THE HANDS

Nothing betrays lack of daintiness in personal care more than neglect of the hands and nails. Of course it is more difficult for some women to keep their nails clean and their hands soft, white, and free from blemishes than for others. But in the care of the hands immaculate cleanliness is imperative. They should never be washed except when it can be done thoroughly. Constantly rinsing them in cold water grinds the dirt in and ruins the texture of the skin, making it rough, coarse, and red. When exposed to hard usage, as in the routine of housework, instead of fre-

quently washing the hands in water, a few drops of oil should be rubbed into them. They should then be dusted over with talcum powder and wiped with a coarse towel. This will cleanse them and protect the flesh from growing callous. Lemon juice will remove stains.

The hands should always be washed in tepid water, and a good soap is an absolute necessity. It is also important that the water be soft. Avoid washing the hands frequently with cheap laundry soap, washing powders, soft soap, or other powerful detergents. They tend to roughen, redden, and chap the skin. The best soap is none too good for the toilet. There are many brands on the market which are known to be good, and it is better not to experiment with those that are new and untried. Any hard, white, pure or neutral soap is suitable for the toilet. Hence it is not necessary to purchase special toilet soaps, which are usually expensive, however desirable they may seem to be. To test soap for toilet purposes, apply the tongue to it. If it contains free alkali, it will have a caustic or burning taste and should be avoided. Otherwise it is not likely to be injurious.

In cold weather or when the hands are very dirty rub a little pure lard or cold cream over them, and afterwards wash them with soap and water in the usual way. This has a tendency to keep the skin from cracking or chapping. The use of gloves, especially when gardening, driving, or walking in sun or wind, helps to preserve the softness of the hands and keep them clean. Sprinkling the hands with orris root or talcum powder before drawing on the gloves will counteract excessive perspiration.

Redness and Burning.—These troubles are caused by defective circulation. Attention should be given to the general health, and as a preventive measure the hands should be protected from exposure to the weather—especially in the winter—by the use of a muff or by fur-lined gloves. Or two pairs of gloves may be worn, which will be found warmer

than one pair lined. After the hands have been exposed to the cold they may be prevented from tingling by washing them in very warm water, and drying them carefully on a soft towel. The after effect will be a feeling of coolness, whereas the use of cold water causes a glow.

Moist Hands.—If the hands are constantly moist from too free perspiration, bathe them frequently either in salt water, which acts as a stimulant or tonic, or in a solution of vinegar or lemon juice, which acts as an astringent.

Or rub them with a mixture of powdered alum and tannic acid, both of which have astringent properties.

Or a little of this mixture may be dusted inside the gloves.

But care should be taken not to use acid or astringent cosmetics oftener than is necessary, as they tend to overwork the pores of the skin and to produce injurious after effects.

To Remove Stains from the Hands.—Substances recommended for removing stains from the hands are lemon juice, the juice of ripe tomatoes, sulphuric acid (oil of vitriol), chloride of lime, oxalic acid, fumes of sulphur, and various compounds of these. The following special directions may be noted:

To Use Sulphuric Acid.—Dilute a few drops in 20 times its volume of water, and apply to stains with a brush. Take care this does not touch a cut on the flesh or fall upon fabrics of woolen or cotton, as it will take out their color and eat holes in them.

To Use Oxalic Acid.—Make a weak solution of oxalic acid and water, and apply with a brush or rag. Take care this does not get into any sores and cuts, as it will inflame them. On healthy skin its action is as mild as lemon juice.

Or dampen the stain and hold it over the fumes of an old-fashioned sulphur match, freshly lighted. Or burn a small piece of sulphur out of doors and hold the stain in the fumes. Care must, of course, be taken not to burn the flesh or inhale the fumes of burning sulphur.

The above are specially useful for fruit stains.

To Remove Stubborn Stains.—Mix oxalic acid and cream of tartar in equal proportions. This should be marked "Poison," and kept out of the reach of children. Wet the stain with warm water and sprinkle with this preparation, rubbing until the stain disappears. Then wash the hands with soap and rinse well. This will remove the most stubborn ink and dye stains.

To Soften the Hands.—Keep on the toilet stand near the soap a dish of oatmeal, and rub it freely on the hands after washing. This will cleanse and soften the skin.

Or use corn meal in the same manner.

Or keep at hand a quantity of clean white sand. The artificial sort, made by crushing quartz or flint stone and sold for filters, is preferable to sea sand or ordinary sand, since it has sharper edges. Mix a handful of sand with hot soapsuds, and wash and rub the hands with this mixture for several minutes. The sand may be cleansed by pouring fresh water over it and draining through a filter. It can be used again and again. This method softens and removes the calluses caused by housework. The hands may afterwards be rubbed with oatmeal or corn meal, as above, and treated with cold cream or some other simple lotion.

Or a pair of white kid gloves may be turned inside out and brushed over with cold cream or any melted mixture of wax, oil, lard, or other unguent. These gloves may then be drawn on the hands and worn at night.

Or the hands may be rubbed at night with cold cream, mutton tallow, or honey, and a large pair of gloves drawn on. In the morning the hands should be thoroughly washed with some good toilet soap, and rubbed with oatmeal or corn meal and any simple lotion. The following mixtures are recommended to use with gloves at night to soften and whiten the hands:

Put in a quart glass fruit jar $\frac{1}{4}$

pound of grated or shaved castile soap. Pour over this $\frac{1}{2}$ pint of alcohol, and let stand in a warm place, shaking frequently until the soap is dissolved. Add 1 ounce of glycerin and oil of almonds, perfume with a few drops of any essential oil, and seal tightly.

Or put $\frac{1}{2}$ pound of grated castile or other hard white soap in a double boiler; pour over it 1 gill of olive oil, and dissolve with gentle heat. Add $1\frac{1}{2}$ ounces of mutton tallow, mix thoroughly, remove from the fire, and add 2 fluid ounces of alcohol and a few drops of any essential oil as perfume.

Or shave together in a flat glass dish or on a marble slab 1 ounce of spermaceti, 1 ounce of white wax, and 1 ounce of gum camphor. Mix with olive oil to a stiff paste.

Or mix 1 ounce of glycerin and $\frac{1}{2}$ ounce of ammonia with $\frac{1}{2}$ ounce of rose water.

Chapped Hands.—Substances recommended for chapped hands may be distinguished as follows: solid unguents, such as spermaceti and other forms of wax, lard, unsalted butter, mutton suet, tallow, and the like; liquid unguents, such as glycerin, yolk of egg, honey, almond oil, linseed oil, and olive oil; various substances which have specific soothing properties, as borax, bitter almonds, bran (decoction of), balsam of fir, camphor, sal soda, carbolic acid, quince seed, raisins, oatmeal; various flavoring and coloring extracts and perfumes.

The objects sought in using these substances are as follows:

The solid and liquid unguents are employed to hold the specific remedial agent in suspension, and to give consistency to the mass so as to make it easier to apply them; also to prevent their speedy evaporation. The various remedial agents are selected according to their several properties and the results desired. These vary in their effects with different individuals and also according to the condition of the skin. A little experience will indicate which to employ under given conditions. Coloring extracts and perfume may, of course, be used

according to taste. With these thoughts in mind it is an easy matter to prepare a stock of emollients suited to one's ideas and experience, based upon a solid unguent if a paste or salve is desired, or upon a liquid unguent if a lotion is preferred, and containing such remedial agents, coloring matter, etc., as are desired.

Glycerin for the Hands.—Glycerin may be used pure or scented with any essential oil. Rub on the hands at night with the same motion as when washing them, either before or after the hands have been chapped, or apply immediately after they have been chilled by exposure. Soft chamomile-skin gloves worn at night will prevent this and other preparations from making grease spots on bed linen.

To soften and whiten the hands, use a mixture of two thirds glycerin and one third rose water.

Or, to prepare glycerin paste for toilet use, put 1 ounce of any good transparent toilet soap in 4 ounces of soft water or rose water, and add 5 ounces of glycerin. Dissolve all with gentle heat, stir in 20 ounces of additional glycerin, pour into a glass fruit jar, and when nearly cold perfume with a few drops of any essential oil.

Or simmer with gentle heat in a double boiler 1 ounce of glycerin, 2 ounces of olive oil, and 2 drams of spermaceti. Apply to the hands night and morning.

Or mix 3 ounces of glycerin, 1 yolk of egg, and 30 grains of carbolic acid, and beat up to an emulsion with an egg beater. Rub into the skin several times daily.

Or simmer 1 dram of quince seed in $\frac{1}{2}$ pint of boiling water for 10 or 15 minutes; strain out the quince mucilage through a piece of cheesecloth, and to it add one ounce of glycerin, 1 ounce of borax, and 6 ounces of soft water or rose water. Apply to the hands two or three times a day.

Bran for the Hands.—Boil a small quantity of bran in a linen bag. Put both the juice and the boiled bran in the washbowl, add warm or hot water, and wash the hands with or

without soap. This is perhaps the best and simplest treatment for the redness, dryness, and roughness caused by housework and exposure. After washing, the hands may be rubbed with a few drops of honey or a lotion composed of $\frac{1}{4}$ pound of honey, $\frac{1}{4}$ pound of sal soda, and 1 pint of water. Mix well and heat without boiling.

Linseed Oil for the Hands.—This is good for chapped hands, and also for burns and sprains. It has the advantage of being cheap and almost always available.

Honey for the Hands.—This may be used when the skin is dry, hard, and rough. Moisten the hands and rub the honey in well. After a while wash them thoroughly in bran water or some other liquid preparation, and they will be perfectly clean and soft.

Camphor for Chapped Hands.—Camphor cakes or balls, to prevent chapped hands, may be made as follows:

Melt 3 drams of spermaceti and 4 drams of white wax. Add 1 ounce of almond oil. Moisten 3 drams of camphor with spirits of wine, and mix up all together. Run this into molds or make up into balls in the same manner as butter balls are made.

Or, for an ointment, melt together gum camphor, 3 drams; beeswax, 3 drams; olive oil, 2 ounces. Apply at night, and wear chamois-skin gloves.

Other Remedies for Chapped Hands.—Mix white wax, 4 drams; olive oil, 2 drams; spermaceti, 18 grains.

Or unsalted butter, $\frac{1}{4}$ pound; rose water, 1 wineglassful; yolks of eggs, 2; honey, 1 tablespoonful. Mix and stir in finely ground oatmeal to make a paste of the consistency of butter. Apply at night and wear gloves.

Or use almond paste instead of oatmeal in the last.

Or mix equal parts of white nut-ton tallow, unsalted butter, beeswax, and stoned raisins. Simmer until the raisins are dried up but not burned. Strain into molds to cool. This preparation smarts chapped hands, but quickly heals them.

Camphor Ice.—Oil of sweet al-

monds, 1 ounce; spermaceti, 2 ounces; white wax, 1 ounce; camphor, $\frac{1}{4}$ ounce. Melt these ingredients in a double boiler, and pour in molds of proper size and form.

Powder for the Hands.—Common starch reduced to powder by grinding with a knife or in a pestle is a good substitute for talcum powder for the hands. This is always at hand. When taking the hands out of suds or dishwater, or after washing them when they have been chilled by exposure, rinse them thoroughly, wipe them, and apply the starch while they are still damp, covering the whole surface. This is cheap, convenient, and easy to try.

MANICURING

Finger Nails.—The condition of the finger nails is one of the best tests of the care given to the toilet. Well-groomed finger nails are, as far as they go, a mark of refinement. Needless to say, the toilet for any social occasion is not complete until the nails have been thoroughly cleaned, trimmed, and, if possible, manicured. Young men are usually the worst offenders in this respect, and they would often have cause to blush if they should hear the comments caused by their appearances in society with finger nails "decorated in mourning."

Machinists and others whose work tends to cause the finger nails to become grimy will find it helpful to insert a little lard or cold cream under the nails each morning. Housewives will find this a good plan when blacking stoves.

The most useful article for use on the nails is a small orange stick, which can be obtained for a trifle at any drug store. With this the nails can be cleaned each time the hands are washed and the skin which adheres to the nails carefully pushed back. This may also be done with a dry towel. It will prevent the skin from cracking about the roots of the nails and forming hangnails. This method practiced daily will greatly improve the general appearance of the hands.

The nails should never be bitten. By this practice the appearance of the hands may be spoiled for life. To prevent children from biting their nails, rub a little bitter aloes or quinine on the tips of the fingers. If this does not effect a cure, tie glove tips upon them until the habit is given up.

Ingrowing Nails.—The finger nails do not often grow in, but when this happens a notch cut in the middle of the nail will have a tendency to draw it up from the sides.

Manicuring the Nails.—Special care and training must be bestowed upon the nails, as their condition in regard to shape, color, and texture of skin makes or mars the loveliest hand.

It is within the power of any woman possessed of average ability to become her own manicure. It takes only a few minutes each day to put the nails in perfect condition, and properly kept nails are indications of refinement. A manicure outfit will cost two or three dollars. Buy good instruments to begin with. You will need a flexible file, emery boards, buffer, orange sticks, cuticle knife, curved needle-pointed scissors, nail scissors, some red paste and white nail powder, and a good bleach of glycerin, rose water, and oxalic acid.

Begin by shaping the nail with the file. When you have finished one hand, the fingers should be dipped into a bowl of lukewarm water, into which has been poured a tablespoonful of lemon juice and a few drops of some pleasant antiseptic as listerine or peroxide of hydrogen. Let them remain in this some time to soften the cuticle, and then dry them with a soft towel.

With the point of the orange stick clean the nail, dipping the stick in the bleach if this is necessary. Loosen the skin around the nail with the cuticle knife. This skin should be lifted up, and not pushed down and back, as the latter movement cracks and splits the cuticle. Keep dipping the knife in the water, as it helps to lift up the cuticle, which must be well raised before it is cut. Now use the cuticle scissors, and try

to trim the cuticle in one piece, otherwise you are likely to have ragged edges and hangnails.

Be extremely careful about this special part of the treatment, for the nail may be altogether spoiled by a too zealous use of the cuticle knife and scissors. Use your red paste sparingly, and rub it well into the nails with the palm of your hand. It is better to dip the fingers in the water again and dry thoroughly, as you cannot polish a wet nail. Cut off a hangnail with the nail scissors, and smooth the edge of the nail with the emery boards. Dip the buffer or polisher in the nail powder. Place the center of the buffer on the nail, and rub slightly.

In a short time you will find it very easy to manicure your own nails.

To Whiten the Nails.—First cleanse and soften the nails by soaking in soft water in which a little pure toilet soap has been dissolved, and then dip the fingers into a mixture composed of 2 drams of diluted sulphuric acid, 1 dram of tincture of myrrh, and 4 ounces of soft water. Rinse with clear water and polish.

Or, to remove stains and discolorations, moisten a chamois buffer or a piece of chamois in a mixture of lemon juice and water, or vinegar, and water. Dip it into powdered pumice stone or putty powder, and apply carefully until the stain is removed. But rub as little as possible, and do not use these substances oftener than is necessary, as their constant use tends to make the nails thick and coarse.

To Toughen the Nails.—Mix 8 grains of pure rectified tar with $\frac{1}{2}$ ounce of cold cream, rectified lard, or suet. Apply liberally to the nails at night and draw on a pair of loose gloves.

To Polish the Nails.—Apply, with a chamois buffer, a mixture of 1 ounce each of finely powdered emery and cinnabar, softened with olive oil, almond oil, or the essential oil of bitter almonds.

Diseases of the Nails.—Splinters under the nails which cannot easily be drawn out by pincers may be removed by softening the nail with pot-

ash lye diluted with an equal quantity of water. Apply this with a brush, then scrape the nail until the splinter is laid bare and can be removed. To check the action of the lye when necessary rinse with clear water and apply vinegar or lemon juice. In all cases, however, when

foreign bodies get under the nails, it is best to consult a physician.

The white spots which superstitious people, half in fun, sometimes say are produced by having told lies, are caused by air getting under the nails during their growth and being confined there.

CHAPTER XLV

TOILET PREPARATIONS

TOILET PREPARATIONS—SIMPLE HOME PREPARATIONS—
ALMOND MILK, CREAM AND PASTE—COLD CREAM—ARO-
MATIC VINEGAR—TOILET POWDERS—ROUGE—ESSENCES
AND PERFUMES

TOILET PREPARATIONS

Recipes for the Toilet.—The enormous array of mixtures of all sorts for the toilet evinces equally the popular interest in these recipes, and the whims, caprices, and vagaries of their makers. At first glance the number and variety of recipes recommended by standard authorities is bewildering. A careful study of these preparations, however, and their tabulation in the form of charts for comparison, discloses the fact that the number of remedial agents contained in them is relatively small. The various forms in which these recipes appear are merely so many attempts to attract the notice of the public, whether by appealing to its taste or its convenience. The same ingredients, for example, may be compounded so as to form washes, lotions, emulsions, creams, or pastes, according to the degree of dilution preferred by the individual user. Standard recipes differ also by varying the proportions of the same ingredients recommended. Very often these ingredients will be the same with the exception of the perfumes. Needless to say the latter may be varied to suit the preference of the user.

There are, of course, certain standard types of toilet preparations. These vary according to the different bases, remedial agents, and the kind and amount of liquids employed for

diluting them. A few words on each of these subjects will assist the reader in making a satisfactory selection.

To Save Money.—Practical suggestions and instructions for preparing all kinds of toilet preparations are of universal interest and value. Many toilet preparations made according to recipes given in this section are widely advertised for sale. The cost of advertising these articles and placing them upon the market is usually from 50 to 80 per cent of their retail price. The purchaser has to pay all this in addition to the original cost of the ingredients and the labor of compounding. Moreover, it is impossible to tell what the ingredients are or whether they are of good quality. Very often they are injurious and even poisonous. Adulteration and substitution are very common. Anyone can save from 75 to 95 per cent on the cost of these by compounding them himself. He will also have the satisfaction of knowing exactly what the preparations are composed of and that the ingredients are fresh and of good quality.

To Make Money.—Some persons, however, have little skill in compounding, or have not the time or the proper facilities for the work. While any one can prepare these articles, it is, of course, true that a person may become more expert by giving special time and attention to them, and especially by the practice of making up prescriptions in fairly

large quantities. Hence any one who has an aptitude for work of this kind can make a good deal of money by preparing these articles in quantity, putting them up neatly in jars, bottles, boxes, etc., and affixing to them neat printed labels. These can be sold on shares at the local stores, or bought by friends and neighbors, or peddled from house to house by employing young people on a commission basis. Mail-order business can also be worked up for the sale of these preparations. The recipes are taken from the formulas of manufacturers of standard toilet articles. Such preparations also make a very popular bazaar at a church fair. The work of compounding them in such cases can be delegated to a committee.

Bases.—The standard basis for solid and semifluid preparations, as pastes, creams, and emulsions, are white wax, spermaceti, suet, lard, yolk or white of egg, and various soaps.

Animal fats, as lards, suet, and the like, must be specially refined and prepared for toilet purposes. This may be done at home by melting and simmering the fat slowly with gentle heat, and straining it through linen one or more times. On the farm these animal fats are easily obtained and consequently inexpensive, but unless alcohol or other preservatives are mixed with them they tend to become rancid. Hence small quantities at a time should be prepared, and care should be taken not to employ such preparations when they become in the least degree sour. The same caution applies to compounds containing the white or yolk of eggs and honey.

White wax, spermaceti, Castile and other soaps as bases are free from these objections, and recipes containing them are to be preferred when such ingredients can conveniently be obtained. In compounding recipes having these solid unguents as bases they are first melted slowly with gentle heat, and while in a melted condition the other ingredients are added. They may also be "cut" or dissolved in alcohol and spirits.

Liquid Bases.—Certain toilet preparations, as emulsions, lotions, washes, and the like, omit the above solids or employ them only in small quantities, and in their place use certain oils and other liquids as bases. The principal liquid bases are almond oil, olive oil, glycerin, honey, and the like. These have a double value: they tend to soothe and also to feed the skin. They are, therefore, among the most deservedly popular of all ingredients.

Other Bases.—Gum arabic, quince seed, and white paste are also employed as bases when a certain degree of adhesiveness is desired, as in the preparation of bandoline and pomades for the hair and beard. The quince seeds are prepared by simmering them gently in rose water until they form a stiff jelly. This must then be strained through a fine sieve to remove the hulls. Gum arabic may be dissolved in warm water.

Bases of Powders.—Wheat starch is the standard base for homemade toilet powders, but other materials often employed are fuller's earth, French chalk, and pearl white. Almond meal, like almond oil, has the double property of serving as a base and also as a remedial agent.

Remedial Agents.—This term is employed to describe certain ingredients used in toilet preparations which have specific curative properties. Some of the bases already mentioned, notably almonds, fall also under this heading. Among others of especial value may be noted substances which soothe and feed the skin, as the yolk of egg, honey, and cocoa butter; substances which are mildly astringent, as lemon juice, alum, spirits, and benzoin; and other specifics, as glycerin, camphor, and sulphur, whose action varies with different persons. These agents are in most cases of a harmless character except when otherwise stated.

Mineral Agents.—The use of mineral drugs in toilet preparations cannot be too earnestly deprecated. In many cases they are immediately harmful, and defeat the very object for which they are intended, as in the case of bismuth, which frequently

blackens the skin. All compounds and preparations containing lead in any form are positively dangerous and sometimes give rise to blood poison. These mineral compounds are often recommended as heroic remedies, to be tried when other measures have failed; as, for example, for the removal of obstinate freckles, moles, pimples, and similar disfigurements. They are very common in hair dyes and pomades, and are too often employed under delusion, caused by the misleading statements of friends, beauty doctors, or others, and by publishers of otherwise reputable books.

Two statements we desire to earnestly make and stand by: first, mineral drugs in toilet preparations are dangerous; and, secondly, they are not necessary. The simple and harmless remedies hereinafter given, if patiently and skillfully applied according to directions, will, in due course of time, accomplish the results intended, and develop the most perfect complexion that the individual is capable of.

The use of mineral drugs, on the other hand, whatever the immediate benefits derived from them may appear to be, will in the end defeat its own object by producing after effects ruinous to the complexion, and the last state of the deluded individual who employs them will indeed be worse than the first.

Diluents or Vehicles.—Distilled water, various perfumed toilet waters, as rose water, together with alcohol, rectified spirits of wine, and other spirits, are the liquids most often recommended for diluting toilet preparations to the consistency of creams, lotions, washes, and the like.

Distilled water may be prepared at home by attaching a tube to the spout of the teakettle, immersing as much of its length as possible in a basin of water shielded from the fire and kept cold, if convenient, with ice, and collecting the condensed steam at the opposite end of the tube in a fruit jar or other receptacle. The object of this process is to remove all impurities held in suspension, as lime and other minerals which are found

in hard water; also vegetable and animal matter and other impurities. In winter clean snow, melted, is equivalent to distilled water. Rain water collected in a clean vessel is a good substitute. The ordinary water supply, softened if necessary by means elsewhere recommended, will usually answer every purpose. Elder-flower water, orange-flower water, and other perfumed toilet waters are often recommended, but rose water or plain distilled or soft water may be used as a substitute, if preferred, in all cases.

Perfumes.—Substances used as perfumes commonly occur in several forms, i. e., the attar or essential oil, the essence, and the tincture or the "water," depending upon the degree of dilution. They can also be obtained in powdered form, as in sachets. The most convenient form in which to purchase perfumes is the otto or attar, i. e., the essential oil. This may be purchased in small quantity and employed according to taste, a few drops being sufficient to perfume most toilet preparations in quantities suitable for domestic use. The scent of these perfumes is familiar to most persons, but they can easily be inspected at a drug store and a selection can be made. It is not necessary, of course, to purchase or have on hand each and all the different perfumes recommended. In fact, perfumes are now used very much less than they were formerly, and a strong scent of cologne, musk, or other odor about an individual is regarded as a mark of vulgarity. Many ladies who enjoy perfumes compromise by selecting any particular odor they prefer, as violet, rose, lavender, or heliotrope, and employ this exclusively in the toilet. Any of the essential oils may be substituted freely for the others, and the quantity may be varied to suit the taste as determined by experiment.

Coloring Matters.—The standard coloring matters employed for lip salve, rouge, cold cream, and the like are as follows: for rose pink or red, alkanet root or dragon's blood; for yellow or orange, palm oil or annatto; for blue, finely powdered indigo; for

green, spinach leaves. Other coloring matter, as the various lakes and other mineral substances, are intentionally omitted.

Utensils Required.—The utensils required in compounding the following recipes are usually at hand in every household. A small pair of druggist's scales or balances is a great convenience, and will be found useful in many ways. A graduate glass, marked for the measurement of fluid ounces, is also useful, and can be obtained of any druggist or dealer in photographic materials.

In addition to the above a small spatula or thin, broad-bladed, flexible knife, a small mortar and pestle, and one or two short pieces of glass tube or rod for stirring, will be found convenient. Ordinary porcelain-lined saucepans are the best receptacles in which to melt and mix the necessary ingredients. A double boiler is convenient, but if this cannot be had, a large saucepan may be partly filled with water, and a smaller one containing the ingredients to be melted placed within it so that the water will reach part way up the sides. A few nails or other solid objects placed in the bottom of the large saucepan will raise the small one so as to permit the water to circulate freely beneath it. In this way the ingredients may be melted without danger of burning or sticking to the pan. Care must be taken that the water in the outer saucepan does not all evaporate or boil up and flood the inner one.

Directions for Compounding.—First place the solid or liquid constituents used as a base in a double boiler or saucepan, as above suggested. Simmer with a gentle heat, but without boiling. When the solids are melted and the mass is warm enough to flow freely, first put in the coloring matter, if any, and simmer until the color has been fully incorporated. Next strain through linen while still hot.

Return the mixture to the double boiler, and while hot add such specific remedial agents as the oil of bitter almonds, honey, glycerin, benzoin, lemon juice, alum, etc.

If rose water or distilled water is to be added to form an emulsion, lotion, or wash, take the mixture off the fire and add the water gradually, stirring briskly with a spoon or egg beater to insure forming a perfect emulsion. The last ingredient to be added is always the perfume, and this should be done after the mixture has cooled somewhat, but before it sets. Perfumes are volatile, and if added to a heated mixture are likely to be wasted by evaporation.

Compounding of Pastes and Powders.—The above instructions apply especially to liquid compounds. The solid constituents of pastes may be rubbed together in a mortar, and kneaded with the hands or with a spatula on a marble or metal slab, a clean piece of zinc, or a kneading board. In some cases an egg beater can be employed if the consistency of the mixture will allow it. Almonds for pastes may be reduced in a mortar to the proper consistency by moistening them with rose water and grinding them with a pestle, or by heating them with water in a saucepan until the mass assumes a granular consistency, somewhat similar to cooked oatmeal. Both methods are employed, but the former is the more common. The materials for toilet powders may be compounded by simple mixture in a mortar or other suitable receptacle.

General Suggestions.—We would suggest to the novice that it will be well to first prepare a small quantity of some good toilet powder (preferably based on wheat starch), a good cold cream, and, if desired, one of the liquid emulsions or lotions as a wash for the face and hands.

Other preparations, as pastes, rouge, aromatic vinegar, and the like, may be made up as occasion demands. Persons experienced in these matters will, of course, need no suggestions.

Tables.—A number of tables have been prepared which contain practically all the standard recipes for the toilet in use by beauty doctors and others in all parts of the world. An exception to this statement has already been noted; all recipes containing preparations of lead and other in-

jurious mineral drugs have been absolutely excluded. A list of the different ingredients is given at the left of the table, and the name of each preparation is quoted at the top. Under each name and opposite the names of the different ingredients will be found the amount of each to be employed. General directions for compounding the following recipes have already been given. Special directions follow each table when necessary.

SIMPLE HOME PREPARATIONS

The following simple homemade preparations are suggested in addition to the more elaborate recipes given later:

To Remove Freckles.—Preparations recommended for the removal of freckles are usually of an acid character containing alum, lemon juice, horse-radish, buttermilk, and the like; also mineral drugs, as salts of lead, mercury, bismuth, and others. It cannot be too clearly stated that all such preparations are distinctly injurious to the complexion, and their frequent use is not to be recommended. Most young persons of light complexion are annoyed by freckles, but these ordinarily pass away in later life, and the wisest possible course is to pay little attention to them and allow nature to effect a cure. The application of preparations advertised to remove freckles, the ingredients of which are unknown, should be avoided lest they contain bismuth, which is liable to blacken the skin, or lead or mercury, which are active mineral poisons. The following recipes, the active principles of which are confined to animal or vegetable acids, are less injurious; but it must be borne in mind that all cosmetics of an astringent nature do their work by contracting the pores, which thus become weakened and in time are unable to discharge their natural functions. The result may be, in later life, wrinkles and sallowness, and the last state of the complexion may be distinctly worse than the first.

Grate a fresh horse-radish root very

fine, cover with fresh buttermilk, and let stand over night. Strain through cheese cloth, and wash the face night and morning with the resulting liquor.

Or squeeze the juice of a lemon into half a tumbler of water, and use two or three times daily as a face wash.

Or dissolve in lemon juice as much sugar as it will hold, and apply with a soft brush frequently until the freckles disappear.

Or apply a lotion containing glycerin, but this is hardly a specific.

Or put in a double boiler 1 ounce of grated Venice soap and 1 ounce of pure soft water (or distilled water); melt with gentle heat and continue the heating until the water is evaporated and only the melted soap remains. Remove from the fire, and stir in $\frac{1}{2}$ ounce of lemon juice, $\frac{1}{4}$ ounce of oil of bitter almonds, $\frac{1}{4}$ ounce of deliquated oil of tartar, and 3 drops of oil rhodium. This is said to be a recipe of the celebrated Mme. de Maintenon, the mistress of Louis XIV of France.

Or this mixture can be prepared by grating the soap, pouring over it the lemon juice and other ingredients, exposing it to direct sunlight, and shaking occasionally until it is of the right consistency. Apply to the face at night.

Or mix $\frac{1}{4}$ pint of tincture of tolu, $\frac{1}{2}$ pint of tincture of benzoin, and $\frac{1}{4}$ ounce of oil of rosemary. Put a teaspoonful of this mixture in one fourth tumblerful of pure soft water, and apply to the face with a soft sponge two or three times a day.

But none of these preparations can be regarded as desirable lotions for regular or frequent use.

Cucumber Milk.—Slice three or four large cucumbers with the skin on, add $\frac{1}{2}$ pint of water, boil, stir to a soft pulp, cool, and strain. Mix $1\frac{1}{2}$ ounces of this cucumber juice, $1\frac{1}{2}$ ounces of 95 per cent alcohol, and $\frac{1}{4}$ ounce of grated Castile soap. Let stand in a warm place over night; next day add 8 ounces more of the cucumber juice, 1 ounce of oil of sweet almonds, 20 drops of tincture of benzoin, and 5 grains of boracic acid. Shake well before using, and

apply to the face two or three times a day with a soft cloth or sponge.

Milk for the Skin.—New milk, skimmed milk, and buttermilk each possess properties peculiar to itself, and they all make useful and simple washes having a general emollient action on the skin. If used daily they tend to make the skin soft, smooth, and white, and to preserve it from the effects of exposure to weather. Buttermilk is useful for freckles and acne, and relieves itching and local irritations of the skin. Pure, fresh cream is a simple and effective preventive of chapped hands and lips, and is excellent to cure these evils.

Milk as a cosmetic may be improved by infusing in it freshly grated horse-radish, or infusing in new milk or buttermilk a quantity of flowers of sulphur. These are useful remedies for freckles and other discolorations and slight eruptions of the skin.

Or mix flowers of sulphur with a little new milk and let stand an hour or two to settle. Pour off the milk from the sediment, and rub well into the skin before washing. This mixture is for immediate use only, and must be prepared daily. It may be prepared at night with evening milk and used the next morning, but not afterwards. Two or three tablespoonfuls are all that need be prepared at a time.

Or boil 1 cupful of fine Scotch oatmeal—not breakfast food—in 1 pint of boiling water until it forms a clear liquid. Use a double boiler, or place the saucepan containing the oatmeal in an open kettle or pan of boiling water to prevent sticking or burning. Strain the clear liquid through a cloth, boil again, and strain a second time. Add rose water, elder-flower water, or orange-flower water until the liquor has the consistency of milk. Add a few drops of your favorite perfume, and bottle for use.

Lemon Juice.—Dilute fresh lemon juice with five or six times its volume of pure soft water. This, however, should not be used too frequently on account of its acid quality and tendency to impair the work of the pores

of the skin. It may, however, be used on occasion to relieve itching or local irritation.

Or mix equal parts of lemon juice, toilet water, and alcohol. Let stand over night, pour off the clear liquid, and strain through silk or linen.

Kalydor.—Dissolve 2 drams of tincture of benzoin in 1 pint of rose water, and use as a face wash for the complexion.

Magnesia Cream.—Mix fine powdered magnesia with rose water to a thin cream, dip the face in warm water to open the pores, apply a glycerin lotion, and afterwards apply the magnesia cream. Let dry and remove with a soft towel.

Or dissolve fuller's earth in water, stir well, then let it settle, and use once or twice daily.

Honey.—Honey is a favorite ingredient in various lotions under the name of "honey water," "balsam of honey," and the like. The term "honey water" is also applied to certain combinations of perfumes that do not, in fact, contain honey.

To prepare honey water from honey, put in a 2-quart fruit jar 4 ounces of pure white honey with $\frac{1}{2}$ ounce of fresh grated lemon peel, $\frac{1}{2}$ ounce each of calamayta, benzoin, and storax, $\frac{1}{4}$ ounce of cloves, and $\frac{1}{2}$ ounce of nutmeg. Add 2 ounces each of rose water and elder-flower water and 12 fluid ounces of 95 per cent alcohol. Let stand 3 or 4 days, shaking frequently, run through a filter, and bottle for use.

Or, for balsam of honey, mix with gentle heat 8 ounces of pure white honey and 2 ounces of best quality glycerin. Let stand until cool, stir in 2 fluid ounces of 95 per cent alcohol, and add 10 drops of the essence of ambergris.

Glycerin.—When pure, glycerin is a colorless viscid liquid, having a sweet taste and without odor. All the ordinary fats contain glycerin, which is produced by treating animal fats with alkalies, such as caustic soda or potash, as is done in the manufacture of soap. Glycerin is a by-product of soap factories. It may also be produced by treating fats with superheated steam, as is done

in the manufacture of candles. Hence glycerin is also a by-product of candle factories.

Glycerin mixes freely with water, and pure glycerin absorbs about one half its own weight from the atmosphere. It is an excellent solvent, and is an important ingredient of pomades, toilet soaps, and cosmetics. Glycerin is recommended as a lotion for irritation of the skin and for itching; also as a preventive against sunburn, chaps, and redness from exposure to the weather. A preparation of 1 ounce of glycerin to 19 ounces of pure soft water is about right for regular use as a face wash, and is an excellent vehicle in which to dissolve various remedies.

Or 1 ounce of glycerin to 9 ounces of water may be used for chapped hands and lips, or whenever a strong solution is desired.

Borax.—Dissolve 5 drams of borax in 1 pint of pure soft or distilled water, and use as a wash for sore gums or nipples, boils, or any other irritation of the skin or mucous membrane.

Or combine borax with glycerin in the proportion of 6 drams of borax and 1½ ounces of pure glycerin; add 16 ounces of rose water. This may be used regularly as a face wash.

Or mix ¾ ounce of powdered borax with 1 ounce of pure glycerin and 16

Or to 1 ounce of glycerin add 2 ounces of fresh lemon juice, 1 pint of pure distilled water, and 1 pint of rose water. Apply to the face several times a day and let dry before rinsing.

Lotions for Tan or Sunburn.—These are based principally on oil of almonds, with the addition of Castile soap and rock candy, and contain various remedial agents, including astringents, as alum and lemon juice, also benzoin, tincture of tolu, tartar oil, ox gall, and the like. They are diluted usually with alcohol or any perfumed toilet water, for which plain distilled or soft water may be substituted. And they may be perfumed with any essential oil or essence preferred. Apply any of these lotions to the face with a small sponge or a soft linen rag. Let it dry on without rubbing, and afterwards wash the face with soft warm water.

The following is a simple remedy for tan or sunburn: apply peroxide of hydrogen, pouring a teaspoonful or more in the palm of the hand, and applying it equally over the hands, arms, and face. Let it dry without rubbing. After it is thoroughly dry, apply any good lotion. This will rapidly bleach the skin without injuring the most delicate complexion.

LOTIONS FOR TAN AND SUNBURN

Castile Soap	1 lb.			1 oz.		½ lb.			4 oz
Ox Gall	2 dr.								1 dr
Borax			½ oz.		½ dr.		1 oz	½ dr.	8 oz
Almonds, Bitter				¼ oz.			¼ oz		
Almonds, Sweet Oil of			1 oz.					1 dr.	8 oz.
Rock Candy	½ oz.				1 dr.				2 oz.
Rock Salt	1 dr.								1½ scr.
Camphor		1 pt.					1 pt.		2 dr
Benzoin		½ pt.				½ oz.	½ pt.		
Tinc. Tolu	1 dr.								1½ scr.
Alum					½ oz.	2 oz		½ oz	2 oz.
Lemon Juice				1 oz.				¼ oz	
Tartar Oil									
Limewater									
Alcohol (95%)						1 qt.			
Rose Water	½ pt.	½ pt.				1 gal.	½ gill	2 qt.	1 qt
Any Essential Oil	½ oz.			8 dr.		4 dr.	½ oz.	8 dr	20 m.

ounces of camphor oil. Apply to the face with a soft cloth or sponge two or three times a day; let dry, and rinse with clear water.

ALMOND MILK, CREAM AND PASTE

Almond Preparations.—The prime favorite among all ingredients of the

various toilet preparations is probably the nut or kernel of the almond, of which there are two sorts: the sweet and the bitter. The almond is the fruit of a tree very similar to the peach tree. It is cultivated extensively in Southern Europe, and is now grown largely in California. Almonds are much cheaper now than they were formerly, and are likely to become cheaper still. The almond contains two active principles: an odorless fixed oil of a light color, which is obtained by pressure; and the oil of bitter almonds, which is a volatile oil obtained by crushing bitter almonds in cold water and by distillation. This latter oil is colorless, limpid, and has the distinctive odor of bitter almonds, similar to that of prussic acid. It sometimes contains prussic acid, in which case, if taken internally even in minute quantities, it is a deadly poison.

The ordinary almonds of commerce are sweet almonds of the thin-shelled varieties. They contain about 50 per cent or more of almond oil, which may be extracted by boiling in water or by softening the kernels with water or other liquid, rubbing them in a mortar, and mixing the resulting mass with various other ingredients. Or the oils of commerce may be utilized. Preparations of almonds for toilet purposes are variously known as "milk of almonds," "almond cream," "almond paste," and the like. They are likewise known as English, French, or other "milk of roses," and by similar fanciful titles, arising from the various added ingredients and the wishes of the different manufacturers.

Among the ingredients most often added to almonds in these preparations are solid unguents, as white wax, spermaceti, white paste, and the like; also liquid unguents, as glycerin, honey, the yolk of egg, and similar substances. Perfumed and distilled water, alcohol, and other spirits are often used as vehicles. And various specifics for the complexion, as benzoin, salts of tartar, alum, lemon juice, and other cosmetics, may be added. All recipes containing mineral substances, as salts of lead, mercury, bismuth, and the like, are here omitted.

The oil of almonds is a gentle emollient. It not only softens but also feeds the skin. Hence it is a specific for the complexion, and is especially useful for chaps, sunburn, redness, and other local irritations. The following are standard recipes for milk, cream, or paste of almonds, in the order mentioned. Among these are proprietary articles which are sold under various fanciful titles at exorbitant prices, but which can be readily prepared at home by any one who cares to take the necessary pains, with the advantage of knowing that the materials are fresh and pure and that the mixture contains nothing injurious.

Milk of Almonds.—The principal object to be attained in preparing milk of almonds or milk of roses is to form a perfect emulsion which will not separate, or which, if it separates after standing, may be emulsified by shaking. Such substances as soap, gum, wax, and the like, are added for this purpose, and all such preparations will be improved by beating thoroughly with an egg beater or otherwise after all the ingredients have been incorporated.

The milk of roses varies from the milk of almonds merely in being perfumed with rose water or the essence or attar of roses. Other perfumes are frequently added, but in such limited quantities that the scent of roses predominates.

Rub up in a mortar 1 ounce of sweet blanched almonds by adding, a little at a time, $\frac{1}{2}$ pint of distilled water or pure soft water, mixing and rubbing constantly until a smooth, homogeneous milky emulsion is formed. Finally strain the resulting mixture through a piece of net or gauze to remove the coarser particles. This is the common "milk of almonds" of perfumers, to which glycerin, various cosmetics, perfumes, and coloring matter may be added as desired.

Or mix in a mortar 5 drams of blanched almonds, 2 drams of white lump sugar or rock candy, and 1 dram of powdered gum arabic, and rub up the whole together in the same manner, adding distilled water, a lit-

tle at a time, until 8 fluid ounces have been incorporated. This is an Irish formula, and is especially useful when it is desired to add oils, gums, or balsams.

Or milk of bitter almonds or emulsion of bitter almonds may be prepared in the same manner by substituting blanched bitter almonds for the sweet variety. The milk of bitter

lavender, and 8 drops of attar of roses. Add this mixture to the "milk of almonds," rub up thoroughly in a mortar, beat with an egg beater or otherwise to form a perfect emulsion, and strain through silk or linen.

Enough has been said to indicate the method of compounding these recipes. The following may be prepared in the same manner:

ALMOND CREAM, MILK OF ROSES, ETC.

	Cream of Roses	English Milk of Roses	Almond Milk	French Cream of Roses	Commercial Milk of Roses	Queen's Lotion	Bernhardt Cream	Italian Milk of Almond	Bitter-almond Cream	Barber's Almond Cream	Bitter Almond	German Milk of Roses	Tartar Oil
Almonds, Sweet.....	16 oz.	1½ oz.	1 oz.		7 lb.	5 lb.	3 lb.	16 oz.		6 lb.			
Bitter.....			3 oz.	5 oz.	16 oz.			1 oz.	8 oz.				
Oil.....	1 oz.	1 dr.		5 d.		16 oz.	4 oz.				1 dr.		1 oz.
Milk.....												3 dr.	
Paste.....										3 dr.			
White Wax....	7 dr.			1 oz.			½ oz.	1 oz.					
Spermaceti....	3 dr.			1 oz.			½ oz.	1 oz.					
Castile Soap...	1 oz.	1 dr.		4 oz.		12 oz.	½ lb.	1 oz.					
White Sug.....			1½ lb.										
Alcohol.....	1 pt.	2½ oz.		6 oz.	1 gal.	3 qts.	2 qts.	1 qt.		1 gal.	1 oz.		
Rose Water ...	7 pts.	¾ pt.	1 qt.	1 pt.	5 gal.	q. s.	10 qts.		8 oz.	3 gal.	1 pt.	½ pt.	4 oz.
Rosemary Water.....		¼ pt.											
Elder-Fl. Water			1 oz.						6 oz.				
Lavender Water.....													
Tin. Storax....									2 dr.				
Tinc. Benzoin..	½ dr.										1 dr.	½ fl. oz.	
Pearlash.....													
Oil of Rose....		6 m.			60 m.	8 oz.	20 m.			20 m.			
Oil of Lavender	½ dr.				1 oz.	4 dr.	½ oz.			1 oz.			
Oil of Tartar...				1 dr.					20 m.				20 m.
Oil of Bergamot													
Balm of Peru...											20 m.		

almonds is especially recommended to relieve itching and irritation (especially that caused by shaving), and as a remedy for freckles, but it develops prussic acid, a very active poison, and hence must not be swallowed or applied except in very minute quantities to a raw surface.

Or rub up gradually in a mortar 2 ounces of sweet blanched almonds and 12 ounces of rose water. Mix separately with gentle heat 2 drams each of white Castile soap, white wax, and oil of almonds, to which add 1 dram of oil of bergamot, 15 drops of oil of

Complexion Paste.—The principal ingredients in standard pastes for the complexion consist of solid and liquid unguents, as spermaceti, wax, paste, suet, various soaps, and the like; soothing substances, as almond oil and honey; mild astringents, as lemon juice and alum; rose water and alcohol for mixing purposes, and various perfumes.

As in other toilet preparations, the solid unguents give substance to the compound and hold the various remedial agents in suspension. Yolk of egg, almonds, honey, and the like, feed the skin, and other ingredients are

Almond Paste may be prepared in two ways: either in the cold or by cooking the almonds. To prepare almond paste in the cold, pound the dry kernels of sweet almonds to a fine powder in an earthenware or marble mortar. This will require time and patience. When the almonds are sufficiently fine, add just enough elder-flower, rose, or orange-flower water to make a paste of the desired consistency and perfume with some essential oil—as the attar of roses, bergamot, neroli, or any other desired. Preserve in covered glass jars.

Or, to prepare paste of bitter almonds, take equal parts of bitter and sweet almonds and proceed as before. It is not necessary to add perfumes, as the scent of the bitter almonds is sufficient.

Or add to either of the above 2 ounces of powdered spermaceti or 1 ounce of grated Castile soap for each pound of almonds.

Or the white of 1 egg to each pound of almonds.

Or, to prepare almond paste by cooking, chop or grind 24 ounces of blanched bitter almonds, which may be done by passing them through a meat cutter, cover with 8 ounces of elder-flower or orange-flower water, and cook over a slow fire, stirring constantly until the almond kernels burst and assume the consistency of paste. If the fire is too brisk or the mass is not constantly stirred, the almonds will burn and the quality of the paste will be impaired. It must be borne in mind that much of the oil of bitter almonds is volatilized by heat, and care must be taken not to breathe the fumes, which are poisonous. Before removing from the fire, stir in 4 ounces more of orange-flower or elder-flower water, and rub up the paste in a mortar to the proper consistency, adding 16 ounces of alcohol and 3 ounces of attar of roses or any other essential oil desired. Rub through a hair or other fine sieve and bottle for use.

Or, for honey-almond paste, heat in a double boiler 4 ounces of pure white honey, strain through cheese cloth, and add 4 ounces of bitter white paste, 8 ounces of expressed oil of

bitter almonds, and 2½ yolks of eggs. Add the egg and the oil gradually, and beat vigorously with an egg beater or otherwise, as in preparing mayonnaise.

COLD CREAM

Cold Creams.—The basis of most cold creams is either white wax or spermaceti or both, with almond oil or rectified animal fats, as lard, suet, and the like, to which may be added various specifics for the complexion, and distilled waters, essences, or essential oils to perfume as desired.

Cold cream is among the most useful of all toilet preparations, both as a preventive and as a remedy for sunburn and reddening of the skin by exposure, chapped hands and lips, frostbite, and other local irritations. It is also useful for whitening the hands and to prevent wrinkles. For this purpose it should be applied at night and thoroughly washed off in the morning. The hands may be protected at night by a loose pair of kid or chamois gloves.

To prepare cold cream, melt in a double boiler 2 drams of white wax, 1 ounce of spermaceti, and 3½ ounces of oil of sweet almonds. Remove from the fire and add in a thin stream 2 fluid ounces of rose water, and stir constantly until cold. Those who can use glycerin with safety may add ½ ounce to 1 ounce before the mixture sets.

Or, for a medicated cold cream, melt with gentle heat in a double boiler ½ ounce of white wax, ½ ounce of spermaceti, and 4 ounces of almond oil. Mix separately ¼ fluid ounce each of the tinctures of balsam of Peru, tolu, and benzola, to which add in a thin stream 2 fluid ounces of elder-flower water. Beat in the meantime with an egg beater or otherwise to form a complete emulsion. Pour this emulsion in a thin stream into the melted wax and oil, meantime beating with an egg beater until all the ingredients are fully incorporated. When cold, this compound will set as a permanent cold cream which is highly recommended as a cosmetic.

Or melt together in a double boiler with gentle heat 2 ounces of spermaceti and 1 ounce of oil of almonds. Stir in 3 ounces of pure glycerin, and $\frac{1}{2}$ ounce of balsam of Peru. Remove

mot, rosemary, and marjoram. Add $\frac{1}{2}$ pint of pure white-wine vinegar and 1 pint of elder-flower or rose water. Filter and cork tightly for use.

Or dissolve in $\frac{1}{2}$ pint of glacial acet-

COLD CREAM

	Rose Cream	Crème de Cathay	Wax Cream	Cream of Roses	Chryselline	French Cream	Quince Cream	Hudson's Cream	Sultana Cream	English Cream	Georgia Cream	Farmer's Cream	Oriental Cream
White Wax..	4 oz	$\frac{1}{4}$ oz.	$\frac{1}{2}$ oz.	10 dr.	$\frac{1}{2}$ oz.	5 dr.		1 oz.	$\frac{1}{4}$ oz.	4 dr.		3 oz.	1 oz.
Spermaceti ..		$\frac{1}{4}$ oz.		10 dr.	$\frac{1}{2}$ oz.	5 dr.		1 oz.	$\frac{1}{4}$ oz.	6 dr.		16 oz.	10 oz.
Lard				8 oz.							2 lb.		2 oz.
Suet											1 lb.		
Quince Seed							20 oz.						
Mucilage ..													
Cocoa Butter.	16 oz.	4 oz.	2 oz.		2 oz.	10 oz.		8 oz.	$\frac{1}{4}$ lb.	8 oz.			4 oz.
Almond Oil..							$\frac{1}{4}$ oz.						
Almond Soap.							1 oz.		$\frac{1}{4}$ lb.				
Glycerin							5 oz.			20 gr.			
Borax													
Stearic Acid..													
Sub Carbonate				15 gr.									
Potash				2 oz.									
Alcohol				4 oz.									
Rose Water..	12 oz.	2 oz.	2 oz.			8 $\frac{1}{2}$ oz.		5 oz.	2 dr.	8 oz.	4 oz.		3 oz.
Any Essential													
Oil		10 m.		10 m.		15 m.			12 m.		30 m.	10 m.	15 m.

from the fire and beat with an egg beater until cool enough to stir.

ic acid 1 ounce of camphor. Add 5 grains of pure oil of lavender and 12 grains of oil of cinnamon.

AROMATIC VINEGAR

Aromatic Vinegar, or Toilet Vinegar, is a toilet preparation, the active principle of which is acetic acid in the form of glacial acetic acid, white wine or other vinegar, or the like. It may be perfumed according to taste and may serve as a vehicle for various cosmetics. To compound toilet vinegar, first dissolve the essential oils or other perfumes in the spirits, next add the vinegar or acetic acid, and lastly the distilled or toilet water.

Or put in a close vessel 4 ounces of dried red-rose leaves, and pour over them 1 quart of white-wine vinegar; add $\frac{1}{2}$ pint of strong essence of rose. Seal and let stand 2 or 3 weeks, shaking frequently; filter and preserve in a tightly stoppered glass vessel.

Or, if no spirits are used, mix the ingredients in a glass fruit jar or other tightly stoppered vessel, and let stand for several days, shaking frequently.

TOILET POWDERS

The following recipes are recommended:

The bases of most toilet powders are compounds of magnesia, including talc or talcum—which chemically is magnesium silicate, and which is mined in large quantities in various parts of the world—and French chalk, which is not chalk but ground soapstone; fuller's earth, a greenish clay found in many parts of England and on the continent of Europe; and starch, especially rice and wheat starch, which is sometimes adulterated with cornstarch, potato starch,

Dissolve in $\frac{1}{2}$ pint of pale rum 1 dram each of the essences of berga-

etc. These preparations usually contain pulverized perfumed woods, as orris root, sandalwood, and other perfumes. In addition, it is quite customary to use in face powder metallic bismuth, preparations of mercury, and other mineral drugs—all of which are distinctly harmful, and the use of which is therefore never advisable. No recipes of this sort are included in the present volume.

The following are standard preparations which contain no injurious ingredients:

For plain face powder without perfume, pure white starch can hardly be improved upon.

Or mix together equal quantities of rice flour, fuller's earth, and white starch, and perfume with any essential oil—rose, violet, or any other preferred.

Or, for violet powder, mix 3 ounces of white starch with 1 ounce of powdered orris root, rub up together in water, and perfume with the essential oils of lemon, bergamot, and cloves, using about double the amount of lemon as of the two others.

Or, for a rose face powder, mix 8 ounces of pulverized rose leaves with 4 ounces of pulverized sandalwood, and add 1 dram of the attar of roses.

Or to 3½ pounds of powdered rose or white starch, add ¼ dram of rose pink and 1 dram each of rose oil and santal oil.

ROUGE

Rouge Paste and Powder.—The base of rouge for the lips and cheeks is usually French chalk, almond oil, or other animal fat, or oil, or one of the gums, as gum tragacanth, colored with cochineal, carmine, vermilion, alkanet, or other red coloring matter, and perfumed to taste. To this may be added a mild astringent, as alum, acetic acid, and the like.

For carmine rouge, raise to a boil in an aluminum or copper vessel 1 quart of distilled water, to which add 1 ounce of the best pulverized cochineal. After 5 or 6 minutes stir in carefully 30 grains of powdered Roman alum. Continue boiling 3 to 5 minutes and set aside to cool. When

lukewarm, but before the mixture settles, pour off the clear liquor from the sediment through a piece of white silk or chiffon into a glass fruit jar. Let stand 3 or 4 days and again pour off through white silk into another vessel. Allow the resulting liquor to settle; pour off the clear liquor from the top, and dry the sediment carefully in a cool, shady place. The result is a very finely divided powder, making a rouge of the best quality.

Or finely powdered carmine can be used by taking a piece of fine unscented pomatum about the size of a pea, and placing on it a bit of carmine the size of a pin head. Mix the two together and apply with a bit of cotton.

Or the rouge ordinarily used for theatrical purposes may be prepared by mixing fine French chalk with any quantity of powdered carmine necessary to give the required color.

Or the so-called Turkish rouge may be prepared by putting 1 ounce of alkanet in a glass fruit jar and pouring over it 1 ounce of alcohol. Let stand for a week or 10 days, shaking frequently; strain and bottle for use.

Or vinegar rouge may be prepared by mixing together 1½ drams each of powdered cochineal and carmine lake and 3 drams of alcohol. Pour over these ¼ pint of alcohol and let stand 2 or 3 weeks; afterwards strain and bottle for use. Perfume with essential oils according to taste.

Liquid Rouge.—Rouge in liquid form is variously known as "bloom of youth," "bloom of roses," "almond bloom," "Turkish bloom," etc. These various preparations are based upon distilled water and alcohol, or other spirit, as vehicles, and are colored with Brazil wood, red sanders, cochineal, and various other red coloring matter. In some instances they contain an adhesive ingredient, as isinglass, and various specifics, as benzoin, alum, borax, and the like.

Put in a glass fruit jar 2 drams of dragon's blood, 2 ounces of red sanders, and 1½ ounces of gum benzoin; pour over these 2 ounces of 90 per cent. alcohol and 4 ounces of pure soft water. Seal the jar and let

stand a week or 10 days, shaking frequently; filter and bottle for use.

Or put in a glass fruit jar 4 ounces of finely powdered cochineal; add 4 fluid ounces of distilled water and the same amount of aqua ammonia; cover with a wet cloth and let simmer 3 or 4 hours in a double boiler. This preparation is ready for use as soon as it is cool.

Circassian Cream.—Put in a glass fruit jar 4 ounces of fresh suet, 6 ounces of olive oil, 1½ ounces of powdered gum benzoin, and ½ ounce of alkanet root. Place the jar in a double boiler and simmer with gentle heat for several hours. Let stand 24 hours more; heat, and strain through cheese cloth, and when cold perfume with ½ dram of essence of ambergris, ½ dram of oil of lavender, or any other essential oil preferred.

Chapped Lips.—Preparations recommended for chapped lips are usually based upon white wax, spermaceti, or beeswax, with the addition of almond oil and such specifics as benzoin, honey, unsalted butter, and the like, adding perfumes and coloring matter according to taste.

Melt together with gentle heat 2 ounces of white wax and 1 ounce of spermaceti; add 2 ounces of pure strained honey, and continue to heat and stir until fully incorporated. Add in a thin stream 4 ounces of oil of almonds; remove from the fire and continue stirring until the mixture is nearly cold; finally perfume with any essential oil according to taste.

Or use pure clarified honey. Perfume as desired.

Or mix equal quantities of white sugar candy, white wax, oil of almonds, and spermaceti, melting all together with gentle heat.

ESSENCES AND PERFUMES

Perfumes.—The subject of perfumery is perhaps not so important as it was formerly, because the use of strong perfumes appears to be going out of fashion. The natural fragrance of flowers, spices, and perfumed woods—the sources of the ingredients used in perfumery—is, however, so delightful that those sub-

stances are likely always to be employed to some extent in the toilet.

The various forms in which perfumes are placed upon the market are, according to the degree of dilution, the attar or essential oil—also called otto—the essence or extract, and the perfumed toilet water. Innumerable compounds are sold under various fanciful titles, as colognes, scents, spirits (French *esprit*), and the like. The substances from which these perfumes are obtained may also in some cases be purchased, as the dry leaves or flowers of plants, various kinds of wood or roots, ambergris (supposed to be a morbid secretion of the sperm whale), and the like.

Perfumes are also used in the form of sachets or dry powder, to be placed among garments or linen, either in sachet bags or scattered loosely in chests and drawers. They are likewise employed to perfume the atmosphere of a room by putting them in open jars, or burning them in the form of pastilles and incense.

Generally speaking, the most convenient form in which to obtain perfumes is the attar (otto), or essential oil. A few drops of these concentrated substances, usually about 5 or 6 drops to the pint or pound, will yield any desired odor. When the essence, the perfumed water, or the original substances themselves are prescribed in recipes, the essential oil can be substituted in most cases by a little careful experimenting. The process of extracting essences and essential oils, however, is not difficult, and can be carried on at home by any one who is interested enough to procure suitable apparatus. Several methods of preparing homemade extracts are given below which can be employed successfully by any one.

Volatile Oils.—These are found naturally in plants, and are usually obtained by distillation. They are distinguished by their pungent odor and also by the fact that they are not capable of uniting with alkalies to form soaps. They are used principally in perfumery, with the exception of turpentine, which is employed in mixing paints and varnishes. This oil is obtained from various conc-

bearing trees, and exudes from the bark mixed with rosin and other vegetable juices, from which it is extracted by distillation.

The volatile oils upon being exposed to air absorb oxygen and crystallize into substances having the appearance of rosin, balsam, or gum camphor. The perfumed oils, if not tightly corked, gradually lose their delicate scent. Most volatile oils are obtained by distillation in the presence of water or alcohol, but others are obtained by mechanical processes without heat. The essential oils in solution with water are known as essences, as essence of pennyroyal or of mint, and the like. These are often prepared by distillation with water, forming the distilled perfumed waters of commerce. The bath in which perfume-bearing substances are distilled should be slightly acidulated with sulphuric acid. Use a few drops only—just enough to give a sour taste to the tongue. All the essential oils are soluble in alcohol and ether.

To Test Essential Oils.—As many of the essential oils are expensive, they are frequently adulterated. Obtain a drop of the pure oil and determine the presence of substitutes by placing a drop of each on separate pieces of paper and comparing them carefully. The attar of roses is often adulterated with the oils of rhodium, sandalwood, camphor, spermaceti, etc. The pure article has a sweet, smooth taste. A bitter taste indicates the oil of rhodium or sandalwood; a pungent flavor, the oil of geranium or camphor; a greasy stain on paper, spermaceti.

Or mix a drop of the attar of roses with a drop of sulphuric acid. The pure attar will not be affected, but the adulterated article will become dark colored, and the characteristic odors of the different substances with which it may have been adulterated can easily be discerned.

Or, to test for adulteration with fixed oils, place a drop of the suspected oil on paper and evaporate it with gentle heat. The presence of a fixed oil will be detected by a permanent greasy stain.

Or distill off the volatile oil with gentle heat. The fixed oil will be left behind.

Or add three or four times its volume of 80 per cent alcohol. The fixed oil will not be dissolved.

Or, to test for alcohol, dilute the suspected oil with water. If the quantity of alcohol is large, the mixture will become roily or turbid.

To test for oil of turpentine—which is often used to adulterate the oils of orange, lemon, neroli, and the like—set a little of the oil on fire, blow it out, and the presence of turpentine may be detected by its characteristic odor.

Odor of Perfumes.—The odor of the volatile oils is probably caused by their gradual oxidation or chemical union with the oxygen of the air. This is the same process as that which takes place in the rusting of iron, and is similarly promoted by moisture. When treated chemically so as to be perfectly pure and free from oxygen and moisture, the most powerful perfumes are odorless. Exposure to moist air restores their odor. Perfume-bearing flowers are much more fragrant when moistened, as with dew. In dry climates roses and other fragrant blossoms are nearly scentless. Rose jars and other mixtures of dry perfume-bearing substances give off very much more perfume when slightly moistened.

Individual Perfumes.—Many persons prefer to have a perfume of their own different from those which are on the market or used by others among their acquaintances. This is not especially difficult, although the perfumes that are usually employed, such as heliotrope, violet, white rose, and the like, may, of course, be obtained by any one. An individual perfume may be secured by experimenting with two or more essential oils, mixing and blending a few drops at a time until a new and agreeable fragrance is obtained. This is, in fact, the way in which colognes and similar preparations are compounded for the market. One celebrated "German cologne" of the past generation is said to have contained no fewer than thirty different kinds of

ingredients, the result being a pungent perfume of a peculiarly agreeable odor. The proportion in which the various ingredients should be blended is entirely a matter of individual preference, to be determined by experiment.

sachet powders, it is only necessary to finely pulverize the solids in a mortar, add the essential oils drop by drop, and mix the whole thoroughly together. When not required for use, sachet powder should be kept in tightly sealed boxes, jars, or bottles,

PERFUMES — COLOGNE

	Eau de Cologne	Cologne Water	Superior Cologne Water	Cologne Water	Do	Cologne Water	Eau de Cologne	Cologne Water	Best Cologne Water	Cologne Water	Farina Cologne	Portugal Cologne	Eau de Bouquet
Oil Bergamot..	1 oz	1 dr.	1 dr.			½ oz.	30 d.	2 oz.	1 oz.	1 oz.	1 oz.		
Oil Cedrat ..	2dr.					8 d.		1 d.	2 dr.				
Oil Cinnamon.				8 d.		15 d.							½ oz.
Oil Cloves ...				8 d.				½ oz.					
Oil Jasmine ..						½ oz.	30 d.					2 oz.	
Oil Lemon ...	2dr.	1 dr.	2 dr.	1 dr.		¾ oz.	30 d.	2 dr.					
Oil Lavender.	40 d.						50 d.	2 dr.					
Oil Neroli ..								2 dr.					
Oil Orange ..		1 dr.							1 oz.	3 dr.		8 oz.	
Oil Roses ...		10 dr.				15 d.			6 dr.	½ oz.		2 dr.	
Oil Rosemary.	2 d.	1dr.	1½ dr.	2 dr.		¼ oz.			1 dr.			2 dr.	
Tinct. Benjamin	1 dr.												
Tinct. Benzoin					5 dr.		50 d.	3 oz.					
Ess. Bergamot	1½ dr.						50 d.	2 oz.					
Ess. Cedrat ..													
Ess. Ambergris					5 dr.								1dr.
Ess. Citron ..													
Ess. Cardamons							2 dr.						
Ess. Lemon ..	1½ dr.		2 dr.	4 dr.									
Ess. Orange Flower	1½ dr.			3 d.									
Ess. Musk ..		2 dr.	50 d.					½ oz.					1dr.
Ess. Neroli ..	2 oz.												8dr.
Ess. Jasmine..													8 oz
Ess. Rosemary				2½ dr.			50 d.						
Distilled Water										1 pt.			
Orange-flower Water								30 d.	32 oz.				
Rose Water..									2 pt.				
Scented Honey Water													
Alcohol (95%)	1½ pt.	5 oz	1 pt.	1 pt.	1 qt.	2 qt.	1 gal.	½ pt.	1 gal.	1 gal.	3 pt.	1 gal.	1pt. 3pt.
Calamus Aromaticus ...													4 oz

Sachet Powders.— Various solid perfume-bearing substances, to which may be added small quantities of the essential oils, are used in powdered form and sprinkled between layers of absorbent cotton or otherwise to perfume garments laid away in chests or drawers. To prepare the various

so that the volatile perfumes will not be lost by evaporation.

Incense — Pastilles.— Several perfume-bearing substances may be utilized in solid form by mixing them with combustibles, such as charcoal, niter, and various gums, and setting them on fire to perfume apartments.

The table on page 695 embraces a number of recipes for incense pastilles. In all cases first reduce the solids separately to powder in a mortar. This may be done by beating the ingredients together in an earthenware bowl, or by mixing them on a marble slab or plate of glass with an ordinary knife or a palette knife having a thin, broad blade. If gum tragacanth is used, it should be dissolved in water to the consistency of

paste with the charcoal. Dry this paste thoroughly, and pour over it the liquid perfumes. If other solid ingredients are added, they should be in powdered form. Mix the whole with gum tragacanth dissolved as above. Dry and use as above.

Rose Perfume.—One of the most universally popular odors is the perfume of the rose. Most persons can obtain rose petals in any quantity during the month of June, and their

PERFUMES — SACHET

Caraway							½ oz.											½ lb.
Cassia		1 oz.	1 oz.	1 oz.														
Cedar		1 oz.																
Cloves			1 oz.	1 oz.			½ oz.											
Coriander Seed			1 oz.	1 oz.	1 oz.													
Black Currant Leaves...																		1 lb.
Arom. Calamus							1 oz.											½ lb.
Gum Benzoin																		
Tonka Beans								½ lb.										
Dried Lemon Peel.....										1 lb.								
Lemon Geranium Leaves.										¼ oz.								
Lavender Flowers			8 oz.	1 oz.				½ lb.						½ oz.				
Rose Leaves			8 oz.	1 oz.	1 oz.	1 lb.							1 ½ oz.	1 lb.				1 lb.
Orris Root	1 lb.		1 oz.	1 oz.	1 oz.	1 lb.							2 oz.	2 lb.				
Mint								½ oz.										
Rhubarb Wood		1 oz.																
Santal Wood								½ lb.										½ lb.
Salt									1 oz.									
Thyme								½ oz.										
Vanilla Beans														½ dr.				
Musk	12 gr.					5 gr.	1 dr.							¼ gr.				1 dr.
Oil Bergamot										1 oz.}								
Oil Almonds											¼ dr.							¼ dr.
Oil Lemon												¼ dr.						
Oil Neroli								1 dr.						6 m.				
Oil Lemon Grass												1 dr.						
Oil Rhodium							¼ dr.											
Oil Rose								½ dr.						10 m.	½ dr.			¼ oz.
Oil Santal														20 m.				
Ess. Ambergris	1 dr.																	
Ess. Bergamot	½ dr.																	
Ess. Jasmine														2 dr.				
Ess. Lavender	1 dr.																	
Ess. Lemon	½ dr.																	

mucilage. The essential oils and other liquid perfumes are then to be added and thoroughly worked into the mass, the whole formed into small cones like chocolate drops, and thoroughly dried either in a very slow oven or by the heat of the sun. When required for use, one or more of these cones may be placed on any hot surface or set on fire at the tip and allowed to gradually smolder, when they will give off an agreeable perfume.

Or, where niter and charcoal are both employed, dissolve the niter in sufficient soft water to make a soft

fragrance may be extracted and stored for future enjoyment.

Attar of Rose.—This costly perfume is prepared principally in the Orient and imported to America, but the process of preparation is simplicity itself and can be tried by any one. A large quantity of petals of the rose are picked carefully so as to be free from all foreign substances. They are then placed in a large earthen pot or a wooden vessel, covered with pure soft or distilled water, and exposed to sunshine. The vessel should be taken indoors at night, kept covered, and placed preferably in a warm

spot. The attar or essential oil of the rose petals rises on the surface in the form of a scum. This may be carefully taken up by a small piece of absorbent cotton on the end of a stick. The oil may then be squeezed from the cotton into a very small vial with a glass or rubber stopper and preserved for use. The process should be continued until the scum

gentle heat until the oil has fully extracted both the odor and the color of the flowers. Or the essential oil of roses or of any flower which has an agreeable fragrance may be extracted as follows: procure a quantity of the petals of any flower or flowers desired, a roll of absorbent cotton in thin layers, a wide-mouthed glass bottle or earthen vessel, and a small

PERFUMES — PASTILLES — INCENSE

	Pastilles for Burning	Perfumed Fumigating Pastilles	Pressi's Pastilles	Pastilles of Orange Flower	Pastilles of Rose	Pastilles à la Vanilla	Pastilles for Perfuming Sick Room	Incense	Do	Do
Niter	1½ dr.	2 oz.	¾ oz.		2½ oz.	5 oz.				
Charcoal	6 oz.	1¼ lb.	¼ lb.	17 oz.		23 oz.	2 lb.			
Gum Galbanum				3¼ oz.		5 oz.				
Gum Frankincense							1 lb.	2½ oz.		
Gum Benzoin	4 dr.	2 oz.			3 oz.		1 lb.	12 oz.	1 oz.	2 oz.
Gum Tragacanth	q. s.	¾ oz.	q. s.	½ oz.	½ oz.			1½ oz.		
Gum Storax		1 oz.	11 parts	3 oz.		5 oz.		2½ oz.		
Oil Bitter Almond							2 oz.			
Oil Caraway			½ dr.							
Oil Cloves			½ dr.			5 oz.				
Oil Neroli				¼ oz.						
Oil Lavender			½ dr.							
Oil Rose			½ dr.							
Oil Santal			½ dr.							
Oil Olibanum	2 dr.	1½ oz.	12 parts	3 oz.		5 oz.		2 oz.	7 oz.	
Oil Styrax	2 dr.									
Oil Thyme			½ dr.							
Ess. Ambergris			6 oz.				2 oz.			
Benzoic Acid							6 oz.			
Clear Sirup							4 oz.			
Ess. Musk							4 oz.	15 gr.		
Ess. Rose					¼ oz.					
Alcohol						2½ oz.				
Orange-flower Water				4 oz.						
Rose Water				4 oz.	6 oz.					
Cascarilla Bark	8 dr.	q. s.	½ pt.					q. s.	1 oz.	1 oz.
Burnt Sugar		¾ oz.						1 part		
Orange Powder				4 oz.				½ oz.		
Powder of Rose					4 oz.					
Yellow Sanderswood	2 dr.									
Vanilla Bean						7 oz.				

no longer rises. The vessel in which the roses are steeped should be covered during the day with a fine screen; otherwise it is likely to become a breeding place for mosquitoes. Needless to say, it should be kept as free as possible from dust and dirt. Or put dried rose petals in an earthenware or glass vessel, cover with olive oil, and simmer with very

quantity of high-grade olive oil. Put a layer of petals in the empty bottle, sprinkle over them a small quantity of fine salt, and cover with a layer of absorbent cotton dipped in olive oil. So continue until the bottle is filled. Close it tightly with a glass stopper, a piece of bladder, parchment, or rubber cloth, and expose to the sun. In from ten to

twenty days squeeze out the oil, which will be found nearly equal to the commercial article.

Or arrange the flowers in the same manner in an earthen jar and simmer with gentle heat by means of a double boiler, changing the flowers occasionally until the odor is satisfactory. Rectified spirits may be added, and the whole squeezed and strained for use.

Rose Jar.—Many artistic vases with suitable lids can be purchased for this purpose, and these make very acceptable holiday gifts; or an earthenware or glass vessel, such as a fruit jar which can be tightly closed, may be employed.

Gather fresh roses on a clear day when the petals are dry. Place these petals in the rose jar in layers, covering each with a thin layer of common salt. Then add two or three handfuls each of lavender flowers, rosemary leaves, and sweet marjoram. Other flowers may be added if desired, or a jar may be filled entirely with rose petals. Add 4 ounces of pulverized bay salt and 1 ounce each of various spices, as cloves, cinnamon, grated nutmeg, and the like, also orris root, storax, or indeed any other perfumes that may be preferred. The jar is to be kept closely covered, except when perfume is desired. Then the lid may be removed and the contents slightly moistened.

Potpourri.—This is a mixture of dried flowers and spices not ground. To make it, take dried lavender flowers, 1 pound; dried rose leaves, 1 pound; crushed orris root, $\frac{1}{2}$ pound; crushed cloves, 2 ounces; crushed cinnamon, 2 ounces; crushed allspice, 2 ounces; table salt, 1 pound.

To Prepare Tinctures.—A tincture of flowers having strong perfume, as the tuberose, jasmine, violet, jonquil, and heliotrope, may be prepared by crowding the fresh blossoms into a fruit jar and covering them with alcohol. After they have stood for a few days, the mixture may be strained through a linen cloth, the flowers squeezed to extract as much of the essence as possible, and fresh flowers added.

Or glycerin may be scented for the

toilet and bath with any desired odor by the same method.

Or put half-inch layers of any flowers in an earthen pot or glass jar with layers of fine salt between. Screw the top on tightly and place the jar in a cellar or other dark, cool place. This process requires from one to two months. At the end of this time strain and squeeze the liquor through a cloth, put it into a glass bottle, and let it stand in the sun to clarify.

Or place dry rose or other petals in a large bottle or fruit jar, cover with alcohol or other rectified spirits, close tightly, and preserve for use. A few drops of this tincture sprinkled about a room will give it a delicious perfume.

Geranium Perfume.—A perfume which is very agreeable to many may be made by either of the above methods from the leaves of any of the sweet-smelling geraniums. The tincture, obtained by packing the leaves in a fruit jar, filling it with alcohol and allowing it to stand for a few weeks, is perhaps the easiest to prepare. The leaves may be renewed, if desired, to strengthen the perfume.

Smelling Salts.—The base of the best quality of smelling salts is the true neutral carbonate of ammonia. This is a volatile salt which keeps its pungency as long as it lasts. The portion exposed to the air as it volatilizes separates into carbonic-acid gas and gaseous ammonia. Care should be taken in ordering to procure the true carbonate of ammonia and not the sesquicarbonate, which does not possess an equally strong, agreeable, or lasting pungency.

Smelling salts may be prepared by putting the carbonate of ammonia in a suitable glass bottle with a stopper of ground glass, and adding any desired perfume, as 8 parts of carbonate of ammonia to 1 part of oil of lavender, or a suitable quantity of other essential oils, as bergamot, cloves, cassia, verbena, and the like.

Or put equal quantities of slaked lime and carbonate of ammonia in a glass-stoppered bottle, cover with aqua ammonia, and add 12 to 20 drops of any desired essential oil or oils.

Or put in a glass-stoppered bottle absorbent cotton or a small sponge cut up into fine pieces. Fill with common liquid ammonia, and add 5 or 6 drops each of various essential oils according to taste.

Perfumed Waters.—A substitute for rose water and other distilled waters may be quickly prepared by dropping the essential oil or attar of rose or other substances into distilled boiling water. The water should be taken off the fire at a boil, the oil dropped in, and stirred vigorously while cooling.

Rose Water.—Dissolve 1 dram of attar of rose, or a proportionate quantity of other essential oils, in 1 pint of rectified spirits; while hot place in a 2-gallon jug and add 1½ gallons of pure distilled water, heated, but not quite to the boiling point—say 190°. Cork the jug and shake, cautiously at first but thoroughly afterwards, until cold. This form of rose water will be found equal to the commercial article.

Or drop 12 drops of attar of rose on a half ounce of cube sugar. Add 2 drams of carbonate of magnesia. Put in a fruit jar and pour in gradually 1 quart of water, stirring briskly. Add 2 ounces of rectified spirits. Place a funnel of filtering paper in another fruit jar, and pour through the funnel to filter. The effect of the magnesia is to break up the oil globules and assist in forming an emulsion with water. The magnesia is removed by filtering. Other perfumed waters may be prepared in a similar manner.

Violet Water.—Put 1 pint of alcohol or proof spirits in a quart fruit jar. Add 1 pound of orris root, cover, and shake. Let stand on the dregs for a week or 10 days. Filter through filter paper to remove the orris root.

Or mix deodorized alcohol, 15 ounces; rose water, 2 ounces; extract of cassia, 1 ounce; and extract of violet, 2 ounces. Mix, shake, and filter.

Or mix 1 pint of alcohol and 1 ounce each of neroli and essence of violets.

Lavender Water.—A favorite article for the toilet is the oil of lavender

diluted with rectified alcohol, to which various other perfumes may be added according to taste. To prepare lavender water, it is only necessary to first mix the oil of lavender and other essential oils (if any) with a little of the alcohol; then add the remaining alcohol in a thin stream, stirring constantly. Finally stir in the other ingredients. The whole should be placed in a glass fruit jar with rubber rings, or other closely stoppered vessel, and allowed to stand for several months before using. It should be shaken frequently. The longer it can be allowed to stand before being opened the better the quality will be. The English oil of lavender is the best.

Other perfumed toilet waters may be prepared by substituting any of the essential oils, according to taste, in the following tables.

Perfumed Toilet Waters.—The number of possible combinations of perfumes diluted with distilled or soft water, which form the perfumed toilet waters of commerce, is of course, unlimited. The following examples illustrate the method of combining these, and may be recommended to be as desirable as any:

Put in a pint glass bottle or fruit jar ½ ounce of oil of rosemary and 1 dram of essence of ambergris; add 1 pint of 95 per cent alcohol. Shake well, remove the cork, and let stand 24 hours. Then cork tightly and let stand a month or 6 weeks, shaking frequently, after which put in a tightly stoppered bottle until ready for use. This is the well-known "Hungary water."

Or put in a 2-quart fruit jar 1 ounce of oil of bergamot, ½ ounce of tincture of benzoin, 1 dram of oil of cinnamon, and cover with 1 quart of 95 per cent alcohol. Let stand a month or weeks, shake frequently, filter, and put in a tightly stoppered glass bottle. This is a standard recipe for "Florida water."

Or, for a simple "Florida water," put in a corked fruit jar ¼ ounce of oil of bergamot, ¼ ounce of tincture of benzoin, and ¼ pint of 95 per cent alcohol. Dilute with pure soft or distilled water to the extent desired.

CHAPTER XLVI

CARE OF THE HAIR

DANDRUFF AND SHAMPOOING — HAIR WASHES — HAIR TONICS — HAIR DYES — OTHER HAIR TOPICS

Hairdressing. — The subject of hairdressing, while of interest to both sexes, is especially important to women, both because the mass and length of their hair render it difficult to handle and keep clean, and also because any peculiarities it may have are very conspicuous. This subject is not only of interest to every woman for herself, but it may also be mentioned among the many methods of earning pin money in small communities. In neighborhoods where there is no professional hairdresser any woman with natural deftness and taste can earn a good many dollars by caring for ladies' and children's hair, doing up ladies' hair in proper style for parties, and also by teaching inexperienced persons, for a small fee, how to do up their own hair in the latest style of coiffure. The information contained in the following paragraphs can thus be put to practical use and turned into dollars and cents. The attention of neighbors can be called to a woman's willingness to serve them in this manner by having a few business cards printed and giving them to one's friends to distribute among their acquaintances, or by means of a reading notice or business card in a local paper, which may be paid for by services to the wife or family of the editor.

Nature of the Hair.—The hair, like the nails, is formed of the same horny substance as that which appears on the outer surface of the skin when it becomes callous. Each hair, on the other hand, has a well-developed root which runs deep into

the skin. The pigments which give the hair its color are present in light hair as well as dark, except that gray hairs may not contain them. Sometimes gray hairs are produced by the splitting of the hair in such a way as to admit the air. The daily growth of the hair is about one twentieth of an inch. It normally continues to grow for several years, and reaches from 18 inches to 1 yard in length. The hair is subject to various diseases, and may be affected by the constitutional results of wasting and infectious ailments, such as typhoid fever, and also by severe emotions, such as fright, grief, and the like. Many preparations are advertised which claim that they will infallibly promote the growth of the hair. It cannot be too strongly emphasized that all such claims are humbugs.

Care of the Hair.—The proper care of the hair under normal conditions is very simple. The objects to be kept in mind are to preserve its natural luster and texture by means of absolute cleanliness, and to massage the scalp sufficiently to remove any scurf or dandruff that may adhere to it, and thereby promote the active circulation of the blood. All this must be done without injury to the scalp or the hair by pulling, scratching, or tearing. Cutting the hair frequently has a tendency, especially in youth, to thicken the individual hairs and promote their growth. Neither this nor any other known process, however, tends to increase the actual number of hairs.

All claims to the contrary are the pretensions of charlatans.

Professional hairdressers do not advocate shampooing the hair oftener than once a month. A thorough brushing once or twice a week is regarded by them as sufficient for cleanliness and as much more beneficial to the hair and scalp.

Much contradictory advice has been given on the subject of brushing the hair, some persons saying that stiff brushes should be used and the scalp and hair brushed by means of them with a good deal of vigor; others recommending soft brushes and a very moderate amount of friction. These differences are probably due to different views of the objects to be obtained by brushing. One object is to promote the health of the scalp and hence to give strength and vigor to the hair. For this purpose brushes with hard, stiff bristles may be used with considerable vigor, provided the skin is not injured. The other object is to smooth the hair and free it from dust. For this purpose brushes may be soft and used with a very moderate pressure.

Care should be taken, on the one hand, not to scratch the scalp, tear the roots of the hair, or cause it to split; and on the other, not to neglect the stimulating effects of massaging the scalp and removing dandruff. In other words, a vigorous brushing should be directed to the head or scalp, the gentler stroke being employed in brushing the hair itself.

The general opinion is that it is feasible to brush the hair free from dust each night before retiring. Applications of tonics and restoratives should also be made at this time, as they have the best opportunity of doing their work during sleep and especially while the blood is circulating freely as the result of brushing. The care of the hair must be governed by common sense, and general rules must be adapted to individual conditions. Some persons find it necessary to wash the hair as often as twice a month, and with others once a month is sufficient. When the hair is oily it should not be brushed as freely or frequently as otherwise.

When it is dry and harsh the application of lanolin or other pomades may be necessary.

An analogy may be found in the grooming of horses. Every good groom knows by experience that plenty of combing and brushing not only produces a fine coat but promotes the health and vitality of the animal. Hence brushes with moderately stiff bristles should be chosen.

For men the so-called military or broad double brushes, one for each hand, are to be preferred.

To Dry-clean the Hair.—To thoroughly cleanse the hair it should be brushed successively from partings made in all directions upon the scalp, the utmost care being taken that foreign matter accumulated on the brush is removed and not returned by the next stroke to the hair.

Professional hairdressers when giving the hair a dry cleaning run a comb through the brush each time the latter is drawn through the hair, and afterwards wipe the comb clean on a towel. The object of this process is to remove dirt and dandruff and bring about the additional softness resulting from perfect cleanliness. If this is not done, the natural oil of the hair mixing with foreign substances merely makes the hair sticky.

Care of Hairbrushes.—Brushes should be cleaned very often and thoroughly, as a surprising amount of dust and dirt gathers in the hair. This quickly accumulates in the brushes and fills them. Hence the brush should be cleaned immediately after using.

Substances recommended for this purpose are gasoline, ammonia, borax, and sal soda, of which the last is least desirable. It is also a good plan to disinfect the brush by putting a few drops of carbolic acid in the water. Neither hot water nor soap should be used, and the bristles should be allowed to dry thoroughly before using them. The effect of hot water and soap is to soften the bristles and also the glue with which they are commonly fastened into the brush, and when soft, the bristles are

likely to split and break off or fall out.

To Clean a Hairbrush.—First comb out the loose hair with a coarse comb. Turn the brush downward and strike the bristles on a smooth, solid surface to loosen the dust and dandruff. Then rub the bristles over a Turkish or other coarse towel to wipe off as much of the loosened dust as possible.

To Wash a Brush.—Take two bowls of cold water in which to wash and to rinse the brush respectively. In one put about 1 tablespoonful of ammonia to 1 pint of water, and introduce the bristles in this without immersing the back of the brush. Rub the bristles back and forth with the hand in the water until they are clean.

Or, to assist in cleaning them, remove the brush from the water and brush the dust and dirt out of it with a clean, stiff whisk broom which will work down into the bristles. Afterwards rinse in clear water in the same way.

Or add about 2 or 3 teaspoonfuls of alum to 1 pint of water, and rinse the bristles in this to toughen them.

Wipe the bristles back and forth on a clean, dry towel, and hang up the brush by the handle to dry, or better still, lay it down in the draught with the bristles down. Never lay a wet brush down on the back, as this permits the water to run down the bristles and soak the glue with which they are fastened to the back. Do not expose a wet brush to direct sunshine or other drying heat, as too rapid drying has a tendency to warp or crack the back of the brush.

To Clean Combs.—A wire brush or whisk broom is the best means to clean gutta-percha combs, and is preferable to soaking them in water.

Or they may be washed in either of the solutions recommended above for washing brushes.

DANDRUFF AND SHAMPOOING

Dandruff.—Dandruff is a very common disease. It is caused by the formation of a scurf on the scalp

which becomes detached in fine, dry scales. Unless these scales are removed from the hair by frequent brushing they give it a dry and lusterless appearance. They also tend to accumulate on clothing and to give the impression of uncleanness. Advertised preparations for the cure of dandruff are not only usually of no avail, contrary to the claims which are so persistently advertised in their favor, but are often positively injurious.

Among the causes of dandruff may be mentioned weakness of the scalp from infectious diseases or otherwise, pressure of heavy and close hats and caps or of the hair matted upon the scalp, excessive use of hair oils and dyes, and other causes. These conditions should be avoided as much as possible, and the scalp should be kept perfectly clean, with due attention to instructions already given for its care. Hygienic measures for the improvement of the general health are also very important. Substances which are especially recommended for dandruff are yolks of eggs with chloroform, borax with or without camphor, carbolic acid, soda, and chlorate of potash.

Add 10 drops of chloroform to the yolk of an egg, and beat with an egg beater to a stiff consistency. Rub the size of an English walnut of this mixture into the scalp with the tips of the fingers, taking care to rub it thoroughly into the roots of the hair. Afterwards wash the scalp with castile or lanolin soap, and dry thoroughly with a soft towel. Some physicians claim that this is the only remedy for dandruff that is at once harmless and efficacious.

Or dissolve 1 ounce of flowers of sulphur in 1 quart of water. Shake frequently while dissolving. Allow the solution to stand until it settles, and saturate the hair with the clear liquor night and morning.

Or mix 2 ounces of glycerin with $\frac{1}{2}$ dram of carbolic acid and 1 dram of oil of bergamot or other perfume. Rub this mixture into the roots of the hair with the finger tips and afterwards use bay rum. This tends to keep the hair and scalp in good con-

dition and to prevent the formation of dandruff.

Or dissolve 1 thimbleful of powdered borax in 1 teacupful of water. Rub this mixture into the scalp with the fingers, and follow with a brisk brushing. Where the dandruff is plentiful, use this mixture daily for a week. Afterwards use twice a week until a cure is effected.

To Shampoo the Hair.—Shampooing is a word which means cleansing the head and hair. The base of the best shampoo mixtures is undoubtedly yolk of egg. Castile soap, however, is highly recommended. Borax, ammonia, sal soda, and salts of tartar are added on account of their cleansing properties; alcohol or bay rum to cut the oily substances and as preservatives; distilled water and rose water for convenience of application.

Perhaps the best of all shampoos is the yolk of an egg beaten up with a pint of soft warm water. Apply at once, and rinse off with warm water and castile or other hard white soap.

Or add 6 drops of chloroform to the above.

Or salts of tartar may be used for this purpose and is commonly employed by barbers. Dissolve $\frac{1}{2}$ ounce of salts of tartar in 1 pint of soft water; apply freely and rub to a lather. Wash with soft warm water and castile soap.

Or dissolve 1 ounce of salts of tartar in $1\frac{1}{2}$ pints of soft water. Add 1 ounce of castile soap in shavings and 4 ounces of bay rum. The salts of tartar will remove dandruff, and the soap will cleanse the hair and scalp.

After using a shampoo mixture, a little vaseline, oil, or pomade should be rubbed into the hair to take the place of the natural oil which is washed out in the shampooing.

Or pea flour or almond meal is recommended for cleansing the hair and scalp. The hair should first be washed with cold water, and a small handful of pea flour or almond meal, as preferred, rubbed into it for five or ten minutes. Fresh water should be added from time to time until a perfect lather forms. The whole

head should then be rinsed clean, dried with a soft towel, and brushed thoroughly. This process thoroughly cleanses the hair and tends to give it a soft, silky texture. It is also said to be invigorating to the scalp.

To Compound Shampoos.—When yolk of egg is employed it should be beaten stiff with an egg beater, other dry materials added, and the whole diluted by adding distilled water slowly, and stirring briskly with an egg beater or otherwise to form an emulsion or thin paste. For the ideal egg shampoo, however, see above under "Dandruff."

For other remedies, bring distilled water to a boil, take it off the stove, dissolve in it such substances as castile soap, sal soda, borax, etc., add bay rum and spirits if desired, strain through linen, and allow to cool before perfumes are added.

To Apply Shampoo Mixtures.—Apply about a tablespoonful of a good shampoo mixture, rubbing it into the scalp with the tips of the fingers and working it in thoroughly. Massage with the hands until a fine lather is produced. Afterwards rinse with clear soft water, first hot then cold, dry the hair with a coarse towel, and apply a little oil or pomatum, if desired, to take the place of the natural oil which has been removed from the hair by this process.

Dry-hair Shampoo.—Mix 4 ounces of powdered orris root with 1 ounce of talcum powder, and sprinkle freely through the hair. This absorbs the superfluous oil and gives the hair a very thick and fluffy appearance. It is especially useful to persons whose hair is heavy and oily. It is also cooling and cleansing to the scalp.

HAIR WASHES

The solid and semisolid bases commonly found in toilet preparations are naturally to a great degree absent from those given here. The base of these washes is usually soft water, rose water, eau de cologne, or some form of spirits in which the remedial agencies and perfumes are held in solution. Preparations containing alcohol and other spirits should be

used with caution, as by evaporation they tend to dry the scalp and also to deprive the hair of its natural oil, which gives normally a perfect luster.

Such substances as castile soap, ammonia, sal soda, salts of tartar, borax, and the like are often added for their cleansing properties. The principal remedial agents recommended are such substances as cantharides, arnica, camphor, sulphur, iron sulphate, and the like, and various vegetable infusions. These are employed

a handful of rosemary leaves, and add $\frac{1}{2}$ tablespoonful of carbonate of ammonia. Cork tightly and let stand over night, shake well, and strain through cheese cloth. Preserve in a tightly stoppered bottle.

Or mix 2 ounces of sal soda and 1 ounce of cream of tartar. Dilute with soft water to any desired consistency.

Or dissolve 1 tablespoonful of aqua ammonia and 1 teaspoonful of borax in 1 quart of soft water. Wash the

HAIR PREPARATIONS, WASHES, ETC.

	Tartar Wash	Myrrh	Colonial	Athenian	Rondeletia	Rosemary	Ammonia	Barber's Cheap	Spanish	Lavender	Rosemary	Camphor	Pearlash
Borax								2 oz				1 oz	
Castile Soap					$\frac{1}{2}$ oz.				1 dr.	$\frac{1}{2}$ oz.		$\frac{1}{2}$ oz.	
Camphor													2 dr.
Cream of Tartar	1 oz.												
Pearlash				1 oz									
Salts of Tartar	15 dr.												
Glycerin	$\frac{1}{2}$ oz.	2 oz.											
Ammonia						2 oz	2 dr.	2 oz					
Tinct. Cantharides ..		$\frac{1}{2}$ oz.	1 oz.										
Alcohol				$\frac{1}{2}$ pt.	$\frac{1}{2}$ pt.								$\frac{1}{2}$ pt.
Sherry Wine								$\frac{1}{2}$ pt.					
Lavender Oil			$\frac{1}{2}$ dr.							1 oz			
Rosemary Oil			3 dr.								2 oz.		
Eau de Cologne		1 oz.	1 oz.		1 qt.								
Tinct. Myrrh		1 oz.											
Ext. Rondeletia					$\frac{1}{2}$ pt.								
Water (Soft)	1 pt.	24 oz.		1 qt.		2 qt.	$\frac{1}{2}$ pt.	1 qt.	4 pt.	2 qt.	2 qt.	1 qt.	1 gal.
Box Leaves									6 oz.				
Hay Saffron					$\frac{1}{2}$ dr.								
Hazel Bark											2 oz.		
Maidenhair											2 oz.		
Myrtle Berries											2 oz.		
Rosemary Leaves ..						6 oz			2 oz.	1 lb			
Southernwood									2 oz.	2 oz.			

for certain specific properties beneficial to the scalp. As in other similar toilet preparations, rose, elderflower, orange-flower, rosemary, and other waters may be used, according to taste, and the same may be said of the various perfumes.

Nothing, perhaps, is better to cleanse the hair than diluted ammonia water—1 part of aqua ammonia to 10 parts of water. The hair and scalp should afterwards be well rinsed with clear warm water.

Or pour 1 pint of boiling water on

hair thoroughly and rub dry with a towel.

Or dissolve 20 grains of salts of tartar in 1 pint of soft water, and add $1\frac{1}{2}$ ounces of glycerin.

Care, however, should be taken not to use these preparations too frequently. Once or twice a month is often enough to wash the hair in this manner unless it is unusually oily, and it should be borne in mind that the use of hair washes, by depriving the hair of its natural oil, has a tendency to make it harsh and dry,

and hence tends to split it. After the use of washes of this sort a little vaseline, hair oil, or pomatum may be rubbed into the hair to replace the natural oil.

Compounding Hair Washes.—

When the solid substances, as rosemary or bay leaves, saffron wood, southernwood, and the like are recommended, they are prepared by boiling in the water or other liquid for fifteen or twenty minutes to make a strong infusion. Next strain, add such solids as castile soap (in shavings), borax, sal soda, and the like while the liquor is warm enough to dissolve them, and reserve the perfumes until it becomes cool.

HAIR TONICS

Loosening and Falling Out of the Hair.—This often takes place as the result of infectious diseases, on account of the weakening of the scalp. Contrary to common belief, it is probably never due to results of dissipation and excesses. Hygenic measures to improve the general health come first in importance. The use of tar soap and the yolk of egg is beneficial. To plunge the head into cold water night and morning, and afterwards to dry the hair, brushing the scalp briskly to a warm glow, is beneficial for men so affected. The recipes for various tonics and lotions will be given containing all the known specific remedial agents, and persons threatened with baldness are earnestly advised to compound their own remedies and not purchase advertised nostrums.

Dry and Harsh Hair.—This condition of the hair may be improved by shampooing the scalp with yolk of egg, as recommended for dandruff, or the scalp may be washed with a weak solution of green tea applied cold, or with an emulsion of castile soap containing a small quantity of tannin. Alcohol in any form is highly objectionable, as it tends by rapid evaporation to increase the dryness of the scalp. Shampooing the scalp occasionally with a good shampoo mixture is also useful. This condition may occur from too frequent wash-

ing of the scalp with soap or other substances that deprive it of its natural oils.

Baldness.—Absolute baldness is a condition in which the follicles or roots of the hair have lost their vitality. It is absolutely incurable. Hence preventive measures should be taken as soon as there is any indication of a tendency to baldness, as shown by the falling out or loosening of the hair. The basis of most hair invigorators and restorers is some form of cantharides or quinine. A number of simple household remedies have been recommended which are harmless and may be tried by any one, among these being sage tea, Jamaica rum, lemon juice, vinegar, salt water, lobelia, onion juice, boxwood, and ammonia.

Instructions for the use of these homemade remedies are as follows:

Mix 1 pint of strong sage tea, 1 pint of bay rum, and 1 or 2 ounces, more or less, of glycerin, depending upon the amount of natural oil in the hair; or substitute neat's-foot oil for glycerin if the latter does not suit the skin. Shake the mixture well and apply with the finger tips to the scalp, rubbing thoroughly into the roots of the hair every night. This tends to prevent the hair from turning gray.

Or pour boiling water on rock salt or sea salt, using 2 heaping tablespoonfuls to 1 quart of water, and allow it to cool before using. Use as a wash daily.

Or steep in a covered saucepan for 15 or 20 minutes 4 large handfuls of the leaves of the common box, such as is used for garden borders. Let the decoction stand over night. Strain through a linen cloth and add $\frac{1}{2}$ ounce of cologne or lavender water. Use as a wash daily.

Hair Tonics.—The principal remedial agents in proprietary articles usually known as invigorators or restoratives for the hair are the various preparations of cantharides (usually the vinegar or tincture), quinine (either in the form of cinchona bark or quinine sulphate), carbonate of ammonia, tincture of ar-

nica, an infusion of the tendrils of the grapevine, and various astringent substances. These preparations may be based on solid unguents, as lard, whitewax, spermaceti, or beef marrow; or on liquid unguents, as sweet, olive, coconut, or other oil, especially castor oil, which is thought to be a specific for promoting the

wine are thought to have tonic properties. And various cleansing agents, as borax and ammonia, are frequently added. All of these preparations may be perfumed with the various essential oils according to taste. They require only mixing. Hence it is sufficient to give the formulas in the following table. The ingredients

HAIR TONICS, INVIGORATORS, AND RESTORATIVES

	Cantharides Tonic	Wilson's Lotion	Arnica Tonic	Owen's Invigorator	Balsam Tolu	Chili Tonic	West Indian Invigorator	Kilner's Tonic	Spanish Wash	Cheap Tonic	Lavender Tonic	Bay Rum	Capsicum Tonic	Jamaica Tonic	Chinese Tonic
Lard					2 oz.										
White Wax					3 oz.										
Castor Oil				4 oz.		3 oz.	$\frac{1}{2}$ oz.	$\frac{1}{2}$ oz.			1 qt.	1 oz.	1 oz.	1 oz.	3 oz.
Glycerin	1 oz.														
Sweet Oil										1 pt.				1 pt.	
Aromatic Sp. Am.			1 dr.												
Aqa Am.						4 dr.									
Tinc. of Arnica			$\frac{1}{2}$ oz.												
Tinc. of Cantharides	2 dr.	1 oz.				2 dr.	$\frac{1}{2}$ oz.	1 oz.			$\frac{1}{2}$ oz.	1 oz.	2 dr.	1 oz.	$\frac{1}{2}$ oz.
Ving. of Cantharides									1 oz.						
Capsicum													1 dr.		
Carb. Am.							$\frac{1}{2}$ oz.			1 oz.		$\frac{1}{2}$ oz.			
Cinchona Bark								$\frac{1}{2}$ dr.					3 oz.		
Black Tea															2 oz.
Tannic Acid															
Alcohol						1 $\frac{1}{2}$ pt.	$\frac{1}{2}$ pt.	7 $\frac{1}{2}$ oz.			1 qt.	1 pt.	$\frac{1}{2}$ dr.	1 pt.	
Bay Rum				8 oz.			1 pt.					2 pt.	1 oz.	1 qt.	1 qt.
Sherry Wine			$\frac{1}{2}$ pt.												
Water	3 oz.		$\frac{1}{2}$ pt.						1 oz.						1 gal.
Balsam of Tolu					2 dr.										
Oil of Bergamont					30 d.	3 oz.					$\frac{1}{2}$ oz.				
Eau de Cologne									1 oz.				9 oz.		
Oil of Lavender		$\frac{1}{2}$ dr.		30 m.		10 m.					$\frac{1}{2}$ oz.				
Oil of Cloves						15 dr.									
Tinc. of Myrrh								$\frac{1}{2}$ oz.							
Oil of Rose				10 m.											
Oil of Rosemary		$\frac{1}{2}$ dr.													
Thyme (white)								$\frac{1}{4}$ oz.							

growth of the hair; and diluted with various vehicles, as alcohol, eau de cologne, rose water, distilled water, and the like. Jamaica rum, with or without the oil of bay, and sherry

should be shaken well before using and applied daily, being well rubbed into the roots of the hair until it stops falling out, or is otherwise in a satisfactory condition.

The following is an especially recommended recipe: put in a glass bottle 8 ounces of 95 per cent alcohol; add $\frac{1}{2}$ ounce of glycerin, 8 grains of sulphate of quinine, $1\frac{1}{2}$ grains of tincture cantharides, $2\frac{1}{2}$ drams of tincture rhotany, and $\frac{1}{2}$ ounce of essence of lavender. Mix and shake well before using.

Compounding Hair Tonics.—In compounding the various hair tonics in the preceding table the solids, as black tea, bay leaves, and the like, must be boiled fifteen or twenty minutes to produce an infusion, and then strained through a linen cloth. Cinchona bark and jaborandi should be first reduced in a mortar to a fine powder before boiling. Solid unguents must be melted with gentle heat, oils cut in alcohol or other spirits, and remedial agents added while the mixture is still hot enough to dissolve them readily. The whole should then be removed from the fire, thoroughly mixed by beating with an egg beater or otherwise, and strained through a linen cloth to remove the dregs. The essential oils and other volatile perfumes, if any, should be reserved until the liquid is nearly cold, to prevent loss by evaporation.

HAIR DYES

Dyeing as a means of changing the normal color of the hair is now very little resorted to, except by a small number of thoughtless girls and women who are misled by ignorant or interested persons. This practice is regarded by all intelligent persons as an unmistakable mark of vulgarity. Even the young men themselves, who are supposed, if any are, to be deceived and attracted by this process, have coined the expression "chemical blonde" and "peroxide blonde" to define a woman who has been deluded into following this silly fad, and boast themselves able to recognize such an individual at sight.

There is more justification for the use of hair dyes in case of premature grayness and especially in those peculiar cases where irregular patches of gray hair make their appearance. The causes of these conditions are

not fully understood. It is well known that the hair may turn gray suddenly as a consequence of extreme emotion, fright, pain, and the like. Patches of gray hair are sometimes attributed to fungous growths at the roots. Even in these cases, however, it is usually better to avoid taking a plunge into the unknown. The difficulties connected with dyeing the hair are many, and the injurious consequences are inevitable. Such a substance as a harmless hair dye is not known, all claims to the contrary notwithstanding. Neither is it possible to deceive any one. The natural color of the hair is subtly blended by nature with the tints and shades of the complexion, and any change in the color of the hair will produce an unnatural disparity which the practiced eye readily detects. Men might perhaps be deceived, but women never. And the man or woman who adopts the use of hair dyes speedily becomes the subject of more or less invidious gossip and ridicule. The practice is usually begun with the idea that a single application will be sufficient. This is not the case. The hair grows at the rate of about one twentieth of an inch each day; hence in a few days a new growth appears and a fresh application of the dye becomes necessary. Meantime the dye has injured the hair and in many cases the scalp, brain, and nervous system. All preparations of lead, silver, and other mineral substances are distinctly and often fatally injurious. We have excluded from this book all preparations of this character, but in deference to the wishes of those who have a legitimate reason for wishing to darken the color of the hair, we give a number of recipes which are as efficacious as any that can be recommended with safety.

Hair Dyes.—A careful examination of more than 100 counted recipes for hair dyes recommended in otherwise reputable books of household recipes discloses none which do not contain injurious mineral substances, except those we give below.

Recent chemical analysis of widely advertised hair dyes and washes for

bleaching, darkening, or otherwise changing the color of the hair discloses the presence of these mineral agents in practically every instance, notwithstanding the fact that in all cases the proprietors announce that the preparations are "harmless." Among the injurious substances recommended are the following:

Nitric, muriatic, and sulphuric acids; bismuth; lead, as litharge and the acetate or sugar of lead, etc.; antimony, silver (usually the nitrate), potassium, baryta, iron, tin, copper, etc. These metals are recommended in the form of various salts, as sulphates, acetates, chlorides, and the like. They are each and all vicious in principle and injurious in practice, and those who knowingly or unknowingly recommend them should be regarded with suspicion.

To Prevent Gray Hair.—A preventive against grayness of the hair has already been mentioned, i. e., the yolk of egg. Preparations containing neat's-foot oil are also beneficial for darkening the hair. The action of hair dyes in pomades is necessarily slow, and they must be used daily or frequently until the proper results have been secured. Compounds containing vegetable ingredients are better than those containing mineral ones. Among materials which are relatively harmless are stains from walnut shells and green walnuts, which gradually dye light hair to dark-brown shades. These have to be used constantly, as the color is not durable. These stains cannot be used in the form of pomades. Henna and indigo powders produce various shades from yellow to dark brown, and other compounds and substances are mentioned below. "Chemical blondes" wash the hair with greatly diluted hydrogen peroxide. When dyes are applied to the hair it should first be thoroughly cleansed of its natural oils and other foreign substances. This may be done by washing the hair with a mixture containing one fourth part of chloroform and three fourths of alcohol. Gloves should be worn, and the dye worked into the hair with a comb and a clean toothbrush.

Or mix 1 part of bay rum, 3 parts

of neat's-foot oil, and 1 part of French brandy by measure. Use this as a hair wash daily. Shake well before applying.

Or into 1 gallon of new milk put 2 quarts of the green tendrils of the grapevine. Add 2 pounds of honey and a handful of rosemary. Simmer slowly until the bulk is reduced about one half. Strain through a linen cloth and apply to the hair frequently.

An excess of lime in the system is said to have a tendency to make the hair brittle and cause it to split and crack. This, by admitting air to the hair, is the most common cause of grayness. Hence hard water for drinking purposes should be avoided, or softened by means elsewhere recommended.

Walnut Hair Dye.—Press the juice from the bark or shells of green walnuts. Add a small quantity of rectified alcohol and a little allspice or a few cloves. Let the mixture stand for a week or ten days and shake occasionally. Filter through a linen cloth and add a small amount of common salt as a preservative. Keep in a cool, dark place.

Yellow Hair Dye.—Boil 1 or 2 ounces of pure annatto in 1 pint of soft or distilled water, adding a pinch of baking soda. This gives the hair a golden yellow, which, however, varies according to its strength and the original color of the hair. Washing the hair in a solution of alum water deepens the color. The application of a solution of lemon juice or vinegar after the use of this dye reddens the hair or gives it an orange color.

Black or Brown Hair Dye.—Boil 2 ounces of black tea in 1 gallon of water. Strain through a linen cloth. Add 2 or 3 ounces of glycerin, $\frac{1}{2}$ ounce of tincture of cantharides, and 1 quart of bay rum. Let the mixture stand 48 hours, shaking occasionally, and perfume with any essential oil preferred.

Black Hair Dye.—Mix juice of green walnuts as above described with neat's-foot oil, using about 1 part of the oil to 4 parts of walnut juice according to the amount of natural oil present in the hair.

Red Hair Dye.— Make a strong decoction of safflowers or of alkanet by boiling either in water to which a small amount of baking soda has been added. This gives the hair a bright-red or reddish-yellow color, according to its strength. When the hair is dry after this application, wash with a solution of lemon juice or vinegar mixed with an equal quantity of water.

Or, to darken red hair, mix 1 dram each of oil of nutmeg and rosemary, 1 ounce of castor oil, 2 drams of tincture of cantharides, and 8 ounces of French brandy. Work a teaspoonful or more of this into the hair each day with a moderately stiff brush, brushing 12 to 20 minutes.

OTHER HAIR TOPICS

Superfluous Hair.— There is no known method which is entirely satisfactory for removing superfluous hairs. Among the various methods recommended are shaving, plucking out the hairs with tweezers, the use of the electric needle, and various depilatories. The active principle in these compounds is usually chloride of lime, quicklime, or sulphide of arsenic. These cause the hair shafts to fall out, but do not affect the root of the hair, and hence must be frequently repeated. These substances are strong irritants and unless handled intelligently may create ugly ulcers.

Shaving stimulates the growth of the hair and by thickening it increases the discoloration caused by the ends of the hair shafts showing through the skin. Plucking the hairs perseveringly by the roots, the skin having been previously softened and prepared by the application of a suitable toilet emulsion, is perhaps the most satisfactory method.

A competent operator supplied with the proper apparatus can remove superfluous hair permanently by means of the electric needle. The electrode from the positive pole of the battery is attached to the back of the patient's neck or other convenient spot. A three-cornered electric needle with sharp cutting edges is at-

tached to the negative pole of the battery. This is inserted into the skin, alongside the hair, care being taken not to penetrate too deeply. When the current is applied the needle becomes hot and causes bubbles of froth to appear at the point where it is inserted. The needle is then turned so that the sharp corners scrape the adjacent surfaces, and the process is continued until the hair is loosened and destroyed. The resulting scar is so slight as to be hardly noticeable, and if the operation is properly conducted the results are sure and permanent. The following are standard recipes for depilatories. These are severe remedies, and should be employed only with caution and due regard to what has been said above.

Spread equal quantities of galbanum and pitch plaster on a piece of soft chamois leather. Lay it smoothly on the superfluous hair and let it remain three or four minutes. It may then be pulled off, hair and all. The inflamed skin may then be rubbed with olive oil.

Or pulverize finely in a mortar 1 ounce of fresh limestone and 1 dram of pure potassa. Soak the parts for 10 minutes in warm water, so as to soften the superfluous hairs. Form a paste of the above powder with warm water, apply with a brush, and remove after 5 or 6 minutes or as soon as the skin begins to be inflamed. To remove this paste, wash it away with vinegar. This softens the skin and neutralizes the alkali.

Or mix equal quantities of sulphuret of calcium and quicklime pulverized to a fine powder. Apply precisely as for the preceding. The action is quicker. Hence it should be removed after two or three minutes in the same manner as the last.

To Curl the Hair.— Preparations recommended for curling the hair are usually based upon various more or less adhesive substances, as gum arabic, quince mucilage, beeswax, spermaceti, and the like, mixed with various oils and diluted with alcohol or water. They may be perfumed according to taste. Specific curling

properties are claimed for beeswax, oil of origanum, mastic, and carbonate of potassium.

It is also said that when the hair is clipped, as is sometimes done with children or after a serious illness, if the head is shaved "against the grain" the hair will come in curly or wavy. The use of the egg shampoo elsewhere recommended also has the same tendency.

The following recipes are recommended:

Put in a double boiler 1 ounce of oil of sweet almonds, 1 dram of spermaceti, white wax, or beeswax, and dissolve with very gentle heat. Remove from the fire, stir in 3 drams of tincture of mastic. Bottle and cork tightly until wanted. Apply a small quantity and arrange the hair loosely. This is a French preparation and a commercial article of considerable reputation.

Or mix 12 ounces of olive oil, 1 dram of origanum, and 1 dram of oil of rosemary. Bottle and cork tightly until wanted. Apply every other day.

Or melt a piece of white beeswax about the size of a hickory nut in 1 ounce of olive oil, and perfume with a few drops of oil of neroli. This is simple and effective.

Or beat up the yolk of an egg, rub it into the hair, and let dry. Rinse off with clear warm water and apply a little bandoline or pomade when arranging the curls.

To Compound Curling Fluids.—Put the above solids or oils in a saucepan and simmer with gentle heat. When solids are melted or oil is well warmed, add other ingredients, except perfume. Strain, cool, and add perfume when nearly cold.

Hair Powders.—The basis of powders for the hair was formerly wheat

starch, but potato farina is now more commonly used, as it is whiter and more lustrous. This is the ordinary plain hair powder of commerce, to which may be added for a black powder powdered charcoal or ivory black, or, for a sparkling effect, white frosting. Various perfumes are used according to taste. These may be used as a dry powder in the form of sachet, or they may be dropped on loaf sugar, which is afterwards pulverized in a mortar.

The following preparations are recommended:

Mix and sift together through a fine hair or other sieve 8 ounces of powdered wheat bran and 1 ounce of powdered orris root.

Or mix 8 ounces of starch powder with 2 ounces of rose sachet.

Or, for musk hair powder, mix 1 scruple of musk with 3 pounds of wheat starch or farina.

Or mix 12 ounces of starch or farina with 3 ounces of powdered ambergris; or 12 ounces of starch or farina with 3 ounces of violet sachet.

Or, for a blond hair powder, mix 4 ounces each of powdered starch or farina and powdered orris root; add 1 ounce of powdered yellow ochre.

Or, for a black powder, mix 4 ounces each of powdered starch or farina and powdered orris root, and add $\frac{1}{2}$ ounce each of powdered charcoal and ivory black.

Or, for a sparkling effect, grind white frostings to a powder in a mortar.

Compounding Hair Powders.—These powders are merely mechanical mixtures. The ingredients should be thoroughly mixed in a mortar or other suitable receptacle, or sifted through a fine hair or wire sieve.

CHAPTER XLVII

THE TEETH

THE TEETH — DENTIFRICES — THE BREATH — TOOTHACHE

THE TEETH

Good Teeth.—Modern dentistry has greatly assisted in causing the public to realize the value of a set of good teeth, but much still remains to be done in this direction. Medical inspectors in the public schools of large cities report that a very large percentage of school children have poor teeth due to the ignorance or neglect of parents. Good teeth are necessary to health, speech, and beauty.

From the standpoint of health, it must be remembered that the process of digestion begins in the mouth. This fact is the basis of the system of hygiene known as Fletcherism. The originator of this system, after having become a chronic dyspeptic, cured himself at an advanced age by attention to two principles: never eating when not hungry, and chewing food until all the taste is chewed out of it and it disappears without conscious effort of swallowing. The importance of this last is due to two facts. The saliva of the mouth has the property of converting starchy foods into sugar, thus aiding digestion. And food finely divided by proper chewing is more readily acted upon by the gastric juice of the stomach. Good teeth are, of course, necessary to good chewing. If any of the teeth are lost, part of the food is likely to be swallowed without being properly chewed, and the ill effects are no less certain because they are not always immediately noticed or attributed to the true source.

The teeth play an important part

in pronunciation, and their loss often causes a difficulty in speech which, in the case of children, at the age when they are learning to pronounce their words, may have the effect of retarding the child's mental development.

Apertures caused by the loss of teeth, or irregularities due to the permanent teeth coming in unevenly, are life-long disfigurements. For all of these reasons, intelligent and painstaking attention to the teeth is perhaps the most important single subject in connection with the toilet.

Bad Teeth.—Decayed teeth showing cavities in the crown, or having decayed roots, are not only painful, offensive in appearance and in contaminating the breath, but frequently are the direct causes of serious disturbances of digestion. The temperature of the mouth is about 96° F. or considerably above that of ordinary summer weather. The humidity of the mouth is, of course, high. Under these conditions, experience teaches that fresh meat and other organic matter will decay very rapidly. Hence, particles of food lodged in cavities or between the teeth, if not removed, decay and afford breeding places for the bacteria of filth diseases. These are swallowed with food and upon occasion of any irritation of the digestive tract, find lodgment and give rise to indigestion and other troubles. These substances also contaminate the breath and become highly offensive to others. So that absolute cleanliness is an imperative duty that every one owes to himself and also to his neighbor.

Moreover, if any of the teeth are unsound and painful the adjacent teeth are not likely to be used in the process of chewing, and the consequence is imperfect digestion. The remedy for these conditions is twofold: personal cleanliness and other hygienic measures, and prompt treatment by a good dentist as soon as the first symptoms of decay appear.

Structure of the Teeth.—The outer structure of the tooth consists of three parts: the *root*, which is contained in the bony substance of the jaw; the *neck*, which is contained in the gum, and the *crown*, which is the exposed portion. In the interior of each tooth is a cavity which contains the *pulp*, a pale-red soft substance composed of nerves and blood vessels. The surface of the root of the tooth is covered by a thin membrane called the *periosteum*, which, when the teeth decay, frequently becomes inflamed and is one of the causes of toothache.

Infant's Teeth.—Fasten a bit of absorbent cotton on the point of an orange stick or a piece of soft pine wood. Dip it in a 5 per cent solution of boric acid, and with this cleanse the milk teeth of children as soon as they appear.

Or wind a piece of cotton around the finger and dip it in a 5 per cent solution of boric acid or a dilute solution of listerine.

As soon as the full set of milk teeth, consisting of twenty teeth, or five on each half of each jaw, have all come in, a soft toothbrush should be used daily. Otherwise the milk, which forms such an important part of a child's diet, will be deposited between the teeth and become transformed into lactic acid. This tends to destroy the enamel and cause decay.

Two important facts regarding children's teeth are often overlooked, and much mischief results. One is that the first permanent teeth usually appear about the sixth or seventh year. The other is that several of the milk teeth are retained until about the twelfth year. This overlapping of the two sets of teeth makes early and constant care imperative. The first permanent teeth must, of course, have at-

tention if they are to be preserved, and the milk teeth that are retained must be kept in good order to insure proper digestion during the period of most rapid growth of the child.

Teeth of Children.—One of the most common causes of trouble with the teeth in after life is the mistaken notion that children's teeth do not require very much attention because they will soon be lost and replaced by others. Children, on the contrary, should be taught to clean their teeth at a very early age, partly because they will thus acquire a habit which it will afterwards be more difficult to teach them, but more especially because the lack of proper development or decay of the milk teeth has a direct effect upon the health of the child, and an indirect effect upon the permanent teeth themselves.

The appearance of the milk teeth about the seventh month is a signal that the child should commence to have solid food and should no longer be fed exclusively on milk and other soft foods. And during the entire period when the milk teeth are coming in, children should be encouraged to eat crackers and dry bread, and not allowed to discard the crusts. The resistance of coarse food increases the circulation of the blood and gives the necessary exercise to develop the gums and the jaw muscles that are necessary to proper chewing. All of this has a direct influence in improving the quality of the permanent teeth. If the milk teeth show black spots or other evidence of decay, they should be at once treated, and filled, if necessary, with the same care as the permanent teeth. If they are suffered to decay, the permanent teeth coming in their place will be likely to decay also.

Care of the Teeth.—There are two cardinal rules in the care of the teeth: keep them clean and consult a good dentist. Few professions have arrived at a degree of proficiency equal to that of modern dentistry. In fact, the public does not generally realize what dentistry can and ought to do. The notion is far too prevalent that the business of a dentist is

to fill decayed teeth, or to pull them, and make false teeth, crowns, or bridges to take their place. A very important part of the duty of a modern dentist is to prevent the teeth from decaying. Hence it is most unwise to postpone visiting a dentist until one's teeth commence to ache. On the contrary, a dentist should be consulted at least twice a year and often-er if necessary, and children, especially, should be taken to a dentist quite frequently during the period when the milk teeth are being lost and the permanent teeth are coming in.

An honest dentist will make no exorbitant charges or attempt to do work that is unnecessary. On the other hand, by keeping the teeth clean, filling small cavities when they first appear, correcting any malformation of the teeth and giving advice as to suitable mouth washes and other treatment when abnormal conditions are present, a positive saving in future dentist's bills will be effected; toothache and the pain of pulling teeth and other dental work will be avoided, and the teeth themselves will be, as a rule, preserved intact with all of the attendant benefits.

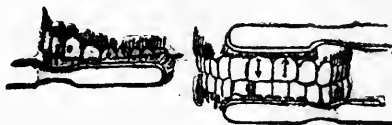
Tartar on the Teeth.—The accumulation of tartar in the form of a yellowish incrustation, which is usually most plentiful on the inner side of the lower jaw, is almost universal. But the deposit is much more pronounced in some cases than in others. Tartar is not only objectionable in appearance, but also tends to push the gum away from the neck of the tooth, and thus expose the soft dentine between the root and the harder enamel of the crown. In the course of years, the gum will recede so far as to allow the tooth to fall out, even if it is kept perfectly clean and is thus protected from decay. The accumulation of tartar cannot always be prevented by brushing the teeth, although the use of suitable tooth powders, pastes, or mouth washes will assist, but in all cases where the tartar is plentiful, the teeth should be thoroughly cleaned by a competent dentist three or four times a year, and an astringent lotion, as a 5 per cent solution of chloride of

zinc or a solution of alum in soft water, should be rubbed on the gums daily.

Aside from the advice and services of a dentist, the teeth should be thoroughly brushed and cleaned at least once a day, or better still when possible after each meal, and especially before retiring at night. And the teeth of small children should be cleaned for them before they are themselves old enough to form the habit of caring for them.

Permanent Teeth are thirty-two in number, or eight on each half of each jaw. Two in the front center of the jaw are called *incisors* or cutting teeth, and appear in the eighth or ninth year. One, next in order, the *canine* or dog tooth, appears between the eleventh and fifteenth year. Two next, called *premolars*, appear between the tenth and fifteenth year. Three last in the back part of the mouth are called *molars*, of which the first (as has already been mentioned) appears about the seventh year, the second between the thirteenth and sixteenth year, and the third, which is called the "wisdom" tooth, between the eighteenth and twenty-sixth year.

Care of the Permanent Teeth.—Chewing dry toast, crackers, hard bread or other coarse food, greatly assists in keeping the permanent



"The Way the Brush is Handled."

teeth in good condition. But for the purpose of dislodging particles of food, removing tartar and other substances a good toothbrush is indispensable. A toothbrush having medium soft bristles is preferable to one having stiff bristles, which may tend to injure or inflame the gum. The shape of the brush is not particularly important, although the so-called "prophylactic" brush assists in dislodging food from the teeth in the

back part of the mouth. What is more important is the manner in which the brush is handled. In addition to the sidewise strokes, the brush should also be worked up and down so as to remove from between the teeth particles of food that would only be crowded in more tightly by rubbing back and forth. This is very important. The inner surface of the teeth should be brushed in the same manner, care being taken to cover, in brushing, every portion of the teeth that can be reached. The strokes of the brush should also cover the adjacent gums. This may cause them to bleed slightly at first, but in time they will harden and become strengthened. By promoting the circulation of blood, this will greatly improve the nutrition of the teeth and insure their permanency.

Toothpicks.—Etiquette forbids the use of the toothpick in public. But a supply of quills or wooden toothpicks of good quality should always be kept at hand at the toilet table. These should be used as frequently as possible after meals to remove particles of food that cannot be dislodged by the use of the brush. When, as sometimes happens, the formation of the teeth is such that a toothpick cannot be used to advantage, a piece of silk thread, such as is used by dentists, can be procured at a drug store or dentist's office. This will be found very useful for this purpose. After the use of the toothpick or thread, the mouth should be thoroughly rinsed, preferably with warm water, which has the property of dissolving foreign substances to a greater extent than cold water would do. And, if possible, a good antiseptic mouth wash, such as peroxide of hydrogen, should be used.

Or use a strong solution of table salt in warm water.

Care of the Toothbrush.—After using a toothbrush, rinse it carefully, wipe it dry on a clean towel and hang it up where it will be exposed to sunlight and a draught of air. Never keep a toothbrush in a closed box or hang it up in a closet. Never lay down a wet toothbrush to dry, es-

pecially on the back, as this allows the moisture to run along the bristles into the back of the brush, softens the glue with which they are fastened in, and causes them to decay and fall out. It is hardly necessary to say that no two persons should ever use the same toothbrush.

DENTIFRICES

This is a general term including all tooth powders, pastes, and washes for the teeth. The principal ingredients of these preparations are various substances in powdered form that are capable of exerting a gentle friction on the teeth and also have antacid, absorbent, or other useful properties, as chalk, Armenian bole, cuttlefish bone, charcoal, orris root, and Peruvian bark. To these may be added mild alkalies, and other substances having cleansing properties, as borax, bicarbonate of soda, and Castile soap; astringent substances as alum and tannic acid; and agreeable vehicles as powdered sugar, rock candy, honey, sirup, and sugar of milk. Any of these mixtures may be perfumed with a few drops of any of the essential oils or essences, or colored by the addition of finely pulverized red coral, rose pink, cochineal, dragon's blood, or red sanders for red; ochre for yellow; indigo for blue or violet. Various other substances having specific properties too numerous to mention may be added.

To Whiten the Teeth.—Salt combined with peroxide of hydrogen is a powerful bleach. Apply by wetting the brush with the pure peroxide and sprinkle with dry salt, but do not use this oftener than is necessary.

Tooth powders containing charcoal assist in whitening the teeth. A little dry charcoal powder may be rubbed gently into the crevices between the teeth on retiring at night, and brushed or rinsed out thoroughly in the morning. The use of bicarbonate of soda as a tooth powder has the same property.

Mix 1 ounce of chloride of lime, 10 ounces of prepared chalk, $\frac{1}{2}$ ounce of Peruvian bark, 1 teaspoonful of tinc-

ture of myrrh. Use once a day until the teeth are sufficiently whitened. Afterwards use an ordinary tooth powder.

The juice of the common strawberry is said to be a natural dentifrice which has the property of dissolving tartar and sweetening the breath.

Or, to remove tartar, dip the brush in powdered magnesia.

Tooth Powder.—A good tooth powder is a very necessary toilet article, as it not only increases the efficiency of the brush, but also makes the operation of cleansing the teeth more agreeable, and hence tends to strengthen the habit.

Standard tooth powders are based mainly upon some carbonate having a slightly alkaline quality. But care must be taken not to use the stronger alkalis, as they tend to irritate the gums and mucous surfaces of the mouth. Many of the tooth powders of commerce, especially the cheaper sorts, contain substances that if used with hard water produce free alkali. This may have a very injurious effect upon the gums. Hence it is much better to buy the ingredients and make up a tooth powder for yourself, or have a recipe made up for you by a local druggist. Thus you will know exactly what ingredients it contains. The powders used in tooth powders must be very finely pulverized and free from gritty particles. Such substances as ground oyster shells, pumice, cuttlefish bone, cigar ashes, and the like, unless ground very fine indeed, are unnecessarily coarse and gritty. Tooth powders may be colored at will, as the coloring matter does not affect their efficiency one way or the other. The addition of some agreeable perfume, as the oil of wintergreen, sassafras, or the like, may have a decided advantage in making children and others take more kindly to the frequent use of tooth powder. A word of caution is especially needed against the use of commercial tooth powders that rapidly remove tartar and quickly give the teeth a snowy whiteness. To accomplish these results they contain strong acids

that will injure the enamel and make the last state of the teeth much worse than the first.

To Compound Tooth Powders.—If charcoal or cuttlefish bone are used, they should be reduced to a very fine powder in a mortar, and may be improved by mixing with water and allowing the coarser and heavier particles to settle. The finer particles that settle more slowly may then be poured off without disturbing the sediment. The water may then be permitted to evaporate, thus leaving a resulting powder of the best quality.

Or, after the ingredients have been rubbed up together in the mortar as finely as possible, the whole may be rubbed through a very fine gauze sieve to remove the coarser particles. As tooth powders contain absorbent substances, they should be kept in tightly closed wide-mouthed bottles when not in use.

Tooth Pastes.—Any of the ordinary tooth powders may be put up in the form of pastes by reducing them to a very fine powder and mixing them with a little clarified honey or almond cream or simple sirup to a moderately stiff paste. Sufficient essential oils or alcohol to act as a preservative should be added, otherwise they are likely to ferment or effervesce.

Or the ingredients may be mixed with cologne or lavender water or other perfumed toilet water to the desired consistency. They should be tightly covered to exclude the air.

To compound tooth pastes, first rub up the dry materials to a very fine powder in a mortar, moisten slightly with alcohol or perfumed toilet water, and add slowly enough honey or sirup to form a paste of the right consistency, beating all the time with an egg beater or otherwise to thoroughly incorporate the materials. Or mix the mass on a piece of glass or marble or other smooth hard surface. Let stand twenty-four hours before sealing.

Mouth Washes.—The use of an antiseptic and scented mouth wash is very agreeable and is to be recom-

mended especially after the use of a silk thread, toothpick, or toothbrush for cleansing the teeth. But it must be carefully observed that the use of a mouth wash does not take the place of these mechanical agencies, all claims to the contrary by manufacturers of various proprietary washes notwithstanding. A mouth wash should be antiseptic, agreeable in taste and

poses are astringents, such as burnt alum, tannin, chloride of zinc, and lemon juice, which tend to harden the gums and prevent the bad effects of accumulation of tartar and scurvy; antiseptics, such as carbolic acid, peroxide of hydrogen, and salt; bleaching substances, as chloride of soda and peroxide of hydrogen; cleansing agents, as Castile soap, salts

WASHES FOR THE MOUTH AND GUMS

	Miahle's Rational	Pelletier's Quinine	Sozodont	Fragrant Sozodont	Van Buskirk's Sozodont	Superior Mouth Wash	Mouth Washes	Do	Do	Kirkland's Tooth Lotion	Cleveland Wash	Violet
Cuttlefish Bone	1 oz.											
Borax			½ oz.				1 oz					
Bitartrate of Potassa												
Tannic Acid	3 dr.											
Camphor							½ oz.					
Alum								¼ m.				
Disulphate Quinine		15 gr.										
Honey			4 oz.			1 oz.						
Glycerin				½ oz.	1½ dr.							
Castile Soap					1½ dr.	2 dr.						
Tinc. of Soap Bark				2 oz.								
Aqua Ammonia	1 oz.									½ oz.	1 dr.	
Mucilage												
Salt-peter								½ m.				
Sugar of Milk	3 oz.											
Orris Root											1fl. oz.	{ tinct. ½ pt.
Myrrh		1 dr.		{ tinct. 1 dr. }			2 oz	1 oz	½ oz.	1 oz	1fl. oz.	
Peruvian Bark												
Red Lake	1 dr.								2 oz		1fl. oz.	
Red Coral		3 oz.										
Water			10 oz.	q. s.	4 oz.		8 oz		q. s.	2 oz	½ pt.	
Alcohol			2 oz.	1½ oz.	1 oz.	3 oz.		½ pt.				½ pt.
Any Essential Oils			q. s.		q. s.							½ pt.
Any Essences				20 d.		4 oz.	1 pt.					½ pt.

odor, and should contain nothing injurious to the general health.

Mouth washes are used with several objects in view, and the ingredients recommended vary accordingly. Among these may be mentioned hardening and strengthening the gums, cleansing the teeth, neutralizing the effects of acids and bacteria present in decayed teeth or particles of food, and sweetening and purifying the breath. Substances recommended for these various pur-

of tartar, and borax, and perfumed substances, as the various essences and toilet waters.

These preparations are simple mixtures. Hence it is only necessary to give the various recipes in the table given elsewhere.

Peroxide of Hydrogen.—Peroxide of hydrogen is perhaps the most generally efficient and satisfactory all-around mouth wash that can be used. If the peroxide is too active in its effects and causes the sensation de-

scribed by athletes as "spitting cotton," it may be followed by a solution of baking soda in water, which will neutralize its effects. This is a chemical substance consisting of dioxide of hydrogen diluted with water. It is a limpid, colorless liquid having a slightly acid taste. It is similar in composition to water charged with oxygen, which is readily set free when in contact with any substance for which it has an affinity. Thus when applied to the mucous membrane, oxygen is set free, which actively attacks any foreign organic matter that may be present. It is used as a deodorant and an antiseptic in medicine for the treatment of sores, sore throat, and diphtheria, and as a mouth wash for bleaching the teeth and cleansing the gums and other mucous surfaces. It is at once the safest and most active substance known in medical science for these purposes, and its general use is to be highly recommended.

THE BREATH

Foul breath is most often caused by decayed teeth, inflammation of the gums, or neglect to use the toothbrush. It may also be caused by catarrh or various diseases of the throat and stomach or other internal organs.

Substances recommended for purifying the breath are essence of camphor, chloride of lime, tincture of myrrh, chloride of soda, chloride of potash, carbolic acid, and various substances designed to heal and strengthen diseased gums. In addition, various perfumes are made up into pastilles to perfume the breath, but these are rarely effective in overcoming foul breath, are in themselves offensive to many, and their use may be obviated by suitable means to remove the cause.

One of the most effective remedies for foul breath is a mouth wash composed of a teaspoonful of concentrated solution of chloride of soda in a tumbler of water. This should be used as a gargle and also forced back and forth between the teeth. Or, if foul breath is caused by stomach

troubles, take 8 drops of the solution of chloride of soda in half a tumbler of soft water before breakfast.

Or use any good mouth wash containing chloride of potash, tannin or tannic acid, myrrh or Peruvian bark. All of these are good for the gums and tend to prevent foul breath and like conditions.

Or chlorine water obtained from a druggist and employed as a wash or gargle is helpful. Use a tablespoonful to half a tumbler of water.

Or use a tooth powder containing charcoal and one of the mouth washes mentioned above. If these are not efficacious, there is probably some organic disease, and a physician should be consulted.

Loose teeth or looseness of the teeth may be due to the effects of tartar, to diseases of the gum, old age, or other causes. Use as a remedy an astringent mouth wash of a teaspoonful of alum dissolved in a quart of soft water or any mouth wash containing myrrh, tannic acid, and similar substances.

To Remove the Odor of Onions.—A cup of black coffee tends to remove the odor of onions from the breath.

Or parsley with vinegar is useful for this purpose.

Or 4 or 5 drops of the concentrated solution of chloride of soda taken in 2 teaspoonfuls of cold water.

TOOTHACHE

This may arise from several causes. Either the crown or root of the tooth may partly or wholly decay, the gum may recede so as to expose the soft dentine of the neck of the tooth, or the membrane covering the outer surface of the root of the tooth may be inflamed. All of the conditions that give rise to toothache are a serious menace to the general health, and should have the early attention of a competent dentist. Toothache is a warning that these conditions are present, and if attended to in time will certainly be a means of avoiding graver consequences. When the

enamel of the tooth becomes broken, the bone decays in all directions until the pulp or nerve of the tooth becomes affected. Often a very small orifice in the enamel, which is hardly noticeable, may lead to the decay of the whole interior of the tooth. And this condition may not be suspected until the crown happens to be chipped or broken. Hence, if the teeth are sensitive to cold or to the touch, or if they ache or "grumble" more or less from time to time, a dentist should be immediately consulted, so that the cavity may be filled before the nerve is affected. Otherwise the roots of the nerve may decay and produce ulcers, which will work their way through the bones of the jaw and the gums and discharge into the mouth. During these conditions the process of chewing is much affected, tartar accumulates on the teeth, and general bad conditions prevail.

Hence the use of toothache remedies is only advisable when for any reason it is not possible to consult a dentist. And the fact that they allay the pain, and thus seem to effect a temporary cure, should not be allowed to cause the sufferer to lose sight of the danger signal that means trouble ahead unless the cause of the pain is permanently removed.

Treatment of Toothache.—This depends upon the cause. And the only permanent cure is the removal of the cause, if possible, by the aid of a good dentist.

Toothache caused by cavities which expose the dentine, but do not affect the nerve, is usually due to local irritations caused by acids, sweets, or salt taken into the mouth, by the presence of acid in the saliva due to indigestion, by the use of the toothbrush, or by exposure to cold. In such cases a dentist should be consulted and the tooth filled as soon as possible. Filling the cavities will almost always give immediate relief. If the neck of the tooth is exposed, mouth washes should be used containing such substances as bicarbonate of soda, carbonate of magnesia, and other alkalies, to neutralize the acid that may be present in the saliva, and

suitable washes should be used to strengthen the gums.

Among substances recommended to give temporary relief in toothache are counterirritants, such as oil of cloves or cinnamon, alum, carbolic acid, ammonia; and various anæsthetics, as opium, belladonna, ether, sulphate of morphia, chloral hydrate, laudanum, and the like. Many of these are powerful and dangerous drugs and should be used only with the most intelligent caution. They should never be used when it is possible to consult a dentist, and they must not be expected to effect a permanent cure.

First cleanse the cavity, if possible, with a bit of cotton on the point of a toothpick dipped in peroxide of hydrogen or a solution of baking soda in warm water, or a solution of boric acid, listerine, or other antiseptic. Rinse out the cavity with the same solution by means of a medicine dropper or small syringe, or by using it as a mouth wash.

Use the oil of cloves or equal parts of the oil of cloves and chloroform. Saturate a bit of cotton with this and crowd into the cavity. Renew frequently. But if the tooth is ulcerated, saturate the cotton and place it on the gum.

Another effective pain-killer is to paint the gum with tincture of iodine. Take care, however, not to swallow this as it is poisonous.

In addition to the above, toothache will usually be relieved by applying to the face any poultice having the property of retaining heat, or resting the face on a hot-water bottle, soapstone, or common red brick covered with flannel.

Dental Work.—Teeth should never be pulled unless it is absolutely necessary. And this will not often be the case if the warning given by sensitiveness of the tooth, or by toothache, is heeded in season. The loss of the tooth usually renders the corresponding tooth on the opposite jaw useless for chewing. It also impairs proper pronunciation in speech.

Always consult the best dentists available and do not put too much confidence in the men who advertise

cheap or painless dentistry. When the pulp or nerve of the tooth is affected it should be deadened and completely removed, and the root canal should be thoroughly cleaned out. This cannot be done properly without some pain. And if the operation is painless there is ground for suspicion that it may not have been thorough. Once the cavity and roots have been thoroughly cleaned and filled by a competent dentist, all trouble with that tooth will be at an end. The judgment of a dentist should be taken as to what sort of filling should be employed in any tooth. But all cavities should be filled promptly and properly, otherwise stomach troubles are sure to follow.

Artificial Teeth.—The progress of modern dentistry is nowhere more apparent than in the cheapness and perfection with which lost teeth can be replaced. Sometimes when the crown of the tooth is broken, it can be covered with an artificial crown, and the loss of one or more teeth can sometimes be repaired by a bridge consisting of several crowns anchored to two or three adjacent roots. All lost teeth, whether in the front or back part of the mouth, should be, on the ground of health, replaced at the earliest possible moment. Artificial teeth should be kept perfectly clean. And plates should be removed at night and placed in an antiseptic solution, such as listerine or boric acid.

CHAPTER XLVIII

THE HOME LAUNDRY

SOAP AND SOAP MAKING—THE LAUNDRY—NATURE OF THE PROCESS—WATER FOR THE LAUNDRY—LABOR-
SAVING METHODS, WASHING FLUIDS, ETC.—COLORED GOODS—LACES AND LACE CURTAINS—SILKS AND SATIN—WOOL-
ENS, WORSTEDS, AND FLANNELS—IRONING—TO DO UP SILKS, RIBBONS, AND WOOLENS—TO DO UP LACES AND CURTAINS

The custom of this country has established Monday as wash day. Many families, however, prefer Tuesday, in order to have an opportunity on Monday to sort over the different articles, mend tears, remove stains, and the like.

Bed clothing is usually changed on Saturday, and body clothing on Saturday or Sunday, so that all clothes may be readily collected and at hand early Monday morning.

Laundry Bags.—Each person in the family should have a laundry bag in his or her own room in which soiled garments may be kept in preparation for the weekly wash. A separate laundry bag for soiled table linen and napkins should be hung on the back of the pantry door or some other clean dry place where mice cannot get at it. If these articles are not kept out of the way they will scent the spots of grease in table linen and gnaw their way to them.

Laundry bags may be made of heavy unbleached muslin, or worn-out pillowcases may be used by facing them to hold a draw string.

Ordinary crash toweling, folded across and sewed at the sides, makes a convenient laundry bag.

Or ornamental bags may be made in the form of a double pocket, hav-

ing one opening across the middle with two bag-like receptacles.

Clothes Hamper.—In addition to these laundry bags a clothes hamper, located conveniently near the laundry, will be found very handy to receive soiled towels and bed linen. Covered basket hampers may be obtained at the stores.

Or a cheap clothes hamper may be made from a small barrel, by lining it inside with cambric or calico and covering the outside with cretonne or other material arranged in plaits. The lid may be covered with the same material and supplied with a covered knob in the center. The lining should be sewed together in breadths like a skirt.

Or a hamper may be made of a dry-goods box by lining and covering it in the same manner with any suitable material. By padding the top this box may be used as a seat and may be placed where a barrel would be inconvenient.

Sorting the Laundry.—Spread a white sheet on the floor and empty on this the contents of the laundry bags and hamper. Sort the small and delicate pieces of fine linen, as laces, fine waists, aprons, and petticoats, in one pile. It is a good plan to have one or two wash bags of cotton,

about two feet square, in which to place these pieces to soak and boil them. Or they can be boiled separately in a kettle or small boiler.

Put the table linen, linen towels, and doilies in one pile; the bed and body linen, kitchen towels, and bath towels in another; the colored clothes, hosiery, and coarser articles in a third; and the flannels and woollens by themselves. These lots should be kept separate throughout the washing, the fine linen and table linen going into the first tub and the first boiler; bed and body linen into the second tub and second boiler; colored clothes being washed separately, but not boiled; and flannels being reserved for separate treatment. By this plan the same suds may be used in the boiler if desired, although changing the water is much to be preferred.

Laundry—To Remove Stains.—While sorting the clothes, they should be carefully looked over for stains from fruit, grass, acids, pencil marks, ink, etc., as these may be much more readily eradicated before they are touched by soap or boiling water. Pencil marks especially should be erased carefully with a rubber eraser, as the hot water will make them indelible.

SOAP AND SOAP MAKING

Properties of Soap.—Garments of linen and other fabrics become soiled principally by the oily exudations of the body, as in perspiration and the natural oil of the hair, and in the case of table linen, by animal fats, etc. The skin itself, of course, retains a considerable part of the oily substances not absorbed by the clothing. These greasy substances by their adhesive quality attract and hold particles of dirt. When soap is dissolved in water, the neutral alkali salts become in part separated into alkali which dissolves, and free fatty acid which precipitates. This explains why the transparency of clear water is disturbed by the use of soap even of the purest kind.

The detergent or cleansing properties of soap are due to the presence of

free alkali, either caustic potash or soda liberated in the soapsuds. This attacks and decomposes the grease contained in soiled linen, in perspiration, and in dishwater, unites with the fatty acids, and in turn saponifies them. The process is precisely similar to that of soap-making. The union of the alkali set free in soapsuds with the grease of garments or dishwater produces a soapy substance which is readily soluble, and hence is easily removed by rinsing.

Free Alkali.—Since the cleansing properties of soap are due to the presence of free alkali, it may be asked why the alkalies themselves—as potash lye or sal soda cannot be used without the trouble of uniting them with animal fats by soap making. It is true that lye and other strong alkalies have strong detergent properties. They attack, however, not only the grease by also the fabrics themselves and rot or weaken them, and also irritate the skin. Hence the object of soap-making is to form a compound which will release a small, definite quantity of alkali at the moment that it is required.

Soap Test.—Alkali has a strong, biting taste. Hence the best test of soap is to apply the tongue to it. If it bites, the soap contains an excess of free alkali and is not suitable for the toilet or laundry. If it does not, it is good soap and will probably not injure the most delicate fabrics.

Importance of Soap.—Whether or not cleanliness is next to godliness, historians say that the degree of civilization of a nation is indicated by the quantity of soap it consumes. The kind and quality of soap and other cleansing articles used by a household is a good indication of the refinement of the family. There should be no economy in the use of soap, but since, if very freely used, it becomes quite an important item of expense, a considerable saving may be made by the use of home-made soap and other cleansing compounds.

The domestic art of soap-making also has an educational value. Soap is a chemical compound, and we perform a real chemical experiment

every time we wash our hands or wash clothing in the laundry. Soap was made as early as the second century of the Christian era, before the modern science of chemistry was inaugurated, and good soap may be made by observing the following instructions without troubling oneself to understand the chemical principles involved. On the other hand, it is interesting, as a matter of general information, to understand the chemistry of soap-making.

There is a group of substances having similar properties, which is known in chemistry as alkalis, and another group, having very different properties, which is known as acids. These two kinds of substances have a strong attraction or affinity for each other, and when brought together under suitable conditions they unite to form another class of substances, the compounds known as salts. Common salt is a good example; it consists of an alkali, sodium, and an acid, chlorine. Most of the salts are freely soluble in water.

Soaps are alkali salts of fatty acids. The alkalis commonly used in making soaps are soda and potash. All of the animal fats, and also the animal and vegetable oils, contain fatty acids. When the proper alkalis are brought into contact with the animal fats or oils, under proper conditions, the alkalis attack the globules of fat or oil and unite with the fatty acids to form alkali salts of fatty acids—i. e., soap. This process is known as saponification.

To make soap it is customary to dissolve an alkali, either potash or soda, in water, forming a liquid known as lye; to dilute the lye; then mix with it a suitable quantity of fat or oil, and to stir until saponification takes place. If the mixture is cold, the process may require several days or even months, depending upon the strength and purity of the ingredients. But if the mixture is raised to 212° F. by boiling, the process of saponification may take place in a few minutes or hours. Hence there are two processes of soap-making—in the cold and by boiling.

The cold process, generally speak-

ing, produces what is known as a soft soap. This is not true or pure soap, but contains, in addition to the actual dry alkali salts of the fatty acids—i. e., real soap—certain other ingredients, as water, glycerin (which is contained in all natural fats and is liberated in the process of soap-making), more or less free alkali, and other impurities. In other words, soft soap is only partial saponified. The pure or hard soap, completing the process of saponification, is obtained by boiling soft soap until the glycerin and other impurities are absorbed by the hot lye, and by the addition of salt to remove the surplus of water. The salt, having a stronger affinity for water than the soap has, causes the water and the impurities it holds in solution to sink into the oil. The pure hard soap rises to the surface and forms a cake which may be removed. The lye, containing glycerin and other impurities, can then be discarded.

A better quality of soap may be obtained by melting the product of the first boiling a second time, and by adding more clean, strong lye and clear, melted grease or oil, and stirring over the fire until complete saponification takes place.

THE LAUNDRY

Utensils for Washing.—The list of utensils for the laundry includes wash boiler, wringer, washboard, washing machine, three or four tubs, two or three pails, clothes stick, dipper, and large and small clothes baskets. Wooden tubs and pails are the most common, but those made of paper or wood pulp are to be preferred, as they are lighter and will not fall to pieces if allowed to dry.

The Boiler.—The ordinary tin boilers are commonly used, but a copper or steel boiler enameled white on the inside and painted some suitable color outside is the best. Tub and boilers should be fitted with faucets to avoid lifting and the liability of accident in carrying hot suds from place to place. With good care a wash boiler should last a lifetime. Hence it is advisable to buy the best.

The Wringer.—The principal cost of a wringer is in the rubber rollers, and it is true economy to buy an article that has rolls made of pure rubber, and that may cost \$5 or \$6, rather than a cheap article having rollers made of a composition that will last but a short time. When the rollers begin to wear, wrap them round with straps of strong, unbleached cotton cloth. This will lengthen their usefulness many years.

Washing Machine.—We especially recommend the purchase of a good washing machine. Like the sewing machine, this instrument has a very important bearing upon the welfare of the family by lessening the physical labor devolving upon the wife and mother, and thus saving much of her energy for the higher and more elevating duties of the household. We believe that any of the standard makes of washing machines are to be recommended in preference to the ordinary washboard, which is only a relic of barbarism. But we especially recommend the make which contains an inner cylinder in which the clothes are placed, and which is revolved in an outer cylinder containing water. This method tends to cleanse the clothes evenly and with the least possible wear. Other makes accomplish the result by holding the clothes stationary, agitating the water, and squeezing the goods, very much after the fashion of the old-style clothes pounder; and still others revolve the garments in the tub by means of prongs, reversing the motion from time to time. The last method is perhaps the least satisfactory. When the clothes are suddenly stopped and sent backward by the reverse motion they are subjected to a considerable strain. But even this method wears out the garments far less than does rubbing on the washboard, and we strongly recommend some washing machine to every household. If the clothes are first boiled with soap and kerosene, or other good washing fluid, they can be run through the washer in about five minutes. Colored clothes cannot, of course, be boiled, and will require a longer time to wash.

NATURE OF THE PROCESS

Objects of Washing.—Dirt has been described as "matter which is out of place." The substances which soil garments and household linen are unobjectionable in their proper places, but become dirt when transferred to wearing apparel and linen, and require to be removed by washing. These substances are principally of three classes: fruit, acids, ink, and other things which produce stains; animal oils, grease, or fats from the oily exudations from the body in perspiration; or, in the case of table linen, from foods or from other sources; and particles of earth and other solids, either mixed with grease or caught in the texture of the fabric. Stains require special treatment according to the nature of the substance which produces them; greasy substances, as oils or fats require to be decomposed by the use of an alkali, in soaps or otherwise; and particles of earth and other substances, when set free from the grease in which they are usually imbedded, may be removed by the mechanical operations of rubbing and rinsing. Aside from stains, the most difficult part of washing is the decomposition, without injury to the fabrics, of greasy substances by the action of an alkali. Unless this point is clearly understood, good results in washing will come rather from good luck than from good management.

The means employed to remove dirt on fabrics are soaking, boiling, rubbing, and rinsing, with the use of an alkali either in soaps or in the various preparations known as washing powders and washing fluids.

Soaking.—The object of soaking garments is to soften the dirt and loosen it by swelling the fabric. There is no objection to soaking the clothes in pure soft water for a reasonable time, but soaking them overnight in water with soap and washing fluids or powders is not advisable. The first effect of the alkali contained in soap is to soften the greasy substances which cause dirt to adhere to the fabric, and to render them soluble in water. But if these substances are not immediately re-

moved by washing and rinsing, another chemical action takes place which produces compounds that, while not always visible to the eye, are very much more difficult to remove. This is especially likely to be the case if soap or other detergents are used which contain much alkali. The result is often to give the clothes a heavy or musty smell and a dingy appearance after ironing. Instead, try soaking the garments for about twenty minutes in boiling water containing borax.

Or rub soiled articles with a piece of wet soap on the morning of wash day and soak in cold water for about two hours before washing.

If clothes are soaked over night use pure soft water only, without any soap or other washing compounds. If not, put the clothes to soak in cold soft water the very first thing in the morning while the wash water is heating and breakfast is being prepared, first rubbing soiled articles, especially the greasy spots, with a piece of wet soap before putting them in the water.

Rubbing.—Rubbing is, of course, merely a mechanical operation, but it assists the action of soap and washing compounds by removing the greasy substances that have been decomposed by the alkali and by bringing what remains into contact with the alkaline suds.

Right here note a helpful labor-saving device. Instead of rubbing the clothes in the usual way lay the washboard across the top of the tub and apply soap to them with a scrubbing brush having rather stiff bristles. Use the brush especially for the neck, wristbands, and other spots which are especially soiled or greasy. This cleanses them much more quickly than rubbing in the usual manner, besides being easier for the laundress and much less detrimental to the garment. This method is especially helpful for men's overalls, heavy blankets, and other coarse articles that are difficult to clean. Put the clothes through a wringer into the second tub and wash again, looking them over carefully for dirty spots.

Boiling.—Boiling is also a mechanical process, as the steam passing

through the garments agitates them and loosens the particles of dirt contained in their texture. Boiling water and steam also increase the activity of the alkali in attacking and decomposing the grease.

Rinsing.—Rinsing is a mechanical operation for removing the excess of soap, with the dirt, glycerin, and other impurities that have been released by the action of the washing compounds.

These processes should be firmly fixed in mind, and the nature and properties of soap and other cleansing compounds should be fully understood by all who wish to obtain satisfactory results in washing.

The principal object of rinsing clothes is to remove the excess of soap. Hence they must be thoroughly rinsed until all the suds disappear from the water. If plenty of hot water can be had it should be used for the first rinsing, as the soap contained in the garment will dissolve in hot water much more readily than in cold. It is customary, however, to lift the clothes from the boiler directly into a tub of cold rinsing water, rinse thoroughly, wring out into a second rinsing water, and continue rinsing until all trace of soap disappears. If any soap is left in the garments it will unite with the bluing and make the clothes yellow. After the final rinsing and bluing the articles must be wrung out, rolled in bundles, and sorted, starched pieces being placed in one basket and unstarched ones in another, and hung up to dry at once. It is a good idea to first spread a large, clean cloth in the bottom of the basket.

Plan for Wash Day.—The following routine is especially recommended: get up at daylight and get the washing out of the way as early as possible. It is surprising how much can be accomplished early in the morning before the regular routine of the day begins.

First Boiling.—Next fill the boiler with clear soft water, or if the water is hard, add borax to soften it. Put it on the stove and bring to a boil. Rinse out the tubs with hot water and soap to remove any dust that may have accumulated. When the

clothes have been well soaked, run them through a wringer or wring them out lightly by hand, put them in tubs half filled with hot water from the boiler, and rub on the washboard, using plenty of soap. Or use the washing machine.

Second Boiling.—Run them again through the wringer and put them in a boiler with cold water over the fire. The articles may be rubbed separately with soap as they come from the wringer before being placed in the boiler, or shaved hard soap or other washing compounds may be dissolved in the water in which the clothes are boiled. If washing fluids or powders are used, care must be taken to dissolve them in the water before the clothes are put in, as otherwise they may settle in the folds of the fabrics and eat holes in them with the excess of alkali they contain. Let the clothes come to a boil, pressing them down occasionally with a clothes stick. The first boiler should contain the first sorting of fine linen, and while these are coming to a boil the second sorting may be in the process of rubbing. The boiler should be emptied and refilled with cold water every time a new lot is put in. Clothes should be lifted from the boiler with a clothes stick, held up to drain slightly, and placed in a tubful of clear, cold rinsing water.

WATER FOR THE LAUNDRY

Laundry Water Supply.—All water for laundry purposes must be soft or else the clothes cannot be made clean. Hard water that contains lime and other mineral substances, or that is brackish from its vicinity to the sea, will cause the soap to curdle and float on its surface. In limestone regions and other localities where the water is hard, perhaps the best method is to collect rain water in a cistern or rain-water barrel, but hard water can be softened in various ways for laundry purposes.

To Test Water.—To find out whether or not water is fit for laundry purposes, dissolve a little good white soap in alcohol and put a few drops of this solution into a glassful of water.

If the water is pure the soap solution will be dissolved and the water will continue limpid, but if it is impure the soap will form into white flakes which will tend to float on the surface.

To Soften Hard Water.—Bring the water to a boil and expose it to the air, which may be done by pouring it from some little height into a tub or other vessel, and afterwards letting it stand over night.

Or boil it with the addition of a little baking soda, and afterwards expose it to the air.

Or place a quantity of clean wood ashes in a tightly closed woolen bag and immerse the bag in a tub of water. The required amount of ashes can be ascertained by experiment.

Or use chalk, which may be put into the spring or well or used in a tub or bucket, the proper amount depending upon the extent of the impurities, and to be determined in each locality by experiment.

Rain-water Barrel.—A cask to hold rain water should be provided with a hinged lid or other cover to prevent dust and dirt from getting in, and to keep out insects that would use it as a breeding place. It should be raised above the ground by stone or brick, and be furnished with a spigot to draw off the water for use.

LABOR-SAVING METHODS, WASHING FLUIDS, ETC.

Certain compounds added to the water in which the clothes are boiled are recommended as labor savers. Washing fluids and powders contain two kinds of ingredients: volatile substances, such as kerosene, turpentine, alcohol, ammonia, and camphor gum; and alkaline substances, as potash and soda lyes from wood ashes, sal soda, and various brands of commercial lye. These powerful chemicals must be used with the most intelligent caution.

First Caution.—If the hands and arms are immersed in hot water containing turpentine, alcohol, ammonia, camphor, and similar substances, these are absorbed through the pores of the skin and may seriously imperil the health. Paralysis is said sometimes to result from this cause. Hence it is

best to use these compounds only in the boiler, and to take the garments out of the first rinsing water with the clothes stick, especially if hot water is used, rather than to immerse the arms therein.

When turpentine has been used in the boiling water the clothes must be very thoroughly rinsed, as if any of it remains in garments worn next the skin it may cause mischief.

Second Caution.—Substances that are strong in alkali, as potash and soda lyes and the like, are powerful cleansers, but clothes should not be allowed to lie in water that contains them for any length of time. If they are used in the boiling water the clothes must be boiled for a limited time and immediately removed and rinsed thoroughly. The alkali, as has already been explained, continues its action after decomposing greasy substances and attacks the fabrics themselves. It is injurious to the skin if not thoroughly rinsed from underwear.

Third Caution.—All washing powders should be thoroughly dissolved in the boiling water before the garments are added, so that the alkali and other ingredients may be present in equal strength in all parts of the water. If these compounds are added after the clothes have been put in they may settle in spots in the folds of the garments and eat into the fabric.

Washing Fluids.—Most washing fluids amount to neither more nor less than potash or soda lye. In other words, they are liquids containing an excess of free alkali. Their use is quite customary on the ground that they do the work quickly and well and save labor, but they are open to the objection that unless used with great caution they tend to rot the clothes and to roughen and chap the hands and arms of the laundress. They are, at best, only suitable for the coarser articles, and it is probable that their constant use weakens anything which they are employed to clean.

Caustic Soda Lye.—A common family recipe for washing fluid is caustic soda lye. Dissolve 1 pound of sal

soda in 1 gallon of boiling water. Slake separately 8 ounces of fresh quicklime in 2 quarts of water. Bring the soda solution to a boil, pour in the slaked lime in a thin stream, stirring constantly, and let the mixture stand over night. Pour off the clear lye, taking care not to disturb the sediment, and preserve in glass bottles or stone jugs. When this fluid is used it is customary to soak the clothes over night in clear water, wring them out, and soap the soiled places. The boiler is then half filled with water which is brought to a boil and 1 teacupful of this fluid is stirred in thoroughly, after which the clothes are added and boiled for half an hour, when they can be cleaned with very little rubbing. The injury that the lye may do the fabric is not likely to be noticed as a result of a single washing, and the gradual weakening of the garment is likely to be attributed to ordinary wear. Hence it is often asserted that this and other washing fluids can be used without rotting ordinary fabrics. But the injury, though slight, is certain. At all events, if such fluids are used the greatest care must be taken not to let garments lie long in the suds, to rinse them very thoroughly in two or three waters and hang them out as quickly as possible. This washing fluid may be used in hot water for scrubbing floors, removing grease spots, and cleansing greasy pots, kettles and the like. But care must be taken not to use it on tinware or aluminum or strong enough to injure the hands.

Caustic Potash Lye.—The basis of another class of washing fluids frequently recommended is potash lye, which is perhaps even more injurious than caustic soda lye, requiring the same cautions and being open to the same objections. The addition of various other ingredients, as borax, ammonia, and the like, may be regarded as beneficial, as they tend to increase the cleansing properties of the fluid, and thus lessen the amount of pure lye necessary to do the work.

Put $\frac{1}{2}$ pound of concentrated lye in an earthenware jar or iron kettle and pour over it 1 gallon of cold water. Stir with a wooden stick until dis-

solved, and let stand until cold. Dissolve, each in a separate vessel, $\frac{1}{2}$ pound of borax, $\frac{1}{2}$ pound of salts of tartar, and $\frac{1}{2}$ pound of lumpy ammonia (not aqua ammonia), using in each case as little water as possible. After the solution of lye is cold, pour into it each of the other solutions in a thin stream, stirring constantly, pour the mixture into large glass bottles or earthenware jugs, and cork tightly. Use this washing fluid in the proportion of 1 or 2 tablespoonfuls to each pailful of water. In all cases dissolve it in the wash boiler before the clothes are put in, for if the clothes are put in first and the washing fluid afterwards, it will be stronger in some places than others, and be more likely to injure the garments.

Or put 1 pound of crude potash in an earthenware jug and pour over it 1 gallon of soft water. When cold stir in $\frac{1}{2}$ ounce of sal ammoniac and $\frac{1}{2}$ ounce of saltpeter previously dissolved in a little soft water. Use this fluid at the rate of 1 pint to 6 or 8 gallons of water.

Washing Fluids with Turpentine.—Turpentine as a washing fluid, with or without other ingredients, as camphor, alcohol, ammonia, and the like, is often recommended, but unless great caution is observed it is very likely to be injurious. These substances, especially turpentine and alcohol, open the pores of the skin and thus expose a person to the liability of taking cold in hanging out the clothes. Their frequent use is also debilitating. Hence these substances should not be used when washing is done by hand. They are only permissible where the clothes are pounded in the old-fashioned way, or the work is done by a washing machine. Even breathing the fumes of turpentine in the steam of the laundry may be dangerous under certain circumstances, and, on the whole, these recipes should be used only with the greatest caution. Clothes washed with turpentine should be rinsed very thoroughly to remove all traces of it before being worn, as otherwise it will be injurious to the skin.

To a boilerful of hot water add 1½ bars of hard soap shaved fine, 1 table-

spoonful of spirits of turpentine, and 1 teaspoonful of aqua ammonia; bring to a boil and stir until all are dissolved before putting in the clothes.

Or, in addition to the soap, use 1 tablespoonful of spirits of turpentine and 1 tablespoonful of powdered borax.

Or first soap the water in which the clothes are to be boiled, then add the following: spirits of turpentine, 1 tablespoonful; aqua ammonia, 1 tablespoonful. Housekeepers who have used this washing fluid value it highly.

Washing Fluids with Sal Soda.—Dissolve $\frac{1}{4}$ pound of sal soda and $\frac{1}{4}$ pound of borax in 1 gallon of boiling soft water. Add 2 gallons of cold soft water and 1 ounce of gum camphor dissolved in $\frac{1}{2}$ pint of alcohol. Stir well and put in corked bottles or fruit jars. Add 4 teaspoonfuls of this preparation to 1 pint of soft soap or 1 bar of hard soap cut into fine shavings, and dissolve the whole in a boilerful of hot water before putting in the clothes.

Or dissolve $\frac{1}{4}$ pound of washing soda and $\frac{1}{4}$ pound of borax in 4 quarts of boiling soft water. When cold add $\frac{1}{2}$ teacupful of aqua ammonia and pour into corked bottles or fruit jars. Dissolve in the wash boiler in the proportion of 1 teacupful to 1 pailful of water before the clothes are put in.

Washing Powders.—Commercial washing powders, such as pearline, soapine, and the like, are said by chemists to be composed of hard white soap ground to powder and mixed with pulverized sal soda in approximately equal parts. Hence they are liable to the same objections as sal soda, which is well known to contain an excess of alkali. They are, however, useful for dishwashing, scrubbing, and many other purposes. They can be made at home much more cheaply than they can be purchased.

To make washing powder, melt in a double boiler 1 ounce of good white glue in 1 gallon of hot water to make a thin glue size. Mix equal parts of granulated soda ash with granulated sal soda, pulverizing them into grains about the size of coarse sand by means of a rolling pin. Pour over this

mixture the solution of glue, or use instead pure linseed oil and stir until the mass forms a stiff, thick paste. Spread out the whole on a table top or other flat surface in a warm room to dry.

Or, instead of the solution of glue, use a solution of 1 pint of linseed oil to 1 gallon of water.

Soap Jelly.—Dissolve 1 teaspoonful of any good washing powder in a cupful of hot water, or dissolve any desired quantity of shaved hard white or yellow soap in twice its own bulk of hot water, using a double boiler. Use instead of soft soap for delicate fabrics.

Kerosene for Washing.—This is a favorite labor-saving article in many households. Use for each boilerful of water 1 pound of good hard soap in shavings and 1 teaspoonful of kerosene to each pail of water, or about 2½ tablespoonfuls for a wash boiler two thirds full of water. Should it be necessary to add more water after the first or second boiling, put in ½ pound of shaved soap and 1 tablespoonful more of kerosene. This mixture will not injure fabrics and will evaporate when the clothes are laundered so as to leave no odor. When kerosene is used very little rubbing will be required.

Special Hints.—When rinsing large linen pieces, as sheets, tablecloths, and large towels, gather the middle of the piece into the hand and souse the edges in the water several times. This leaves the selvage smooth and ready for the iron.

If a little cooked starch is put into the rinsing water it will add just enough stiffness to launder properly and will give to old linen the appearance of new.

A little pipe clay dissolved in the water in which the linens are washed will assist in cleansing the more soiled articles, and also in giving them the appearance of having been bleached.

The addition of a teaspoonful of paraffin will assist in removing stains.

A small vegetable brush may be used to apply soap and water to the spots on the coarser linens, and a nail-

brush is convenient to use on the delicate fabrics.

Fine cotton goods, as lawns, cambrics, and muslins, should not be washed with linen, especially unbleached linen, as the latter has a tendency to discolor them.

Delicate dresses of lawn, muslin, cambric, and print goods should not be boiled or rubbed with soap. They should be washed in tepid water in which soap has been previously dissolved, rinsed quickly, and dried in the shade.

A quart of bran sewed into a tight bag and boiled in the wash boiler will assist in cleansing delicate garments.

The addition of a handful of salt helps to set the colors of light cambrics and dotted lawns.

A little beef gall will brighten yellow, purple, or green tints.

Handkerchiefs.—Handkerchiefs, used by persons who have affections of the nose, throat, and lungs, as grippe, catarrh, bronchitis, and the like, should not be put in laundry bags or clothes hampers containing the family wash. The easiest and most sanitary method of handling these articles is to keep for the purpose a large tin or enameled-ware pan containing a strong solution of common salt. Drop the handkerchiefs into this, place the pan on the stove when clear from cooking, and bring to a boil. They may now be rinsed with clean water and put into the rest of the laundry, or the pan may be filled with boiling water containing a tablespoonful of any good washing powder, the handkerchiefs returned to it and boiled from twenty minutes to half an hour, then removed, rinsed, and laid aside for ironing.

To Wash Corsets.—Choose a clear, sunny day; make a strong solution of good soapsuds and a small amount of ammonia, spread the corsets on a clean board or table and scrub with a good stiff brush until thoroughly clean. Apply clear water in the same way to rinse them and hang immediately in the sun. Do not wring out. Let them drip dry, and the shape will not be changed.

Or make good warm suds, lay the

corsets on a washboard, and scrub thoroughly on both sides with a stiff brush. Then scald a little, rinse thoroughly, starch slightly, and dry. When ironed they look much better than when rubbed on a washboard.

Special Pieces.— In addition to the regular wash day it is often advisable to lay aside small muslins, laces, ribbons, and other delicate articles to be washed at other times when they can have special attention, rather than to put them into the weekly wash. Blankets and other heavy articles can also be washed to better advantage by themselves, and in the season when the days are long and bright.

COLORED GOODS

Care for Colored Goods.— All colored goods, especially light dress goods having delicate colors, as colored linens, muslins, lawns, or cambrics; and prints, as chintz, ginghams, and calicoes, require special care in washing. They must be handled separately from other articles, and in many respects it is better to make a special job of washing fine colored goods on another day than the regular wash day. Care must be taken in washing colored goods that the colors do not soak out or run. This may be prevented in two ways: by a special process in washing, different from the method of washing white goods, and by the addition of various substances to the washing or rinsing water to set the colors.

Cautions for Colored Goods.— The best general caution for handling colored goods is to avoid extremes of heat or cold, to avoid hard wringing, and to wash and do them up as quickly as possible. They must not be soaked or otherwise delayed in washing, boiled, scalded, or exposed to direct sunlight or the heat of a very hot iron. No form of washing soda, soft soap, or washing powders or fluids containing free alkali should be employed. Use pure white or yellow neutral soap only for this purpose. Neither must they be allowed to freeze.

To prevent the colors from running they may be set by adding certain sub-

stances to the suds or rinsing water or both.

Don'ts for Colored Goods.— Don't soak or soap colored goods over night.

Don't boil them, don't wash in hot water, don't use washing fluids, washing powders, or anything else containing the slightest particle of sal soda.

Don't put them all into the tub at once.

Don't let them lie any longer than necessary in the suds, rinsing water, or clothes basket.

Don't hang them up to dry so that the right side will be exposed to the hot sun.

Don't hang them up in the sun at all if shade is available.

Don't iron them with a very hot iron.

To Wash Colored Goods.— Sort out the calicoes and other prints, colored linens, etc., and prepare suds with cold or lukewarm water and good hard white or yellow soap. Have at hand a tub of rinsing water containing alum, oxgall, or other substances to set the colors. Wash each piece separately, commencing with the lightest in color, rinse, and wring it out as quickly as possible, leaving the remaining pieces in a dry state. Wash all the colored articles as quickly as possible, turn them wrong side out, and hang them up to dry, if possible, in the shade.

To Suds Colored Goods.— Prepare suds by shaving hard white soap in soft water at the rate of about half a bar to two pailfuls of water. Bring the water to a boil, remove from the fire, and allow it to cool until it will bear the hands comfortably.

Do not rub soap on delicate colored goods. Wash the garments quickly. Put them in the water one at a time, and rub as little as possible; rather souse them up and down in the hot suds. If the suds become foul, prepare a fresh lather. Wash each garment by itself as quickly as possible.

To Wring Colored Goods.— Do not wring out delicate colored articles, but squeeze them gently as dry as possible between the hands.

To Rinse Colored Goods.— Rinse in two or three clear rinsing waters, adding various ingredients, according to the goods, to set the colors.

To Dry Colored Goods.—Select bright, clear weather to wash delicate and expensive colored garments, and when washed hang them to dry in the shade. The best goods will fade if hung in the sunshine. In freezing weather they may be dried indoors by the fire, as the colors will be irreparably injured if they are allowed to freeze.

To Wash Calicoes.—An exception to the rule against soaking colored articles is found in the custom of soaking calicoes and other print goods in a strong solution of salt before washing. Authorities variously recommend soaking the articles in strong salt water for periods of half an hour to over night. We would recommend experimenting with a sample of the goods before soaking delicate or expensive fabrics for a long period. First soak new calico garments in strong salt water. Dissolve 3 gills of salt in 1 gallon of hot water, not boiling. Put in the garments and soak until the colors are thoroughly set. The time required will vary according to the fabrics, and may be determined by experimenting with samples. We would recommend 15 minutes to a half hour as an average.

Wash same as other colored goods, using alum or oxgall in the suds and salt in the rinsing water. Use alum preferably for green.

Black calico may be washed in an infusion of potato starch. Peel two or three potatoes, scrape them, boil, and strain, washing the calico in the pure liquid.

Or wash in an infusion of wheat bran as hereinafter suggested.

Colored Goods—To Fix Their Color.—Substances recommended for fixing the colors of calicoes and other colored articles vary with the colors and the nature of the fabric. They include oxgall, salt, infusion of hay, alum, and lemon juice or vinegar; for red articles, borax, and for black goods lye and black pepper.

Of these, oxgall and salt are the most popular. The gall of an ox can be obtained from the butcher. It may be preserved by adding to it a handful of salt, and keeping it corked tightly. A bottle of this preparation

should always be kept on hand in the laundry. Use 1 teacupful to 5 gallons of water.

Common salt may be used in the proportion of $\frac{1}{2}$ cupful to 2 gallons of water; alum, 1 ounce to each gallon of water; borax, 1 tablespoonful to the gallon; vinegar or lemon juice, the same. Add these substances in the above proportion to both suds and rinsing water.

Or use a large tablespoonful of oxgall in the suds and a teaspoonful of vinegar in each rinsing water.

Or use alum in the suds and vinegar in the rinsing water.

Do not use both oxgall and alum.

To Fix Light, Solid Colors.—To permanently fix blue, slate, and stone colors in cotton fabrics, dissolve 1 ounce of sugar of lead in $2\frac{1}{2}$ gallons of hot water. Stir with a wooden stick, and let stand until lukewarm. Immerse the garments in this solution for 1 to 2 hours, and hang up to drip dry in the shade before washing. Remember that sugar of lead is poisonous; hence, after being dried, these articles should be washed thoroughly and rinsed in plenty of clear water.

To Fix Dark, Solid Colors.—To fix black and other dark colors, dissolve 2 cupfuls of salt in $2\frac{1}{2}$ gallons of water, immerse the articles until they are thoroughly saturated, and hang them up to drip dry in a shady place. Add a tablespoonful of salt to the rinsing water.

Or, to prevent black goods and hosiery from turning brown, use very strong bluing in the water. For black goods, also, add a teacupful of lye to each pailful of soapsuds in which the articles are washed. They must be washed quickly and the excess of lye thoroughly rinsed out in clear cold water to which salt has been added.

Or, for black goods, prepare an infusion of 1 tablespoonful of powdered black pepper with sufficient water to cover the articles, and steep them in it for a half hour before washing.

To Fix Pinks, Reds, and Greens.—Vinegar is especially recommended for pink, red, or green goods to brighten the color; salt for black, blue,

and green colors. Hence, to fix pink or green, add $\frac{1}{2}$ cupful of strong vinegar to $2\frac{1}{2}$ gallons of water, immerse the articles, and let them drip dry in the shade.

To Fix Red or Scarlet.—For red or scarlet table napkins add 1 tablespoonful of borax to each gallon of soapsuds when washing.

To Fix Solid-colored Linens.—A strong infusion of common hay made by boiling the hay and straining off the clear liquor is recommended for French linens; black pepper, 1 teaspoonful for each pailful of water, for gray and brown linens.

To Wash Colored Goods with Bran.—Delicate lawn and muslin dresses, also chintz and cretonne, may be washed without soap in an infusion of wheat bran. This process cannot possibly harm the most delicate fabrics. Boil 1 quart of wheat bran in 3 quarts of water for about 15 minutes, and strain off the clear liquor into the wash water. Boil the bran again for 15 minutes in an equal quantity of water, and strain off the resulting infusion into the rinsing water.

For the wash water add to the infusion of bran about an equal quantity of clear soft water. Add also, to set the colors, a tablespoonful of oxgall or a small lump of alum. Use no soap, as the bran itself possesses sufficient cleansing properties. Wash with as little rubbing and wringing as possible.

Rinse first in the lukewarm bran water, adding salt, and afterwards in clear water containing a little gum arabic. No starch will be required. The bran after having been strained may be fed to pigs or chickens.

To Clean Colored Goods with Raw Potatoes.—Grate the potatoes to a fine pulp and mix with 1 pint of water for each pound of grated potato. Sift with a coarse sieve and let the liquid settle until the starch accumulates at the bottom. The clear liquid remaining may be bottled for future use. To apply, lay a linen towel over the washboard and spread the soiled garment upon it. Sponge with the clear liquid and afterwards rinse with clear cold water.

LACES AND LACE CURTAINS

To Wash Lace.—To wash cotton or linen lace or embroidery prepare suds of hard white soap with hot water, to which add 1 or 2 teaspoonfuls of borax. If much soiled, boil the articles in the suds before or after washing, or both. Squeeze them with the hands or draw them through the fingers in the suds until clean, rinse in clear water, add to the last water about $\frac{1}{2}$ teaspoonful of granulated sugar to 1 pint of water, and iron without starching.

White Laces.—White linen and cotton laces and embroideries may be washed in soapsuds in the same manner as other delicate white goods, except that more care is required in their handling. To prepare these goods for the laundry, baste the small pieces, as doilies and smaller embroideries, Battenberg pieces, edging and the like, on a piece of linen or cotton cloth larger than the lace. Take care to catch every point with basting thread. Several small articles can be basted on one large piece. After washing, if the cloth is stretched, the lace will dry in perfect condition without ironing. Fine lingerie, as lace waists, etc., may be basted inside a pillow case or special cotton bag prepared with a draw string for this purpose, and need not be taken out from the time it is put into the first wash water until after it is hung on the line, dried, and ready to iron. This prevents the lace from being frayed or torn by buttons catching in it, etc. Lace edging and other long pieces may be quickly basted on to a piece of cloth with the sewing machine by making the stitch long.

Or, to prepare a long piece of lace for the laundry, it may be wound around a large glass bottle. First surround the bottle with a jacket of cotton or linen cloth sewed on. Attach one end of the lace to this cloth jacket with basting thread, and roll the lace around it, overlapping carefully as in bandaging. Catch the ends and edges through the cloth jacket with basting thread.

To Soak Laces.—If lace is much soiled it may be soaked for an hour or

more before washing in suds made of cold water and naphtha or curd soap. Do not use yellow soap or any form of washing compound which may contain free alkali.

To Prepare Laces for the Wash.—First remove all stains, and if much soiled by perspiration wash in soap and cold water, rubbing the soiled spots gently between the fingers. After the stains have all been removed the lace may be washed in warm suds, and, if necessary, afterwards boiled.

To Suds Laces.—Only the purest hard white curd soaps should be used for washing laces. Many persons save the scraps of fine castile and other toilet soaps, melt them with a small quantity of water in a double boiler, and make a soap jelly for use with these delicate fabrics. It is better to make soapsuds in a small kettle with soft water and fine soap in which to boil these articles than to put them in the regular boiler. If they are not much soiled do not boil them, but bring the suds to a boil and pour over the laces, letting them soak until the water is cool enough to bear the hands. Wash as other fine goods, stripping between the hands as lightly as possible and sousing up and down in the suds. Use two or more fresh suds if necessary.

To Boil Laces.—Laces that are soiled may be, if prepared and protected in the above manner, boiled in soapsuds the same as other white goods. To boil laces rolled about a bottle, first saturate the lace with olive oil or sweet oil, prepare strong soapsuds, and stand the bottle upright. Or the bottle may merely be dropped in with other articles.

To Rinse and Dry.—Rinse laces thoroughly in clear water, pressing the water out of them with the hands and dry in the hot sun without removing from the cloth or bottle which protect them.

Point Lace and Battenberg.—Point lace may be washed as other laces if very carefully basted to a piece of fine white flannel and another piece of flannel basted over it. Care must be taken to catch all the points, using very fine basting thread. After rinsing, the flannel must be carefully stretched, and while still damp ironed,

without removing the lace, until perfectly dry.

Or the professional method may be employed, which is as follows: stretch the lace, face down, on a piece of clean white duck and carefully tack it on, using very fine basting thread and taking pains to catch all the points. Stretch the duck tent fashion over a rod out of doors on a clear day. Make a lather of fine castile or curd soap and apply the soapsuds with a soft brush, as an old toothbrush or a nail-brush with soft bristles, or with a sponge, until it is thoroughly cleaned. Rinse by pouring over it water containing a little alum. Add a little bluing to the last rinsing water. Apply thin starch or a solution of gum arabic with a sponge, and when nearly dry lay a Turkish towel over the ironing board, put the duck on this with the lace underneath, and iron the duck. This is a perfectly safe method and gives a polish which cannot be acquired in any other way.

To Wash a White Lace Veil.—If not much soiled, first wash in cold water with castile or curd soap, squeezing between the fingers without rubbing. When stains and spots have disappeared, squeeze gently from the cold water and pour over it the hot suds. Let stand until cool enough to bear the hands, and continue squeezing with the fingers until perfectly clean, changing the suds if necessary. If much soiled, put the veil in a cotton bag and boil ten or fifteen minutes. Rinse in cold water with a little bluing, and starch with a thin solution of gum arabic, rice water, or corn starch. Stretch to its original shape and spread over a linen towel stretched tent fashion out of doors, and in the bright sun if possible. Pull the edges out to their proper shape and fasten with pins. When nearly dry iron on a Turkish towel through a piece of flannel or linen cloth.

To Wash Black Lace.—Make suds of castile or other hard white soap and boiling water, and add a tablespoonful of oxgall to set the color. Allow this to cool until it will bear the hand, then immerse the lace and cleanse by squeezing gently with the fingers. Rinse in two or more cold

waters, adding salt to the first and bluing to the last. Starch with a thin solution of gum arabic or common glue made by dissolving a piece of thin glue about an inch square in a quart of boiling water. Or use thin rice water or cornstarch. Lay over black silk or cambric stretched tent fashion, stretch, and pin the edges securely. When dry arrange face down on a Turkish towel, and iron through a thin cloth, following the pattern with the point of the iron. Use a warm, not hot, iron, as much heat will turn the lace rusty.

To Sponge Black Lace.—First dust the articles thoroughly and stretch, face down, over a piece of black goods, tacking down the edges with basting thread. Sponge with dilute ammonia and water.

Or sponge with green tea.

Or use borax water in the proportion of 1 teaspoonful of borax to 1 pint of soft water.

Use, if convenient, an old black kid glove as a sponge. Press while still damp and without removing from the cloth to which it is basted. Lay the lace on a Turkish towel protected by a piece of dry black goods and iron through the protecting cloth on the wrong side, using a warm, not hot, iron.

Or a long piece of lace may be wound about a bottle and put in a warm place to dry. Avoid the direct heat of the sun or of a hot stove or iron, as these tend to give black articles a rusty appearance.

Lace Curtains — When to Launder Them.—Have a special day at housecleaning time for lace curtains, doilies, dresser scarfs, and all articles of fancy work. These require suds made of fancy soap and more care in the laundry than ordinary articles; hence they should be handled by themselves and given special treatment. After being done up they can be laid away until housecleaning is finished, and put up as each room is cleaned.

To Air Lace Curtains.—Lace curtains may be cleaned easily and will not need washing so often if hung on the line on a clear day with a gentle breeze—not too windy—and dusted by the wind. Washing these articles

is a delicate and difficult business, and they necessarily suffer more or less from the process.

To Prepare Curtains for the Laundry.—Stitch a narrow piece of tape along the hem of net or lace curtains before they go to the laundry. This keeps the curtain from pulling out of shape when ironed. Lay the curtains on an old sheet and brush them carefully with a soft brush to remove the dust. Fold them separately as a tablecloth is folded, taking care to keep the edges perfectly together until the folds are about two feet square. Baste a strip of white muslin along the edges to keep the package in order and quilt slightly with basting thread. In this shape large curtains can be put into suds and cleaned with a pounder or otherwise.

Or fold them carefully and insert in a pillowcase, running through them at intervals strong basting thread to keep them flat and prevent their bunching in the end of the case.

Or they may be carefully gathered crosswise and tied loosely in a bunch by two or three cords at intervals. Wash like other fine white goods, first, if much soiled, soaking for an hour or more in soap and cold water, next rubbing gently between the hands in warm or hot soapsuds, and afterwards boiling in one or more hot suds according to their condition. Rinse first in hot water, afterwards two or three times in cold water, adding bluing to the last. Kerosene, ammonia, or turpentine may be used in the boiling water, but no washing powders that may contain free alkali.

Or put the curtain in a large tin funnel with a wooden handle attached to it; work it through suds and rinsing water in such a way that the water will pass through the curtain and out at the bottom of the funnel, removing the dirt by suction. This process will not injure the most delicate fabrics, no matter how long it may continue.

Colored Curtains.—If there is any doubt about colors being fast, delicate-colored curtains may be cleansed with gasoline.

To Dry Curtains.—If curtains are dried out of doors, cover the line on which they are hung with one or more

thicknesses of paper or throw over it a dry sheet. This will prevent the clothespin from marking the articles and keep them from being injured by the wind.

Or, if the curtains are folded and basted together with muslin, dry them before taking them out of the folds.

Or lay a blanket on the floor and spread the wet curtains on it, stretching them carefully. They will keep their place and dry without fastening.

To Stretch Curtains.—A curtain stretcher is not used in most families, and hence is something of a luxury. Sometimes two or three families in a neighborhood can combine to purchase one for their common use. As a substitute lay a sheet or clean wrapping paper on the floor, stretch the curtains over this, and fasten by means of heavy pins called bank pins, which can be obtained at the stores. Use a pin for each scallop, driving them into the floor with a tack hammer. Lay other curtains over these, hooking them on the same pins, as is done on stretchers. Several curtains may be hooked on the same set of pins. The pins may be afterwards removed and used again.

Or the curtains may be pinned to a sheet laid upon the carpet, two or three curtains by carefully matching the scallops being pinned down at the same time.

Or stretch a sheet on a quilting frame, and pin the curtains to this.

Or, while damp, hang the curtains, one at a time, on a curtain rod, and slip a heavy rod or curtain pole through the hem at the bottom. Stretch the curtains to their full width, and allow them to hang until dry. The weight of the rod at the bottom will stretch them sufficiently.

SILKS AND SATINS

To Launder Silks.—To wash silk dresses and other garments, ribbons, handkerchiefs, stockings, and the like, first rip apart made-up garments, shake, and brush thoroughly to free them from dust. Prepare soap jelly by cutting castile or other good white hard soap into shavings, pour over it about double its own bulk of water,

and dissolve by gentle heat. Have ready two or three tubs or pans and fill these partly full of hot water. Thus the washing and rinsing waters will cool alike and always be of exactly the same temperature. This is the great point to observe in washing all animal fibers, as silks or woolsens.

In the first receptacle dissolve enough soap jelly to make good suds, and let stand until the hands can be comfortably borne in the water. Wash each piece separately in the suds by sousing it up and down, raising it in one hand and stripping it through the fingers with the other. Continue this process until clean, but without creasing, wringing, or squeezing it. When washed clean, strip through the fingers to remove suds. If soiled spots do not come out, rub on a little soap jelly and immediately dip again into the suds. Change the suds if necessary. Rinse in clear water, following the same process as in washing, strip out the water between the fingers, or shake out the pieces without wringing, and iron at once without hanging up to dry.

Or for delicate fabrics, as China silk, pongee, and similar dress goods, for each article, as a waist or summer gown, put $1\frac{1}{2}$ pints of bran in a bag of white muslin, and pour over it sufficient boiling water to wash the garment. When the hands can be borne in it comfortably, squeeze the bag in the water to extract the solution of bran. Add 1 or 2 teaspoonfuls of powdered borax, wash, rinse in clear water, and iron at once. Use no starch, as the bran gives sufficient stiffness.

To Wash Colored Silks.—The same cautions must be observed in washing colored silks as in the case of other colored goods, with the additional caution that they must not be crushed, squeezed or wrung when wet, or wrinkles may be formed which will not iron out. Prepare suds for silk by dissolving hard white soap in boiling water, and add oxgall or alum to set the colors. Allow the suds to cool until they will bear the hands, and immerse the silk in them. Lay the washboard across the tub, spread an old towel or piece of flannel over it,

lay the silk flat on this, and apply the suds by rubbing gently with a soft cloth or a sponge, or a toothbrush or nailbrush having medium hard bristles. When the silk is clean apply cold water with the brush and afterwards souse in cold water containing salt. If the silk is of solid color, dissolve a little dye the color of the silk in the rinsing water. If the color has faded this will restore it. Silk garments rinsed in diluted dye water will come out nearly as fresh as new.

To Wash a Crepe de Chine or any Light Weight Silk Dress.—Dissolve five cents' worth of soap bark in lukewarm rain water and wash the dress in this with the hands. Rinse in clear water, and iron when nearly dry. It will look like new.

To Wash White Silk.—Prepare suds as for other delicate white goods by using hard white soap, but no soda or washing compounds containing free alkali. Cleanse the silks by applying the soapsuds with a soft cloth or brush, rinse in cold water, partially dry in the sun, and while still damp iron between two cloths on the wrong side.

To Wash Satin.—Satin may be washed in the same manner as silks, or sponge the way of the grain with a weak solution of borax.

To Wash Silk Stockings.—Prepare a lather and wash as other silk goods. For white stockings add a little bluing to the last rinsing water. For other tints add a little dye of the required color. Stretch the stockings to their proper shape, and pin or baste them between two thicknesses of a clean linen towel. Stretch this tent fashion, and the stockings will dry in their natural shape without ironing.

Or wash in bran water.

WOOLENS, WORSTEDS, AND FLANNELS

To Wash Woolen Goods and Flannels.—Washing woolen goods and flannels without shrinking them or causing them to lose their natural softness and delicate colors is one of the best tests of the skillful laundress.

Cautions for Woolen Goods.—

Woolen and flannel goods must not be soaked, boiled, scalded, or wrung out by twisting. They must not be dried near a hot fire. The fibers of wool are hooked and curled, and when they are crushed together by rubbing they form knots, which thicken the fiber and shrink it in both dimensions. This is one of the principal causes of the shrinking that is so much feared. Or the expansion or contraction caused by alternate heat and cold may cause the fibers to interlace. Flannels may be shrunk, if desired, before they are made up by first placing them in cold and afterwards in hot water. But they can be washed without shrinking if proper precautions are observed.

To Suds Woolens and Flannels.—Prepare suds by dissolving 1 bar of hard white soap shaved fine in a boilerful of water and adding 2 tablespoonfuls of aqua ammonia. Do not use yellow soap which contains borax or soda in any form, or washing fluids and powders of the composition of which you know nothing. Pour the suds into a tub and allow them to become cool enough to bear the hands comfortably before putting in the flannels. Wash these articles one at a time as quickly as possible. Do not rub soap on them or rub them on the washboard. Souse them up and down in the water and rub them together with the hands until cleaned. Do not put them through the wringer or wring by twisting, but squeeze out the soapsuds with the hands, shake out carefully, stretch, and wash in a second lather prepared like the first, but not so strong. Rinse in warm water as near the temperature of the suds as possible, to which a little bluing may be added, press out the rinsing water, shake vigorously, and stretch the articles to prevent shrinking.

Pull each piece as nearly as possible into its proper shape and hang up carefully in such a way that the shape may be preserved. A clear, bright day with sunshine and a light breeze is desirable. Flannels should be taken down while still slightly damp and rolled up in a dry cloth. If the weather is not clear they may be dried indoors, but not near the

stove. The object should be to avoid extreme changes of temperature, as these cause flannels to shrink and become hard.

To Wash Colored Woolens and Flannels.—Wash colored woolens and flannels same as other colored goods, adding oxgall or alum to the suds to set the colors, and salt or vinegar, or both, to the rinsing water. Omit the use of ammonia or borax. A teaspoonful of glycerine added to the rinsing water makes the flannels come out like new. Dry delicate colored flannels in the shade.

To Wash Colored Woolen Dress Goods.—Cashmere, merino, alpaca, and llama dresses and colored worsted and flannel waists and blouses may be washed in suds prepared as for other colored woolen goods, provided the same cautions are observed. Do not soak, boil, or scald any woolen goods. Do not use any form of soda, lye, or unknown washing fluids or powders. Do not use borax or ammonia for delicate colored articles. Use pure neutral white or yellow soap shaved and dissolved in boiling water until it will bear the hands comfortably, and keep the suds and rinsing water at the same lukewarm temperature. Rub and wring as lightly as possible, rather sousing the garments up and down and squeezing out the water with the hands. Add oxgall or alum to the suds, and salt or vinegar to the rinsing water to set the colors. Dry delicate colors in the shade. Avoid direct sunlight or proximity to a hot fire. Take down before dry and iron while damp, but without sprinkling.

Soap Jelly or Woolen Goods.—To avoid preparing suds by shaving soap and boiling each time, it is convenient to prepare in advance a soap jelly, as follows: shave any amount of neutral white or yellow soap in the proportion of $\frac{1}{2}$ pound of soap to 1 quart of boiling water and simmer until dissolved. When cold it will jell. Use this jelly in the proportion of 1 heaping tablespoonful to $\frac{1}{2}$ gallon of warm water to prepare suds for washing all flannels or woolen goods. This saves the time required to bring the water to a boil.

To Wash Dress Goods with Rice.—Boil 2 pounds of rice in 12 quarts of water for 2 or 3 hours. Pour half of this into a tub, and when cool enough to bear the hands put the garments in and wash them with the soft boiled rice the same as with soap. Strain the other half through cheese cloth. Put the solid part into another tub of warm water and wash the garments once in this. Rinse in clear warm water, and a second time in warm water in which the clear rice water that was reserved for this purpose has been added. This will take the place of starch. No soap or starch need be used. The rice should be boiled a day or two in advance and kept in readiness, so that garments may be washed early in the morning and done up the same day.

Woolen Fancy Work—Crochet, etc.—Small and delicate woolen articles may be put into a cotton bag or tied up in a pillowcase and washed the same as other woolen articles. The suds and rinsing water should be plentiful. The articles need not be taken out of the bag while washing, and they may be hung up in it on the line to dry.

Woolen Table Covers.—First remove all stains and grease spots; next soak thirty minutes in strong salt water. Prepare suds, wash, rinse, and dry same as other colored woolen goods. If much soiled, apply soap and water with a scrubbing brush, laying the cloth on the washboard placed crosswise upon the tub.

To Wash Knitted Shawls.—Knitted or crocheted shawls may be folded as flat as possible and laid carefully in a pillowcase, run through at intervals with basting thread to keep flat, and treated like other flannel or woolen goods. If washed separately, observe the usual cautions for woolen goods, gently squeezing through the hands and keeping the suds and rinsing water of the same lukewarm temperature. Do not hang knitted goods up to dry, but put in the oven on a big platter, shaking and turning occasionally, or lay on a clean cloth in the bright sunshine.

Woolen Shawls.—The most delicate colored cashmere and other woolen

shawls may be washed in soapsuds if proper precautions are observed. Make suds same as for other woolen goods by dissolving 1 pound of hard white soap in $2\frac{1}{2}$ pailfuls of water. Add 1 tablespoonful of oxgall or 2 ounces of alum and wash the articles by sousing up and down, rubbing as little as possible. Squeeze the water out of them and rinse in two or three waters, each containing a teaspoonful of salt. Place between two dry sheets to wring out and wring lightly. Press while still damp with a warm, not hot, iron.

To Wash Blankets.—Choose a warm, sunny day with a gentle breeze. Prepare suds by dissolving in hot water $\frac{1}{2}$ bar of any good white hard soap, 1 tablespoonful of borax and 1 tablespoonful of aqua ammonia for each pair of blankets. Let the suds cool until they will bear the hands. Immerse the blankets and let them stand in the suds for an hour, keeping the temperature about as hot as the hands will bear by frequently adding hot water. Do not rub soap on the blankets nor scour nor rub them. Lay the washboard flat across the tub, put in one blanket at a time, raise the blanket on to the washboard and go around the edge, applying the suds with a scrubbing brush and rubbing vigorously. Meantime heat sufficient water for two more lathers. Remove from the first to a second suds prepared in the same manner, seize the blanket by the middle and souse it up and down. Squeeze and press it between the hands until clean. Rinse in three clear waters, keeping them at the same temperature as the suds, namely, as hot as the hands will bear, and run through the wringer or squeeze the water out of them rather than wring them in the usual way. Fasten by the edges to the line and frequently shake and stretch them to their proper size while drying. To have the best success in washing blankets two points must be observed, namely: to keep the water at a uniform temperature, neither boiling hot nor cold enough to chill, but as hot as the hands will bear; and not to wring or rub the blankets in such a way that the fibers will become in-

terlaced and cause shrinking. When thoroughly dry beat the blankets while on the line with a carpet beater. This will cause the wool to become fluffy like a new blanket.

To Wash Bedspreads.—If bedspreads are changed quite frequently they will not require soaking; but if very much soiled they may be soaked by putting them in a tub and pouring over them a boilerful of hot water in which 2 tablespoonfuls of borax has been dissolved. Prepare suds by dissolving 1 bar of hard white or yellow soap in a boilerful of hot water and wash same as other white goods. Do not use any form of soda, lye, or any washing fluids or compounds. If washed on a windy day, bedspreads will need no ironing. Fold the edges together and pin them on the line with the wrong side out. This not only prevents the spread from wearing across the middle, but gives it a fresher appearance than ironing.

To Wash Comforters.—Sometimes a heavy comforter can be washed by simply tacking it smoothly on a clean shingle roof and letting the rain fall on it. It is well to previously soak it for half an hour or more in a strong solution of common salt to prevent the colors running.

Or soak the comforter for an hour or two in borax water. Prepare suds as for other colored goods, with the addition of oxgall or alum and salt. Lay the washboard across the top of the tub and apply the suds with a soft scrubbing brush, especially round the edges. Continue as in washing blankets. Those who have a supply of running water may use the garden hose for rinsing blankets, bedspreads, and comforters. Remove from the suds without wringing, hang them on a line, and drench them with water from the hose until they are rinsed thoroughly.

BLUING AND SPRINKLING

Bluing.—It is very difficult to rinse clothes quite free from all traces of soap or other washing compounds. The minute quantities of alkali left in the fabrics tend to give white arti-

cles a dingy or yellow tinge. The object of bluing is to correct this. Hence it is customary to add bluing to the last rinsing water for white articles or colored goods that have a white background. For dark colored goods it is also customary to add a liberal supply of bluing to the starch. Some laundresses do not wring from the bluing water table linens and similar articles which they desire to have a fine, clear white, but hang them up dripping in order to deepen their luster.

To Make Bluing.—Dissolve 1 ounce of the best soluble Prussian blue powder and $\frac{1}{2}$ ounce of powdered oxalic acid in 1 quart of soft water.

Sprinkling.—The object of sprinkling is to give the garments a uniform dampness, to soften wrinkles, and to prevent the iron from scorching. Hence the clothes should be sprinkled slightly and afterwards rolled up and allowed to lie until the moisture has uniformly penetrated all parts of the fabric. Delicate colored goods, flannels and other woollens, and fine linens will have a better appearance if ironed on the same day that they were washed than if allowed to become entirely dry before ironing. Colored goods especially should not be sprinkled if it can be avoided.

Starch and Starching.—The amount of starch to prepare for a given washing depends upon the articles to be starched, and must be determined in each family by experiment. The ability to do up starched linen perfectly is one of the most severe tests of the successful laundress. Hence the importance of knowing how to prepare good starch. First mix the required amount of common starch with a small quantity of cold water to the consistency of cream. Carefully rub and beat the starch with a spoon to break up all lumps and insure that the particles of starch are evenly wet through. Thin to the consistency of milk with a little more cold water. For thick cooked starch add 8 parts of boiling water to 1 of starch. For thin cooked starch add 16 parts of water to 1 of starch. Pour the water while boiling vigorously in a

thin stream, and stir constantly to prevent the starch from lumping. Set the starch over the fire and continue to boil it from 3 to 5 minutes, stirring vigorously all the time. If such substances as wax, borax, oil, etc., are used, they should be mixed with the starch while cooking. Bluing should not be added until the starch is cold. Raw starch or that which has been insufficiently cooked will stick to the iron and make much trouble for the laundress. Cooked starch may be thinned by the addition of cold water.

Cornstarch.—Common cornstarch, such as is used for making puddings, is preferred by some laundresses instead of the ordinary laundry starch. It is about as cheap and in the opinion of many gives a finer gloss and more finished appearance to delicate starched articles. Try this some time when the laundry starch is out and see how you like it. A mixture of the two kinds is also much favored.

Additions to Starch.—Among the various substances added to starch for different purposes are wax, borax, salt, soap, lard, sugar, gum arabic, glue, stearin, and glycerin. Borax makes the starch more fluid, so that it goes farther, and also increases the gloss. Salt prevents the starch from freezing in garments; wax and gum arabic and stearin increase the gloss and give additional stiffness, and soap and sugar improve the gloss. These substances may also be mixed together according to various special recipes.

Starch with Wax.—For white cuffs, collars, and shirt bosoms melt with gentle heat white wax or a mixture of equal parts of white wax and spermaceti or a mixture of 1 part of white wax to 2 parts of spermaceti, as preferred, and stir into ordinary starch while boiling. Use a lump of wax about the size of a walnut to a quart of cooked starch, or estimate the amount of wax in the proportion of $\frac{1}{16}$ to $\frac{1}{8}$ of the bulk of *dry* starch required for the garments.

Starch with Borax.—Add 1 tablespoonful of borax to each pint of cooked starch while boiling. This makes the starch go farther by lessening the amount that adheres to each

garment. It increases the gloss without giving additional stiffness and tends to prevent the irons from sticking.

Or add 1 teaspoonful of borax to 1 pint of uncooked starch for garments requiring stiffness.

Starch with Salt.—Add 1 teaspoonful of table salt to 1 pint of cooked or uncooked starch. This prevents the starch from being whipped out of the garments by the wind when drying, and also from freezing in severely cold weather.

Or add 1 teaspoonful of Epsom salts to each bowl of cooked starch while boiling. This will add stiffness and tend to prevent the articles from being scorched by hot irons.

Starch with Soap.—Make the boiling water in which starch is cooked slightly soapy with pure castile or other neutral white soap. This will assist in producing a gloss and will also prevent the irons from sticking.

Starch with Gum Arabic.—Prepare a solution of gum arabic by putting about 2 ounces of the white gum finely powdered in a glass bottle or quart fruit jar and pouring over it 1 pint of boiling water. Cork tightly and shake until the powder is dissolved. After 24 hours strain through cheese cloth and preserve the clear gum water for use. Add 1 tablespoonful to each pint of cooked starch while boiling. This is especially useful for fine dress goods, either white or colored, as lawns, muslins, calicoes, and the like, giving them much of the body and appearance of new material. Less of the gum water may be used for the finished materials, as muslins, and more may be added for cuffs, collars, and shirt cuffs to increase the stiffness and impart a gloss.

Starch with Sugar.—To give the so-called domestic finish, add a teaspoonful of granulated sugar to each pint of starch while boiling.

Starch with Stearin.—Add a teaspoonful of stearin to each pint of starch when boiling. This substance with the addition of bluing is sold under the name of "starch luster" at a much higher price than the stearin itself costs, and is no better.

Starch with Lard.—Add half a

teaspoonful of lard or butter to each quart of cooked starch when boiling. This helps to give the soft or domestic finish, and prevents the irons from sticking.

To Apply Starch.—Strain the hot starch through a piece of cheese cloth and use while it is still warm. Select first the articles that require the most stiffness, as shirt bosoms, collars, and cuffs. A portion of the starch of course adheres to each, so that it becomes thinner by using. Starched clothes such as skirts, etc., should never be stiff enough to rattle. The garments to be starched should be nearly dry. Immerse them, or such part of them as should be starched, in the thick starch, and rub between the hands to work the starch thoroughly into their texture. Remove from the starch, squeeze out the excess, and rub once more with the hands to distribute the starch evenly through the material. If this is not done the surface will not iron smoothly. Dry the articles, sprinkle them, spread them on a clean white cloth, and roll them up in bundles so that the dampness will be evenly distributed before ironing.

To Starch Colored Clothes.—Divide the starch, set apart the required amount for colored clothes, and add bluing sufficient to make the starch quite blue. Use a liberal supply of bluing for blacks and dark colors, but not so much for light garments, especially pink. This will prevent white patches of starch from appearing on dark garments.

Or dip black or colored goods, as lawns and calicoes, in sweet or sour milk and use no starch. Milk alone will give the desired stiffness.

Or, for delicate colored goods, use a simple solution of gum arabic instead of starch.

Or rinse in dilute bran water or rice water instead of starch.

To Starch White Dress Goods.—Thin white dress goods, as white waists and summer gowns, may be starched with cold raw starch. Dry without starching. Dissolve a heaping tablespoonful of starch in sufficient water to immerse the garment, dip it into the starch until saturated,

rinse in cold water, wring out, roll up in a dry cloth, and iron half an hour later.

Or dry the garments, dip a clean muslin cloth into raw starch, and lay over them long enough to dampen them. After a few minutes press them with a hot iron.

For delicate lawns and similar fabrics use a solution of gum arabic diluted to give the stiffness required.

IRONING

To Iron Shirts.—Starch the shirt bosoms, collars, and cuffs in cooked starch containing also wax or lard or other similar substance. The addition of gum arabic will increase the stiffness. First use the common iron in the usual way, making the surface smooth, but without polishing. Iron first the back and sleeves, next the collar and bosom, last the front. The dull or domestic finish, as it is called, is preferred by many persons to a high polish, but if the latter is desired use a smooth hard-wood board covered rather thickly with cloth on one side, but not on the other. First use the padded side of the board, ironing the bosom smooth, then turn the board, lay the bosom upon the hard wood, take the polishing iron, and polish by rubbing vigorously crosswise. A good polishing iron should weigh between 6 and 7 pounds and have a rounded edge at the heel. The iron is not laid down flat, but only the edge of the heel is used to give the polish. Keep the iron very hot and dampen the bosom slightly before using it by brushing with a damp cloth or sponge. If the bosom rises in wavelike blisters, dampen it slightly and go over it again. It requires a little care to use a polishing iron, but with experience any laundress can give as good a polish as can be produced in a steam laundry. A greater finish can be obtained by laying over the bosom a cloth dipped in starch just before the polishing iron is applied.

To Iron Colored Goods.—Colored goods should be ironed, when possible, before they are quite dry. They should not, as a rule, be sprinkled nor

allowed to lie over night. The iron should be allowed to cool slightly, as delicate colors, especially pinks and greens, will frequently fade as soon as they are touched by a hot iron. The pink may turn to purple and the green to blue.

If, however, colored goods cannot be ironed the day they are washed, they should not be allowed to lie over night in a wet condition, but should first be thoroughly dried and then slightly dampened just before ironing by rolling them in a damp cloth and allowing them to stand for fifteen or twenty minutes.

Press colored goods on the wrong side, especially the collars and cuffs. Iron on the right side no more than is absolutely necessary to take out the wrinkles.

To Iron Black Sateen and Farmer's Satin.—Use no starch. Iron on the wrong side.

To Iron Fancy Work.—Press ribbons, lace, and embroidery on the wrong side, and iron delicate articles through a piece of linen. For colored silks and ribbons, allow the iron to cool slightly as with any other colored goods.

To Iron Linen.—The appearance of linen will be improved if it is ironed the same day it is washed and without hanging out to dry. Rinse thoroughly, wring dry, and roll the linen articles in a dry sheet. Let them lie for a time and iron dry with a hot iron. This saves the wear on fine linen of whipping on a clothesline, and gives an additional stiffness and luster, especially to cheap linens and well-worn articles.

To Do Up Handkerchiefs.—To save ironing, spread the handkerchief wet from rinsing water on a clean pane of glass or mirror. When dry, fold and lay away. Guests at summer hotels and persons who are boarding will find this plan very convenient. It is especially desirable for fine linen and delicate lace handkerchiefs, to save the wear and tear of the laundry.

Ironing Hints.—Table linen and handkerchiefs frequently show wear where the customary folds have been

ironed in. To save wear press the article all over until perfectly dry, without folding. Then fold and press the folds lightly with a hot iron. The appearance will be the same as if the folds had been ironed separately, but the articles will wear longer.

Large tablecloths that are awkward to manage without folding may be rolled upon curtain poles as fast as they are ironed. When the entire cloth has been ironed it may be unrolled and folded with a light pressure.

The clothes wringer will smooth sheets, towels, pillowcases, and the like sufficiently without ironing, and upon occasion these articles may be folded and put away rough dry. Give handkerchiefs one fold less than is customary, leaving them oblong instead of square. The economy of time is small, but the handkerchiefs lie more conveniently in the drawer.

To Iron Embroidery.—Embroidered articles, as doilies, shirt waists, and the like, Hamburg trimmings, and other goods of similar texture may be ironed over a Turkish towel. This method raises the pattern clearly and beautifully. It may also be used for napkins, handkerchiefs, and tablecloths. The towel yields slightly, lessening the labor of ironing, and the process adds to the appearance of the article.

TO DO UP SILKS, RIBBONS, AND WOOLENS

To Iron Silks.—Lift silks from the rinsing water, shake and snap them to remove as much water as possible without squeezing or wringing, and smooth them out on pieces of old cotton cloth or towels. Roll them up in these and iron as soon as possible without drying. Smooth pieces out while wet on the ironing board, lay over them a piece of thin white muslin, and iron on the wrong side with a moderate iron to prevent smutting. Now remove the cloth, iron perfectly dry on the wrong side, and smooth slightly, if desired, on the face with a warm, not hot, iron. The whole process of washing and ironing should

be done as quickly as possible after the silk is wet, as the colors may be affected by lying in that condition.

To Iron Colored Silks.—Like other colored goods silk should not be allowed to dry, but should be ironed while still damp with a warm, not hot, iron. Place between two cloths and iron on the wrong side.

To Do Up Ribbons.—Wash same as other colored silks, and if stiffness is required, rinse in weak soapsuds containing a small amount of gum arabic. Now roll the ribbon about a glass bottle, or wind about a small rolling-pin, smoothing carefully, and dry in the shade.

Or smooth them out, face down, upon a piece of varnished wood. When dry they will require no ironing.

To Remove Wrinkles from Silk.—Wrinkled or creased ribbons and silks may be restored by laying them on a smooth surface and sponging them evenly with a sponge moistened in a weak solution of gum arabic. Smooth out while wet on a polished flat surface of wood, or roll about a rolling-pin and dry in the shade. Iron between two pieces of cloth, pressing on the wrong side with a warm, not hot, iron.

To Store Away Silks.—Do not wrap silks in white paper. The chloride of lime used to bleach the paper will attack the colors of the silk.

To Iron Flannel and Woolen Goods.—Iron flannels and woollens the same day they are washed, if possible, and before they become quite dry. Take from the line when still damp, roll up in a dry cloth, and press on the wrong side with an iron not too hot. If they become dry they should be dampened slightly by rolling up in a damp cloth to await their turn.

To Iron Blankets.—Iron blankets before they are quite dry, and air thoroughly before storing away.

TO DO UP LACES AND CURTAINS

To Starch Laces.—Good lace does not require starching. Enough white sugar dissolved in the last rinsing water to make it slightly sweet should give it the required stiffness.

Or boil 4 ounces of rice in 1 quart of water until the kernels break up. Strain through cheese cloth and dip the laces in the clear rice water.

Or use a thin solution of gum arabic.

Or mix 1 teaspoonful of cornstarch or wheat starch with cold water to the consistency of cream, beating and rubbing until all is wet evenly. Dilute to consistency of milk with cold water, add 5 or 6 drops of gum arabic, and thin with boiling water until nearly transparent. Boil for 5 or 6 minutes until well cooked. The poorer the lace the more stiffness will be required. Hence do not dilute too much for poor laces.

To Tint Laces.—For an écreu tint add black coffee or powdered saffron to the rinsing water. Or add tea to give a stronger shade. Experiment with a small sample of the goods, adding a little more color at a time until the right shade is obtained.

To Iron Laces.—If laces are basted on cloth, and the cloth is thoroughly stretched, or if they are carefully wound about a bottle and stitched, they may not require any ironing. Lace wound about a bottle may be dipped into very thin starch or gum-arabic water without being removed, and may not need any ironing. Lace handkerchiefs may be pulled into shape while wet and carefully laid on a pane of glass, wrinkles being all smoothed out. When dry they will be ready for use.

Or dry small lace articles between two pieces of clean white blotting paper under a weight, with or without ironing. When starch is used, do not allow laces to dry, but roll them in a dry towel for half an hour or more, and press while still damp. Iron on the wrong side over a Turkish towel to bring up the pattern, protecting the articles from the iron with a piece of muslin or other thin white cloth. Use a warm, not hot, iron. Ironing pieces while damp greatly improves their appearance; ironing on a soft, rough surface both protects them and brings up the pattern, and ironing through a thin cloth makes it possible to bring out the

points and pattern of the lace with the point of the iron without injury. New embroideries should be washed and ironed before using.

To Remove Wrinkles.—If lace becomes dry before ironing, or if it is desired to remove the wrinkles from clean lace without washing, hold it over the steam of the teakettle or a basin of steaming water until thoroughly moistened. While damp press it under a weight, with or without blotters, or iron it as above suggested.

To Starch Curtains.—Do not use much starch for lace curtains. This is a common mistake when curtains are done up at home. It is contrary to the essential delicacy of lace to make it stiff with starch. Moreover, the sun will rot lace which contains too much starch or other stiffening substances. Only the coarsest kind of lace can stand stiffening.

To Do Up Curtains.—Starch curtains the same as other laces with a thin boiled cornstarch or wheat starch containing a solution of gum arabic, and stretch them on suitable frames or otherwise to dry. If they are stretched properly, they will require no ironing or they may be pressed slightly when dry.

To Iron Curtains.—Lay the curtains while still damp on a folded flannel blanket and press on the wrong side with irons as hot as possible without scorching. This method brings out raised figures and designs.

To Prevent Scorch.—Wipe the iron on a cloth wet with kerosene.

To Remove Scorch.—Linen articles and other white goods slightly scorched by hot irons may be restored, if the fibers have not been destroyed, simply by exposing them to the heat of the sun or, on dark days, to the heat from an open oven. Moisten them at intervals by sponging lightly with clear water. If the stains are deeper, rub chlorine water into the spot with a sponge or linen rag. earth. Boil five minutes, cool, and pour over the scorched linen. Let it dry on, and afterwards remove by washing. Repeat if necessary.

CHAPTER XLIX

REMOVAL OF SPOTS AND STAINS

SOLVENTS FOR SPOTS AND STAINS—KINDS OF SPOTS AND STAINS—STAINS ON WHITE LINEN OR COTTON—TO REMOVE STAINS FROM VEGETABLE FIBERS—TO REMOVE STAINS FROM ANIMAL FIBERS—TO CLEAN COLORED GOODS—TO DRY-CLEAN MEN'S GARMENTS—TO DRY-CLEAN WOMEN'S GARMENTS—CLEANING AND CARE OF GLOVES—TO CLEAN FEATHERS, FURS, AND STRAW—BLEACHING VEGETABLE AND ANIMAL FIBERS

SOLVENTS FOR SPOTS AND STAINS

The commonest stains that have to be removed from textile fabrics are ink, grass green, iron rust, mildew, grease spots, paint, and tar. These require treatment according to the nature of the stain and the fabric. The principal chemicals that should be kept on hand in the laundry closet to remove stains are certain acids, especially oxalic, tartaric, and muriatic acid; together with ammonia and hyposulphite of soda to neutralize the effect of the acid after the stain has been removed; aqua ammonia for the same purpose; various substances that have the power of cutting or dissolving gums and resins, as alcohol, chloroform, and oil of turpentine; and certain absorbents, as chalk, French chalk, pipe clay, fuller's earth, and the like. Other useful articles—as fresh milk, sour milk, buttermilk, cream of tartar, lemon juice, salt, raw potato, etc., will usually be at hand.

Treatment of Spots and Stains.—Treatment for stains in general should be progressive, beginning with the milder remedies and reserving the more powerful ones to the last. Fresh stains are much more easily

soluble than those that are allowed to remain until various chemical changes have taken place. Hence prompt treatment is always advisable. When stains are fresh, immediate application of any dry absorbent powder, as common salt, common starch, chalk, pipe clay, etc., will take up much of the staining fluid. Dipping at once into boiling water for some stains and into milk for others will assist in dissolving the stain, and various other agents may then be applied while the fabric is wet. If the stains have been suffered to dry they must usually be wet by soaking to swell the fibers of the fabric, so as to allow the cleansing substance to be absorbed.

The Laundry Closet.—It will be found very convenient to provide a special receptacle in the kitchen or laundry for the various articles for removing stains, and for the soaps, washing compounds, bluing, starch, and other things used in the laundry. A complete list will include hard bar soap, both white and yellow, naphtha soap, sal soda, bluing, wheat and corn starch, borax, aqua ammonia, sugar of lead, oxalic, muriatic, and tartaric acids, bleaching powder (chloride of lime), caustic potash, turpentine, benzine, and gasoline, besides various cleansing mixtures. This closet should

have a strong lock or padlock, and the key should be kept beyond the reach of children. Every bottle and package of poisonous substances should be plainly labeled and should bear the word "POISON."

Utensils for Stains or Spots.—The laundry closet should also contain a number of small sponges, which can be bought for ten cents a dozen, for applying various substances to stained fabrics; likewise several sizes of small camel's-hair paint brushes, such as are used for water colors. The stiff fibrous sponges called "loofah," which cost about ten cents apiece, are especially useful for grease stains or spots. If the goods is rough these can be used to scrape with vigorously. They can also be used with a lighter touch on delicate fabrics. They leave no lint and are easily washed and dried. When removing spots or stains, first hold the garment to the light, and if the stain is on the surface scrape off as much of it as possible with a sharp knife before wetting the fabric or applying chemicals.

Acids to Remove Stains.—The laundry cupboard should be furnished with a 4- or 6-ounce vial of oxalic acid and of tartaric acid and a 2-ounce vial of muriatic acid. These will be found easy to apply, and prove much more effective than many of the ordinary methods that often must be employed if they are not kept at hand.

Cautions in Use of Acids.—These acids are all poisonous and must be labeled "POISON," and locked up out of the reach of children. They must not be used on colored fabrics, and must be quickly and thoroughly rinsed out as soon as the stain has been removed. When possible, they should be followed by the use of hyposulphite of soda, ammonia, or other chemical that will neutralize the acid.

Oxalic Acid.—This is the active principle of salts of sorrel. When combined with cream of tartar it is known as salts of lemon. It may be dissolved in one part of boiling water. It is a dangerous poison, and in certain quantities will cause death in about ten minutes. It is used for

cleaning leather, scouring metals, especially brass and copper, and for removing various stains. It has very much the appearance of Epsom salts, from which it must be carefully distinguished.

Use of Oxalic Acid.—Oxalic acid is especially useful in the laundry to remove iron mold, fruit stains, and ink spots produced by the old style iron-gall inks. It does not, however, remove ink stains produced by modern writing fluids or blue-black inks composed of aniline dyes. Oxalic acid may be applied to cotton, linen, woolen, silk, or any ordinary fabric if uncolored, but it bleaches colored goods. The color, can, however, in most cases be restored by aqua ammonia. When possible, it is advisable to experiment with a sample of the goods before applying oxalic acid to colored articles.

To Apply Oxalic Acid.—The acid may be applied alone, either dissolved in its own bulk of boiling water for a "saturated" solution, or in nine parts of cold water for a "dilute" solution.

Or, as salts of lemon, it may be dissolved in 1 to 10 parts of water, either hot or cold. The action of the acid is increased by heat as in boiling water.

To apply, either wet the spot in water and cover with a dry oxalic acid or salts of lemon, or dip the spot into the solution, or apply the solution to the spot with a small brush, sponge, or piece of rag. If the stains are old or have penetrated through the fabric it will be necessary to rub the acid vigorously into the spot and persist patiently until successful. Oxalic acid is also recommended to bleach silk in the proportion of 4 pounds of the acid and 4 pounds of salt to 2 quarts of water for the raw silk, or 2 ounces of oxalic acid and 2 ounces of salt to 6 quarts of water for white silk that has become yellowed from washing. The latter proportions may be observed for removing vegetable or fruit stains, should it be necessary to immerse the article in the solution.

As soon as the stain disappears, rinse with clear water, and afterwards wash with soapsuds.

Uses of Citric Acid.—This is the

acid principle of alum and lemon juice; it is also found in gooseberries, currants, and some other fruits. It is intensely sour, is readily soluble in water, and is used in medicine; in dyeing, to heighten certain colors; and to break up certain coloring compounds. Citric acid may be used dissolved in slightly more than its own bulk of water for a saturated solution, or in 10 or more parts for a dilute solution. It may be applied to white goods or fast-dyed cotton or woolen, by moistening the stain with a solution by means of the finger tips, a small brush, sponge, or rag. Rinse immediately in clear water. It may be used for stains from fruit, iron-gall inks, iron rust, or mildew; but for these oxalic or tartaric acids are commonly preferred. In the form of lemon juice, citric acid is a mild but useful agent, and one generally employed. With the addition of salt on colored goods it may safely be used on any ordinary fabric. To apply, saturate the spot with lemon juice, and for colored goods cover with dry salt. Expose to direct sunshine and repeat if necessary.

Or apply lemon juice and salt, and stean the fabric over a kettle.

Uses of Lactic Acid.—This is the acid which forms in milk when it turns sour and which is, therefore, contained in buttermilk. It is the presence of this acid which causes buttermilk to be employed in the process of bleaching linen. Sweet milk, sour milk, and buttermilk are all recommended for the treatment of stains in fabrics, the action being strong in proportion as the liquid sours with age. Hence, when stains are fresh they may be removed by dipping immediately in warm milk; but when they are more stubborn, they may require soaking in buttermilk for some time. The addition of common salt increases their effectiveness. This is a simple and useful means of treating ink stains from iron-gall inks, tea stains, red-wine stains, and fruit stains, especially when fresh. Sour buttermilk also erases mildew. Wet or soak the article in fresh or sour milk or butter-

milk, cover with common salt—which contains chlorine, a powerful bleaching agent—and expose to sunshine in the open air.

Nature of Tartaric Acid.—This is the acid principle of cream of tartar and is found in a free state in various plants and fruits, especially the grape. It is readily soluble in either alcohol or water. If dissolved in water and allowed to stand it deteriorates, turning into acetic acid. It is the acid principle of Rochelle salts and is principally used in dyeing, in preparing effervescing beverages, and as an ingredient in baking powder. In medicine it is used as tartar emetic.

Tartaric acid is but slightly poisonous, is much less destructive to cloth fibers than are other acids, and does not injure fast colors. It may be dissolved in less than its own bulk of water, and hence may be used in a very strong solution and readily washed out of the most delicate fabrics.

Uses of Tartaric Acid.—Tartaric acid is especially useful in grass stains, as it changes the chlorophyll and chlorophyllan into soluble substances. It is nearly as effective as oxalic acid on ink spots from iron-gall inks. It may be used on all ordinary linen, silk, cotton, woolen, or other fabrics, and if combined with salt will not cause the colors to run. The usefulness of this article in the laundry does not seem to be generally known.

To Apply Tartaric Acid.—Wet the spot with water and apply the dry acid with or without an equal quantity of salt.

Or wet the spot and cover with cream of tartar, with or without its bulk of salt. The process will be quickened if the stain is held over the steam of a teakettle or laid upon a heated dinner plate or other smooth, heated surface. The acid may be rubbed into white goods with the finger tips or the bowl of a spoon, but on colored goods it should be applied more carefully.

Or, for a saturated solution, dissolve in its own bulk or less of hot water. For a dilute solution dissolve

in 10 or more parts of cold water. Apply same as oxalic acid.

Nature of Salts of Lemon.—This is a compound of equal parts in bulk of cream of tartar and salts of sorrel. It combines the effects of tartaric and oxalic acids. Its uses and methods of application are similar. It may be used on the same fabrics and requires similar caution.

Nature and Uses of Muriatic Acid.—This is a gas produced by treating common salt with sulphuric acid or oil of vitriol. It is readily soluble in water, and this solution is the commercial article. It is poisonous, has a sharp keen smell and taste, and when inhaled causes suffocation. One part of water will absorb about 450 times its own bulk of the gas. It is a powerful corrosive, and must be provided with a glass or rubber stopper, or the cork must be smeared with vaseline, else it will eat the cork and evaporate. It corrodes metals.

To Apply Muriatic Acid.—This acid is especially useful to remove red rust stains. To apply, lay the fabric containing the spot over an earthen dish of boiling water. Allow a drop of the acid to fall on the stain from a glass stopper or medicine dropper. This will cause the stain to fade to a light yellow. Drop the cloth immediately into the water and rinse. Repeat if necessary. As soon as the stain disappears, rinse the article and dip it into ammonia water. This will neutralize any acid that was not removed by rinsing.

Muriatic acid may be used on linen or cotton fabrics, but not on silks or woollens. It can be employed on certain fast colors, but it is advisable to test a sample of the goods before applying.

Nature and Uses of Ammonia.—It is interesting to note that the name "ammonia" was formerly applied to common salt on account of the fact that salt was anciently found in the Libyan Desert near the Temple of Jupiter Ammon. Ammonia occurs as a colorless transparent gas with a pungent odor. It is readily soluble in water, 1 part of water absorbing about 500 volumes of the gas. A so-

lution of ammonia in water is called aqua ammonia or "spirits of Hartshorn." Preparations sold for household purposes vary greatly in strength. Smelling salts or sal volatile is a carbonate of ammonia. Ammonia combines with acids to form soluble salts. Hence it is useful in removing fruit stains and other acids. It may be applied freely to all ordinary fabrics; to remove stains made by strong acids, red wine, iodine, nitrate of silver, and also the stains of sea water and cod-liver oil.

Uses of Alcohol.—Alcohol, as is well known, is a pure, colorless liquid with a burning taste. It burns easily, has a strong affinity for water, and dissolves many substances. Pure alcohol is called absolute or "anhydrous" alcohol, but the commercial article varies from "proof spirits," which contains about 50 per cent of alcohol by volume, to "cologne spirits," which contains from 93 to 95 per cent.

The solvent quality of alcohol makes it useful to remove stains in silk, woolen, and other delicate fabrics, provided they are soluble and do not require chemical treatment. It may be mixed with benzine or aqua ammonia or both. It is most effective when the stains are fresh.

Uses of Chloroform.—Chloroform is a colorless liquid with a sweetish taste and characteristic odor. Its anæsthetic properties are well known. It is slightly soluble in water, but readily so in alcohol and ether. It has the property of dissolving camphor, resin, wax, rubber, iodine, and other substances. Chloroform may be employed to restore certain colors that were removed by acids after the acids have been destroyed by the application of ammonia.

Uses of Turpentine.—Turpentine is a resinous oil obtained from cone-bearing trees. The commercial article is a solution of resin in a volatile oil. Turpentine has a well-known spicy odor, a bitter taste, and burns freely. Oil of turpentine, obtained by distillation, is a colorless liquid with a peculiar odor; it is insoluble in water, but dissolves readily in alcohol or

ether. It also dissolves resin, gummy substances, oils, rubber, iodine, sulphur, and phosphorus. Hence its usefulness in treating stains produced by such substances. The commercial article is sold in various grades, and is used extensively in the preparation of paints and varnishes.

To Apply Turpentine.—Turpentine will remove paint, grease, or vaseline stains without injury to the most delicate fabric. Apply sufficient turpentine to soak the paint or grease spot. Use a camel's-hair brush, a common pen or feather, or, for large spots, a sponge.

Or apply by dropping from a glass bottle.

The turpentine may be mixed with alcohol, salts of lemon, or sulphuric ether.

Kinds and Uses of Absorbents.—Various absorbents are recommended to remove grease, wax, blood, ink, mildew, and other stains from fabrics. Among the most useful of these are brown paper and blotting paper. Others are chalk, French chalk (which is not chalk but ground soapstone), pipe clay, fuller's earth, magnesia, gypsum, common starch, and melted tallow.

One of the quickest and best methods to remove grease (especially when it is fresh) and spots of wax is to lay over the spot a piece of common brown paper and press with a hot iron. Care must be taken not to use an iron hot enough to change the colors of colored silks and print goods. If convenient the spot may be previously covered with French chalk.

Or any of the above powders may be applied dry. The grease or wax will be taken up more quickly if held near a stove or pressed with a hot iron.

For mildew, rub the spots with wet soap, rub in pipe clay, fuller's earth, or chalk, cover thickly with the same, and expose to sunshine.

For blood stains use cornstarch.

Chlorine and Uses of Bleaching Powder.—This is the chloride of lime prepared by exposing damp slacked lime to chlorine gas. A good, fresh

article contains 25 to 30 per cent of effective chlorine, which is a powerful bleaching agent. It decomposes and deteriorates with time, setting free hydrochloric acid, to which the bleaching is due. This is a pale-yellow gas that has the property of decomposing various kinds of coloring matter. Bleaching powder is one of the surest agents for removing ink stains or writing from white textile fabric or paper. Cover the spots with dry bleaching powder and moisten with a weak mineral acid, as acetic or tartaric acid. This method is not suitable for colored goods, as the bleaching powder would remove the colors. Afterwards neutralize the acid by applying aqua ammonia or hyposulphite of soda.

To Make and Use Javelle Water.—Chloride of lime or Javelle water is a colorless liquid that may be prepared from bleaching powder. It is much used for taking fruit and other stains from white textile fabrics and for bleaching wood and straw. For fruit stains dissolve $\frac{1}{2}$ pound of chloride of lime in 2 quarts of cold water. Dissolve separately in an agate pan 1 pound of sal soda in one quart of boiling water. Mix the two solutions, let the mixture settle, and pour off the clear liquid. This is Javelle water. Apply with a brush, rinse in clear water, and dip in ammonia water to neutralize the acid.

Or dissolve 2 ounces of chloride of lime in 1 quart of boiling water. Immerse the fabric in this for 5 minutes. Remove, add 4 quarts of cold water, and soak the article for 3 to 12 hours, depending upon the strength of the fabric. This is heroic treatment, and should only be used on coarser articles, as duck, canvas, and the like, as it tends to rot the fabric. Afterwards immerse in a solution of 4 ounces of hyposulphite of soda to 1 gallon of water to neutralize the acid. Rinse in clear water and wash in soapsuds.

Nature of Gasoline.—Gasoline is a product of the distillation of petroleum. The first liquid that passes over in the distillation of petroleum is crude naphtha. By redistillation

this is separated into gasoline and the A, B, and C grades of naphtha. Gasoline is very commonly used for domestic heating and cooking in stoves especially prepared for the purpose, and also in gasoline engines for the production of power. It is highly inflammable and explosive. It gives off under ordinary temperature a volatile gas which, by contact with flame, or a hot stove, will ignite at a distance of several feet from the liquid gasoline. Great caution must, therefore, be exercised in its use.

Benzine is a substance similar to gasoline, and may be used for sponging fabrics in the same manner.

How to Use Gasoline.—Employed by the following methods gasoline will thoroughly cleanse wool, silk, velvet, and other fabrics of animal fibers, but not cotton, and will remove grease, paint, wax, and mud stains; in fact, practically all stains except acid ones, without injury to the texture or colors of the fabric. Dirt and other impurities removed will sink to the bottom and can be removed by straining through cheese cloth. Hence the same gasoline may be used again and again. The best results are obtained by using a fairly large quantity of gasoline and soaking and washing the articles in it the same as in water. The cost of cleaning with gasoline is much less than is charged by a professional cleaner, and a great deal less than that of replacing the articles. Hence it pays to purchase the best gasoline in five-gallon cans, and to provide and set aside two or three covered earthenware jars in which to use it.

Cleaning with gasoline should be done preferably out of doors, or if indoors, by daylight, and never in the vicinity of a hot stove, lamp, or other flame. Care must be taken that matches are not accidentally lighted in its vicinity.

First, shake and brush the articles to remove dust and dirt. Remove rubber dress shields or other pieces of rubber, as they will be spoiled. Tack small articles together and wash larger ones singly in an earthenware jar filled with gasoline and allow them

to soak for an hour or more. If the jar can be put in a pan which is surrounded with hot water (but not on a stove or near any open flame), the gasoline will do its work quicker and better and will be less disagreeable for the hands. The addition of common salt at the rate of a teaspoonful to each quart will prevent leaving a ring, and a few drops of oil of sassafras will neutralize the unpleasant



“Cleaning with Gasoline Out of Doors”

odor. After soaking, work the articles about, rubbing carefully between the fingers, or rub the spots with a toothbrush or nailbrush having fairly soft bristles. Or dip the brush into a small can of gasoline set into a pan of hot water. Squeeze the gasoline out of the garments and put them into a second jar, into which pour fresh gasoline, meantime putting other articles to soak in the first jar. A third jar may be used if necessary. After rinsing in the second or third jar squeeze the garments quite dry, stretch carefully to their proper shape, and thoroughly evaporate by airing them on a line, and afterwards pressing them with a hot iron. Hang coats or

waists on a coat hanger to keep in shape while drying.

Pour the gasoline back into the can through a funnel covered with several thicknesses of cheese cloth.

Or, to remove a spot or a stain, stretch the fabric over a piece of blotting paper and pour the gasoline around it. Sponge inwardly toward the spot as a center until it is removed. Take a dry cloth and continue rubbing in the same manner with light strokes until the article is dry.

Or sprinkle a little powdered gypsum over the spot, extending beyond the moistened part. When this is brushed off, the spot will be removed.

Or, if a benzine stain, rub French chalk into it with a piece of flannel, sprinkle a layer of the chalk over it, and let stand for twenty-four hours.

Cleansing Mixtures.—Shave 4 ounces of Castile or other hard white soap and dissolve in 2 quarts of boiling water. Remove from the fire, and when cold add $\frac{1}{2}$ ounce of saltpeter, stirring until dissolved. Strain through cheese cloth, let the mixture settle, and take off the scum with a skimmer. Now add $\frac{1}{2}$ pint of ammonia and bottle and cork tightly. Keep in an earthenware jug with a tight cork. This is the so-called "Magic Annihilator," which is recommended to remove grease and oil from all kinds of dress goods and other fabrics without injuring them, and for various other purposes, as scouring floors, cleaning windows, metals, etc. It must not be used on woodenware, as it will remove paint, for which purpose it is especially recommended.

Pour this liquid on both sides of the spot or article to be cleaned. Scrub with a stiff brush, sponge, or loof, and rinse with cold water. Repeat if necessary. To clean silverware and other metals mix with whiting.

Chemical Soap.—Shave 1 ounce of Castile soap, cover with 1 pint of water, and boil until dissolved. Stir in 2 ounces of sal soda, $\frac{1}{2}$ ounce of starch, $\frac{1}{4}$ ounce of borax. Pour into molds to cool and harden. Apply with a rag, sponge, or loofah to remove grease, paint, tar, etc.

Or mix $\frac{1}{2}$ ounce of borax and $\frac{1}{2}$ ounce of camphor in a quart fruit jar. Pour over them 1 pint of boiling water. Cork tightly and let stand until cool. Now add $\frac{1}{2}$ pint of alcohol, shake well, and cork tightly. Use to sponge woolen dress goods, men's clothing, felt hats, and the like.

Or dissolve 1 ounce of Castile soap scraped in 1 quart of boiling water. Let cool and add $\frac{1}{2}$ ounce of glycerin, $\frac{1}{2}$ ounce of alcohol, and $\frac{1}{2}$ ounce of sulphuric ether. Bottle, cork tightly, and keep in a dark place. Use to sponge all sorts of dress goods, and especially to remove grease spots.

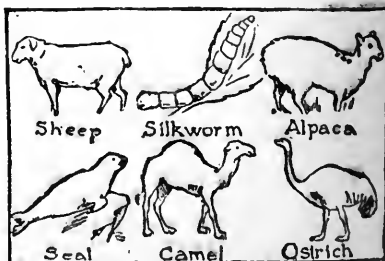
Or mix equal parts of turpentine, benzine, and chloroform.

Scouring Mixtures.—Mix 3 pounds of fuller's earth, $\frac{1}{2}$ pound of pipe clay, 2 ounces of powdered French chalk. Mix separately 1 ounce of rectified spirits of turpentine, 1 ounce of alcohol, and 12 ounces of soap jelly. Stir the two mixtures together to a stiff paste and place in tightly covered fruit jars.

Or mix equal parts of fuller's earth and soap jelly. To apply, moisten the cloth with warm water and cover with this mixture, rubbing it well into the goods. Let stand until dry, then scour with a stiff brush and warm water.

Or mix 1 ounce of baking soda, 1 ounce of prepared chalk, 1 ounce of pumice stone, and 1 ounce of sifted wood ashes. Apply this mixture with a piece of raw white potato.

Nature of the Fabric.—The treatment of spots and stains depends not



"With Animal Fibers Caution is Necessary"

only upon the kind of stain, but also upon the nature of the fabric. Fabrics are of two principal classes: vegetable fibers, which include linen and cotton goods; and animal fibers, which include wool, silk, furs, feathers, and the like. All vegetable fibers contain cellulose, a hard, woodlike substance that offers a strong resistance to the action of chemical agents, and is not easily injured by rubbing. Hence stronger acids and alkalis and more vigorous rubbing can be employed upon cottons and linens than upon wool, silk, or other animal fibers.

In the treatment of wool, caution is necessary from the fact that the fibers of wool have numerous minute hook-like projections which, by rubbing the fibers together, or by alternate expan-

grades of soap should be employed in cleaning it.

KINDS OF SPOTS AND STAINS

The principal stains and spots the laundress has to do with are tea, coffee, and wine stains, iron rust, and ink; paint and tar, grass stains and mildew, blood stains, grease spots, and mud stains. These should all be removed from washable articles before sending them to the laundry. Hence many housekeepers set apart Tuesday for wash day, and take occasion Monday to sort the wash and carefully remove all stains, and sponge or scrub or dry-clean any articles that may require it.

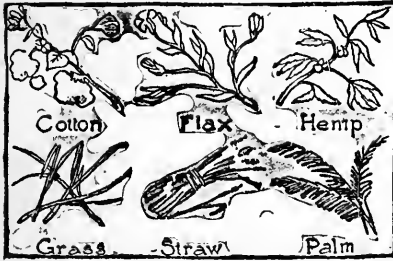
Grass Stains.—White and other light-colored summer gowns, duck and flannel trousers, and children's garments frequently show grass stains in summer. The green stain is produced by chlorophyll, a coloring matter present in growing vegetation. This, when exposed to the action of the air, becomes changed into chlorophyllan, which is insoluble in water. Grass stains when fresh may be removed by sponging with alcohol, but after the chlorophyll has been converted into chlorophyllan, the action of alcohol will leave an insoluble brown stain in place of the green. Neither oxalic nor muriatic acid is effective with grass stains, but a hot solution of tartaric acid changes the green stain to light brown, that yields readily to boiling soapsuds in the laundry. If tartaric acid is not at hand, wet the stain and apply cream of tartar or salts of lemon.

Or dissolve cream of tartar in boiling water and apply hot.

Or rub grass stains with molasses and wash in clear, soft water without soap. Do not use oxalic or muriatic acid.

Or ammonia and water may be used, if the colors are not delicate.

Tea and Coffee Stains.—These, when fresh, all yield readily to the action of boiling water, especially if the fabric be stretched tightly and the boiling water poured upon it with some force.



"All Vegetable Fibers Contain Cellulose."

sion and contraction (as when plunged from hot water to cold water, and back again), become interlaced in such a way as to warp fabric in all directions. This is what causes the shrinking of woollen goods, so much dreaded by the laundress. Hence wool should not be rubbed or wrung out in the usual way, nor subjected to either very hot or very cold water. The water should be lukewarm or not too warm to bear the hands comfortably, and all washing and rinsing waters should be kept at a nearly uniform temperature.

A similar caution in handling silk is due to the delicacy of the fabric. Silk, if rubbed or wrung out, tends to crack or to show permanent wrinkles. It should accordingly be handled with care, and only the finer

To prevent scalding the hands when pouring hot water over table linen in order to remove the stains, stretch the stained portion over a deep bowl or basin and use clothes pins to hold it firmly in place. Then it becomes an easy matter to pour on the boiling water.

The stains will yield to treatment more readily if first soaked in cold borax water.

If stains have been neglected and fixed by soap in the laundry, it may be necessary to apply dilute oxalic acid or chloride of lime, or to treat them with lemon juice and salt, salts of lemon, and other remedies, afterwards exposing the article to the air and sunshine. The stains of berries, especially of blackberries, and of plums and peaches are very refractory. Hence, if possible, these should have immediate treatment.

Paint.—Paint and resin may be quickly dissolved by the action of turpentine, benzine, chloroform, or sulphurous ether, the treatment depending upon the nature of the fabric. Tar may be rubbed with lard and afterwards removed by washing. Oils may be dissolved by alcohol, ether, or spirits of turpentine. For colored goods, these may all be combined with ammonia and glycerin.

Mildew.—Mildew is a fungous growth of certain parasitic plants. It forms on cloth that is exposed to dampness in patches of various colors, red, black, yellow, or even green. Various substances may be used to prevent its forming. Mildew produces a stain which is very refractory. The treatment depends upon the nature of the fabric and the extent and depth of the stain, and varies from simple remedies, such as soap, lemon juice and salt, and the like, to chloride of lime and the more powerful acids. Other substances recommended are French chalk, starch, and buttermilk. These must, of course, be used with proper caution and a due regard to the liability of injury to the fabric. They should be afterwards assisted by the bleaching agencies of air and sunshine.

To Prevent Mildew.—Canvas, duck,

and similar fabrics used for awnings, tents, and the like may be preserved against mildew by first soaking them in strong suds made by dissolving $\frac{1}{2}$ pound of hard white or yellow soap in 2 gallons of water, and afterwards immersing the fabric, for a period of 24 hours, in a solution of 1 pound of alum dissolved in 1 gallon of water.

To Remove Mildew.—Dissolve 1 ounce of chloride of lime in 1 pint of boiling water; then add 3 pints of cold water. Soak the article in this from 3 to 12 hours. Remove, rinse thoroughly, and send to the laundry. If the chloride of lime is not thoroughly washed out the fabric may be injured.

Or rub the spot with good yellow soap, wash, and while wet rub powdered chalk into it and cover with a layer of chalk. Lay the article on the grass in the sun and sprinkle clear water over it. Repeat this treatment until the mildew is removed.

Or wet the spots in a solution of one half peroxide of hydrogen and one half water. Hang out to drip dry, or lay on grass to bleach. Repeat, if necessary.

Or mix $\frac{1}{4}$ pound of soap jelly with 2 ounces of starch, 1 ounce of salt, and the juice of 1 lemon. Pour over the stain, or apply with a brush.

Or saturate the spots with lemon juice and salt and expose to direct sunlight.

Iron Rust.—Stains from iron rust (or "iron mold," as they are sometimes called) yield readily to both muriatic acid and oxalic acid, but as the latter is less injurious to fabrics, a hot solution of it gives most satisfaction. Other substances recommended to remove iron rust are salts of lemon, lemon juice, salt, cream of tartar, and various admixtures of these.

Spread the stained fabric over a bowl containing 1 teaspoonful of borax dissolved in 1 quart of water. Apply dilute muriatic or oxalic acid, drop by drop, until the stain fades. Then dip the fabric into the borax water. Repeat if necessary.

Or wet the stained fabric, apply the cleansing substance and hold in the

steam of a teakettle, or expose to direct sunshine, spreading on the grass when convenient until the stain is removed. Repeat the treatment as often as is necessary.

To make salts of lemon, mix equal parts of cream of tartar and powdered salt of sorrel. Wet the spot, and apply dry salts to the wet surface.

Or mix lemon juice with salt and cover thickly.

Or use equal parts of cream of tartar and oxalic acid, or equal parts of cream of tartar and salt.

To Remove Whitewash.—To remove whitewash stains apply strong vinegar.

Vaseline Stains.—Wash in warm soapsuds, rinse, and apply chlorinated soda.

Or soak in kerosene and wash in strong soap suds.

To Remove Tomato Stains.—Soak the parts stained (before washing) in sour milk.

Wax Stains.—Apply alcohol or naphtha with a camel's-hair brush, sponge, or piece of rag.

Or hold the stains within an inch or two of a very hot iron, and rub with a soft, clean rag.

Or lay over them a piece of coarse brown paper, or blotting paper and iron with a hot iron.

Paint Stains.—Rub with benzine or turpentine; or for delicate goods and colors use, instead, chloroform or naphtha.

Or saturate the stains with gasoline and rub with a small sponge or flannel rag. Continue until the paint is absorbed, and rub with a clean cloth until dry.

Or saturate the spot for some hours with turpentine, and afterwards rub the article between the hands, when the paint will crumble and can be dusted away without injury to the fabric.

To Remove Tar from washable materials, rub fresh lard on it, and allow it to stand about two or three hours. Then wash with hot water and soap.

To Remove Sticky Fly Paper from clothing or other articles rub with fresh lard. Then wash with soap and water.

Iodine Stains.—As iodine is often applied externally to the skin, it frequently stains cotton and linen garments. To prevent this add a few drops of liquid carbolic acid to the iodine.

To remove the stains when fresh, dip the spots in aqua ammonia diluted with warm water.

Or cook starch as for the laundry and while hot dip the stain into it and rub between the hands or on a board until it disappears. This process will remove stains of most other drugs and medicines.

Or soak the stains in a strong solution of hyposulphite of soda and water.

Or wet the fabric and cover with hyposulphite of soda until the stains are removed.

Nutgall Inks.—Formerly black ink was usually made of green vitriol dissolved in an infusion of gallnuts. Inks of this sort stain paper permanently and speedily, rapidly darken for a while, but eventually become yellow or brown with age. These old-fashioned inks were easily removed with oxalic and mineral acids, but the modern inks contain, in addition to tannate of iron (produced by the action of nutgalls upon copperas), aniline blue, indigo, and other dye stuffs that are not removable by these acids. The first inks of this sort were placed upon the market about the middle of the nineteenth century. Many of the recipes still found in print claiming to remove all sorts of ink spots were originally published more than fifty years ago. All such recipes must be regarded with suspicion. No single recipe can be given that will remove stains made by every kind of ink.

Chrome-logwood Ink.—Another modern ink known as the chrome-logwood ink is produced by the action of a solution of logwood upon potassium chromate. This is a deep purple ink, that turns darker after being exposed to the air, and has the advantage over iron-gall inks that it will not fade. Logwood is also combined with an extract of alum or chloride of aluminum. The best French copying inks are of this class. These inks may be removed

by muriatic acid, which first turns the spot red. This acid must not, however, be used on stylographic inks containing eosin or nigrosine, as it will turn them into an indelible dye.

Stylographic Ink.—This is a modern ink made by dissolving in water the coal-tar product known as nigrosine. It is used for stylographic pens on account of its fluidity, as it contains no sediment. This ink is of a deep blue-black color that does not change on exposure to the air and has little luster. It does not fade, and after a lapse of years is soluble in water. Hence if paper containing it is wet the color will run. The effect upon a nigrosine ink of acids in certain recipes "guaranteed to remove any ink spot" is to mordant or set the ink, rendering it insoluble and practically indelible. Hence it is always advisable to moisten an ink spot with water, and if it blurs or smirches, thus indicating the presence of nigrosine, washing soda, caustic soda, potash lye, or any other alkali should be used, but not an acid.

Indelible Ink.—Indelible writing and marking inks are mostly finely divided carbon which, as is well known, offers great resistance to chemical agents. India and China inks are of this class. They are composed of carbon, chiefly lampblack or other soot, mixed with gum or glue. Indelible ink for marking textile fabrics is also made of nitrate of silver and other silver salts.

Various other substances are employed in ink making, but those we have given are the most common.

Treatment of Ink Stains.—If the nature of an ink is known, the proper treatment can, of course, be given; otherwise it is best to first dip the ink in water to test if nigrosine is present.

If nigrosine is not present try oxalic acid, which will remove an old style iron-gall ink or decompose a modern iron-gall ink by removing the black tannate of iron, and leaving the indigo and aniline blue dye stuffs as a stain on the fabric. Wet the stain in cold water and drop dilute oxalic acid, or equal parts of oxalic acid and cream

of tartar on the spot. Let stand a few minutes and rinse in ammonia water. If this is not effective, try muriatic acid. This will remove the stain of a logwood or copying ink. Follow this with an alkali to remove the effects of the acid.

A nitrate of silver ink stain may be removed with cyanide of potassium, which is a deadly poison.

Or apply a dilute solution of permanganate of potash with muriatic acid; follow by soaking in a solution of hyposulphite of soda, and afterwards rinse in clear water.

If all else fails, cover the spot with dry bleaching powder and moisten with dilute acetic acid or strong vinegar. Afterwards apply ammonia, or dip in a solution of hyposulphite of soda and rinse. It must be borne in mind that strong acids and alkalis will injure the texture of animal fibers as wool and silk and bleach colored fabrics. For such articles use pyrophosphate of soda.

If a garment spotted with ink is especially valuable it would be well to try a series of experiments with the same ink on a piece of similar fabric. In the meantime cover the stain with various dry absorbents to take up the excess of ink. After these have done their work, soak the article in sweet or sour milk while the experiments are being made.

Or if it is small dip it immediately into pure melted tallow.

If the stain is dry and well set, use Javelle water.

Lemon juice and salt, sour milk, and similar remedies are useful if suitable acids are not at hand, but cannot be depended on to do the work in a thorough manner.

STAINS ON WHITE LINEN OR COTTON

Ink Stains.—Substances recommended for removing ink from linen are salts of lemon, cream of tartar, citric acid, oxalic acid, lemon juice, vinegar, salt, sour milk, and chloride of lime. The treatment to be employed depends necessarily upon the nature of ink.

Ink stains should be treated as quickly as possible, before the ink has had a chance to set. While fresh, pour over them a quantity of salt, dry starch, or other absorbent, and brush it away as it absorbs the ink. Keep the spots wet, and continue applying the absorbent until the ink is removed.

Or keep the spots wet with milk, and apply dry salt until the stains come out.

Or wash the stains with sour milk and let them soak over night.

Or dip the stains alternately in strong bran water and lemon juice until they disappear.

Or use equal parts cream of tartar and powdered salts of sorrel (salts of lemon), dissolved in the smallest possible quantity of boiling water and applied hot.

Or rinse carefully in clean water and apply oxalic acid. If this produces a red tinge apply dilute aqua ammonia.

Or dip small articles, as laces, handkerchiefs, and the like, in melted tallow and after the stain has disappeared remove the tallow by boiling in hot soapsuds. This last is perhaps the simplest and best of all remedies.

To Remove Marking Ink from Linen.—Apply fresh chloride of lime mixed with water. As soon as the color fades, dip into a solution of aqua ammonia or hyposulphite of soda, and rinse well before sending to the laundry.

To Remove Indelible Ink.—Stains made by indelible ink containing nitrate of silver may be removed by applying chloride of copper. Afterwards dip the article in hyposulphite of soda.

Or apply a dilute solution of permanganate of potash and muriatic acid, and follow with hyposulphite of soda. Cyanide of potash is also used for this purpose. It is highly poisonous.

Or melt pure tallow and pour over the ink spot while hot. Remove the tallow by dipping in hot water; repeat if necessary. This is a method employed by many dyers and cleaners,

and has the merit of not injuring the fabric.

If lamp black has been used in the ink the stain cannot be wholly removed.

To Remove Printer's Ink.—Soak the spots in turpentine for several hours. Rub them in the turpentine, as in washing. Let dry and brush thoroughly with a stiff brush.

To Remove Iron Rust.—Use lemon juice, salt, and sunshine. Or a strong solution of oxalic acid rubbed in with the fingers. Or equal parts of powdered alum and salt applied dry to the wet fabric.

Grass Stains.—Use tartaric acid or cream of tartar dissolved in boiling water. Apply hot. Or rub lard on the spot when fresh and afterwards wash as usual.

Ink Stains.—Rub promptly with a slice of lemon. Or dip in pure melted tallow. Or apply a saturated solution of oxalic acid or dilute muriatic acid or salts of lemon.

Use dilute tartaric acid for colored goods. If the colors fade, renew with dilute aqua ammonia.

Acid Stains.—Wash the article and dip in Javelle or chlorine water. For colored goods, moisten in dilute aqua ammonia.

Nitrate of Silver or Nitric-acid Stains.—Apply iodine and rub briskly with strong aqua ammonia.

Or apply a dilute solution of permanganate of potash and hydrochloric acid. Afterwards dip in a solution of hyposulphite of soda and rinse well.

Mildew.—Boil in strong borax water.

Iodine.—Soak for an hour or more in a warm solution of aqua ammonia and water. Then while still wet rub dry bicarbonate of potash into the stain until it is fully removed.

Cod-liver Oil.—Add kerosene or aqua ammonia to the suds and boil.

Red Wine.—Bleach with sulphur fumes over an inverted funnel, or dip in Javelle or chlorine water.

Tannin Stains.—These may be produced by green chestnut burs, walnut husks, or substances used for tanning leather. Dip in hot Javelle

or chlorine water, remove, and rinse quickly. Or apply a strong solution of tartaric acid.

Red Stains from Colored Goods.—The dyes used for colored goods, red threads, etc., sometimes run and accidentally stain white goods. Apply fumes of sulphur through an inverted cone, or a saturated solution of oxalic acid or Javelle or chlorine water.

Mud Stains.—Dip the mud stains in kerosene before putting them in the boiler. Add kerosene to the boiling water.

Grease Spots.—Apply a hot saturated solution of alum with a sponge or brush, or dissolve in 1 quart of warm water 2 ounces of aqua ammonia, 1 teaspoonful of saltpeter, and 2 ounces of Castile soap. Soak the spot in this liquid and sponge.

Or moisten French chalk with naphtha. Spread over the grease spot and brush off when dry. Or moisten salt with benzine or gasoline, and with this rub the spot until dry, being careful to rub from the outer edge toward the center of the spot.

Or moisten the spot with butter or olive oil and rub with chloroform.

Machine Grease or Oil.—Rub sal soda or cooking soda into the spot and pour boiling water through until the spot is removed.

Or rub with turpentine, or naphtha.

To Dry-clean White Goods.—Small mud stains on a clean white skirt may be concealed until ready for the laundry by pipe clay or painting over with white water-color paint.

Or if a clean white skirt or shirt waist is spattered or spotted by mud or soot, let it dry, scrape off with a penknife, and rub over the stain with white crayon or school chalk.

Rub with a clean white cloth until the spot disappears.

To Dry-clean Shirt Waists.—Put 4 quarts of corn meal into a 24-pound flour sack or a pillow slip. Put the waist into this, and rub or knead gently so that the meal will come in contact with all parts of the fabric. Leave it there for a day or two, then

shake and dust thoroughly, and press with a hot iron.

Perspiration.—Use bay rum to remove perspiration stain.

To Clean Cotton Dress Skirts.—Mud stains may be removed from the bottom of a cotton dress skirt by folding several thicknesses of cloth, laying the soiled parts upon them, and scrubbing with a nailbrush, soap, and water.

TO REMOVE STAINS FROM VEGETABLE FIBERS

For strong tea stains, put a spoonful of sugar on the stain, dip into the water, and let it stand for a few minutes. Afterwards rinse with clear water.

Or, if not convenient to treat in this way, cover the stain with a quantity of powdered starch, let dry, and remove by brushing.

When dried tea, coffee, or milk stains are found in table linen, rub the stains with butter and afterwards rub in hot soapsuds before laundering.

Or apply the yolk of an egg mixed with a teaspoonful of glycerin.

Or take 10 teaspoonfuls of water, 1 teaspoonful of glycerin, and $\frac{1}{2}$ teaspoonful of aqua ammonia. Dip the stain in this and allow it to dry. Repeat several times. Afterwards rub the spot between the fingers, and before sending the article to the laundry brush or scrub away the dry residue with the edge of a knife.

Mildew on Linen.—Mildew may be removed from linen as from other fabrics with powdered chalk, lemon juice, salt, and pipe clay, and afterwards exposing to sunlight. Wash the spots in soapsuds made of hard white or yellow soap. Rub in powdered chalk with a flannel cloth, cover the spot with more chalk, and lay in the sun. Repeat if necessary.

Or soak the spots in lemon juice and apply common salt. Afterwards cover with pipe clay or powdered chalk, or use equal parts powdered starch and salt.

To Remove Ink from Linen.—Treatment depends upon the nature

of the ink. Stretch the linen before the steam of a teakettle and brush with a strong solution of salts of lemon.

Or use acetic or muriatic acid, not too strong. Rinse as soon as the ink disappears. Or apply salt and lemon juice. Or use the juice of a ripe tomato. Squeeze the juice upon the ink and rub with the fingers. Rinse and apply the juice again, until the stain disappears.

Linen, Marking Ink.—Apply a saturated solution of cyanide of potassium, (a deadly poison) rubbing with a glass rod. Rinse as soon as the ink disappears.

Linen, Iron Rust and Mold.—Cover the stain with salts of lemon and stretch it across the steam of a teakettle or a saucepan full of boiling water, so that the salts of lemon will be gradually dissolved by the steam and soaked into the fabric.

Or put a common dinner plate on top of a saucepan containing boiling water. Lay the linen over this, cover the stain with salts of lemon, and keep wet with hot water until the stain is removed. Afterwards rinse carefully in cold water.

Or rub the spot with butter, then add a small quantity of potash lye, and again rub the spot until the stain has disappeared. Rinse quickly in cold water.

Brass Stains.—Rub with lard or olive oil and wash in warm water with soap.

Linen, Yellow Stains.—If linen has faded yellow or become stained from perspiration, dissolve about one table-spoonful of pipe clay in the water in which it is boiled.

Linen, Acid Stains.—Wet the article, and cover it with salts of wormwood. Rub the dry salt into the wet fabric until the stain disappears. Afterwards rinse thoroughly.

Or rub acid spots with dilute ammonia. Rinse with cold water.

Or form a cone by twisting and pinning together a piece of paper, and under this light a number of old-fashioned brimstone matches or burn a bit of sulphur. Hold the stain so that the sulphurous-acid gas escap-

ing through the cone will pass through it.

Linen, Iodine Stains.—Dip the spot in cold water and hold it by the fire until dry. Repeat until the stain is removed.

Linen, Fruit and Wine Stains.—While fresh put a little baking soda or washing soda on the stain, stretch it tightly over a bowl or pan, and pour boiling water upon the stain so as to dissolve the soda. No fresh fruit, wine, tea, coffee, or other common stain is likely to withstand this treatment. Let the spot sink into the water and soak until the water cools, dipping it up and down and rubbing with the fingers. When the water cools repeat, if necessary, until the stain disappears.

Or for more obstinate stains use Javelle solution and boiling water in equal quantities, immersing the stained portion, allowing it to soak a few minutes, and then rinsing thoroughly with boiling water. Use glycerine for peach stains.

Or rub salts of lemon upon the stain and soak in hot water. Or dip in a weak solution of chloride of lime with water. Afterwards rinse carefully. Or rub in starch with yellow soap, then apply starch thickly moistened with water and expose to the sun. Or soak in sour buttermilk. Or apply oxalic acid.

Linen, Tea or Coffee Stains.—If tea or coffee stains are noticed at the time they are made, remove the table-cloth as soon as convenient, stretch the cloth over a pan, and pour boiling water through the stains.

Or, if they are small and the table-cloth is clean, slip a saucer or small nappy containing boiling water under the tablecloth and let the stain lie in the water. Rub gently with the fingers until it is removed. Remove the dish, put a folded napkin under the stain, and go over it with a warm iron. The cloth will then be as fresh as new without having been removed from the table. Add a little glycerin to the boiling water to remove coffee stains.

Or, if an old stain is found on a tablecloth in the laundry, first soak

the spot in cold water without soap, and try to remove with boiling water and glycerin. If this is not effectual, mix the yolk of an egg with a tablespoonful of milk and a little warm water. Add a few drops of alcohol or chloroform, if convenient, and use this as soap.

Milk and Cream.—Wash in cold water, then follow with soap.

Linen, Wine Stains.—Pile a little dry salt on a fresh wine stain and it will absorb the wine. Afterwards rinse in boiling water. Dip old stains in boiling milk until removed.

Linen, Blood Stains.—For fresh blood stains on white fabrics apply peroxide of hydrogen, which will immediately remove the color from the blood. This is a strong bleaching substance. Hence it must not be used on colored fabrics, and must be immediately rinsed, especially from woolen goods.

Or soak in warm water and cover with dry pepsin. This will digest the blood.

Or moisten the stain slightly with water and apply a thick layer of raw starch paste. Afterwards rinse in cold water. Repeat, if necessary.

TO REMOVE STAINS FROM ANIMAL FIBERS

To Prepare Silks for Cleaning.—If silk garments are to be made over or if the silk is much soiled, rip them, remove all basting threads, and stretch out creases and wrinkles. Brush thoroughly all articles, including ribbons and small pieces, to remove dust and dirt, shake well, and stretch them to their original shape. Clear a wooden kitchen table or an ironing board, and on this stretch an old linen towel, tacking the corners down tightly. Smooth the silk out flat on the towel, and sponge first on the wrong side, afterwards on the right, applying with a small toothbrush or nailbrush or flannel cloth any of the following recipes that may be most convenient. After sponging on both sides rinse in clear cold water by dipping up and down, but without wringing or

squeezing, partly dry in the shade, and press between two pieces of cloth, ironing on the wrong side with a warm, not hot, iron.

Or while wet spread the silk smoothly on a wooden polished surface, as a varnished table top, and let it dry near the fire. It will then require no ironing.

Caution as to Silks.—Observe that no measures whatever for cleaning colored silks can be employed with safety unless the goods are properly dyed in fast colors. Many modern dyestuffs, especially in light and delicate colors, are very unstable and will spot or stain at the first application of any liquid hence it is well in all cases first to experiment with a sample of the goods to ascertain what method, if any, can be employed successfully.

To Remove Grease from Silk.—For removing grease spots from silk, chloroform, French chalk, essence of lemon, turpentine, white clay, magnesia, yolk of egg, and benzine are all recommended. If possible, apply any of these while the grease is still warm.

To Clean Silk and Velvet.—Substances recommended for removing grease and other spots and stains from silks, satins, and velvets are alcohol, chloroform, benzine, turpentine, juice of raw potato, magnesia, French chalk, pipe clay, yolk of egg, and various admixtures of these. Lay the stained article flat on a smooth surface and apply the cleansing fluid with a small sponge, toothbrush, or nailbrush, unless otherwise directed, until the stain is removed. Apply chloroform with a light, quick touch, using a bit of absorbent cotton or soft cotton rag. Dampen the grease, and when it disappears rub until dry with clean cloth. To use gasoline or benzine, add a teaspoonful of salt to each quart, wet the spot and also a rather large circle around it. Rub inward toward the spot as a center with quick, firm strokes, and if the benzine leaves a stain hold it in the steam of a tea-kettle until it disappears.

Or rub grease spots with a lump of

wet magnesia. This may be dusted off when dry. Or mix 4 ounces of rectified spirits of turpentine with $\frac{1}{2}$ ounce of pure alcohol. Or mix 2 ounces of essence of lemon and 1 ounce of oil of turpentine. Or use turpentine alone. Or mix 2 ounces of alcohol, 1 ounce of French chalk, and 5 ounces of pipe clay. Apply as a paste to the grease spots.

Or cover grease spots thickly with French chalk, lay brown paper over them, and smooth with a hot iron. The iron will melt the grease, and the chalk and paper will absorb it.

Or if chalk is not at hand lay a piece of brown paper on the ironing board, lay the silk over this, place another piece of brown paper on top, and press with a hot iron, but not so hot as to scorch the fabric. This is a most effective method.

Or apply the yolk of an egg with or without the addition of 12 drops of chloroform or a teaspoonful of alcohol. Afterwards rinse with warm water.

To Clean Silk with Potato Juice.—Grate two fair-sized clean raw potatoes into each pint of water used and strain through cheese cloth. Let the resulting liquor stand until the potato starch it contains settles to the bottom, then pour off the clear liquid and bottle it. Lay a washboard down flat, spread over this a clean cloth, and lay the silk upon it. Apply the potato juice with a sponge until the silk is clean, and afterwards rinse it in clear cold water.

To Clean Silk with Gasoline.—Gasoline and benzine may be applied to silk with a sponge, but this should be done by daylight and never in the vicinity of an open fire or flame of any kind. These liquids are highly volatile, producing a gas which will ignite and explode if it comes in contact with an open flame. After cleansing with gasoline or benzine rinse the silk in alcohol.

Black Silk.—Various substances are recommended for cleaning black silks, including infusion of oxgall, logwood, copperas, tea, coffee, fig leaves, vinegar, and ammonia. The

preparation and use of these is explained below.

Dust the article carefully, spread smooth on a flat surface, and apply, with a sponge or piece of flannel, a cold, strong infusion of black tea. Or use equal parts of clear cold coffee and soft water. Or equal parts of coffee and aqua ammonia. Or a dilute solution of aqua ammonia in water.

Any left-over tea or coffee may be used for this purpose. Strain through cheese cloth to remove the dregs. Sponge or scrub both sides of the fabric, taking care not to crease it. Make the silk quite wet. Smooth the articles carefully and press as for other silk fabrics. Coffee removes grease and renews the silk without making it shiny.

Or sponge with oxgall slightly diluted with boiling water and applied warm. Rinse in cold water from time to time and continue the oxgall until the rinsing water is clear.

Or make a strong solution of logwood by boiling 1 ounce in 2 quarts of water down to 1 pint. Wash the silk clean, immerse in the solution and simmer with gentle heat for half an hour. Remove the silk, add $\frac{1}{4}$ ounce of copperas to the solution, strain through cheese cloth, and dip the silk in it.

Or wash the articles in gasoline, dipping them up and down and rubbing lightly between the hands as in water. Care must be taken not to wrinkle or crease the fabric. This removes the dirt quickly and does not cause the colors to run.

To Remove Wax from Silk.—Scrape off the excess of wax from the surface of the fabric with a penknife. Apply French chalk made into a paste with water. Lay the silk on a piece of brown paper spread over the ironing board, put another sheet of brown paper on it, and press with a hot iron.

Or toast a piece of soft bread before the fire until quite hot, but not burned, and rub the wax spot with the hot bread until cold. Take another piece, and so continue until the

wax is removed. Afterwards rub with the dry bread crumbs until perfectly clean.

Silk—To Remove Paint.—Apply a mixture of 5 parts of spirits of turpentine and 1 part of essence of lemon with a small brush, sponge, or linen rag. Or apply turpentine alone.

Silk—To Remove Tar.—Rub lard on the tar, and afterwards wash with soapsuds.

Silk, Stains of Sea Water.—Sponge with dilute aqua ammonia and water.

Silk, Acid Stains.—If the color has been taken out by acid stains, apply aqua ammonia.

To Remove Acid Stains from Violet Silk.—First apply tincture of iodine, and immediately afterwards cover the spot with hyposulphite of soda dissolved in water. Hang in the shade to dry.

To Clean Velvet.—First dust the velvet thoroughly, using for this purpose an old piece of rolled-up crape. Sponge with benzine or gasoline, same as silk. Stretch the velvet right side up over a basin of boiling water so that the steam must pass through it. While thus stretched brush with a whisk broom in the direction of the nap. The time spent depends upon the condition of the velvet, but if patiently continued the result will be entirely satisfactory. Any ingenious person can arrange a contrivance to hold the velvet in place while brushing, or an assistant may do so.

Or dampen a newspaper and set it in a hot oven until it steams. Lay this on the ironing board, cover it with a folded cotton cloth, and lay the velvet on it. While the steam is rising, brushing the velvet against the pile.

Or heat a flatiron, turn it face upward, and lay a wet cotton cloth on it. Lay the velvet, nap up, over the iron, and brush while steaming.

To Revive Faded Velvet or Plush.—Brush slightly with a sponge dipped in chloroform.

To Clean Satin.—Sponge satin neckties and other small articles with

a weak solution of borax, following the grain, and afterwards iron on the wrong side.

To Clean White Silk.—White silk may be washed in soapsuds the same as other delicate white fabrics, if care is taken not to rub or squeeze the fabric so as to cause creases or wrinkles.

Or it may be washed in gasoline, or dry-cleaned by rubbing or dusting it with magnesia and laying it away for two or three days in a paper bag covered with magnesia, afterwards brushing it with a soft, heavy brush.

Naphtha soap will remove most stains from white silk, including paint stains.

To Bleach White Silk.—When white silk articles have become yellow from the laundry or from being packed away, dip them in a solution of one tablespoonful of ammonia to a quart of warm water. Squeeze out this solution, and rinse in bluing water until fully restored. Hang in the shade to dry and while damp press between dry cloths on the wrong side.

Or dissolve 4 ounces of salt and 4 ounces of oxalic acid in 6 quarts of water. Immerse the silk in this solution until it is bleached white. This will require a half hour to an hour or more. Rinse thoroughly.

To Remove Stains from Colored Silks.—To remove acid stains, apply liquid ammonia with a brush or soft rag, taking care not to rub the fabric, as the ammonia may cause the colors to fade or run. Should this happen, afterwards apply chloroform to restore the color.

Or cover the spot with cooking soda or magnesia and moisten with clear water.

TO CLEAN COLORED GOODS

Alkali Stains.—Moisten the spot with vinegar or tartaric acid, and afterwards apply chloroform to restore its color.

Grease Spots or Pitch.—Cover the spot with fuller's earth, pipe clay, or French chalk. Place between blot-

ters or layers of brown paper and press with a hot iron.

Fruit and Wine Stains.—Wet with a mixture of equal parts of alcohol and ammonia. Afterwards sponge gently with alcohol until the stain is removed.

Or rub the spot with soap, and apply chloride of soda with a camel's-hair brush, rinsing quickly and thoroughly.

Wax Stains.—Scrape off the surplus of wax from the surface of the fabric, dissolve with alcohol, and remove by rubbing gently with a clean flannel rag or pressing with a hot iron through brown paper.

Oil Stains.—Cover with French chalk, pipe clay, or fuller's earth, and wet with water to a thin paste. Let this dry on the fabric and remove by brushing. Repeat if necessary.

Mud Stains.—Let the mud dry thoroughly, and then remove as much as possible by brushing. When fully dry, cover with a mixture of salt and flour and keep in a dry place.

If the stains are extensive place the garment in a large paper flour sack with a quantity of salt and flour well mixed, shake vigorously, tie up the sack, and allow it to hang behind the stove for a few days. Afterwards shake out the dust and press.

Or, while the stains are wet, cover thickly with cornstarch and brush away until the stain has disappeared. When dry, make a thick paste of cornstarch with warm water, lay over the stains, and brush off when dry. Repeat if necessary.

Rust Stains.—Apply a solution of salts of lemon.

Ink Stains.—Apply 1 teaspoonful of dilute oxalic acid to 6 ounces of water. Or moisten the spots with a strong solution of citric acid. Or dip the spots in milk and cover with salt. If the colors are affected, restore them with aqua ammonia and chloroform.

Tar.—Rub lard over the tar and wash in soapsuds. Or apply oil of turpentine, rub with soap, and wash. Or soak in olive or sweet oil for twenty-four hours. Afterwards wash in soapsuds.

TO CLEAN LACES

To Dry-clean Lace.—Stretch the lace carefully on a thick piece of wrapping paper, fastening the edges with pins. Sprinkle it quite thickly with calcined magnesia. Cover with another piece of wrapping paper, and place it under a pile of books or other heavy weight for three or four days. The magnesia can then be shaken off and the lace will appear like new. It will not only be clean, but the edges will be in perfect condition. Calcined magnesia is very cheap, and this method is well worth trying.

Or stretch the lace, if not too much soiled, on a piece of cloth, pin all the points, and work over it with the soft part of a loaf of fine bread, not too dry, and afterwards shake out the crumbs.

Or use bread crumbs, rubbing them over the lace with a soft cloth, constantly using fresh crumbs, and changing the cloth as it becomes soiled.

Or dust a mixture of flour and magnesia into the fiber of the lace, and rub it with a soft cloth. Afterwards put the lace under pressure for a few hours.

To Clean Gold and Silver Lace.—Stretch the lace and tack it down on a piece of woolen cloth, following the outline of the pattern carefully with basting thread. Brush it thoroughly free from dust. Sprinkle over it a mixture of dry crumbs or stale bread, and powdered laundry blue. Rub gently with a piece of flannel until clean.

Or use burnt alum, pulverized to a fine powder, and sifted through cheese cloth. Apply with a fine, soft brush.

Or sponge with alcohol. Afterwards polish with a piece of red velvet.

TO DRY-CLEAN MEN'S GARMENTS

To Clean Men's Clothes.—Hang the garments on a line, beat them with a carriage whip or piece of rubber hose, and brush them thoroughly with a stiff brush. To remove spots, place

several thicknesses of soft cloth, like an old towel, under the spot, moisten it with water, and scour with any good cleanser, or moisten the spot thoroughly with a liquid cleanser and rub it hard. Use for this purpose a loofah, a stiff, fibrous sponge, costing about ten cents. This is rough enough to scrub with vigor if the goods will stand it, or it can be used more gently on delicate goods. It leaves no lint as cloth does, but is stiffer than a sponge and can be easily washed and dried after being used. Or use one or more small scrubbing brushes of varying degrees of stiffness.

To Remove Spots.—First hold the garment up to the light to see if there is any surface dirt; if there is, scrape off with a sharp knife what can be removed (taking care not to injure the weave of the garment) before wetting the spot in water, cleansing fluid, or any sort of chemical. Next apply the cleanser and rub well, so that the dirt when dissolved may be forced through into the pad beneath. Rub with a piece of woolen cloth folded into a tight pad. Use plenty of "elbow grease." The secret of success lies in hard rubbing.

To Press Men's Clothes.—Spread the garment right side up on an ironing board, lay over it a cotton cloth wrung out of warm water containing about 1 tablespoonful of aqua ammonia to 3 pints of water, and iron the wet cloth until both the cloth and the garment are perfectly dry. This prevents the garment from having a shiny appearance.

Black Dye for Renovating.—Put 8 ounces of logwood chips in a porcelain kettle, cover with 2 quarts of soft water, and let stand over night. Boil 30 minutes, strain through cheese cloth, and add 6 grains of prussiate of potash and 12 grains of bichromate of potash previously dissolved in as little boiling water as possible. Pour this mixture into a black glass bottle, cork tightly, and store in a dark place. This is a good black dye. To apply, first sponge or otherwise cleanse the garments, stretch them out smooth, and go over them

with this dye by means of a soft brush. Let dry thoroughly before pressing.

To Clean a Mackintosh.—To clean a mackintosh, scrub both sides with soap and water, and afterwards rinse it in clear water until the soap is removed. Hang up to dry without wringing. Care must be taken not to sponge a mackintosh with alcohol, chloroform, benzine, gasoline, turpentine, or any of the chemicals which are used in sponging other fabrics, as they have the property of dissolving rubber and will injure the texture of many waterproof garments. Ammonia may be applied freely.

To Renovate Woolen Goods.—After woolen dress goods have been sponged or washed, to restore the original gloss rub the cloth with a brush dipped in a thin solution of gum arabic, cover with a dry cotton cloth, and dry under a weight. This method is useful to remove the spot caused by sponging out stains. To raise the nap on a rough woolen garment, wet it, lay it on a smooth surface, and roughen it gently with a common prickly thistle, or what is known as a teasel brush. Afterwards brush with a stiff clothes brush the way of the nap.

To Clean Men's Woolen Clothes.—Boil for half an hour 2 ounces of soap bark in 1 quart of water, and let stand all night on the dregs. Strain through cheese cloth, and use alone or combined with an equal amount of gasoline. Or use 1 part of oxgall to 16 parts of water. Or use 1 tablespoonful of oxgall and 1 teaspoonful of cooking soda to a quart of water. Or mix 1 ounce of sulphuric ether, 1 ounce of aqua ammonia, and 6 ounces of water.

The most convenient way to clean men's garments is to remove the cover from an ironing board, or use some other smooth, clean, narrow board or plank, arranged to admit of laying the coat smoothly over it, or insert the board into the trousers legs. A smooth, hard, narrow board is also desirable for coat sleeves. Arrange the garment on this board

and with a stiff brush apply any of the cleansers you prefer. A bristle nailbrush or horsehair brush, such as is used in the stable for smoothing the coats of horses, is a most useful implement for this purpose. Rub with, rather than against, the nap of the cloth, wetting the brush frequently.

Scrub especially spots of grease and, if much soiled by perspiration, the collar and cuffs. When the grease and dirt are thoroughly loosened, sponge with clear water until quite clean. Trousers and waistcoats may be rinsed by immersing in water and sousing up and down, but it is better not to immerse coats and jackets, as it is difficult, on account of the padded linings, to press them into shape.

To Renovate Men's Clothes.—Boil 8 ounces of logwood chips in 2 gallons of water down to 1 gallon. Strain and add 2 ounces of gum arabic, dissolved in a little hot water. Bottle for future use.

After dark, solid-colored garments, as blacks, blues, or browns, have been scrubbed and sponged, dilute this mixture to the shade of the garment, and go over it lightly with a sponge. Do not expose to direct sunshine or the heat of a stove while drying.

Or moisten a soft brush with olive oil and carefully go over the garment.

To remove a shiney appearance from the seat of a man's trousers, or the sleeves, of his coat, sponge thoroughly with water to which laundry bluing has been added and press with a cloth dampened in the same.

To Press Men's Clothes.—After sponging the garments, stretch them to their proper shape, lay them right side up over the ironing board, and press through linen or cotton cloth previously wrung out of clear cold water. A tablespoonful each of oxgall and salt added to every gallon of water will tend to brighten the colors. Press with a hot iron until the garment is dry.

Care must be taken that all the liquid preparations used for clean-

ing woolen goods be kept at the same temperature, which should be about as warm as the hands will bear comfortably.

A large piece of white canvass to dampen and spread over both men's and women's garments while pressing is a great convenience since it does not roll up or wrinkle under the iron.

After the garments have been pressed, brush with the nap while the steam is still rising from the cloth, and hang on suitable clothes hangers or over chairs to dry. Do not wear them for twenty-four hours or more after pressing, or until they are thoroughly dry.

TO DRY-CLEAN WOMEN'S GARMENTS

To Clean Woolen Dresses.—The most satisfactory method of cleaning waists or skirts of wool, silk, velvet, or anything except cotton goods, is to soak and wash them in gasoline. For this purpose two or three large earthen jars will be found very useful. It pays to buy the best gasoline, five gallons at a time, and use it plentifully, as the expense is much less than would be the charge of a professional cleaner, or the cost of a new garment.

First, dust the garments and rub soap on soiled or greasy spots. Nothing need be removed from them except rubber dress shields.

Next, put large pieces, one at a time, in an earthen jar and cover with gasoline. Throw a wet cloth over the jar, and press the lid down tightly. Soak for an hour or more, then rub the article well, sousing it up and down, and transfer it to a second jar containing an equal amount of fresh gasoline. Rinse in this, squeeze out the gasoline, and hang up to dry. A third jar may be used if desired.

Articles washed in this way will require to be hung out and aired for two or three days, when the odor will entirely leave them. They should not be pressed until they are thoroughly dry and all the gasoline has evaporated. The gasoline can be

poured back into the cans through cheese cloth and used again, as the dirt settles to the bottom. This operation must be carried on out of doors, as much of the gasoline will evaporate. If done in the house the odor would be very unpleasant, and, besides, the vapor is explosive and might cause accident. A small bristle brush dipped in the gasoline will be found useful for removing grease spots, scrubbing collars, and the like. If a small quantity of gasoline be put in a tin can and then surrounded by a vessel of boiling water (but not on the stove), it will do the work more quickly and thoroughly.

To Dry-clean a White Woolen Coat or other similar garment, saturate a package of cornstarch in gasoline and spread this over the garment with a soft clothes brush. Roll the garment and lay it away for several days, or until the gasoline has evaporated, leaving the starch dry. Then shake out and brush thoroughly.

Or mix 1 quart of coarse corn meal, 1 cup of salt, and enough gasoline to moisten. Place the garment on a firm surface and rub thoroughly with this mixture, covering as large a surface as possible at one time. Rub until dry. Make a second application, if necessary.

Grape, Mourning, and Other Black Goods.—Black dress goods may be washed by observing the same caution as for other colored fabrics, whether cotton, linen, wool, or silk. To remove stains before laundering, apply a solution of 1 part of alcohol and 2 parts of water with a soft cloth, sponge, or soft bristle brush.

To remove paint, apply spirits of turpentine; for grease, apply benzine or gasoline; for mud stains, rub the spot with a piece of raw potato.

To Remove Gloss.—Sponge with a saturated solution of borax and water. Afterwards sponge with clear water.

Or boil half a handful of fig leaves in a quart of water down to a pint. Strain and apply the clear liquor.

Crape Lace.—Dissolve a square inch of sheet glue in a pint of boiling water, add a pint of skim milk, and

dip the lace in this while boiling hot. When cool enough to handle, remove, stretch, and clap the lace between the hands. Pin it to a linen cloth and stretch the cloth tent fashion to dry in the shade.

White Spots.—If white spots or light-colored stains appear on black garments, apply India ink, marking ink, or common ink with a camel's-hair brush. Put a piece of blotting paper underneath the stain to absorb the surplus ink.

To Revive Faded Colors.—In 3 quarts of boiling water stir $\frac{1}{4}$ pound of green vitriol, 1 pound of logwood chips, and $\frac{1}{2}$ pound of bruised galls. Boil gently for 3 hours and strain through cheese cloth.

Or mix oxgall, 4 ounces; logwood, $\frac{1}{2}$ ounce; green vitriol, $\frac{1}{2}$ ounce; iron filings, $\frac{1}{2}$ ounce; sumac, $\frac{1}{2}$ ounce, and vinegar, 1 quart.

Or make a simple solution of logwood, boiling 2 ounces of logwood in 1 gallon of water down to 1 quart.

To apply any of the above, dilute with sufficient hot water to cover the articles, and boil for half an hour. If the infusion of logwood is used alone, remove the articles, add an ounce of sulphate of iron, and boil for half an hour. Hang them up without wringing in a shady place until they cease to drip. Then rinse them in cold water, let them dry, and rub gently with a brush moistened with a little olive oil.

To Clean and Scour Woolen Goods.—Remove all dirt and dust by shaking and brushing the articles. Remove grease spots with turpentine, benzine, or gasoline. Make a strong suds of hard white or curd soap with water, and to each gallon add a tablespoonful of oxgall. Apply vigorously with a fairly stiff nailbrush. Rinse by sponging with warm water containing salt, and dry by rubbing with a piece of clean flannel.

Or, for garments which will not lose their shape, rinse in clear cold water and hang up to dry.

Sponging with stale lager beer will give some stiffness and gloss to the surface.

Clear black coffee will clean black

cloth if diluted with water containing a little ammonia.

Or go over the surface with a brush slightly moistened with olive oil.

To Dry-clean Woolen Cloth.—Remove all spots and stains, and cover the garment with clean, damp sand, with which may be mixed a quantity of French chalk. Rub over the surface of the sand with the hands to work it into the texture of the fabric, and allow the garment to dry. Afterwards brush off the sand.

To Clean Scarlet Cloth.—Wash in bran water, and rinse in clear water containing a tablespoonful of solution of tin to each gallon.

Or add a small quantity of scarlet dye to the last rinsing water.

To Clean Light-colored Worsteds.—For delicate light-brown or buff colors apply pipe clay mixed with water to the consistency of milk. Cover the surface with this by means of a sponge or brush. Brush off when dry.

To Shrink Broadcloth and Prevent from Spotting.—Take a large white cloth, as a sheet, dip in warm water, partially wring it, lay it on a table, put the broadcloth on it, roll, and lay aside for a few hours. It need not be opened out full width until ready to press. Press on wrong side with a hot iron until dry.

CLEANING AND CARE OF GLOVES

To Clean Gloves.—For cleaning gloves, gasoline, benzine, naphtha, and soap used with either milk or water, fuller's earth, with or without powdered alum, cream of tartar, pipe clay, French chalk, bread crumbs, and corn meal are all recommended; for fruit and acid stains, ammonia; for ink stains, oxalic acid; and various compounds of these substances.

Gasoline.—Draw the gloves on to the hands and wash them in gasoline in the same fashion as the hands are washed in water. For best results, place the bowl containing gasoline in a basin of very hot water. The addition of a teaspoonful of salt to the quart of gasoline will also assist.

Wipe off surplus gasoline with a piece of flannel, and allow the gloves

to partially dry on the hands. Afterwards hang on a line to dry in the sun. The soiled parts of the gloves may be rubbed with any good white hard soap during this process. But they should not afterwards be washed in soapsuds, as it shrinks and wrinkles them. For light glacé kid gloves, draw the gloves on to the hands and



"Wash Them in Gasoline."

with a flannel cloth apply a paste composed of flour and gasoline. Rub with a clean, dry cloth until quite dry.

Turpentine.—Before the discovery of gasoline, gloves were cleaned by washing in spirits of turpentine in the same way as they are now washed in gasoline. Turpentine is to be preferred when the gloves are stained with paint or resinous substances.

Benzine.—Place the gloves in a large fruit jar full of benzine, screw on the lid and let them soak for twenty minutes or more, shaking the jar vigorously at intervals. Take them out and examine for dirt spots, which may be removed by rubbing with benzine on a flannel rag. Afterwards hang them up to dry in the open air. To remove the odor of benzine, professional cleaners dry articles cleaned in this manner in a drying room at a temperature of about 200°. But this odor will pass off after a time.

Or draw the gloves on the hands, dip a flannel rag in benzine, and allow it to become nearly dry. While slightly damp, moisten the gloves with this by rubbing the hands with it as if with a towel.

Or take part of a loaf of bread slightly moist, or dry bread crumbs, and rub lightly over the gloves until they are clean. Change the crumbs as they become soiled. Repeat if necessary.

Milk for Kid Gloves.—Draw the gloves on the hands, dip a cloth in skim milk, and wipe them on the cloth as if on a towel. Let them dry on the hands.

Or draw a glove on one hand and with the other hand dip a piece of flannel in new milk, rub on castile soap or any good hard white soap, and rub the soiled glove lightly.

Or lay the glove on a folded towel, dip a flannel cloth in milk, rub on castile soap or other white soap, and rub the glove lightly, working from the back or wrist toward the fingers.

To Dry-clean Gloves.—Delicate white kid or suède gloves may be dry-cleaned with cream of tartar, magnesia, fuller's earth, alum, pipe clay, corn meal, or various compounds of these.

A simple method is to draw the gloves on the hands and wash them thoroughly in fine corn meal.

Or place the glove in a paper bag or fruit jar, fill them with a mixture of magnesia and cream of tartar, cover them with it, shake the bag, and let it stand over night. Rub off this mixture with a flannel cloth inside and out, draw the gloves on the hands, and apply a mixture of powdered alum and fuller's earth with a small, soft brush, sponge, nailbrush, or toothbrush.

Or brush with fuller's earth with-out powdered alum, and dust it off.

If the gloves are not entirely clean, draw them on the hands and apply fine bran or pipe clay, or a mixture of both. None of these substances will injure the gloves, and if one is not at hand use another. Bread crumbs are also useful, especially when the

gloves are much soiled. Change the crumbs as they become dirty.

To Clean Wash-leather Gloves.—Wash-leather gloves may be cleaned with soap and water. Draw them on the hands and with a shaving brush apply a lather of fine shaving or toilet soap. Wipe them on a clean towel and let them dry on the hands.

Or, if much soiled with perspiration, apply a mixture of magnesia and cream of tartar, filling and covering the gloves and letting them stand over night. Rub off with a flannel cloth, draw the gloves on the hands, and wash them in lukewarm suds made with fine white soap, rinse in warm water, and let them remain on the hands until quite dry.

To Color Wash-leather Gloves.—While the gloves are still damp they may be colored yellow by rubbing with yellow ochre, or white by rubbing with pipe clay, or any desired intermediate shade by mixing the two. Mix into a paste with stale beer or vinegar.

To Renovate Kid Gloves.—White kid gloves that are stained beyond cleaning may be dyed to a tan shade by applying two or three coats of saffron and water, drying them between the coatings. Apply to the surface with a soft brush, wetting as little as possible. Black kid or suède gloves when defaced may be improved by painting the worn spots with a mixture of black ink and olive oil. Apply it with a camel's-hair brush or feather, touch the spots lightly, and observe the effect by allowing the glove to dry before adding more color. Repeat if necessary.

Glove Cleaners.—Scrape one pound of castile or other hard white soap into a powder, place in a fruit jar, and add alcohol sufficient to make a soap jelly. Stir in a teaspoonful of ether or chloroform and keep the cover of the jar glued tight.

Or grate $1\frac{1}{2}$ pounds of castile soap in 15 ounces of water and dissolve with gentle heat. Melt 3 ounces of soap in an equal bulk of water, add 2 ounces of Javelle water and 1 teaspoonful of ammonia. This will form a thick paste or jell. Apply by put-

ting the gloves on and using a flannel cloth. Dry the gloves on the hands.

To Remove Stains.—Put a few tablespoonfuls of aqua ammonia in a large two-quart fruit jar, or other wide-mouthed bottle or can or similar receptacle, taking care not to wet the mouth or sides of the vessel. Suspend the gloves in this vessel above the ammonia, where they will be penetrated by its fumes, and cover tightly. Do not allow the gloves to touch the ammonia water. This process will not injure the most delicate colors.

To Remove Ink Stains from Gloves.—First dip the stained part in melted tallow to absorb the ink. Afterwards cover with pipe clay.

Or, if the stain is not removed, make a solution of 1 part of oxalic acid to 10 parts of water, and gently apply it to the spot with the tip of the finger, using as little as possible.

Follow with a drop of aqua ammonia or wet the spot and cover with common soda, to neutralize the effect of the acid.

To Clean Kid Gloves.—Shave 2 ounces of white soap and dissolve in a pint of milk with gentle heat. Add the white of 1 egg and beat up the whole with an egg beater. Add a teaspoonful of sulphuric ether, draw on the gloves, and apply the paste with a small bit of sponge until clean. It is best to keep the gloves on until they are dry. This method not only cleans but softens and revives the leather.

Or draw the gloves on the hand and go over them with a cloth dipped in skim milk. Wear them until quite dry.

Or moisten a small sponge or piece of cloth in skim milk, rub it on a cake of castile or other hard white soap, and with this sponge the gloves all over until they are clean. Wear them until dry.

Or shave fine 3 ounces of castile or other hard white soap in 2 ounces of water, and dissolve with gentle heat. Remove from the fire, and when cold stir in 2 ounces of Javelle water and 1 teaspoonful of aqua ammonia. Apply with a flannel cloth.

Or put the gloves in a large-stoppered bottle about half filled with benzine and let stand several hours, shaking frequently. Remove the gloves, sponge any spots with benzine or ether, and hang up to dry.

Or draw the gloves on to the hands and wash in benzine or turpentine. Dry on a soft muslin cloth or towel and hang up in a draught until the odor disappears.

To Polish Kid Gloves.—Apply talcum or other good toilet powder or French chalk with a piece of soft muslin.

To Clean Chamois.—To clean gloves and other articles of chamois skin, dissolve 3 tablespoonfuls of aqua ammonia in 1 quart of warm water. Soak the articles in this for an hour or more. Stir occasionally with a wooden spoon. Press out as much of the dirt as possible. Pour all into a basin of warm water, wash with the hands, rinse in clear soft water, dry in the shade, and rub between the hands until soft.

TO CLEAN FEATHERS, FURS, AND STRAW

To Clean Feathers.—Prepare suds by shaving and boiling half a bar of hard white or naphtha soap in a saucepan with sufficient water. Dilute with warm soft water. Immerse the plume in this and allow it to soak for ten or fifteen minutes, occasionally drawing it rather loosely through the hands to strip out the dirt with the suds. Rinse in water of the same temperature. If not yet clean, lay the feather on a smooth surface and with a soft toothbrush rub gently with soap and water, working outwardly from the stem. Rinse in clear warm water and afterwards, if a white feather, in bluing water. Draw through the palm of the hand to squeeze out the water, but without twisting. Pin or stitch the stem to a cloth and hang up to dry with the thick end of the stem up and the plumage hanging down. Shake occasionally while drying it, or, if time will permit, shake the feathers near the stove until dry.

Or dry out of doors in a gentle breeze. But care must be taken that the wind does not whip the feather and break the stem.

Quick Process for Coloring Feathers, Velvet, Chiffon, Ribbon, Lace, etc.—Always use Windsor and Newton Tube Paints. Take one drop of the tube paint, rub smooth in a saucer, add a little gasoline, and mix well. Put in enough gasoline to cover the material nicely. Draw the feather or other material through the mixture, shake out, and dry. If not the desired shade, dip again, or add a little more paint to the gasoline to get the required shade. The material dyed will not need any pressing. The most delicate fabrics may be dyed in this manner without harming them in the least.

To Renovate Feathers.—Black feathers after having been washed may be restored to their original luster as follows: dissolve 1 ounce of sulphate of iron in 1 quart of hot water. Immerse the feathers in this and let them steep until the liquid is cold. Hang up in a shady place to dry. Make a solution of logwood and gallnuts by boiling $\frac{1}{2}$ ounce of each in a copper vessel with 1 quart of water down to 1 pint. Remove from the fire, while hot, immerse the feathers, and allow them to remain until cool. Rinse in clear water and dry. Lay them on a smooth surface and rub from the stem outwardly with a piece of flannel slightly moistened in olive oil.

Grebe Feathers and Other Skins.—These may be washed in the same manner as ostrich plumes by first removing the lining. They must be handled with great care to prevent injury by tearing.

To Curl Feathers.—Feathers which have temporarily lost their curl from exposure to rain or fog may be improved by holding them over a fire and shaking occasionally until the matted fibers are loosened, when the curl will be restored.

When the curl has been entirely taken out by washing or soaking, it will be necessary to curl the fronds with the blunt edge of a knife or a

piece of ivory. The curl will be more durable if the feather is held near the surface of a hot flatiron while curling. The feather should be bone dry. Do not take more than two or three fronds at a time, and draw them between the thumb and the blunt edge of a silver knife or ivory paper cutter. Begin at the point of the feather, and work along the stem on both sides. After a little practice feathers may be curled to look as good as new.

Swan's-down.—To clean swan's-down, first tack the strips on a piece of muslin and wash same as ostrich plumes. When partially dry, remove the muslin and rub the feather carefully between the fingers to make it pliant.

To Clean Fur.—The nature of fur is similar to that of wool, as both are animal fibers. Hence anything that will injure wool should not be used on fur of any description. Stains of grease or paint may be removed from fur hats or other articles by means of turpentine. Afterwards sponge with alcohol and dry.

Or other furs may be cleaned by rubbing damp corn meal through them and allowing it to dry. Afterwards remove by shaking and brushing. The coarse furs, as bear, buffalo, etc., may be scrubbed with warm suds made of pure white soap and pure water, and their appearance will be very much improved by combing with a coarse comb. To improve the luster of furs, heat corn meal in an iron skillet to a rich brown but without burning. While still hot sprinkle it over the fur and rub with a flannel cloth. Afterwards remove by shaking and brushing.

To Clean Straw Hats.—The most delicate straw goods, as Milan, Leghorn, and other straws, can be thoroughly cleaned by mixing the juice of a lemon with a tablespoonful of powdered sulphur to form a thick paste. Apply this to the hat with a nailbrush or toothbrush, first removing the band, and rub the paste thoroughly into the straw. Afterwards rinse by dashing water upon it from a glass, but without soaking. Shape

the hat while still damp with a warm iron, pressing through a wet cloth until dry.

Or press into shape and dry out of doors in the sun.

Panama Hats.—Apply corn meal, slightly damp, with a fairly stiff nail-brush, changing the meal as it becomes soiled. Brush off the excess of meal while still damp, dry the hat out of doors in the sun, and afterwards brush thoroughly.

Or with a piece of flannel rub fuller's earth into the hat, cover quite thickly with it, and lay the hat away covered with a large piece of paper for four or five days. Remove the powder by brushing.

Or apply peroxide of hydrogen with a flannel cloth. Repeat if necessary.

To Size Straw Hats.—Beat up the white of an egg and apply to the hat after cleaning with a small camel's-hair brush or a sponge.

BLEACHING VEGETABLE AND ANIMAL FIBERS

Bleaching.—Bleaching is the process of treating materials in such a way as to whiten them. Bleaching is commonly applied to textile goods, as linen, cotton, wool, and silk; also to paper, pulp, straw, ivory, wax, and animal and vegetable oils. The operation of bleaching textile fabrics consists of two parts: first, removing dirt and other impurities and all foreign substances, and afterwards altering the natural coloring matter of the fabric by chemicals having specific bleaching properties. The preliminary operation of cleaning fabrics for bleaching is much the same as ordinary washing in the domestic laundry. It depends upon the action of alkaline lyes and certain acids to dissolve the resinous and fatty substances and other impurities that may either be natural or may be introduced into the fabrics in the process of manufacture.

The principal actual bleaching agents now employed are chlorine gas, usually combined with lime as chloride of lime or bleaching powder; and sulphurous acid, usually as fumes of

burning sulphur. Of these the chlorine compounds are the more powerful. Like free alkali, however, they tend, after decomposing the coloring matter, to attack the fibers of the fabric itself and to injure them. Hence it is customary at the proper time to treat fabrics bleached by this agent with such substances as hyposulphite of soda to neutralize the excess of chlorine and prevent its further action.

The various vegetable fibers, as cotton, flax, and hemp, are composed of cellulose, a substance that withstands to a great degree the action both of the acids and alkalies used in preliminary cleansing and the chlorine used as a bleaching agent. Animal fibers, on the other hand, as silk, wool, feathers, and the like, contain no cellulose and are readily destroyed by these agents. Hence they are commonly bleached by the action of sulphurous acid gas. Various other chemicals have been recommended for bleaching, but none of them are commonly employed.

Previous to the application of modern chemistry (during the latter part of the eighteenth century), bleaching was done without the use of chlorine or sulphurous acid, by soaking and washing the articles alternately in alkaline and acid liquids, exposing them on the grass to the action of air, light, and moisture, and sprinkling them with water several times a day.

The exact nature of the change which takes place in bleaching is not known, but it is supposed to be brought about by the action of ozone, *i.e.*, oxygen in its active form. This is set free during the process of bleaching with chlorine, and is also known to be present in small quantities in the atmosphere. The ancient method of first soaking and washing articles in lye and acids and afterwards exposing them to the action of the elements, is still practiced in many localities, but the modern methods of bleaching by chlorides and sulphurous acid can be practiced successfully in any household.

To Bleach Brown Sheetting.—This is for an ordinary partly bleached

cotton fabric. First wash with other white goods, and afterwards soak over night in strong soapsuds. Dissolve 2 pounds of chloride of lime in a wash boiler containing 2½ palls of boiling water, or about ¾ pound of chloride of lime to the gallon. Stir vigorously, and when cold pour through cheese cloth into a tub. Immerse the goods in this, stirring with a clothes stick for half an hour. Rinse thoroughly with cold water containing 1 ounce of hyposulphite of soda to the gallon. Finally rinse in bluing water and hang up to dry. Repeat if necessary. This will take mildew out of cotton or duck cloth, and restore the color of cotton goods that have been stored and yellowed.

These methods are, of course, not suitable for more delicate cotton fabrics.

Bleaching with Sal Soda.—Washing soda tends to bleach garments, but also injures them unless it is thoroughly removed by rinsing. Put no more than one teaspoonful in a boilerful of clothes.

Bleaching by Turpentine.—Dissolve 1 teaspoonful of oil of turpentine and 3 teaspoonfuls of alcohol in the last rinsing water.

To Bleach Wool with Oxalic Acid.—Dissolve 1 ounce of oxalic acid in 1 gallon of boiling water; allow this to cool until it will bear the hands. Immerse the articles and let them steep for an hour or more, rinse thoroughly, and dry. Repeat if necessary.

To Bleach Flannel.—Dissolve 1 ounce of powdered ammonia and 1 ounce of salt in 2 quarts of water. Soak the articles in this for an hour or more.

Or dissolve 2 ounces of bisulphite of soda in 1 gallon of water acidulated slightly with hydrochloric acid.

To Bleach Feathers.—Make a dilute solution of bicarbonate of potassium, 1 part to 10 parts of water, slightly acidulated with nitric acid, 1 fluid ounce to the gallon. Immerse the feathers for 3 or 4 hours. Afterwards rinse in clear water, slightly acidulated with sulphuric acid, 1 fluid ounce to the gallon.

To Bleach Straw Goods.—Sub-

stances recommended for bleaching straw and straw goods, including straw hats, are sulphurous acid (i.e., fumes of burning sulphur), chlorine water (or chloride of lime), citric acid, and oxalic acid. Straw goods must be prepared for bleaching by scrubbing with lukewarm soap and water.

The safest and best method of bleaching straw is perhaps by means of the fumes of burning sulphur. This method is employed by manufacturers and milliners to bleach hats and bonnets. All bands and trimmings must first be removed.

Or apply chlorine water with a sponge, cloth, or brush. Afterwards rinse in clear water containing hyposulphite of soda.

Or make a paste of corn meal and a solution of oxalic acid in water. Spread this on the hat, allow it to dry, and remove by brushing.

Or apply a strong solution of oxalic acid and water, and rinse.

Or immerse in a weak solution of chloride of lime—2 ounces to 1 gallon of water. Rinse in water containing hyposulphite of soda.

Or make a paste of flowers of sulphur, or pulverized brimstone, with water. Cover with this, and expose to direct sunshine until dry. Repeat if necessary. Remove the sulphur by brushing. This is simple and successful.

To Bleach Straw Braid.—Dissolve 6 ounces of chloride of lime in a gallon of water.

(1) Dip the goods in this for thirty minutes.

(2) Dip in clear water acidulated with muriatic or sulphuric acid at the rate of 1 fluid ounce to the gallon.

(3) Rinse in clear water containing 1 ounce of hyposulphite of soda to the gallon.

Or dip in weak soapsuds and expose to the fumes of burning sulphur.

To Prevent White Goods from Fading.—If a suitable lawn or grassplot is available, spread white garments on the grass to dry during the warm months of the year. This is more convenient than fastening to a line and keeps the garments always bleached.

Faded articles may be bleached in this way by keeping them constantly moistened with clear water.

To Bleach Unbleached Muslin.—Unbleached muslin is more durable than that which has already been bleached. Hence it pays to buy it by the piece and bleach it before making it up. Place on the stove a boilerful of strong bluing water, or use indigo instead of bluing. Unroll the cloth, put it in the boiler, and boil ten or twenty minutes. Hang it out on a clear, sunshiny day to drip; dry without wringing. When partially dry spread it on the grass to bleach.

To Whiten Lace.—First wash in strong soapsuds, rinse and immerse in fresh suds, and expose to the sun.

Or first wash and iron, stitch on cotton with basting thread, and soak for twenty minutes in olive oil. Afterwards boil for twenty minutes in suds of castile or other hard white soap and rinse in warm water.

To Bleach Faded White Goods.—All cotton and linen fabrics and garments that have been laundered tend to become yellow by the action of the alkali contained in the soap, which is imperfectly removed in rinsing. Garments that have been laid away for a

time, as summer dresses, will frequently come out in the spring much yellowed or faded. Put the faded articles in a separate boiler and add $\frac{1}{4}$ pound of cream of tartar. Boil until the goods are clear. Wring out of bluing water and lay on the grass to dry.

Or soak the garments over night in clear cold water, wring out, and soak for twenty-four hours in sour milk or buttermilk. If much yellowed, soak a third night in weak suds containing a little hard white soap and a tablespoonful of kerosene. Afterwards boil in suds containing a tablespoonful of kerosene. Rinse in bluing water, and hang out to drip dry.

Or boil the articles for fifteen or twenty minutes in strong soapsuds containing 1 tablespoonful of essence of turpentine and 3 tablespoonfuls of aqua ammonia, stirring occasionally. Care must be taken not to immerse the arms in suds containing turpentine. Rinse the articles, using a clothes stick, in one or two clear waters, and wash and blue in the usual way.

Washing soda should not be used for bleaching purposes, as it tends to rot the fabric.

CHAPTER L

HOUSE CLEANING

CLEANING THE CELLAR—CLEANING THE ATTIC AND CLOSETS—CLEANING THE CHAMBERS—TO CLEAN FLOOR COVERINGS—CLEANING AND REFINISHING WOOD FLOORS—MATTING—OIL CLOTH AND LINOLEUM—HARD WOOD FLOORS—CLEANING AND REFINISHING SOFT WOOD FLOORS—CLEANING PAINT—WHITEWASHING—PAPER HANGING—CARE OF WALLS—WINDOWS, DOORS, ETC.—CLEANING AND CARE OF FURNITURE—CLEANING PICTURE FRAMES—CLEANING BRIC-A-BRAC AND MISCELLANEOUS OBJECTS—TO CLEAN MARBLE, BRICK, AND STONE—CLEANING KITCHEN STOVES AND OTHER METALS

In addition to the daily and weekly routine of housework it is customary to give the house and its furnishings a thorough overhauling and renovating once or twice a year, usually in the spring and fall. But this custom varies in different parts of the country, and in cities is also quite different from what it is in rural neighborhoods. In cities, winter is the season when guests are received and most entertaining takes place; hence the fall house cleaning, as a preparation for the duties and festivities of the winter season, is likely to be the more important.

In rural neighborhoods, however, summer is the period of greatest activity, and the spring house cleaning is usually the more thorough and painstaking.

Spring House Cleaning.—Spring house cleaning should ordinarily be postponed until the weather has become sufficiently settled, so that winter underwear, draperies, carpets, etc., may be stored away if desired, and so that the health of the household need not suffer by reason of the open windows and dampness attendant upon

scrubbing floors and walls, whitewashing, painting, and the like. Most women, after constant confinement during the winter months, are more or less run down in the spring, and the change from the bracing temperature of winter to the enervating warmth of the first spring days is likely to result in a lowering of tone that may expose them to serious mischief from overexertion. For these reasons there is a gradual change of sentiment in favor of making spring house cleaning a comparatively simple affair, putting off the heavy work until the fall. But the spring house cleaning must be sufficiently thorough to renovate and protect all woolens, furs, and feathers from the ravages of moths, to remove heavy hangings and draperies, and everything that impedes the free circulation of air during the heated term.

Plan of Campaign.—The work of house cleaning will be very much simplified by thinking out in advance a systematic plan of campaign. In a blank book make an inventory of the principal contents of each room. Measure the floors and the width and

length of the window shades needed. Ascertain the number of yards of carpet or matting, the number of rolls of wall paper and the yards of border required for every room in the house, the amount of paint or stain needed for the various floors; also the size of the dining-room tablecloths, the length and width of sheets, and the size of pillow slips for different pillows. Divide the book in sections, assign a number of pages to each room in the house, take accurate measurements, note them down, and preserve the book for future use. Consult it to determine what changes shall be made in the rooms, what articles shall be stored away, and what, if any, need to be repaired. Provide in advance the requisite amount of materials of all sorts, and have them at hand when the work begins.

William Morris says: "Have nothing in your house that you do not know to be useful or believe to be beautiful." Hence before house cleaning go through the house and critically examine each object. Some of them may have passed their usefulness, or your tastes may have changed and you may no longer regard them as beautiful. Then remove them without question. The art of successful living consists in getting along with as few articles of furniture as possible, rather than in accumulating many different pieces. Remember that every additional object is an additional care. If you decide to retain an article, consider, if it is in order or not, if it can be put in order, and in that case whether it can be done at home. Gather up such pieces as you decide to repair and take them to the family workshop.

Consider the discarded articles to see if they can be given away, sold, or used for fuel, and if not, throw them together to make a bonfire to celebrate with when the house cleaning is finished.

Rules for House Cleaning.—It is a good rule in house cleaning first to clean the cellar, because it is the most difficult and often the most neglected part of the house. Afterwards begin with the attic and work down.

Another good rule is to clean thoroughly one room at a time, settling it as you go.

Preparations for House Cleaning.—Experienced housewives arrange for house cleaning by preparing food in advance, boiling ham, baking beans, pies, bread, and cake, so as to be spared as far as possible the labor of cooking while house cleaning is going on.

While house cleaning, dress appropriately for the work. Some housekeepers wear a divided skirt or bloomers made of four widths of heavy dark skirting. These are gathered into bands and buttoned about the ankles and waist. They are valuable protectors for skirts, and facilitate climbing step-ladders, scrubbing floors, etc.

Pull the sleeves up as far as you want them to go, and put elastic bands on the arms over the sleeves. Trim the finger nails as short as can be borne with comfort. This prevents their being broken or torn when obliged to work without gloves. Wear a dust cap, a big apron, and loose gloves.

Half the disagreeableness of house cleaning is taken away by having a lotion to apply to parboiled and uncomfortable hands. Soak 2 or 3 ounces of quince seed over night, strain through cheese cloth, and add 2 quarts of water and 2 ounces each of glycerin, boracic acid, and witch-hazel. This is one of the best of lotions.

CLEANING THE CELLAR

To Clean Cellars.—Begin to clean house with the cellar. It is a hard job, and you may be inclined to neglect it if you wait till the rest of the work has been done. No part of the house cleaning is so important from the standpoint of sanitary cleanliness or, because it is out of sight, more likely to be neglected.

First sweep all dust and cobwebs from rafters and ceiling; sweep the shelves and wash them with strong suds or soda and water; remove, empty, and clean bins and barrels that have contained vegetables, and set them out of doors exposed directly

to the air and sunlight. If the cellar admits of thorough drainage, wash down the ceilings, walls, and floor with a hose, or dash water on them from pails by means of a large dipper. Open the bulkhead windows and sweep the floor, especially digging out the corners. Remove everything that is not necessary. The fewer objects to accumulate dust and to get in the way when cleaning, the better.

Dissolve 2 pounds of copperas in 1 gallon of water, and sprinkle the walls and floor with this solution by means of an old whisk broom or watering pot having a fine spray. This is a good disinfectant and assists in driving away rats and other vermin.

Finally whitewash the walls with an old whitewash brush or old broom, and use plenty of whitewash, to which add copperas at the rate of $\frac{1}{2}$ pound to 1 pound for each pailful.

Vegetable Cellars.—If vegetables are kept in barrels or bins in the house cellar, they should be examined from time to time and picked over as soon as they begin to rot. Leaves from cabbage heads, celery tops, and other vegetable stuff not wanted should be carefully removed before they begin to spoil. Decaying organic matter of any kind is the favorite breeding ground of the germs of typhoid fever, diphtheria, and other contagious filth diseases, and decay is much assisted by dampness. Hence unless the cellar is perfectly dry, clean and free from rotten vegetables, those who are responsible for its condition cannot in case of sickness have a clear conscience. An outbreak of black diphtheria which caused the death of five children in a single family was traced by a physician directly to some decayed vegetable matter on the cellar floor.

Or make an outdoor vegetable cellar by sinking a strong cask or box in the ground below the frost line. Knock out the bottom and let the vegetables rest on the ground. Provide a water-tight cover in two layers, with sawdust or charcoal between. Or throw over the top straw or hay. Thus cabbages, celery, and the like may be kept fresh in winter without

danger of contaminating the air of the house.

To Keep Cellars Warm.—Make a flour paste containing a strong glue size, and with a whitewash brush apply one or more layers of building paper, brown paper, or even newspapers to the rafters of the ceiling, and let it come down over the sills and around the frames of windows to prevent draughts. The thicker the layer or layers of paper the better. This helps to keep the floors warm and to make the cellar frost proof.

Care of Casks.—Keep an empty cask bunged up tight to keep it sweet.

Tar casks slightly on the inside to assist in preserving salt meat.

To sweeten a sour cask that has held pickles, vinegar, or wine, wash it with lime water, or throw in hot charcoal and ashes. Add water and let the cask soak.

To remove must or other odors, wash with sulphuric acid and rinse with clear water, or whitewash with quicklime, or char the inside with a hot iron. In all cases rinse thoroughly with scalding water before using.

To Remove Dampness.—Place in the cellar a large open box or pan containing fresh lime. This will tend to dry and purify the air. Change the lime as fast as it becomes air-slaked.

Whitewash for Cellars.—Slake enough lime for a pailful of whitewash. Mix half a pint of flour with cold water to a smooth paste, thin with scalding water, and boil until it thickens. Pour this boiling hot into the whitewash and stir vigorously.

Or use boiled rice strained through cheese cloth. Add a teacupful of the strained rice to a pailful of slacked lime.

Cover cellar walls twice a year or oftener with whitewash, to which add copperas at the rate of 2 pounds to the gallon. Apply whitewash freely, especially in out-of-the-way corners, removing all shelves, etc., so as to cover the entire surface of the walls.

To Disinfect Cellars.—Close windows and other apertures and stuff the cracks with burlap. Burn a quantity of sulphur in a suitable receptacle on the cellar floor. An ordinary tin

pie plate covered with earth or sand may be used. Place on this live coals, on which sprinkle flowers of sulphur or brimstone. Take precautions to escape quickly so as not to breathe the fumes.

To Prevent Dust in Cellars.—To minimize dust from furnaces, wet the ashes by throwing water on them from a dipper before taking them up. Or sprinkle them with water from a watering pot. Or sprinkle over them wet sawdust.

This also prevents dust from rising into the upper rooms through the registers.

Bins for Cellars.—Have all bins for use in the cellar small enough to be freely movable. Or use barrels, and place bins and barrels on planks turned on edge to lift them above the cellar bottom. Make a sufficient number of swinging shelves by tacking pieces of board to the rafters so as to project downward, and suspend shelves on these to hold canned preserves and other articles in place of having shelves on the walls. Keep the walls free to admit of complete white-washing.

Pipes—To Prevent Frost.—Wrap exposed water pipe with bands of hay or straw twisted tight around them, or cover with the asbestos tubes that are on the market for this purpose.

Pumps—To Prevent Freezing.—Remove the lower valve and drive a tack into the under side of it, projecting in such a way that the valve cannot quite close. The pump will work as usual, but the water will gradually leak back into the well or cistern.

Or have at hand a suitable hook of stout wire by which to lift the valve and let the water out of the pipe at night.

Pipes—To Thaw.—If the pipe is accessible, wrap woolen cloths, as old pieces of underwear, carpet, and the like, thickly about it and pour on boiling water. This holds the heat and melts the ice gradually.

Or, if possible, pour boiling water containing as much salt as it will dissolve into the pipe above the frozen part. This will settle and dissolve the ice.

To Clear Drainpipes.—Flush the pipe once a week with boiling water containing sal soda. Rinse the kitchen sink daily with strong soda water.

To Stop Leaks.—For cold-water pipes apply a thick paste of yellow soap and whiting mixed with a little water. Or, if the leak is too large, wrap the pipe tightly with a tarred cloth bandage. Melt the tar, and spread it over strong duck, canvas, or burlap cloth three or four inches wide. Begin to wind the bandage several inches from the leak and lap it one half or more upon itself at each round.

For hot-water pipes mix iron filings with vinegar and sulphuric acid to a thick paste. Dry the pipe, fill the cracks with this mixture, and keep them dry until it sets. This is very durable.

To Protect Lead Pipes.—Coat the inside of the pipe with sulphite of lead. This is insoluble and cannot be acted upon by water. To effect this fill the pipes with a warm concentrated solution of sulphide of potassium, and let stand fifteen or twenty minutes. Then rinse it out. The sulphide coating will be formed by chemical action.

To Clean Boilers.—To prevent scale forming on the inside of the boiler put into it two or three white oak saplings. These will be entirely dissolved in three or four weeks, and the boiler will be clean.

CLEANING THE ATTIC AND CLOSETS

Closets and Drawers.—Choose a sunny day and empty the contents of bureau drawers, wardrobes, closets, and other storage places upon an old quilt or a sheet spread upon the lawn. Shake and dust these vigorously with a whisk broom, and sort them. Put in one pile ragged articles that are no longer useful except for carpet rags or to sell to the ragman; in another, those that are available for dusters, mops, dishcloths, and the like. Lay aside articles that need to be mended or renovated. Separate woollens and flannels, which require protection against moths, from cotton fabrics, which are moth proof. After remov-

ing with a whisk broom all traces of moths, hang the larger pieces on the line and leave the others out of doors exposed to direct sunshine.

Meantime apply suitable moth destroyers to the insides of the drawers, wardrobes, and boxes that have been emptied. Take off the wall paper in the closets, as behind the wall paper is where you will find the nests of moths and other vermin. Wash the floors and walls with moth destroyers, and apply suitable preventives to cracks and openings. Wash out the insides of the drawers, and take them out to dry in the sun.

Save fine towels that are too worn for further use and lay them in the bottom of the drawers, with lavender between the folds.

While the clothes on the line are airing, pack flannels, furs, feathers, etc., in moth-proof paper bags or boxes to be stored away in the attic, and before the dew falls at night return cotton and other fabrics required for summer use to the drawers and wardrobes that have been cleansed and aired.

Destroy with a hard heart every useless thing, and burn everything that you see no probability of needing in the near future. With the best of care odds and ends will accumulate, and the labor of handling and preserving them in the hope of finding use for them by and by is often more than they are worth.

But remember, if similar objects are classified and kept together, many uses may be found for them collectively. A lot of old stockings may be turned into a quilt. Old underwear is useful for dusters and many other purposes. Hence sort, classify, and arrange as much as you can, but when odds and ends are left over, throw them away.

Drawers that Stick.—Now is the time to remedy the bureau drawer that sticks. If it is not quite dry when returned to its place, you will discover the spot that in damp weather is likely to swell and make trouble. Take a piece of common yellow soap, moisten it, and rub freely the parts which are too tight. Also soap the under part of the drawer where it

slides. Or apply a tallow candle. Or rub the parts freely with bacon rind. But the soap is likely to effect the most permanent cure.

CLEANING THE CHAMBERS

To Clean Bedrooms.—Take down all curtains and draperies, if not already removed, and carry them to the laundry. Put the bedding on the line, shake and beat it, and leave it to air. Take the mattress out of doors, and beat and air it.

If the bed spring is exposed and of metal, take it out of doors and turn the hose on it or dash water on it from a pail. Let it dry in the sun.

If the bedstead is of wood, wash it with water containing borax or ammonia, but do not use washing soda or soap, as the former will spoil the paint and the latter will leave a disagreeable odor.

If the bedstead is of metal, wipe it with a cloth dipped in kerosene. Or brush it over with gasoline and wipe off with a dry towel.

Rub the paint of wooden bedsteads with a cloth dipped in paraffin. This both cleans and freshens it.

Remove extra blankets and quilts to the laundry.

Take up carpets and rugs to be beaten and shaken, or if there is matting on the floor and it is not necessary to take it up, sprinkle dry salt over it and wipe with a cloth wrung out of warm water.

If the floor is of hard wood, wash it with gasoline as you would with water, and *ventilate thoroughly before admitting a light*. Polish with wax and suitable furniture polish.

If the floor covering is drugget, scatter moist bran over it and let remain several hours. When swept up the bran will take the dirt with it. Then scrub the drugget with hot water and ammonia by means of a stiff scrubbing brush, and afterwards wipe off with a soft cloth until the rinsing water is perfectly clear.

To Renovate Metal Beds.—If the enamel is worn from a white enameled bed, go over it with an additional coat of white enamel, or obtain gilt enamel and gild it. This gives the appearance

of brass. The gilding wears better than white enamel and can be washed with gasoline.

Or, if desired, give the white bed that needs renovating a coat of black enamel.

Cotton Blankets.—In summer, cotton blankets and spreads, which are much cheaper than woolen ones, are to be preferred to woolen blankets or old-fashioned cotton quilts. They can be easily washed and are more sanitary. The aim should be in summer to have the bed coverings as light and easy to handle as possible.

Eiderdown.—With use an eiderdown quilt becomes compacted together and loses its elasticity. Take it out of doors, shake and brush it, and expose it to sunshine for several hours. Spread it on the lawn and work over it with a stiff whisk broom to loosen the nap. Thus its elasticity may be restored, and it will again feel soft and downy.

To Clean Mattresses—Stains on mattresses may be removed by covering them with dry laundry starch and moistening this with enough soap or soap jelly (made by melting scraps of hard soap in about their own bulk of boiling water) to form a thin paste, which will dry on, but not soak through into the mattress. Let dry, and brush off with a stiff whisk broom. Repeat if necessary. Afterwards sponge with ammonia and water.

To Clean Feather Pillows.—Feather pillows may be washed without removing the feathers by boiling them in borax water to which a small quantity of ammonia has been added. Use half a teacupful of borax to a boilerful of water, and add a tablespoonful of ammonia. Boil fifteen or twenty minutes. After removing the pillow from the boiler, scrub the tick, if badly stained, by laying it on a washboard and applying suds with a stiff brush. Rinse in two or three waters and hang on the line in a shady place to dry. Shake the pillow and change ends two or three times a day. Bring the pillows into the house before the dew falls or if it should come on to rain, as it takes a long time to dry pillows at best. This process makes the feathers light, flaky, and sweet smelling.

Or, if you do not wish to wash the feathers, pass them into pillow covers and hang them on the line to air while the ticks are being washed.

Or put the pillows out of doors in a drenching rain storm. Afterwards squeeze as much water out of them as possible and hang them up to dry in a shady place.

To Mend Old Blankets.—To mend all breaks and tears in old blankets, cover both sides with cheese cloth. Tack all together with white or colored yarn, and thus make a light quilt superior to a comforter. Finish the edge by crocheting around all four sides.

To Clean the Bathroom.—Thoroughly wash down walls and floors, clean out the medicine closet, and throw away everything that is not likely to be used. Look over the shelves carefully for cracks and crevices which may give lodgment to vermin, and wash them with strong soap and water. Clean the porcelain tub and basin with a cloth wet with kerosene. Pour in kerosene, if necessary, and scrub with a whisk broom or fiber brush. Remove stains from porcelain with dilute muriatic acid (1 part of acid to 10 parts of water), applied by means of a cotton swab held in a cleft stick.

Or rub on the stain a strong solution of oxalic acid in water, but do not allow it to remain more than three minutes, or it will eat into the porcelain. After the stain is removed apply soap and water.

Polish the metal work of faucets and pipes with a suitable cleaner.

Or clean the bathtub, washbowl, etc., with gasoline and flannel.

When painting the bathroom, if you wish the floor darker than the walls, without buying two shades of paint, get a light-colored paint, as lead color or light yellow, and after the walls are painted add to the remainder of the paint powdered burnt umber. This will give to the floor a darker color of the same general tone.

TO CLEAN FLOOR COVERINGS

Floors in Summer.—Take up carpets in the spring, beat and clean

them, roll them up, protect them against moths, and, if desired, store them away until the fall house cleaning. Fill the floor cracks, if any, with a suitable wood filler, and paint or stain the floor, or cover with matting during summer. This plan saves time and labor in the care of floors, and prevents much dust from sweeping during the hot months. If carpets can be replaced by hard-wood floors and rugs, so much the better, and taking up carpets during the summer time is a step in the right direction. Or, if preferred, the carpets may, of course, be returned to the floors after cleaning.

When taking up large rugs and art squares for the summer, roll them on sticks and sew them in canvas or bed ticking. These may be tied with strong cords and slung on hooks attached to the wall or ceiling in the attic or store-room. Thus they are well protected and out of the way.

To Clean Carpets.—If a carpet is much soiled it may require washing or scouring after having been beaten. This may be done after the carpet has been laid on the floor. First remove stains and grease spots. Next wash, then, with a stiff bristle brush the size of a nailbrush, apply suds made with warm water and one of the following cleansing mixtures:

Pure soapsuds made by dissolving 1 bar of castile or other hard white soap in 2 gallons of water.

Or one bar of hard white soap, 1 tablespoonful each of borax, washing soda, fuller's earth, and salts of tartar. Cut the soap fine, mix the ingredients in a kettle, add 1 gallon of boiling water, and stir until all are dissolved.

Or 1 pint of ox gall dissolved in 1 quart of cold water. Apply with a scrubbing brush until a lather is formed. Rub pure ox gall on soiled places, rinse, and dry as above.

Have at hand a pail containing suds, another containing clear hot rinsing water, a stiff bristle brush, a large sponge, and a number of coarse porous cloths. Use as little water as possible. Take one breadth at a time and scrub what can be reached without moving. Rinse this section imme-

diately with a sponge wrung out of clear water and dry with a coarse cloth before proceeding to the next. Soap soiled spots with any good hard white soap dipped in water. Take about 1½ yards at a time and work quickly, so that the water will not soak into the carpet.

Finally, open the windows and allow the carpet to thoroughly dry before the room is used. Kindling a fire, if convenient, will assist in drying.

Or ingrain carpets may be ripped into breadths and washed in the tub like other woolen goods with soap and water, or hung out on the line during a warm summer rain.

Any of these methods is suitable for all forms of carpets or rugs of similar materials, as Oriental, Smyrna, and domestic rugs, art squares, and the like.

Stair Carpets.—The better plan is to leave the stairs uncarpeted, but if a stair carpet is used the steps should be padded, especially over the edges, as otherwise the carpet will tend to wear along the edge. For this purpose use cotton batting or carpet felt or folded newspapers, tacking them at the back of each step and allowing them to fall two or three inches over the edge. This will also assist in deadening the sound of footsteps.

To Freshen Faded Carpets.—After carpets have been cleaned and laid, the colors, if faded, may be freshened by sprinkling the carpet with strong salt water and sweeping hard.

Or dampen a cloth with ammonia and rub over the surface of the carpet.

Or put ½ pint of turpentine in about 1½ gallons of water. Wring a cloth out of this solution and with it rub the carpet.

Or go over the carpet with a broom or whisk broom moistened with gasoline.

Or put 1 cupful of cold tea and 1 tablespoonful of turpentine in 9 quarts of warm water. Dip the broom in this before sweeping.

Or put 3 tablespoonfuls of turpentine and 4 of salt in 3 gallons of water, and moisten the broom with it.

Or put 1 gill of ox gall in 1 gallon

of water and apply with a cloth wrung out so that it will not drip.

Or dissolve 1 teaspoonful of alum in 1 gallon of water.

Or any of the above may be applied with a clean mop if care is taken to wring it out so that it will be damp rather than wet. The above will not only brighten and set the colors of a carpet, restore faded colors, and prevent fresh colors from fading, but will also act as preventive against moths, and to some extent kill germs that may be present in the carpet.

To Remove Grease from Carpets.—Substances recommended for taking grease out of a carpet are ammonia, saltpeter, ox gall, chloroform, ether, gasoline, fuller's earth, potter's clay, and various combinations of these.

To Remove Grease.—Apply gasoline, benzine, or naphtha with a sponge or stiff scrubbing brush.

Or ammonia and water. Or one part common salt and 4 parts alcohol.

Or, if the grease is fresh, cover the spot with a layer of French chalk or fuller's earth. Lay a piece of brown paper or blotting paper upon the chalk, and place on it a hot flatiron. Change the iron occasionally. The grease will be melted and absorbed by the chalk and paper.

Or apply pure ox gall with a stiff brush.

Or apply chloroform or ether with a small brush.

To Remove Ink Stains.—Cover quickly with dry salt or starch. Take this up with a spoon as it soaks up the ink, but do not rub or sweep it. It will take up the surplus and prevent the spot from spreading. Moisten with milk and continue to apply salt, starch, or similar absorbent until you remove all the ink you can.

Leave the spot covered with dry salt and test to see the kind of ink spilled. Put some of the ink on a piece of writing paper and allow it to dry. Or, better, take some writing made with the same ink that has stood several days and test that. First apply water, and if the ink runs, after having been thoroughly dried, it is probably stylographic ink,

made of coal-tar products, eosin or nigrosine. In this case you must not use buttermilk or any acid. Use instead an alkali, as potash lye or sal soda, diluted with water. If the dry ink does not run when touched with water, it is probably an iron-gall ink or logwood ink with or without aniline dyes. For these inks use dilute sulphuric acid, 1 part of acid to 10 parts of water. If this takes out the color, restore it with aqua ammonia.

Or cover with fresh salt or starch, or with a mixture of equal parts ground black pepper and salt, moisten with buttermilk, or salts of sorrel, or tartaric acid, and let stand until dry. Repeat if necessary.

If the colors fade, apply aqua ammonia.

To Remove Kerosene.—To remove kerosene spilled on a carpet, cover the spot with blotting paper or brown paper and press with a hot iron. Repeat if necessary.

Or cover with corn meal, flour, starch, or salt, brush off as fast as the oil is absorbed and repeat, if necessary.

To Remove Whitewash.—Scrub with soapsuds applied with a brush, and renew the color by applying vinegar, or other acid.

To Remove Soot.—To remove soot which sometimes, in case of a defective flue or turning up a lamp too high, fills a room and falls on the carpet, sprinkle the floor liberally with corn meal and sweep carefully a little at a time, taking up the sweepings as you go and before they are trodden on. Continue to apply corn meal and sweep until the soot is all removed.

RUGS

Care of Rugs.—Before sweeping, rugs should be removed from the room and thoroughly cleaned before they are returned to the floor. If rugs are caught by the ends and shaken they soon tear out and unravel. A better way is to hang them on a line and beat them with a carpet beater.

Or lay the rug on a clean floor and sprinkle table salt over it. Sweep it

hard with a broom until it is clean; turn it and sweep the other side the same way.

If rugs must be beaten indoors lay a damp cloth over them. If they are very much soiled, rinse the cloth in hot water and repeat until the rug is clean.

To Lay Rugs.—To prevent rugs from curling at the corners fasten under each corner a triangular bit of corrugated rubber. Let these extend 8 or 9 inches along the rug. Bore several small holes in the rubber and sew through holes in the fabric. This not only keeps the rugs in place but makes them last longer.

Or sew dress stays or whalebone under the corners to keep the rug from curling.

Or turn the rug upside down and apply a liberal coat of cold flour paste with a brush to the corners and edges. Let the rug dry flat on its face, and when dry turn it over, and the weight of the paste will keep it in position.

Care of Oriental Rugs.—Oriental rugs, if genuine, are in fast colors, and the top or right side is practically indestructible. The threads at the back, however, are very easily damaged. Hence Oriental rugs should always be beaten on the right side. When beaten they should be hung on the line or laid over grass or other soft surface.

If much soiled, they may be washed or scrubbed by means of a stiff brush with soap bark dissolved in boiling water, and afterwards wiped off with a clean sponge and dried with a dry cloth. In winter lay an Oriental rug on the porch or other flat surface out of doors, sprinkle it with snow, and brush it off with a stiff broom or heavy whisk broom.

To Brighten Colors.—Slightly moisten salt with kerosene. Sprinkle this over the rug and sweep it off. Kerosene will leave no greasy effect. The dirt will soon pass off and the colors will be freshened.

Or substitute corn meal for salt.

To Clean Oriental and Other Rugs.—Oriental rugs and other rugs having fast colors may be scrubbed with soap and water, or any of the above

cleansing mixtures. Tack the rug on a bare floor, as a porch or piazza, and proceed as with a carpet.

The following mixture is especially recommended for the best quality of rugs or carpets and other woolen fabrics: dissolve 8 ounces of good white soap in the same quantity of boiling water; add 10 ounces of aqua ammonia, 5 ounces of alcohol, 5 ounces of glycerin, and 4 ounces of ether or chloroform. Keep in a fruit jar or large glass bottle and cork tightly. Use 1 tablespoonful of this preparation to a pailful of warm water, and apply with a stiff brush. Or for obstinate stains use a stronger solution.

To Wash Goatskin Rugs.—Wash goatskin rugs in gasoline, or in a mixture of gasoline and pure soapsuds made of hard white soap.

To Repair a Smyrna Rug.—Shaking a Smyrna rug often raveling out the ends. Continue this raveling so as to expose two or three inches of the woolen filling. Tie and knot the loose threads to form a fringe. This will prevent additional raveling, and the fringe will stand as much wear as if new. Use the pattern as a guide, so as to make both ends uniform.

To Patch Rugs and Carpets.—A hole in a rug or carpet may be patched with the rubber mending tissue used for patching garments. Dampen a piece of the same material or of burlap, lay over this a piece of the rubber mending tissue, and place it directly under the hole. Over all lay a piece of brown paper and press with a hot iron. Clip off any frayed edges with scissors or darn them with the ravelings.

To Clean Sheepskin Rugs.—A sheepskin rug should never be immersed in water. The less the pelt side is wet the better. Hence tack the skin on a barrel, pelt side down, and apply hot soapsuds to the wool side with a stiff, clean scrubbing brush until it is clean. Rinse well by dashing cold water upon it, putting in the last water sufficient bluing to make the wool appear white, and leave it on the barrel to dry. This process does not expose the pelt to the rays of the sun, which would cause

it to become dry and hard. After the wool is dry go over it carefully with a clean currycomb or other coarse comb to prevent the wool from matting. It will thus be left fluffy and white as snow.

MATTING

Take up the matting, roll it up, and shake as much dust from it as possible by jarring it on the floor. Unroll it on a green lawn and apply the hose to it, or dash pails of water on it until it is thoroughly clean. This should be done on a hot day, and the matting should be thoroughly dried in the open air as quickly as possible. Take it in before the dew falls and air it again the second day if it does not quite dry the first.

Or draw the matting over a table and apply moist corn meal with a scrubbing brush, thoroughly cleaning a section at a time.

Or scrub with bran water.

To Clean Matting on the Floor.—Matting should not be washed or scrubbed with soapy water, as dampness is injurious to it. It may be swept with a broom previously dipped in hot water, and afterwards gone over with a flannel cloth or sponge dipped in salt and water. The salt will freshen the colors and prevent the matting from turning yellow. It should be quickly dried with a second cloth before the water soaks in.

Or sprinkle matting with bits of wet newspaper or similar substances, as with carpets, and sweep the way of the weave, but not across it. Wash with strong salt and water to strengthen the fibers.

Or borax may be used in the water in place of salt. Afterwards, to give it a gloss and freshen the colors, it may be gone over with a cloth slightly moistened in fresh milk.

Or wash with skim milk, rinse in warm water, and dry quickly with a coarse cloth.

To Brighten Matting.—If light-colored mattings become stained and faded, wash with strong soda water. This will give them a uniform solid cream color, harmonizing the different tints.

Or with a water-color brush apply suitable dyestuff to the pattern to revive and restore it.

To Remove Stains from Matting.—Matting that has been badly stained may be cleaned by washing with a solution of oxalic acid in the proportion of 1 ounce of acid to 1 pint of water. Apply to the stain with a stiff brush, use as little of the solution as possible, and afterwards wipe off with a dry cloth. Care must be taken to throw out the water immediately after using, as oxalic acid is a *deadly poison*.

To Remove Grease Spots.—Cover with French chalk and moisten with turpentine. Let this stand for a few days, and then scrub off with a stiff brush.

To Lay Matting.—Before laying matting, cover the floor with several thicknesses of old newspapers. Matting is porous and lets the dust through. The paper catches this and admits of its being easily removed at house-cleaning time. Paper also protects the matting from the sharp and uneven edges of the boards.

Matting may be tacked down with ordinary carpet tacks or double-pointed brads.

Or the different breadths may be sewed together with strong linen or cotton thread, using loose buttonhole stitches an inch or an inch and a half apart. To prevent tacking, the edges may be fastened with flour paste.

Or, to avoid sewing, the edges of the several breadths may be pasted down.

Pieces of matting may also be used as rugs on hard-wood floors, especially for bedroom use in summer, by sewing the breadths together with buttonhole stitches and binding the cut ends with cotton braid or tape.

OILCLOTH AND LINOLEUM

To Clean Oilcloth.—Oilcloth should not be scrubbed with a stiff brush or mop, or saturated with water, nor should sal soda or other strong washing compounds be used upon it. The surface is nothing but paint, and if it becomes soaked, especially with water containing strong soapsuds or

washing compounds, it crumbles and quickly decays.

To use a large sponge with lukewarm water containing skim milk is the best way to wash oilcloth. A very little hard white or yellow soap may be used if necessary. A sponge is excellent, since it leaves no lint, and does not admit of scrubbing the floor hard enough to crack or peel off the surface.

After removing the dirt with skim milk and water, go over it a second time, rinsing with a sponge wrung out of clear warm water, and dry enough to take up nearly all of the moisture and admit of the floor drying quickly.

Or rub it over with a dry woolen cloth.

Finally go over the surface with a rag dipped in boiled linseed oil or crude petroleum oil. This is very cheap, costing only 8 or 10 cents a quart, and a cloth dipped in it will take up enough oil to go over the floor several times. After the cloth has been once saturated it will require but a small quantity of oil each time afterwards.

Or use buttermilk to wash the oilcloth. Afterwards rinse with a sponge dipped in clear water.

To Lay Oilcloths.—Oilcloths may be put down without the use of tacks by making a cooked paste of flour and water somewhat thicker than flour starch. Lay the oilcloth in place and apply a strip of paste about an inch wide first to the floor and afterwards to the edge of the oilcloth. Stand a heavy board edgewise over this strip until the oilcloth sticks.

Or, if conditions are right, merely press the oilcloth down with the hands. The edges may be fastened to the floor in the same manner.

Thus the oilcloth can be taken up when necessary without the injury caused by tacks and with little difficulty.

Table Oilcloths.—The thin oilcloths used on kitchen tables, shelves, etc., may be cleaned in the same manner as the floor oilcloth. Do not use either soap or hot water, but moisten the rag slightly in kerosene. Rub the oilcloth until it is perfectly clean, wring the cloth out of hot water, and

dip again in kerosene when necessary. Afterwards rub dry with a flannel cloth.

Or wash with skimmed sweet milk or buttermilk, and rinse with a sponge and clear water.

Polish with a little linseed oil or a cloth slightly dampened with new milk.

To Wax Oilcloths and Linoleums.—First wash the floor as above and apply a thin coating of wax with a flannel cloth.

Or use a floor oil mixed with wax. This gives a hard, smooth surface, which is easily wiped up and kept clean.

To Remove Spots on Oilcloth.—Anything hot placed on oilcloth turns it white. To remove these spots rub with alcohol and polish with a dry cloth.

To Brighten Oilcloth.—Put a little salt in the water in which oilcloth is washed. This will brighten and freshen the colors with which it is painted.

HARD-WOOD FLOORS

Finish for Hard-wood Floors.—Rub down a new floor with sandpaper, and polish with pumice moistened with a little water. Wash clean, let dry, fill the nail holes with putty, and if the grain of the wood is open, apply a suitable filler. Avoid a cheap filler, based on plaster of Paris and the like, as these are not durable. The best filler consists of ground quartz mixed with linseed oil about as thick as white-lead paint. The particles of quartz are angular and adhere to the grain of the wood. When nearly dry, or as soon as it begins to "flat," go over it with a cloth or other polisher, and wipe clean all that will come off. Let stand a day or two and polish lightly with the finest grade of sandpaper. Wipe off the dust with a soft cloth and follow with two coats of the best quality of pure shellac. Avoid cheap shellac, as it is much less durable. This gives a high gloss. But if a dull finish is required, the shellac may be rubbed down by means of a piece of felt tacked over a flat surface as a block

of wood, with pumice stone moistened with cold-drawn linseed oil or olive oil.

Or to refinish a hard-wood floor that has become defaced by age or wear, remove the previous finish by washing the floor with a strong solution of sal soda, or, if necessary, caustic potash or soda lye. Or if this does not remove the spots, apply turpentine. After the wood has been perfectly cleaned, proceed as above.

Wax for Hard-wood Floors.—Shellac alone makes a tough and durable finish, but on account of its high gloss it readily mars and scratches. And these defects are very apparent. Moreover, a shellac surface cannot be touched up in spots because the brush marks will show. When defaced, it must be refinished all over. Hence it is customary to follow the shellac with a protective coat of wax.

Or wood may be oiled with cold-drawn linseed or other clear fixed oil, and a coat of wax applied directly to the oiled surface without shellac. This last is the usual custom abroad.

A suitable wax properly applied gives a hard, glossy surface, is not sticky, and does not rub off. Scratches or mars on any part of the surface can be waxed over at any time, and the whole surface can be repolished frequently with a weighted brush. Floor oils, unless rubbed and polished with great care, tend to stain skirts, rugs, and draperies. Hence wax is the most satisfactory of all floor dressings.

To Wax Floors.—Apply, by means of a flannel cloth, beeswax thinned with turpentine and rub down with a weighted brush. This is a hard wax and difficult to apply without turpentine. But the turpentine quickly evaporates, and the wax then forms a very durable coating.

Or as a substitute for beeswax, use paraffin wax, which is cheaper, soft and easy to apply, but less durable. Paraffin is one of the petroleum products, and if not properly refined, tends to combine with the tannin of oak floors to form black petroleum stains, which are difficult to remove.

Or fasten together four or more common red bricks. Lay one or

more thicknesses of felt over the largest surface, surround the whole with flannel or other soft cloth, sew it on and attach an old broom handle with which to push or drag it over the floor. This is equally as effective as a weighted brush and costs nothing.

Steel Wool for Waxed Floors.—To scour a hard-wood floor when scratched or marred, or to remove dirt that is ground in, use steel wool, which comes by the pound for this purpose. It can be used in the same fashion as cotton waste, and is a very effective scourer, which will not injure the finest surface.

Polish for Waxed Floors.—Substances recommended for polishing waxed floors are beeswax or rosin, thinned with turpentine, or paraffin wax. Stearin and even tallow candles are sometimes used for the purpose, but are much less suitable. Pure beeswax thinned with turpentine is the simplest and perhaps most desirable polish, but the following are recommended:

Rub through a coarse grater $6\frac{1}{2}$ pounds of beeswax. Add 3 pounds of pearlsh and a little water. Bring to a boil and stir well until they cease to effervesce. Now stir in 3 pounds of dry yellow ochre and pour all into a tin pail, having a tight cover, in which to preserve it for use. Thin when required for use with boiling water to the consistency of cream, and apply while hot with a soft cloth. Polish with a weighted brush and wipe up with a coarse flannel.

Or place in a tin pan 5 ounces of powdered rosin, 24 ounces of yellow beeswax, and rub through a coarse grater. Add 1 pint of turpentine, and place the pan in a larger pan, surrounded by boiling water. This should be done at a distance from a stove or open flame, and matches should not be lighted in the vicinity, as the turpentine gives off an inflammable gas. Stir until of a uniform consistency, and pour into glass fruit jars or tin pails having tight covers to preserve for future use. When required for use, thin with turpentine to the consistency of cream, and apply as above.

Spots on Waxed Floors.—Apply a

little benzine or turpentine on a soft cloth to remove the wax. Rub clean with a dry cloth, and let the benzine or turpentine evaporate before waxing.

To remove dirt that is ground in, scour with steel wool. After the spot has been removed, rub over the spot and adjacent surface with a cloth moistened in a solution of wax and turpentine or other polisher. Rub dry with a weighted brush to a fine polish, otherwise it will be sticky. Avoid the use of water, as it will turn the wax white. Never use soft soap, sal soda, or other alkalies, as they tend to cut the oil in which the shellac is mixed, strike through and darken the floor beneath.

Oil for Floors.—Do not use crude petroleum oil on oak or similar hard-wood floors. The crude petroleum contains a dyestuff which, with the addition of tannin, is the basis of black ink. All oak and some other hard woods contain tannin, which unites with certain constituents of crude oil and some other petroleum products to form in the fibers of the wood an insoluble black inky dye. Thus, in a short time the floor will be turned jet black, and its appearance ruined. To remove this stain, wash the floor with sal soda or caustic potash lye, rinse, dry, and apply a solution of 1 pound of oxalic acid dissolved in 10 or 12 quarts of warm water. Wet the floor with this solution and let it dry without rinsing. Let stand, if convenient, over night. But remember that oxalic acid is an active poison. Hence care must be taken to keep pets and children out of the room, and not to breathe in the dust that rises from the dry crystals. Pour out the rinsing water into a pit and cover it with earth. Oxalic acid will not injure shellac or interfere with any subsequent treatment.

Care of Hard-wood Floors.—To prevent furniture from scratching or marring hard-wood floors, get pieces of thick felt or soft rubber or obtain from a cobbler a sheet of rubber soling. Cut these to the exact size of the table and chair feet. Cover them with glue, and when the glue becomes

“tacky” lay them on. Put newspapers under the chairs to protect the floor until the glue is quite dry. The floor will be kept in much better condition of the members of the family wear rubber heels on their shoes.

To Restore Wax Floors.—Old wax may be removed from a hard-wood floor by mixing equal quantities of sal soda and slaked lime, and using about 1 pound of the mixture to a pailful of water. Apply this with a mop, and afterwards scrub the floor with sand soap and water. If necessary apply dilute sulphuric acid, 1 part of acid to 10 parts of water. Afterwards rinse in water containing a little ammonia and wipe dry.

Remove any remaining traces of wax by means of turpentine. Otherwise shellac will not adhere.

CLEANING AND REFINISHING SOFT WOOD FLOORS

Cracks in Floors.—Place in a sauce pan 1 pound of pastry flour and rub up with a little cold water until free from lumps. Add 3 quarts of boiling water, place on the stove, bring to a boil, and stir in 1 tablespoonful of alum. Cut a quantity of newspaper into fine bits and stir it into this paste until it is about as thick as putty. Boil and stir until the mass is of a uniform consistency. Fill the cracks with this by means of a putty knife. Or a case knife with the point broken or filed square across will answer the purpose. Be sure to crowd it into the crack as deep as possible and finish level with the surface. This hardens like papier-maché, is of similar appearance and nearly as hard as the wood itself, and is very durable.

Or make a strong glue size of 1 ounce of glue to 16 ounces of water, and while boiling hot stir in bits of newspaper as above; or equal quantities of fine sawdust and prepared chalk; or plaster of Paris, and apply as above. Any of these may be mixed with coloring matter to match the boards.

Or cracks may be filled with putty. But this is not equally good, since with shellac or varnish it shows

through, and is of a slightly different color than the wood.

Oil for Floors.—To oil floors, use linseed oil boiled. First remove all previous wax, paint, or varnish, wash the floor clean and let it dry. Apply the oil with a paint brush, keeping it at the boiling point by means of a small alcohol stove or otherwise.

One or two coats of oil, applied twice a year, will greatly improve kitchen or other rough wood floors, and the addition of a coat of wax will improve the finish and prevent the oil from soiling anything.

An oiled floor should be cared for in the same manner as a waxed floor, without the use of soap, washing powder, or an alkali.

To Color Floor Oil.—Add $\frac{1}{2}$ tablespoonful of burnt umber to each quart of oil to darken it. Or an equal amount of yellow ochre to make it light.

Stains for Floors.—Ordinary oil and lead paints are not suitable for floors for two reasons: they tend to soften the wood, and also to crack, chip, and peel, or wear away in spots that are most trodden, so as to give the floor an uneven appearance. Hence suitable stains (which are the same colored pigments that are used in paints thinned with oils so as to penetrate into the fiber of the wood, but without lead) are better for this purpose.

Or the pigment may be applied in a vehicle of glue size.

Or various dyestuffs, as aniline and other dyes, may be applied, either dissolved in water or oil.

But the following will be found the most generally satisfactory:

For a floor 16 feet square, or approximately 250 square feet of floor space, one heavy or two thin coats, mix 2 quarts of cold-drawn linseed oil and 1 quart of turpentine, to which add 4 ounces of Japan dryer. Stir in about 2 heaping tablespoonfuls of any desired pigment or mixture of pigment, or enough to bring the whole to about the consistency of ordinary lead and oil paint, and bring to a boil over a slow fire. Dissolve with gentle heat 2 or 3 ounces of yellow bees-

wax in a little turpentine, taking care that the turpentine does not catch fire. Stir in the wax, remove from the fire, and when about lukewarm, thin with turpentine to about the consistency of new milk. Try the stain on a piece of the same kind of wood as the floor before using, to see if the color is right. Soft wood like pine will absorb more of the color than hard wood like maple. Hence it is important to thin the stain to the right consistency to get the desired effect. Take care to apply the stain evenly with the brush, as in painting, and lay it on freely the way of the grain, rather than against it. The addition of turpentine causes the stain to strike into the wood.

Or in place of cold-drawn linseed oil with turpentine, use boiled linseed oil mixed with any desired pigment, and apply boiling hot. Keep the oil at the boiling point by means of an alcohol stove or otherwise.

Or dissolve 3 ounces of glue in $2\frac{1}{2}$ quarts of soft water. Remove from the stove and stir in 2 pounds of yellow ochre. Apply with a paint brush while hot, and follow with a coat of boiled linseed oil. Let stand over night before walking on it.

Or to give the floor a deep black like ebony, boil 1 pound of logwood chips in 2 quarts of water down to 1 quart, and apply one or two coats with a paint brush. When dry, follow with a strong solution of sulphate of iron in water. Afterwards, when dry, apply a thin coat of boiled linseed oil, wax, and polish.

Or to 6 quarts of caustic-potash lye made from wood ashes add 1 pound of copperas more or less, to give a light or dark oak shade as desired, and apply one or more coats with a brush. When dry, varnish the floor, wax, and polish.

Pigment for Stains.—Add any of the following pigments in the form of dry powder at the rate of about 2 heaping tablespoonfuls to the gallon of stain, to obtain the colors mentioned:

To imitate mahogany, use burnt sienna. For black walnut, burnt umber or Vandyke brown. For cherry, burnt sienna mixed with iron oxide.

For yellow, raw sienna, yellow ocher, or raw umber. Or any of the above may be combined freely to form tints or shades as desired. Experiments may be made by adding the pigments a little at a time and testing the color from time to time on a piece of board of the same kind of wood as the floor is made of.

Varnish for Stained Floors.—Place in a 6-quart saucepan about 10 ounces of linseed oil. Bring to a boil over a brisk fire, stirring constantly, and stir in 2 ounces of pure white borate of manganese in very fine powder. Heat separately 8 pounds of linseed oil to the boiling point, and add it to the first solution in a thin stream, stirring constantly. Continue to heat the mixture as hot as possible without burning. Stir constantly and boil for half an hour. Take off the stove and strain through cheese cloth. Apply one or two coats while hot, and follow when dry with shellac or hard white copal varnish.

Or oil stains may be followed by ordinary shellac varnish with the addition of 4 ounces of cold-drawn linseed oil to each quart of varnish. One quart of varnish will be required for a floor 12 by 12 or about 150 square feet of surface.

To Clean Stained Floors.—Obtain a quantity of coarse sawdust of non-resinous wood free from dust or dirt, and store it in a bin where it will be kept dry and clean. Scatter this sawdust freely over the floor and scrub the floor with it by means of a stiff scrubbing brush, as if using water. The sawdust may then be swept up and burned, and the floor wiped up with a soft cloth drawn over the head of a broom. This is suitable treatment for unpainted, waxed, or varnished floors if much dirt has been tracked in upon them.

Or wring a mop out of kerosene oil and wipe up with this. Use about 1 quart for an ordinary floor. Use for this purpose only refined kerosene of the best quality, but do not use it freely on oak, as it tends to darken the wood.

Care of Oil-stained Floors.—An oil-stained floor will not soak up grease or show spots like a bare

floor, and will not require scouring. It may be wiped up by means of a mop wrung out in clear warm water, but do not use soft soap, washing powders, or any alkali on an oiled surface, as the alkali will dissolve the oil. Oil-stained floors may be polished with wax or turpentine if desired.

Or the oil stain may be followed by one or more coats of hard white copal or shellac varnish before the wax is added.

To Clean Wood Floors.—Detergents recommended for cleaning kitchen floors and other coarse and unpainted woodwork are caustic potash and soda lyes, soft soap, sand, lime, chloride of lime, ammonia, kerosene, gasoline, and various mixtures of these.

To scrub a wood floor, first take up grease spots. Then apply hot soap-suds with a scrubbing brush or mop, rinse with clear water, and wipe dry. Clean and dry a small section of the floor at a time and change the water frequently.

Mops and Pails.—A strong pail fitted with a small wringer such as is used by janitors of large buildings will be found a great convenience. To save stooping, place this on a chair. Or mount a square board on castors and set the scrubbing pail on this. Use two mops of soft woolen rags, one of small size for washing the floor, and a larger one for wiping dry.

Unpainted Floors.—An unpainted board floor, "white enough to eat off," as the homely saying goes, is very attractive, but requires a good deal of hard work. Our grandmothers used to cover unpainted floors with sand. Thus the family, in the process of walking to and fro, kept the floor boards scoured to a snowy whiteness. This is still a good way to whiten an unpainted board floor. Sprinkle the floor freely with clean white sand, and if there is no objection, let it remain a few days. Or the floor may be scoured with dry sand by means of a stiff scrubbing brush. The best sand for this purpose is obtained by purchasing marble clippings and heating them to redness in an iron kettle or other-

wise. When cold, they may be readily pulverized.

Or prepare a scouring mixture composed of 3 parts of sand, 2 parts of soft soap or soap jelly, and 1 part of lime. Apply with a stiff scrubbing brush, rinse with clear water, and rub dry with a flannel cloth. This has the additional advantage that it kills vermin.

Or moisten a thin flannel cloth with kerosene, draw it over the head of a broom, and wipe up the floor each day with this. It removes dust and grease, and thus obviates the necessity for scrubbing oftener than once every two or three weeks.

Or scatter sand over the floor and with an old whisk broom sprinkle upon the sand a solution of 1 pound of caustic potash or soda in 1 quart of water. Scrub with hot water and scrubbing brush, or mop, rinse, and dry.

Or apply soapsuds and sal soda.

Or add 1 tablespoonful of ammonia to a pail of water.

Or, for musty floors, use chloride of lime, $\frac{1}{2}$ pound to a pailful of water.

Spots and Stains.—Scatter ground quartz-stone sand, or marble sand, over the stain. Pour over it a strong solution of caustic soda or potash at the rate of 1 pound to a pint of water and scrub by means of a stiff bristle brush wet in soapsuds.

Or scour with a mixture of 1 part chloride of lime and 3 parts of sand. This will bleach the boards and destroy vermin.

To remove whitewash, scrub with vinegar and water.

To remove mold, first scour with soap and sand, then sprinkle with chloride of lime. Pour on boiling water and scrub by means of a stiff brush.

To Remove Grease.—To prevent hot grease from sinking into the floor, sop cold water on it with a cloth to harden it. Scrape off what is on the surface with a dull knife. Remove the stain with a wet cloth sprinkled with baking soda.

Or kill the grease by pouring turpentine over it and then scour as above.

Or sponge with gasoline, but take

care not to work near a lighted stove. Greasy walls and other wood-work may first be rubbed with gasoline to kill the grease before washing them.

Or wash greasy paint with fresh slaked lime diluted to the consistency of milk. Let dry and rub off. Repeat if necessary.

Or sprinkle a grease spot with whiting, fuller's earth, or laundry starch. Lay blotting paper or brown paper over it and over that a hot flatiron. Let stand until cold. Repeat if necessary.

Or apply a paste of wood ashes and soap. Let stand over night, and wash off with soda and water. Repeat if necessary.

Or apply sand mixed with chloride of lime, and scrub with a stiff brush.

To Remove Ink Spots from Floors.—If the ink contains coal-tar products, eosin or nigrosine, use a strong alkali, as caustic soda or potash; otherwise use a strong acid, as muriatic acid, vinegar, salts of lemon, or oxalic acid diluted with water.

Dissolve a solution of 1 part of oxalic acid and 10 parts of boiling water. Apply by means of a cloth, and afterwards rinse with water containing sal soda to neutralize the acid.

Or cover the ink spots with a paste of chloride of lime moistened with water.

Or scour out the ink spots with a solution of 1 part of sulphuric acid in 20 parts of water, applied by means of a stiff scrubbing brush with sand and water. Rinse with a strong solution of ammonia or sal soda in water.

CLEANING PAINT

To Clean Paint.—To clean paint and varnish, whiting, fuller's earth, cold tea, wood ashes, kerosene, soda, ammonia, turpentine, and bran water are all recommended. Do not use much soap or washing powders containing free alkali to clean paint, nor any soap at all to clean varnish. Soap tends to streak or to remove paint. Keep the water warm, but

not hot, and change frequently. Use a flannel cloth or chamois, as cotton and similar goods leave lint, which sticks to the paint.

Or use outing flannel or flannel-ette.

Old underwear makes good wash cloths for woodwork. Moisture is good for woodwork, and hence it should be wiped off once a week with a damp cloth, and will be improved by a thorough washing several times a year. If woodwork is too dry, it tends to shrink. Hence it is important to wash woodwork for the sake of moisture as well as for the sake of cleanliness. Beware of recipes which call for soft soap, lye, and strong soapsuds to clean paint. They will remove the dirt, but in time will take the paint with it.

To Clean White Paint and Varnish.—To clean white and other delicate colored paints and varnish, moisten chamois or flannel cloth with warm water, dip it in whiting or fuller's earth, and rub over the surface gently. This will remove the dirt and leave the paint as bright as new. Rinse with clear water and dry with a soft cloth.

Fuller's earth is an excellent substitute for soap.

Or, for white paint, moisten a cloth in milk, dip it in whiting or fuller's earth, and apply.

Or, to wash varnish or delicate paint, use cold tea, with or without whiting or fuller's earth. Apply with flannel and rub until clean.

Or boil a pound of bran in a gallon of water and with it wash the paint. This will thoroughly clean the most delicate surfaces without injuring them.

To Clean Coarse Paint.—First go over it with a cloth dipped in kerosene to loosen the smoke and grime. Then rinse with $\frac{1}{2}$ teacupful of kerosene in 1 gallon of water, and wipe dry with a soft cloth.

Or mix baking soda with water to form a thin paste. Smear the paint with this and wipe off with a cloth wrung out of clear warm water. Cover a small surface at a time and remove the soda before it dries.

Or wet a cloth in strong soda and water, wash the paint quickly, rinse with clear water, and dry at once. This should not be used on varnish or delicate paint. The cloth should be damp rather than wet.

Or mix 1 tablespoonful of ammonia with 1 quart or more of warm water for coarse or dirty woodwork. This saves labor and takes off the dirt, but should not be used on varnish or delicate painted surfaces.

Or dissolve 1 bar of hard white soap in 1 gallon of boiling water. Add 1 tablespoonful each of sal soda and salt-peter and 2 tablespoonfuls of ammonia. Bottle and cork tightly for future use.

Or mix 1 quart of sweet oil with 1 pint of turpentine and apply.

To Polish Woodwork.—Mix equal parts of lard oil and turpentine, or 2 parts of sweet oil to 1 part of turpentine, and rub the woodwork lightly with a cloth saturated with the mixture. This may be used on any painted surface after washing.

To Remove Smoke Stains.—To remove smoke stains, wet a cloth, dip it into very fine sifted wood or coal ashes, and scour the paint clean.

To Remove Match Stains.—To remove the marks left by scratching matches on paint, rub gently with a slice of fresh lemon and rinse with clear water, using a soft cloth.

To Remove Paint.—Detergents recommended for removing paint from woodwork are turpentine, benzine, gasoline, chloroform, oxalic acid, ether, alcohol, caustic potash, sal soda, and quicklime. When paint begins to check, it indicates that its ingredients were impure, and it must be removed.

To soften the paint, apply with a paint brush wood alcohol, spirits of turpentine, benzine, or a strong solution of equal parts of oxalic acid and water. Any of these will soften the paint so that it can be wiped off with a coarse cloth or scrubbed away. Repeat as often as necessary.

Or, if these do not soften the paint, apply chloroform, either alone or mixed with an equal quantity of spirits of ammonia. Moisten only a small surface, and scrape off the

paint while moist before proceeding farther.

Or slake 3 pounds of quicklime, add 1 pound of potash, and dilute with water to the consistency of cream. Apply with a paint brush and let stand over night. Remove by washing the surface with a flannel cloth or mop dipped in a strong solution of sal soda and ammonia.

Or scrub with a stiff scrubbing brush.

Or dissolve a bar of hard yellow soap in twice its bulk of water. When cool, add 1 tablespoonful of potash lye and $\frac{1}{2}$ cupful of kerosene. Before the mixture sets, apply to the woodwork with a paint brush. After 24 hours apply a strong solution of sal soda with a scrubbing brush.

Or paint may be burned off by going over the surface with a flat flame produced by a regular lamp made for that purpose, called a "paint burner."

Or apply a red-hot iron. Take care to remove the paint as soon as it is soft and before the wood is charred or burned.

To Remove Putty.—Go over the surface of the putty with a red-hot poker or other iron, taking care not to burn or char the woodwork. The putty can then be peeled off with a blunt knife blade.

Or with a brush apply a paste made of soap jelly containing caustic potash or soda.

Or apply dilute sulphuric, nitric, or muriatic acid with a brush. But if any of these soaks into the woodwork, it tends to rot the frames. Hence burning is the better method.

WHITEWASHING

Before applying whitewash, go over the wall or ceiling with a brush or dust cloth to remove dust, and wash with clear water. Fill all cracks and broken places with new plaster. Cut away the edges of broken places to make a square edge. Fill small cracks and breaks with plaster of Paris. Do not apply whitewash until the surface is quite dry. Give two or more coats as needed.

To Prepare Whitewash.—The principal ingredients in various kinds of whitewash are slaked lime, whiting, Paris white or sulphate of baryta, oxide and sulphate of zinc, alum, sugar, rice and wheat flour, and glue mixed with milk or water. These ingredients are used in various combinations. The addition of a little bluing will make a clearer white, and a small amount of salt assists by making the whitewash stick better.

The following mixtures are recommended:

Slake a sufficient amount of lime in water to make a pailful of whitewash, and while still hot stir in a pint of flour boiled with water to form a thin cooked starch. Stir well and dilute with hot water to the right consistency.

Or prepare a wash of slaked lime in a pail or tub and strain through cheese cloth. Mix 4 ounces of whiting or pulverized burnt alum, 2 pounds of sugar, and 2 quarts of rice flour with hot water and bring to a boil, stirring constantly. Add this mixture to 1 pailful of sifted lime wash. Add also 1 pound of best white glue dissolved in boiling water over a slow fire. This is a very brilliant and durable wash and will last for many years.

Or slake 8 quarts of lime, and add 1 pound of sulphate of zinc and $\frac{1}{2}$ pound of common salt dissolved in water. This is a hard, firm wash that will not crack.

Or mix 6 pounds of Paris white with cold water to form a paste, and dilute with hot water to the consistency of milk. Stir in 4 ounces of the best white glue dissolved in boiling water over a slow fire. This is a cheap wash and gives a fine, brilliant surface.

To Color Whitewash.—For a fine clear white, add a little bluing.

For a reddish pink, add Spanish brown.

For a red stone color, mix common clay with Spanish brown.

For yellow, add yellow ochre (or chrome yellow, which goes farther and makes a better shade).

For gray or lead color, add lamp-black.

For cream color, yellow ocher.

For stone color, 2 parts each of umber and lampblack.

For fawn color, 4 parts of umber, 2 parts of Indian red, and 1 part of lampblack.

Do not use green with white-wash.

The quantity of coloring matter required depends upon the amount of whitewash and the warmth of the tint desired, and must be determined by experiment, but approximately two or three pounds to a pailful of wash will be advisable.

Whitewash for Outdoor Use.—To make a good whitewash for fences, outbuildings, barns, stucco, and other surfaces exposed to the weather, slake 12 quarts of lime in a tight cask or barrel. Cover with canvas to keep in the steam. Strain through a large piece of cheese cloth or a fine sieve and add 2 quarts of coarse salt and 2 gallons of water. Bring this to a boil and skim off any impurities. Stir in 2 pounds of potash, 8 quarts of fine sand, and coloring matter as desired. This wash may be applied to wood, brick, or stone, looks as good as paint, and is weatherproof, fireproof, and very durable. It is an excellent preservative for shingle roofs and walls.

Or slake 8 quarts of lime in a tight cask or barrel, strain, and add 2 quarts of salt dissolved in hot water. Add boiling starch made of 2 pounds of rich flour. First mix the starch with cold water to a thin paste, dilute with hot water, and boil the mixture 15 minutes. Stir in while boiling hot. Then stir in 4 ounces of powdered whiting and 8 ounces of best white glue dissolved in hot water over a slow fire. Dilute with 3 gallons of hot water, stir vigorously, cover, and let stand 3 or 4 days. This mixture should cover 24 to 36 square yards of wood, brick, or stone. It may be used instead of oil paints, is much cheaper, and will last for years. It should be applied hot, which may be done by using a portable furnace or by suspending a kettle over a camp fire by means of three poles in the form of a tripod.

Or slake 8 quarts of lime, strain, and add 1 pound of dissolved glue and 1 or 2 quarts of boiled linseed oil. Dilute with water.

Or dissolve in hot water 4 quarts of water lime, 4 quarts of fresh-slaked lime, 4 pounds of powdered yellow ocher, and 4 pounds of burnt umber. This gives a rich cream color for fences, outhouses, and barns.

Wash for Bricks.—To make a wash for red brick walls, dissolve 2 ounces of glue in 1 gallon of water over a slow fire. Soaking the glue for a day or two beforehand will make it dissolve more quickly. Bring the glue to a boil and stir in 1 tablespoonful of powdered alum, $\frac{1}{2}$ pound of Venetian red, and 1 pound of Spanish brown. Or vary these proportions according to taste. Mix and apply with a brush.

To Prepare Calcimine.—Dissolve with boiling water in separate kettles 10 pounds of Spanish whiting, 8 ounces of white glue, and 8 ounces of powdered alum. Use in each case enough water to make a thin cream. Pour together, stirring vigorously, strain through cheese cloth, and add 1 teaspoonful of bluing. Apply while warm. Add coloring matter to suit, and dilute with soap jelly to the right consistency. Remove paper, if any, wash off old calcimine or lime, fill holes or cracks with plaster of Paris, and apply a sizing of glue or shellac.

Mix calcimine with any coloring matter desired and apply the same as whitewash.

Blue Wash for Walls and Ceilings.—Dissolve 1 pound of blue vitriol and 8 ounces of whiting in 3 quarts of water. Boil with gentle heat 2 or 3 hours, stirring frequently. Remove from the fire, stir, and allow to cool. Pour the liquor from the sediment, mix the latter with 1 ounce of common glue dissolved in 1 gallon of water, and apply with a brush.

PAPER HANGING

To Remove Wall Paper.—To prepare a wall for fresh treatment, whether by painting, calcimining, or

hanging fresh paper, first remove any paper that may be on the walls. Never lay one paper over another. The germ of disease, eggs of vermin, and other obnoxious matter are not to be gotten rid of by this process. Wet the walls with boiling water applied with a whitewash brush, and remove the paper with a hand scraper or a large case knife or wide-bladed putty knife. Do not allow the scrapings to harden on the floor, as when dry they are very difficult to remove. After the paper is off, wash down the walls with pure water or strong soda water or vinegar and water applied with a large sponge or brush. Let them dry thoroughly before treating.

To Repair Plaster.—To repair cracks formed in plaster by the settling of new houses, the sagging of old houses, the decay of ceilings and floor timbers, and accidental breaks in the plaster, first cut away the edges of the cracks or breaks with a sharp knife. Make the edge straight or slightly slanting in. Then fill with plaster of Paris mixed with water, to which may be added vinegar, flour paste, or sand.

Or fill with paper pulp moistened with glue.

To mend small breaks, mix plaster of Paris with cold water and apply quickly with a case knife, smoothing the plaster as you apply it. Mix a small quantity at a time and work quickly, as the plaster hardens very fast.

Or to prevent plaster of Paris from hardening quickly, when repairing larger breaks that take more material and more time, mix 1 tablespoonful of plaster of Paris with 2 or 3 tablespoonfuls of fine sand and dilute with vinegar. The more vinegar used, the slower the plaster will set.

Or mix plaster of Paris with an equal quantity of cold flour paste.

Or to mend large cracks and breaks, soak bits of wall paper to a pulp with water, squeeze out the water, and mix to a stiff paste or jelly with thin size or glue made by dissolving 1 ounce of good glue in 1 pint of hot water over a slow fire.

Pour the whole on cheese cloth to remove the excess of water. Press the paper pulp into the cracks and holes in the plaster with a putty knife. But do not quite fill the crack to the surface of the plaster, as the pulp does not admit of a smooth surface. When nearly dry, smooth the surface with plaster of Paris and let dry before tinting or repapering. The paper pulp when hard is as strong as wood, and cracks filled in this manner will never reopen.

Size for Paper Hanging.—To prepare walls for paper hanging, first remove old paper, mend cracks and breaks, and wash down the walls with a cloth or sponge wet in warm water. Then apply with a whitewash brush a solution of 4 ounces of common glue dissolved in 1 gallon of boiling water over a slow fire. Or apply a good shellac size.

Paper Hanger's Paste.—Mix 4 pounds of flour, $\frac{1}{4}$ pound of powdered alum, and $\frac{1}{4}$ pound of pulverized rosin. Rub up this mixture with a small quantity of warm water until smooth and free from lumps. Mix with boiling water to the consistency of cream and boil until it thickens.

Or use cornstarch or wheat starch or rice flour instead of wheat flour.

To use this paste, spread it freely on the paper, then lay or fold the pasted sides lightly together. This assists in distributing the paste evenly and also in handling the paper. After the upper end has been attached, the lower part may be unfolded as it goes on the wall. The wall should first be coated with a thin glue size made of about 4 ounces of glue to 1 gallon of water.

Or make a glue size by dissolving 10 ounces of glue in $2\frac{1}{2}$ gallons of water. Mix 9 pounds of bole, an earthy substance resembling clay, with water to the consistency of cream, and strain off the water through cheese cloth. Add the moistened bole to the glue size and stir in 2 pounds of gypsum. Strain through cheese cloth and dilute with boiling water. This is an excellent paste for old walls covered with one or more coatings of whitewash.

To Hang Wall Paper.—First trim

close to the pattern the plain strip on one edge of the paper, but not the other. Next measure the height of the room by holding an end of the paper up to the ceiling and marking along the baseboard with any blunt instrument. Cut along this mark and use the first strip as a pattern. Cut a sufficient number of additional strips for the plain walls, making allowances for doors and windows. Lay the strips face down on a large table, or make a suitable bench by laying old boards across a couple of chair backs or barrels. Apply the paste with a whitewash brush. If the paper is heavy, let it lie after pasting until it is slightly soaked with the paste, or until the surface is sticky rather than wet. Commence at a door or window and place the close-cut edge against the frame. First press the upper end against the ceiling and press downward with a clean cloth. Place the next strip so that the close-cut edge will overlie the half-inch strip left upon the first strip, and so proceed until the room is finished.

But remember that all heavy-weight papers in solid colors, as in-grain, duplex, or cartridge papers, and most cloth or fabric wall coverings, must be "butted" rather than overlapped. That is, the edges must be placed close enough together to cover the wall, but without overlapping each other.

To fit around doors, window casings, and other jogs, cut and paste a full strip, apply it to the wall at the ceiling, and press with a cloth down to the top of the door or window frame and along the side of the adjacent wall. Press carefully up to the frame and cut along the edge with a sharp knife to take out the section of paper which comes over the door or window. It will assist to clip diagonally with shears toward the corner of the opening, taking care not to clip too far, although the diagonal clipping, if it extends into the paper on the wall, may be concealed by carefully bringing the edges together.

To Paper a Rough Wall.—To paper old walls of boards, planks,

or wainscoting without plaster, or sanded walls that have not been "skimmed" with plaster or lime, or other rough surfaces, it may be necessary to first hang a layer of cotton cloth to furnish a smooth surface on which to hang paper. The difficulty of hanging paper on a rough surface is that the paper, being stiff, does not yield to the depressions in the wall. Hence air spaces are left that cause the paper to blister and peel off. The advantages of using cloth are that it is flexible, that it takes up more paste than paper does, and hence that it adheres more closely to the wall. It affords a smooth and suitable surface on which to hang paper, and gives the final result a good appearance. First go over rough surfaces with sandpaper. Tack this to a large block of wood, into which, to avoid using a stepladder, insert an old broom handle.

Next apply liberally to the walls hot boiled flour or other suitable paste containing a tablespoonful of borax to each gallon of water. Cover with paste one strip at a time, and immediately hang on the wet wall any suitable cotton stuff. Unbleached cotton sheeting or cheese cloth answers this purpose; or old sheets, pillowcases, and the like may be utilized. After hanging the cloth, brush it down with a whitewash brush dipped in the hot paste, and allow it to dry. Then hang the wall paper in the usual manner.

To Paint Rough Walls.—To obtain a suitable surface for painting or tinting in colors on rough boards, sanded walls, stucco, or other rough surfaces, first apply a layer of cotton cloth as above and hang a cheap, light-colored wall paper. When dry, pare off with a potato knife the seams in the paper caused by overlapping the edges, running the sharp edge down the seam from top to bottom, or use carefully an old razor for this purpose. Apply two or three coats of paint and white varnish alternately, allowing one to dry before putting on the next. The varnish will prevent the paint from becoming soiled, and the surface will last a lifetime.

To Paint a Whitewashed Wall.—Scrape off the loose lime with any blunt-edged tool. A hoe is convenient. Go over the wall with sand-paper tacked to a large block of wood and fastened to a handle. Wash with a sponge to remove the lime and let dry. Fill cracks and breaks with plaster of Paris. They will be concealed by the paint. Do not use putty for this purpose, as that when dry would have a different-looking surface. Apply one or two coats of shellac or glue size, 3 or 4 ounces of either to a gallon of boiling water. Cover with any suitable paint and varnish.

CARE OF WALLS

To Clean Wall Paper.—Brush down the walls with a hairbrush or dust cloth, then cut a loaf of yeast bread two or three days old once vertically through the middle, and again crosswise. Hold these pieces by the crust and rub the wall downward with long, light strokes. Do not rub across the paper, or rub harder than is necessary. An ordinary coarse grater held in the left hand will be found convenient to rub off the surface of the bread as it becomes soiled. Clean thoroughly as you go.

Or in 1 quart of water, dissolve 3 ounces of salt, 1 ounce of ammonia, 1 ounce of oil of sassafras. Mix well and add flour enough to make a stiff batter. Put in a can or bucket, close up tight, and hang in a boiler of water. Boil until thoroughly done.

The dough should be stiff enough not to stick to the hands or to the paper. Take a piece as large as the fist, dip it in dry corn meal, and use until it becomes soiled. Change as often as necessary.

Or make a similar stiff dough of wheat flour and water. Afterwards brush down the walls with a clean soft brush or dust cloth to remove the crumbs.

To Remove Grease from Wall Paper.—To remove grease and oil stains from wall paper, fold a piece of blotting paper, and in the fold spread pipe clay or French chalk.

Stitch or pin the edges together to keep the chalk from falling out. Lay this over the grease spot and apply a hot iron, taking care not to scorch the paper. Change the blotting paper occasionally, and, if necessary, repeat with a fresh iron.

Or make a thick paste of powdered pipe clay or French chalk and apply it to the spot with a brush. Let it remain until dry. Then brush off and repeat if necessary.

To Dust Walls.—To remove dust from walls, use a clean hairbrush or window brush with a suitable handle. Brush from the top downward.

Or make a bag to cover the head of the broom.

Or draw a sleeve or leg of a suit of old knit underwear over the head of the broom. Put the broom handle through the large part and draw it well down over the broom. The downward motion of the broom on the wall will hold the cloth tightly in place.

Or crumple an old paper bag in the hands, but without tearing it, and slip it over the head of the broom. This can be removed and burned after using.

Or insert into a clean mop handle a suitable dust cloth, as several thicknesses of cheese cloth or discarded cotton or woolen underwear, and sweep down the wall with this.

To Mend Wall Paper.—To patch a spot knocked out of the wall paper, or holes in exposed cracks or edges, take a piece of paper to match the pattern and expose to the sun until it fades to the same shade. Cut a patch an inch or two larger than the broken place, lay it face down on a piece of glass, moisten it with a suitable paste, and when moist scrape or pare the edge with a sharp knife or old razor to a very fine slant or bevel.

Lay on a fresh coat of paste, especially around the edge, and apply the patch so as to match the design. Rub the edges down with gentle strokes of a soft cloth, and if done skillfully the patch will not be noticeable.

Or, if spots are too small to patch, obtain, for a few cents, a child's box of water colors, mix the colors to ob-

tain the right shade, and paint the spots with a small camel's-hair brush. A 25-cent box of colors will last a long time, and a little practice will enable any one to match the colors and keep the wall paper in good order. Faded spots left on solid-colored wall papers by the removal of pictures may be renovated by painting them with dyestuff. Select a color as near that of the paper as possible, follow the directions that come with the dye, and apply to the wall with a brush. Care must be taken not to let the dye drip on floor coverings or furniture. When first applied, the painted spot will be darker than the rest, but it will quickly dry to its proper tint or shade.

To Clean Calcimined Walls.—Rub on corn meal with a coarse cloth, or moisten a soft cloth or sponge in aqua ammonia and rub spots very lightly.

To Renovate Blackened Walls.—A smoked or blackened ceiling or wall may be cleaned by means of a cloth wrung out of a strong solution of baking soda and water. Or use vinegar and water. If the stain is not all removed, dissolve gum shellac in alcohol to the consistency of milk or cream and with it cover the sooty parts. Paint or whitewash over the shellac. The black will not show through.

To Dry Walls that Are Damp.—If there is much dampness in a room that is not commonly heated, it may cause the walls to mold or mildew, besides being unhealthy. To absorb the dampness, place unslacked lime in flat, open vessels, as dripping pans, plates, or saucers. Lime has an affinity for dampness and also purifies the air. Renew the lime as fast as it becomes air-slacked and crumbles into a fine, dry powder.

Walls are often damp for no apparent cause. Brick and other porous walls may hold moisture, or it may work up from springs through the foundations of brick or stone houses. The causes should be sought and, if possible, removed.

To prepare damp walls for calcimine or paper, make a size of 1 ounce of glue to 1 gallon of water,

and add 4 ounces of alum and 4 ounces of boiled linseed oil. Apply one or two coats and let dry before papering.

Or apply with a whitewash brush, during summer when the wall is dryer, a solution of 1 pound of castile or other hard white soap in 1 gallon of water. Let stand a day or two to dry. Follow with a second coat of $\frac{1}{2}$ pound of alum in a pailful of water, and let dry before papering.

Or, if the walls are very damp, apply thin sheet lead or tin foil to the walls with a suitable cement. Or fasten with flat-headed copper tacks. These may be driven into the damp spots only or, if necessary, into the entire wall. Afterwards paper.

To Remove Mold from Walls.—To remove mold or mildew from walls or ceilings, apply with a whitewash brush a solution of 1 pound of chloride of lime dissolved in a pailful of water.

To prevent dampness when building, after the walls are a few feet above the ground lay a row of stone or brick with a mixture of tar pitch and fine sand in place of mortar.

WINDOWS, DOORS, ETC.

To Clean Windows.—Do not use soapsuds on windows. The soap adheres and requires a good deal of rinsing to remove. The easiest way to clean windows is with a chamolis or clean cloth and clear water. Wring out the chamolis or cloth so as to be wet but not dripping, and wash the windows clean. Afterwards wring dry and go over them again. Finally polish with a dry cloth or chamolis. Rinse the cloth and change the water as often as necessary.

Or, if the windows are much soiled, use a little washing soda, but do not let water containing soda drip or stain the paint on the sash. Wash one pane at a time and wipe with a dry cloth.

Or add 1 tablespoonful of kerosene, gasoline, or ammonia to each quart of water. This cleans quickly and gives a high polish.

Or, if the windows are not much soiled, wet them with a soft cloth dampened with kerosene or ammonia water, and wipe with a dry cloth.

Or mix a little dry starch with cold water to the consistency of cream, and wash the windows with this, leaving it to dry on. When dry, rub it off with a damp newspaper. This gives a high polish without lint or streaks.

To Remove Paint.—To remove paint spots from windows, soften them with hot, strong vinegar, or a strong solution of pearlash and rub a copper or silver coin over them to loosen the paint.

To Remove Putty.—To remove putty, go over it with a red-hot poker or other hot iron, taking care not to touch the paint on the window sashes. When the putty is hot, slip a dull knife blade between it and the woodwork and it will readily come off. Any other method that will remove putty is likely to injure the paint on the sashes.

Or apply two or three coats of paraffin oil by means of a small brush, allowing each coat a half hour or more to penetrate before the next one is applied.

Or apply soft soap freely by means of a brush. In a short time the hardened linseed oil is dissolved, making the putty plastic, so that it can be readily removed.

Window Corners.—Use a whisk broom to dig out the corners of the window sash, or use wings of turkeys, geese, or chickens. These are also good to wash windows, as they are free from dust and lint.

Or use a piece of whalebone or a skewer to clean out the corners of the sash.

To Polish Windows.—Polish windows with dry chamois or tissue paper or an old newspaper slightly moistened.

Or apply with a moistened rag powdered indigo, pumice stone, or fuller's earth, and polish.

Or fold a piece of cheese cloth and put a quantity of pulverized pumice stone between the folds, stitching around the edge to keep the powder from spilling. Polish chimneys and window panes with this prepared cloth. It gives a high polish instantly, and will last a long time.

Or with a soft cloth rub a little

vinegar on the glass. Rub dry and polish.

To Prevent Windows from Steaming.—After cleaning the glass, rub over it a rag slightly moistened with glycerin.

Windows—To Keep Out the Sun.—Make a paste of powdered gum tragacanth and white of egg. Beat with an egg beater and let it stand twenty-four hours. Apply with a soft brush and let dry.

To Clean Mirrors.—Mix a little powdered bluing, whiting, or pumice stone with alcohol to form a thin paste. Smear the surface of the mirror with this by means of a small sponge or soft rag, and before the alcohol evaporates rub it dry with a clean cloth. Afterwards polish with silk, chamois, or tissue paper.

Or wring a cloth or chamois out of clear water, dip in dry whiting, and apply. Rub with a dry cloth or chamois and polish.

Or apply whiting mixed with tea to form a thin paste. Use clear tea to remove stains.

Or wring a newspaper as you would a cloth out of cold water, so that it will be damp but not wet. Rub the glass with this, and afterwards dry with a fresh newspaper softened by crumpling it in the hands.

To Polish Mirrors.—Use a dry chamois or pumice bag, or a silk handkerchief, or tissue paper, or apply powdered chalk or whiting with any of these. Or use a dry cloth slightly moistened with a few drops of aqua ammonia.

To Lubricate Window Sashes.—To lubricate a window sash that rubs or swells in damp weather so that it cannot be raised and lowered readily, slush freely with common yellow soap the edge of the sash and the groove in which it runs. This may be done by moistening the soap and rubbing it over the parts, or by dissolving the soap in its own bulk of water, and applying the soap jelly with a brush.

Or use a wax candle instead of soap.

To Prevent Window Sashes from Rattling.—A half of a clothespin will cure temporarily the rattling of a window sash.

To Restore Window Glass.—To restore the transparency of window glass that has become dingy by exposure to the elements, rub with dilute muriatic acid, 1 part of acid to 10 parts of water, and polish with a moist cloth dipped in whiting.

To Prevent Doors from Creaking.—Dip a feather in oil and apply to the hinges.

Or rub on a piece of soap.

Or mix equal parts of soap, lard, and black lead, and apply with the point of a lead pencil or in melted form by means of a small brush.

Burglar-proof Lock.—Lock the door, leave the key in the lock, and keep it there by means of a heavy copper wire 11 inches long bent in the shape of a hairpin. Put this over the spindle back of the knob, with the ends down through the head of the key. The key cannot then be pushed out or turned by a burglar's tool or another key inserted from the outside. This is a convenient device for a traveler to use in hotels, where duplicate keys are often issued to servants and others.

Or one end of the wire may be fastened to the casement by means of a staple, and the other end formed into a hook to hold the key in position.

Or an ordinary hook may be used for this purpose.

Skeleton Key.—Obtain from a locksmith a skeleton key similar to the keys used by burglars and furnished to employees of hotels whose duties require them to have admission to all the rooms. This will be exceedingly convenient when other keys are lost or mislaid.

To Fit Keys.—To fit an old key or a blank to replace a key that has been lost, hold the key to be fitted in the flame of a candle until it is thoroughly blackened, insert it carefully in the lock, and turn it until it strikes the wards. Withdraw the key and file away the parts where the soot has been rubbed off by the wards.

CLEANING AND CARE OF FURNITURE

To Clean Furniture.—Furniture, like other woodwork, tends to shrink

if it becomes too dry, and should be washed for the sake of moisture as well as for the sake of cleanliness. Hence furniture, besides being cleaned, when necessary, with suitable cleansing compounds, should be sponged occasionally with clear water and wiped dry.

But do not use soap or washing powders on painted or varnished furniture. Remove dirt, dust, and stains with other cleansing agents, and rinse by sponging with clear water. Wipe dry, oil, and polish. Detergents recommended for cleaning furniture, removing finger marks, white spots, and stains are olive, sweet, linseed, paraffin, and other oils; whiting, fuller's earth, cold tea, kerosene, turpentine, soda, essence of peppermint, camphor, asphaltum, vinegar, various acids, and combinations of these.

To Wash Furniture.—To wash furniture, use a large sponge, wipe dry, and polish dry as possible with a chamois skin wrung out of clear water, or with a soft flannel cloth. Do not use dry chamois on varnished wood or polished surfaces. Wipe always in one direction, preferably with the grain of the wood.

Wash carved wood with a stiff hair paint brush dipped in clear water.

Or wash with cold tea applied with a sponge or brush, wipe dry, oil, and polish.

Care of Furniture.—To keep polished or varnished furniture in good order, each article should be gone over lightly once a week on cleaning day with clear hot (not boiling) water without soap, or with cold tea, or any other suitable cleanser.

Or, if there is not time for this, after dusting the furniture, rub it over with a cloth moistened with kerosene, turpentine, cold tea, or cold-drawn linseed oil, or with a mixture of equal parts of these. This practice will assist in keeping it in good order.

To Remove Finger Marks.—Moisten a flannel cloth in olive, linseed, sweet, or paraffin oil to remove the spots. Wipe dry, and polish with flannel or a chamois skin wrung out of clear water. For oiled furniture use kerosene.

To Remove White Marks.—To re-

move white marks on furniture caused by heat or water, hold a hot iron near them, but not near enough to burn or scorch.

Or rub with a cloth moistened with kerosene.

Or with a cloth apply equal parts of linseed oil and alcohol.

Or, if the stain is obstinate, cover with baking soda and hold a hot iron close to the spot, taking care not to scorch or burn the wood. Repeat if necessary.

Or apply olive oil or sweet oil, and polish with a cloth moistened in alcohol.

Or apply essence of peppermint with a cloth. Wipe dry and polish.

Or use a mixture composed of equal parts of vinegar, sweet oil, and turpentine.

Or rub with a cloth wet in spirits of camphor or camphorated oil or turpentine.

Or use a cloth saturated with any of these.

After using any of the above, wipe the spot dry, apply furniture oil, and polish with damp chamois or silk or linen cloth. Do not allow alcohol, turpentine, camphor, or similar detergents to remain on a polished surface.

To Remove Ink Stains.—To remove ink stains, first test the ink by applying water to see if it contains coal-tar products, as eosin or nigrosine. If these are present the ink when wet will run. In that case use an alkali, as baking soda mixed with water to form a paste, and let it dry on. Repeat if necessary.

Or, if water does not cause the ink to run, it is probably an iron-gall or logwood ink; hence apply an acid, preferably oxalic acid, dissolved in an equal quantity of water. Saturate a cloth with the solution and lay it on the spot to soften the ink. Then wash with the solution until the ink disappears.

Or apply salts of lemon.

Or a mixture of 6 parts of spirits of salt (diluted hydrochloric acid) and 1 part of salts of lemon.

Or use 1 part of nitric, muriatic, or sulphuric acid diluted with 10 parts of water. Apply by dipping a cork

in the mixture and touching the stain, or by means of a feather.

But remember that all of these acids are *poisonous*, and that all except oxalic acid will burn or blister the skin. Also, if used in too great strength, they will remove paint and varnish and themselves stain the surfaces they are applied to. Hence use no more acid than is necessary and immediately sponge off with clear water containing a little ammonia, wipe dry, oil, and polish.

To Remove Bruises from Furniture.—To renovate furniture that has been bruised or scratched without injuring the fiber of the wood, apply moisture and heat. Wet a cloth in warm water, not hot, and lay it over the parts. Hold near a hot iron, but not near enough to scorch or char the wood. Repeat until the bruise comes up. If the varnish is discolored, apply any of the above remedies.

Or use, instead of cloth, several thicknesses of brown paper moistened in water.

Or, if the bruise is small, omit the cloth or paper. Wet the spot and hold near it a hot iron. Then lay over the scratched or bruised surface a cloth dipped in linseed oil. Finally rub with a mixture of equal parts of turpentine and linseed oil, and polish.

Oils for Wood Furniture.—Furniture polish containing oil or wax will not be needed if the wood is washed occasionally with clear warm water, not hot, without soap, and rubbed dry with chamois or a soft cloth. But if furniture polish containing fixed oils is used the furniture must be rubbed vigorously and kept in condition by daily rubbing to prevent oil accumulating so as to be felt or seen. Furniture oil should be sparingly used and the wood rubbed to a high polish or until it does not have any greasy feel.

Soap for Furniture.—Soap should not be used on wood finished with shellac or varnish or treated with furniture wax or oil. Soap has the property of destroying oily and resinous substances, and thus tends to eat away the coating, destroy the polish, and expose the wood.

To Remove Furniture Scratches.—Go over the articles with a soft rag dampened in kerosene oil. This will cause all light scratches or surface bruises to disappear.

Or, if the scratches or cracks are deep, melt a little beeswax, and thin out with turpentine to the consistency of sirup. Apply with a soft cloth, and polish with flannel or velvet.

To Restore the Color of Furniture.—Apply raw linseed oil by means of a flannel cloth to restore the color, and let stand over night.

Or, for highly polished surfaces, as rosewood or mahogany, apply a cloth moistened with alcohol. Afterwards polish with a soft cloth moistened with turpentine.

Linseed Oil for Furniture.—Apply raw linseed oil as a restorer, with or without an equal quantity of turpentine.

Care of Piano.—The back of the piano should be protected by a dust cloth of denim or other suitable material tacked or pasted lightly to the frame. In moist climate the wires will be protected from dust by sprinkling them with unslaked lime. The keys should be wiped with alcohol once a week on cleaning day to prevent them from yellowing, and the varnish may be kept in good condition by wiping once a week with a chamois wrung out of cold or warm water, or by wiping with a cloth moistened with turpentine, kerosene, or cold-drawn linseed oil, or a mixture of these.

To Clean Pianos.—A careful inquiry by a dealer in pianos from the largest factories in the United States discloses the fact that there is no better means of cleaning a polished piano or any other highly polished furniture than to simply wash it in lukewarm water, drying each part perfectly by rubbing briskly as fast as it is washed. This method is as safe as it is simple. It leaves the polish absolutely uninjured.

To Clean Piano Keys.—Remove stains with oxalic acid and keep the keys white by rubbing with a soft piece of cloth wet with alcohol or with cologne water. Expose the keys

to sunshine on bright, sunny days to bleach them.

Cleaner for Musical Instruments.—To clean guitars, violins, etc., mix equal quantities of linseed oil, turpentine, and water. Shake well before using to form an emulsion or cream. Rub the instrument with a cloth dampened in this cream, wipe dry, and polish with woolen cloth, chamois, or velvet.

To Clean Cane Chairs and Wicker, Bamboo, and Rattan Furniture.—First blow the dust out of the crevices with a pair of bellows or a good-sized automobile foot pump. This will greatly assist in cleaning. Make a suds by dissolving half a bar of white soap in a gallon or more of water and add half a cupful of common salt. This will prevent the cane from turning yellow. Apply the suds to the chair with a scrubbing brush, first one side and then the other, using plenty of water so that the cane may be thoroughly soaked. Place it out of doors to dry in a shady place. This will make the cane firm and tight and renew its elasticity.

To Bleach Willow Furniture.—To bleach willow furniture, make a suds as above and add 2 ounces of bleaching powder.

To Renovate Cane Chairs.—When the cane bottoms of chairs wear out, buy new cane and learn to weave cane seats. This is a simple art which may be easily learned by anyone, experimenting with the cane of an old chair and by a little practice.

CLEANING PICTURE FRAMES

To Protect Gilt Picture Frames.—Brush gilt frames with water in which onions have been boiled—three or four to a pint. Also wash the glass with it. Onion water will not injure the frames, and will prevent flies from lighting upon the picture.

Or, after dusting, go over the frames lightly with a soft flannel cloth moistened in kerosene.

Or give them a coat of clear parchment size. This will prevent the dirt from darkening the gilt. The size may be sponged with cold water or

oil of turpentine, and left to dry without wiping.

Or give the frames when new a coat of white varnish. This may be washed with clear cold water.

Or wash soiled gilt frames with a gill of vinegar dissolved in a pint of cold water and applied with a soft brush.

Or stir into a quart of water enough powdered sulphur to give it a slightly yellow tinge, and in this water boil four or five sliced onions. Strain and apply with a soft brush to soiled gilt frames.

Or to 3 ounces of white of egg add 1 ounce of chloride of potassium or soda and beat up together. Dust the frame with a soft brush, and brush over them with the above mixture.

Or apply well-beaten white of egg with a camel's-hair brush and wipe off with a soft flannel cloth. But rub with the cloth very little and very lightly.

Or wash with alcohol or spirits of turpentine, using a soft sponge, and let dry without wiping.

All picture frames should be treated with one of the above preparations several times during the spring and summer.

Or cover the frames with oiled tarlatan, which may be obtained ready oiled for this purpose.

Or brush boiled linseed oil over ordinary tarlatan. This is excellent for keeping dust from books, bric-a-brac, and various other objects.

Apply alcohol to fly spots and other stains with a camel's-hair brush to soften them, and wipe off the frame with a soft chamois or flannel cloth. Do not use linen for this purpose, as it deadens the brightness of the gilding.

To Renovate Gilt Frames.—Apply gilt paint with a camel's-hair brush to spots where the gilding has come off so as to expose the wood.

Or if the bit of gilding that has come off can be found and is large enough, moisten the spot with glue and replace it, bringing it up to a level by means of putty if necessary. Let dry and go over it with gold paint.

To Clean Gilt Ornaments.—Make

a strong solution of cyanide of potassium. But remember that this is a *deadly poison*. Apply with a stiff brush, or dip the articles in this solution. Afterwards rinse with water, using a soft brush, and dry in boxwood or other hard-wood shavings. These may be obtained of any jeweler. Store away gilt articles in boxwood shavings to keep them from tarnishing.

Or clean them with a lather of soft white soap, rising with clear water.

To Clean Silver Ornaments.—Make a suds by dissolving hard white soap in boiling water, immerse the articles, and boil for five minutes. Remove and scrub gently with a soft brush, rinse in clear boiling water, and wipe dry with a soft cloth. Lay them near the fire until the moisture has perfectly evaporated, or cover them with boxwood sawdust until fully dried.

To Preserve Oil Paintings.—Apply two or three coats of pure white-lead paint to the back of the canvas. This preserves the canvas from damp, mold, and mildew, and makes it practically indestructible. Many ancient canvases treated in this way have been preserved for centuries. The same process will strengthen a decaying canvas.

To Clean Oil Paintings.—To clean an oil painting, wash the surface gently with clear warm water, using a soft cloth or fine sponge, let dry, and rub gently with a soft flannel cloth moistened with pure olive oil. The water softens the accumulated smoke, dust, and dirt, and the oil assists in wiping it away.

Or wash with milk diluted with warm water, and dry without rinsing.

Or cut a potato in half and rub gently with the fresh surface, slicing off the soiled portions, until the whole is cleansed.

The practice of covering the surface of paintings with soft soap or other alkaline lyes is a very mischievous one. If the paintings are of any value, they should be cleaned only by an expert.

To Clean Prints.—Fasten the print

to a board by means of thumb tacks, cover with fine common salt, and moisten the salt slightly with lemon juice. Turn the board at an angle and pour boiling water over the surface until the salt and lemon juice are washed off. Dry gradually in the shade.

Or, to remove yellow stains from engravings, dissolve hydrochloride of soda in water. Moisten a cloth with this solution and lay over the stain until it is removed. Rinse with clear water.

To Restore White in Oil Paintings.—To renovate old oil paintings in which the whites have become dark by the action of the air on paints containing carbonate of lead or other lead compounds, apply, by means of a soft brush, water charged with four of five volumes of oxygen. Afterwards let dry and go over the painting with copal varnish.

To Mend Gilt Frames.—To replace on gilt frames ornaments that have been broken off and lost, melt together with gentle heat 1 pound of rosin, $\frac{1}{2}$ pint of linseed oil, and $\frac{1}{2}$ gill of Venetian turpentine. Dissolve separately $\frac{1}{2}$ pound of glue in 2 quarts of water and mix the two solutions. Boil and stir constantly until the water is evaporated, leaving a thick mass, to which add powdered whiting until the whole is of the consistency of putty. Mold to the desired shape while warm, and when cold it will set and harden. Color with gilt paint.

To Clean Wood Frames.—First dust with a soft brush, and afterwards wipe with flannel dipped in sweet oil.

Or wash with clear, cold water without soap, washing powder or other detergent, as alkalies tend to injure the finish.

To Renovate Old Gilt Frames.—Gilt frames that are past retouching with gilt paint may be renovated by removing the gilding with fine sandpaper or rubbing down the surface with a moistened cloth dipped in powdered pumice or rotten stone. Paint with black or other color of enamel paint or any desired stain, and afterwards apply a coat of copal or any hard white varnish.

CLEANING BRIC-A-BRAC AND MISCELLANEOUS OBJECTS

To Clean Brass Furniture.—Brass bedsteads and brass fittings on furniture may be cleaned by moistening a cloth in sweet oil and dipping it in powdered whiting or rotten stone pulverized finely and sifted through cheese cloth.

Or mix finely powdered tripoli with linseed oil. Apply with a sponge or rag, and polish with a piece of felt or velveteen.

Or moisten a cloth in ammonia and dip in powdered whiting.

To Clean Brass Inlaid Work.—Mix equal quantities of rotten stone, starch, and oxalic acid with water to a stiff paste and dilute with sweet oil. Apply with a piece of felt or velveteen, and polish with a flannel rag or moistened chamois.

To Clean Bric-a-Brac.—Brass ornaments on bric-a-brac may be cleaned with a piece of stale bread. Hold the bread by the crust and rub carefully, allowing the crumbs to fall with the dirt. Brass candlesticks, lamps, and the like may be cleaned with soap and water, but lacquered articles require careful treatment without soap.

To Clean Bronzes.—Genuine bronzes may be washed with good soapsuds and a sponge or rag, and wiped dry with a soft flannel cloth or chamois.

Or dirt and stains may first be removed with a flannel cloth moistened in sweet oil; afterwards polish with flannel or chamois.

To Clean Mother-of-Pearl.—Rub with a cheese-cloth bag containing dry pumice, or apply finely powdered pumice moistened with sweet oil, and polish with a piece of felt or velveteen.

To Clean Upholstered Furniture.—Take the furniture out of doors and freely apply gasoline or naphtha. Pour these on so as to saturate the upholstered parts, and rub vigorously with a soft hair brush, sponge, or flannel cloth dipped in warm gasoline until all spots and soiled places are fully cleaned. Keep the furniture out of doors in a draught until

the cleanser evaporates. This process will also destroy moths.

To Clean Brick or Stone Work.—Mop with a solution of caustic potash or soda with oxalic acid dissolved in water. Or pour the mixture over the surfaces and scrub with a scrubbing brush, but do not dip the hands in this mixture and do not use it too strong.

To Clean Ivory.—For cleaning ivory, use prepared chalk, lime, brick dust, turpentine, lemon juice, salt and vinegar, lime, potash, and alum.

Ivory ornaments, brooches, card cases, bracelets, carvings, piano keys, and the like may be cleaned by painting them over with spirits of turpentine and, when possible, exposing them for two or three days to sunshine. Or articles that can be taken out of doors may be bleached by simply moistening them with water and exposing them to direct sunshine.

Or dissolve slaked lime in water to the consistency of milk. Cover the articles with this, or dip them in it if convenient, and steep as long as may be necessary. Remove them, allow the slaked lime to dry on, and when dry rub off and polish with a dry cloth.

Or apply salt and lemon juice. Polish with whiting. Apply with a moist cloth and rub with a chamois.

If small ivory articles are badly stained and discolored, first soak them for 24 hours or longer in a solution of 1 part of baking soda to 4 parts of water. Rinse, and immerse in a solution of 1 part of sulphite of soda to 3 parts of water for another day or two. Then add to the latter solution 1 ounce of hydrochloric acid diluted with 6 ounces of water, and allow the articles to stand in this for 2 or 3 days. Wash in clean water, dry, and polish.

To Clean Bric-a-Brac.—For deep, narrow-necked flower vases, rose bowls, or carafes, cut some potato parings in small squares and pour over them water in which baking soda has been dissolved. Put them into the glasses to be cleaned, let stand a few minutes, and shake well. Afterwards wash in soapsuds and polish.

Or use 3 tablespoonfuls of vinegar to 1 of rice. Shake well.

To polish, use fuller's earth finely powdered or whiting. Never use hot water for these articles. Allow the water to cool until it will bear the hands comfortably.

To Clean a Chandelier.—Apply pure vinegar with a small sponge; afterwards wash in soapsuds and polish with flannel or chamois.

To renovate tarnished metallic parts, paint black with the dull-black paint used for ebonizing. Or apply white, gilt, or any other enamel paint desired.

Glass Stoppers.—The glass stoppers of decanters or carafes and other bottles sometimes stick and are very difficult to remove. To obviate this, use a large glass marble, either of clear glass or containing fancy figures. This makes a good stopper for a decanter or water bottle and is easily removed.

To remove a stopper that sticks, first apply a few drops of sweet oil or salad oil to the neck of the stopper, and let stand a few minutes to soak in between the stopper and the neck of the bottle.

If this does not loosen the stopper, apply heat to the neck of the bottle on the outside. It is well known that heat expands all substances, and, if applied to the outside, the neck of the bottle will expand before the stopper does, and the stopper will become loosened. This may be done by putting a narrow strip of flannel about the neck of the bottle and drawing it back and forth rapidly to create friction. This will sometimes cause heat enough in a few minutes.

Or hold the hand about the neck of the bottle until the heat of the hand causes it to expand.

Or, if this is not sufficient, dip a rag in water as hot as the hands will bear and wrap it about the neck of the bottle. This must not be done, however, when the bottle is very cold, as it may be cracked by expanding too suddenly.

Or hold the neck of the bottle near a gas jet or an open flame, turning it constantly to prevent any part from becoming overheated.

Or wrap a piece of cloth about the stopper and with a light piece of wood tap it gently, first on one side, then on the other. Do not use a hammer or other metal tool or utensil for this purpose.

To Clean Clocks.—To clean a clock, saturate a cloth or pad of cotton with kerosene oil and lay it inside on a small dish that will prevent the woodwork from being saturated. As it evaporates, the fumes will loosen any foreign substance on the wheels of the clock and cause it to drop. Repeat as often as necessary. The fumes also tend to lubricate the works.

Or remove the works of alarm clocks and others which are made exclusively of metal, and place them in an earthenware jar or other clean vessel having a tight-fitting cover. Pour over them kerosene oil through a cloth strainer or filter paper to remove all sediment. Let stand until the grease and dirt have been entirely cut and removed. The clock may be returned to its case without waiting for the excess of oil to evaporate.

To Oil Clocks.—To oil a clock, obtain the purest olive oil and cleanse it by adding half a pint of lime water to each quart of oil. Shake well and let stand three or four days, when the pure oil may be carefully poured off the sediment and strained through silk or filter paper.

To Clean Metals.—Various acids are recommended for cleaning metals, as tartaric, oxalic, acetic, muriatic, and the like; also alcohol, turpentine, and petroleum products, and such materials as whiting, powdered pumice, rotten stone, bath brick, etc., mixed with water or oil.

Paste for Metals.—Mix 1 ounce of oxalic acid with 6 ounces of rotten stone, and dilute to a soft paste with equal parts of train oil and spirits of turpentine.

Or mix strong potash or soda lye with alcohol and apply to metals with a brush. Let dry, and polish with a soft cloth or moist chamois. This will remove verdigris and most other forms of rust or tarnish.

Brass—To Prevent Tarnishing.—

Moisten powdered sal ammoniac with water and apply to the brass by means of a brush. Afterwards heat the article until the sal ammoniac is melted. Cool, and polish with dry whiting and soft cloth.

To Clean Brass.—Dissolve $\frac{1}{2}$ ounce of oxalic acid in 1 pint of soft water and wash the brass, or moisten a cloth in sweet oil dipped in powdered whiting or rotten stone, and scour.

Or mix to a soft paste 1 ounce of starch, 12 ounces of rotten stone, 2 ounces of sweet oil, and 2 ounces of oxalic acid with water, and apply with a cloth or chamois.

Or, to clean brass inlaid work, mix tripoli with linseed oil, and apply by means of a piece of folded velvet or other suitable polisher. Or use a good furniture paste. But if the wood has a very high polish, finish the cleaning by rubbing on dry starch with the palm of the hand.

Or mix 2 ounces of sulphuric acid, $1\frac{1}{2}$ ounces of nitric acid, 1 dram of saltpeter, and 2 ounces of rain water, and let stand until the solution settles. Dip the articles in this, or go over them with a soft brush dipped in this mixture, rinse immediately with soft water, and wipe dry. Or dry in sawdust. To prevent future tarnishing, apply a good coat of brass lacquer.

To Clean Bronze.—To clean genuine bronze, apply hot soapsuds or boil the article in suds. Rinse and wipe dry with a soft cloth or chamois skin.

Or, for small articles, apply sweet oil with a brush and rub off with a flannel cloth.

Polish with dry whiting and chamois skin.

To Clean Nickel.—Mix equal quantities of alcohol and aqua ammonia and stir in whiting to the consistency of thin cream. Apply with a brush and soft cloth, let dry, and polish with a clean, dry cloth or chamois skin.

Or, to remove stains from nickel, dilute 1 part of sulphuric acid in 50 parts of alcohol, and dip the articles in the solution until the stains are removed, which should take not more than 5 or 10 seconds. Rinse in alcohol and afterwards in clear water,

and polish with dry whiting and chamois. Repeat if necessary.

To Clean Gilt Metals.—Metals finished in gilt or lacquer should not be washed with strong soaps containing free alkali, but preferably with clear, soft warm water and a fine sponge.

Or a little castile soap or other fine white soap may be used if necessary.

Clean out the crevices in the ornamental parts with a soft brush, as an old toothbrush, but use no more force than is necessary to avoid injuring the gilding. Wipe dry with chamois or a piece of soft woolen cloth or silk.

Bronzed articles, not genuine bronze, require only dusting or wiping with a soft cloth. Washing will injure the bronzing.

To clean copper boilers, pipes, etc., mix one tablespoonful of oxalic acid (poison), one tablespoonful of powdered pumice stone, and three tablespoonfuls of water. Put into a pint bottle and shake well to dissolve. Apply with a flannel cloth, rinse with water, and polish with a dry cloth.

Burnishing Powder.—To make a high polish for metals, mix 4 ounces of prepared chalk, 1½ ounces of pipe clay, 1 ounce of white lead, ½ ounce of carbonate of magnesia, and ½ ounce of jeweler's rouge.

TO CLEAN MARBLE, BRICK, AND STONE

To Clean Marble.—To clean marble mantels, table tops, tops of bureaus, washstands, and other polished marble surfaces, wipe them with a cloth moistened in kerosene.

Or mix 2 ounces of common soda, 1 ounce of pumice stone, and 1 ounce of fine common salt, and dilute with water to the consistency of cream. Pour this mixture over the marble and let stand until all stains are removed. Afterwards wash the marble with salt and water, rinse, and wipe dry.

Or mix soft soap and whiting to a thin paste, and apply to the marble by means of a soft brush. Let stand until fully dry, and wash off with lukewarm suds made of hard white or yellow soap.

To Remove Iron Rust from Marble.

—To remove iron stains from marble, dilute 1 part of oxalic acid with 10 parts of alcohol, or 1 part of sulphuric acid with 25 to 50 parts of alcohol; cover the spot and let stand 15 minutes to a half hour. Wash off with water containing aqua ammonia to stop the action of the acid. Repeat if necessary.

Or cover the spot thickly with salt and moisten with lemon juice.

Or apply 1 part of nitric acid diluted with 25 parts of water, and rinse with aqua ammonia.

To Clean Marble Steps.—To clean coarse marbles, as doorsteps, monuments, and the like, mix equal quantities of quicklime and potash lye and dilute with water to a thin cream. Apply with a brush, let stand twenty-four hours or more, and wash off with hot soapsuds.

To Remove Stains from Marble.—Cut a lemon in half and rub with it, or apply a saturated solution of oxalic acid.

Or make a paste of equal parts of whiting and sal soda dissolved in water. Cover the stains, and let stand for several hours. Afterwards wash off with soapsuds.

To Remove Oil Stains from Marble.—Apply common clay, starch, whiting, or prepared chalk, and saturate with gasoline or other petroleum product. Should these injure the polish, scour with a moistened cloth dipped in pumice stone, and polish with whiting.

Or mix with boiling water 2 ounces of soft soap, 2 ounces of caustic potash, and 4 ounces of fuller's earth. Cover the spots thickly, and let stand for several hours. Rinse with clear water.

To Clean Brick and Stone Walks.—To remove the green fungous growth on brick or stone walks and walls exposed to moisture, pour over them boiling water in which potatoes or other vegetables have been cooked, provided that it does not contain grease of any kind. Repeat if necessary.

Or pour strong brine over the brick or stone, or scatter dry salt over it just before or after a rain. This will also kill any tufts of grass and weeds

that come up between the bricks and stones, but care must be taken that it is not used in quantities sufficient to leach off into the soil and kill the adjacent grass of the lawn or the plants in flower beds. Hence use a small quantity of salt, and repeat if necessary.

To Polish Stucco Work.—Let the stucco dry, then rub it down with a flat block of pumice stone. Follow with whitening and polish with tripoli, using a piece of felt mounted on a block of wood. Wash down with soapsuds.

To Polish Glass.—A scratched window pane or a show-case top which has been roughened by use and partially lost its transparency may be polished by covering with a strong solution of potash lye applied by means of a brush. Let it dry, and polish with a moist cloth. Repeat if necessary.

Or, if this is not effectual, polish with putty powder and water by means of a piece of felt.

To Clean Papier-maché.—Wash with clean cold water, using a sponge or soft cloth. While still damp, cover it with dry flour and rub dry with a piece of woolen cloth or chamois.

To Clean Gutta Percha.—Dissolve with gentle heat a little hard white soap in an equal bulk of water, and stir into the soap jelly thus made an equal bulk of powdered charcoal. Scour the article with this, and polish with a dry cloth and finely powdered charcoal.

CLEANING KITCHEN STOVES AND OTHER METALS

To Clean Stoves.—First examine the stove or range to see if any parts need replacing. Make a note of these, and obtain new ones from the manufacturers or some local merchant. Remove clinkers, clean the grate, fire-place, spaces under and over the oven, flues, etc. Dust off the top of the stove, and wash the outside with very hot water and soda applied with a stiff brush or a coarse cloth, or both.

Suggestions for removing rust and polishing nickel and other ornaments, and for blacking and polishing the

stove and preventing rust when not in use, will be found elsewhere.

To Clean Grates.—Brush the dust from the grate with a stiff brush. Then mix 4 ounces of pure black lead with 1 pint of beer, add 2 ounces of hard white or yellow soap, bring all to a boil, and while hot apply this mixture with a paint brush. Allow it to cool, then polish with a hard brush or polishing mitten.

Or, if the grate is much rusted, allow the black lead to remain for a day or two. It will loosen the rust so that it can be scraped off. The grate may then be blacked and polished.

Or first scrub the grate with soap and water and apply rotten stone moistened with sweet oil. Black and polish.

To Black Grates.—Melt $2\frac{1}{2}$ pounds of asphaltum and add 1 pound of boiled oil. Remove from the fire, and when cool add 2 quarts of spirits of turpentine, stirring vigorously. Apply with a brush.

To Prevent Rust.—Substances recommended for preventing rust are various animal fats, as lard, suet, and tallow, and oils, as linseed oil, olive oil, vaseline, etc.; also black lead, paraffin, collodion, quicklime, gutta percha, varnish, pitch-tar paint, and various mixtures of these. The object in all cases is to prevent contact of the metal with the oxygen of the air, especially where there is moisture.

The formation of rust is a process of combustion similar to that which takes place in breathing and in the burning of fuel and other combustibles. The oxygen of the air uniting with iron forms a compound called ferrous oxide, which is iron rust. This action is very much hastened by moisture. Hence a coating of any oily, greasy, or sticky substance which will adhere to the metal without injuring it will prevent rust. Which of the following recipes is best will depend upon the article to be protected, and whether or not it is to be used or stored away. Such substances as collodion, paraffin, and black lead mixed with lard or other animal fat, boiled linseed oil, etc., can be used on small

polished articles, as steel tools, skates, and the like. They can be readily removed, when necessary, by washing.

Paraffin, collodion, boiled linseed oil, and copal varnish may be applied to tools and other articles which are in process of use, the excess being wiped off with a dry cloth. Pitch-tar and paint can, of course, only be applied to coarser articles according to their several characters.

Stoves—To Prevent Rust.—To protect from rust stoves and stovepipes that are taken down in the spring and stored during the summer, apply kerosene with a brush or cloth. The crude oil is better for this purpose than the refined. It costs less and does not evaporate so quickly.

Or melt 3 parts of lard with 1 part of rosin, and apply with a brush while warm.

Or apply linseed oil, or a mixture of equal parts of linseed oil and kerosene.

Or a mixture of 4 parts of linseed oil, 4 parts of kerosene, and 1 part of turpentine.

Apply the above mixtures in a thin coat while slightly warm.

To Protect Stovepipes from Rust.—Shake the dirt and soot out of the inside of the stovepipe, then insert an old broom and brush out as clean as possible. Paint the outside of the stovepipe with a coat of black paint, or apply any of the above rust-proof mixtures.

Stovepipes rust on the inside as well as on the outside. Hold the pipe with an open end toward a good light, or reflect a light inside by means of a mirror. Affix a brush to a long handle and cover the inside of the pipe as well as the outside with oil or other rust preventives.

To Keep Nickel Fittings from Rusting.—Remove the nickel fittings from the stove, cover them with any of the above preventives, wrap them in thin cloths, and lay them away until wanted.

Or cover them with unslaked lime.

Or, if badly rusted, go over the nickel fittings with aluminum paint.

To Prevent Rust on Roofs.—To prevent rust on tin roofs and other exposed metal surfaces, bring to a

boil 2 pounds of linseed-oil varnish. Stir into this a mixture of 2 ounces of black lead, 8 ounces of sulphide of lead, and 2 ounces of sulphide of zinc. Apply with a brush.

Or paint exposed metal surfaces with a paint consisting of 30 parts of pure white lead, 8 parts of crude linseed oil, 2 parts of boiled linseed oil, and 1 part of spirits of turpentine. Apply two or more coats as needed.

To Preserve Metals from Rust.—To preserve stoves, skates, sleigh runners, and other steel articles which are stored for a portion of the year, smear them with vaseline.

Or paint them with lampblack mixed with equal quantities of boiled linseed oil and copal varnish.

Or use powdered black lead and lard, melting the lard and stirring in the lead, and add a small piece of gum camphor. Apply while warm with a brush.

Or melt paraffin, and apply while warm with a brush, sponge, or cloth.

Or clean thoroughly and dust over with unslaked lime.

Or plunge small articles into unslaked lime.

Or dip the articles in boiled linseed oil and allow it to dry on them.

Or apply a coat of copal varnish.

Or melt 5 pounds of beef or mutton suet, 1 pound of gutta percha, and 1 gallon of neat's-foot oil or rape oil until dissolved. Mix thoroughly and apply when cold.

Or coat with collodion dissolved in alcohol.

Or wrap in zinc foil or store in zinc-lined boxes.

Or mix 1 ounce of oil varnish with 4 ounces of rectified spirits of turpentine and apply with a sponge.

Or heat the articles and dip them in train oil.

To Prevent Rust on Tinware.—Rub new tinware with fresh lard, and heat in the oven before using. This tends to make it rust proof.

To Preserve Nails, etc., from Rust.—To preserve from rust nails, screws, hinges, and other hardware that will be exposed to water, heat them (but not enough to injure the temper) in an iron skillet over a fire and drop

them into train oil. This will preserve them for many years.

Or mix $\frac{1}{2}$ pound of quicklime in 1 quart of water and allow it to settle. Pour off the clear liquid and add to the lime sufficient olive oil to form a stiff paste. Apply with a brush to iron or steel articles to be stored.

Or, for rough castings and fence wire, mix mineral pitch, coal tar, and sand in the proportion of 1 pound each of coal tar and sand to 20 pounds of mineral pitch. Immerse the articles in the mixture, remove them, and let them stand a day or more to harden.

To Prevent Rust on Piano Wires.—Sprinkle piano wires with unslaked lime.

Steel Table Knives.—Fill a flower pot or other deep receptacle with quicklime and into it plunge the blades of the knives. Do not allow the lime to touch the handles.

To Remove Rust from Small Articles.—Substances recommended for removing rust are muriatic acid, kerosene, chloride of tin, and unslaked lime used with or without various abrasives, as sandpaper, emery paper, pumice stone, powdered brick, and the like.

First immerse the articles in a hot solution of sal soda or soapsuds to free them from oil or grease.

Or dilute muriatic acid with twice its own bulk of water and immerse the articles from a few minutes to several hours, according to the amount of rust. Remove and apply soap and water with a scrubbing brush. Repeat if necessary. Rinse, dry, and polish with oil and emery paper or other good abrasive.

Or immerse the articles in kerosene oil for several hours, or as long as may be necessary. This loosens the rust so that it may be rubbed off with sandpaper or emery paper. But if the rust has etched deeply into the articles, they may have to be refinished.

Or soften rust with sweet oil and rub with sandpaper.

Or mix 2 parts of pumice stone with 1 part of sulphur. Moisten with sweet oil and apply with chamois.

Or use emery and oil.

Or immerse the articles in a saturated solution of chloride of tin over night, or as long as necessary. Rinse in clear water and polish with chamois.

Or immerse them in olive oil, and polish with whiting or slaked lime by moistening a cloth or chamois and dipping it into the dry powder.

To Clean Zinc.—Substances recommended for cleaning zinc are kerosene, soft soap, salt and vinegar, vinegar and alum, paraffin, coal ashes, sulphuric acid, turpentine, and various compounds of these. As zinc is not easily injured, these may all be used freely. Rub with a coarse cloth saturated with kerosene oil.

Or heat 2 ounces of salt or 2 ounces of alum in 1 quart of vinegar and apply hot. Wipe with a dry rag.

Or dip a cotton cloth in melted paraffin and rub until the dirt is removed. Rinse with clean water and wipe dry.

Or wet with cold vinegar, let stand for a few minutes, rinse, and wash.

Or make a soap jelly by dissolving hard soap with twice its own bulk in water. Mix with sifted coal ashes to a stiff paste. Apply with a moist cloth.

Or mix dilute sulphuric acid (1 part of acid to 10 parts of water) with glycerin.

Or mix 1 pint of linseed oil with 4 ounces of turpentine.

Or polish with bath brick.

To Clean Nickel.—Substances recommended for cleaning nickel are kerosene, jeweler's rouge, whiting, powdered borax, and alum. When not much soiled, use jeweler's rouge and vaseline mixed to a thin paste. Apply with flannel and polish with chamois.

Or dampen a rag and dip in powdered borax. Or, if the articles are small and movable, boil in alum and water.

Or rub with a cloth dipped in kerosene.

Or apply hot salt and vinegar.

To Clean Brass.—Substances recommended for cleaning brass are vinegar and salt, lemon juice, citric acid, oxalic acid, rotten stone, turpentine, alum, ammonia, sulphuric, nitric, or

muriatic acid, and various compounds of these.

To clean brass kettles and other utensils, dissolve a tablespoonful of salt in a teacupful of vinegar and bring to a boil. Apply as hot as possible to the brass with a scrubbing brush.

Or apply a solution of oxalic acid with a scrubbing brush or cloth, using equal parts of oxalic acid and water.

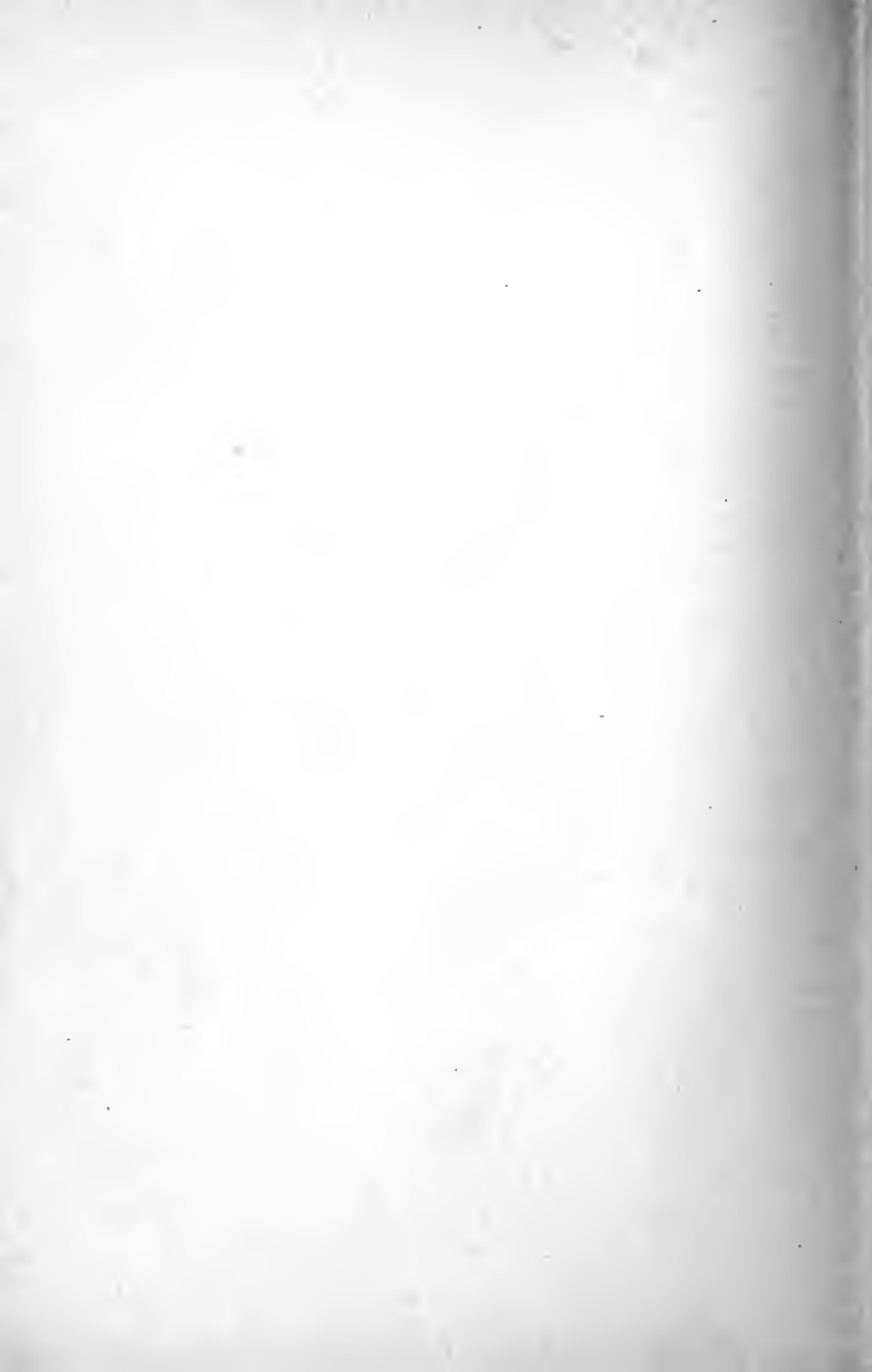
Or apply strong aqua ammonia with a scrubbing brush.

Or dissolve 1 ounce of alum in 1

pint of strong lye and apply with a scrubbing brush.

To Polish Brass.—After removing tarnish with any of the above cleansers, wash the article with warm soap-suds made of any good, hard white soap, dry with a cloth, and polish with dry chamois or any good silver polish, as whiting, or the like. Finish by rubbing the articles with a cloth slightly moistened with vaseline. This will prevent tarnishing.

Or coat with collodion dissolved in alcohol, or thin shellac applied by means of a camel's-hair brush.



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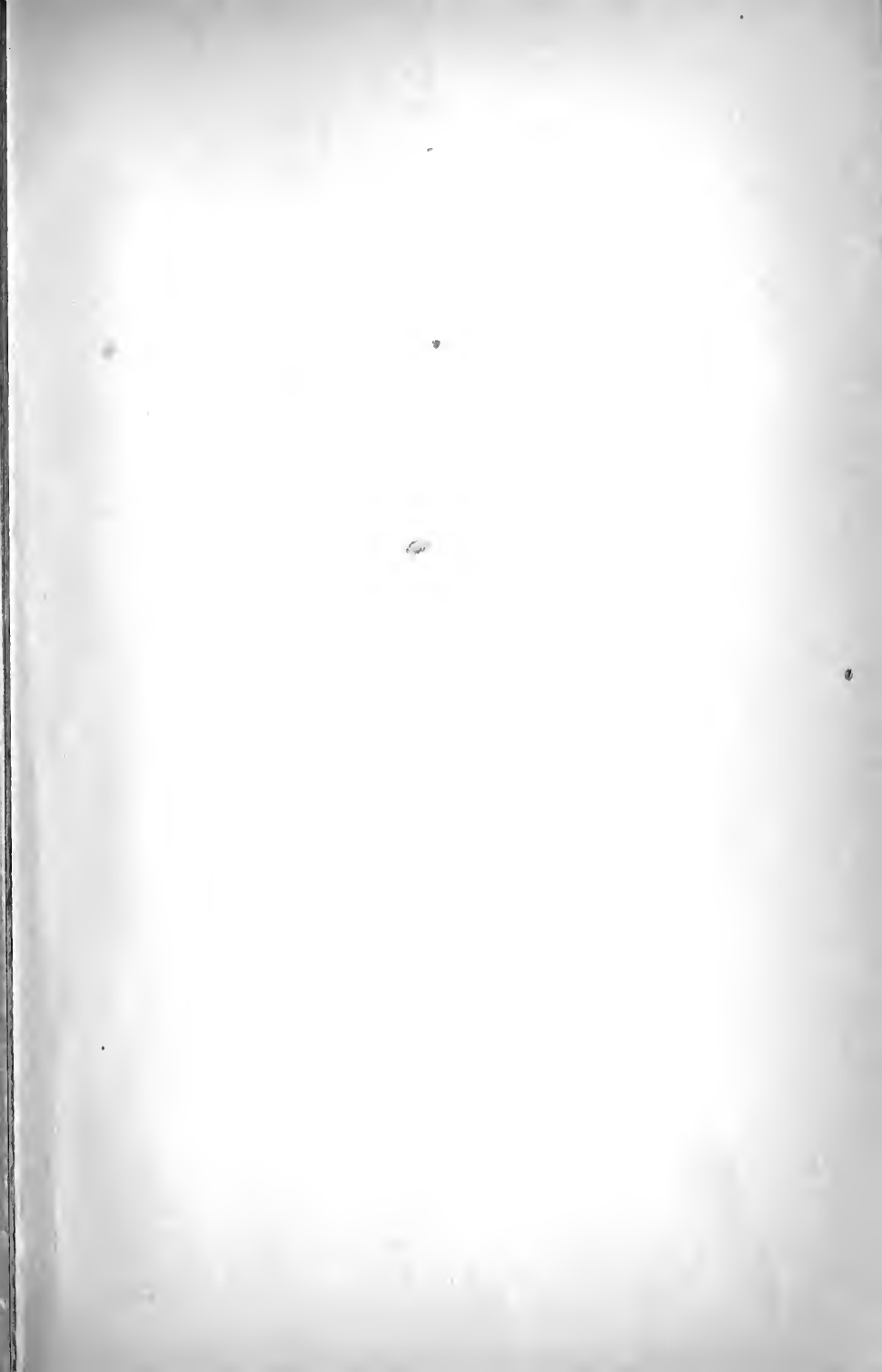
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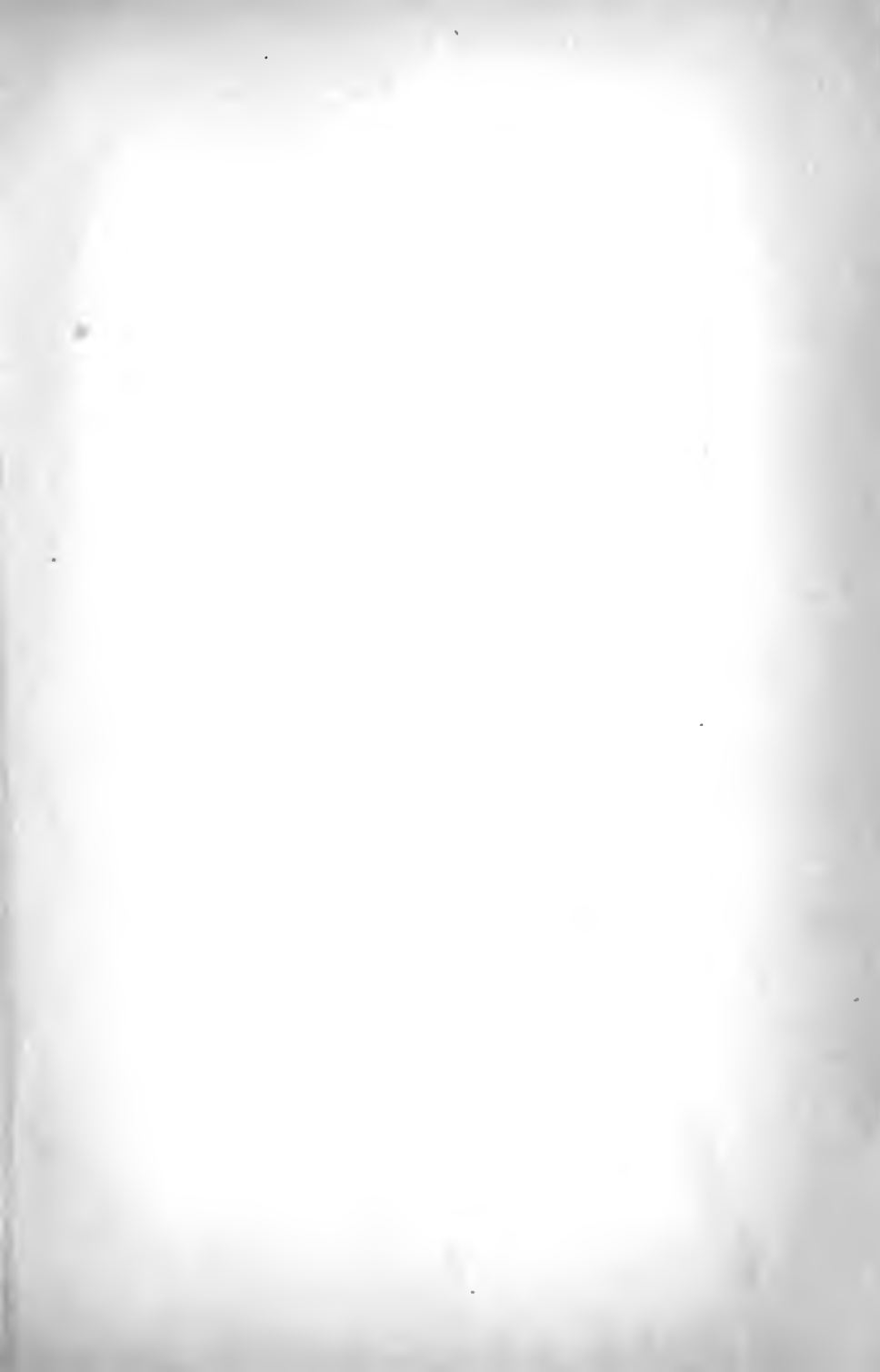
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