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DIETETICS FOR THE CLINICIAN

By MILTON ARLANDEN BRIDGES

B.S., M.D., F.A.C.P.

FOURTH EDITION

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FOOD AND BEVERAGE ANALYSES

BY

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TO
MARIE T. BRIDGES

“Now go, write it before them in a table, and note it in a book, that it may be for the time to come for ever and ever.”

ISAIAH 30:8

PREFACE TO THE SECOND EDITION.

THE food tables and brief comments which comprised the first edition were expanded by Doctor Bridges to meet the requests of a varied group of persons interested in practical dietetics. Years of active association with Doctor Bridges in this work have prepared the writer for the task of completing the second edition.

To prevent this volume from becoming too unwieldy, the Table of Nutritive and Caloric Values of Foods has been reduced in size by two means: (1) re-styling the commercial entries, and (2) limiting large groups, as the classification of meats for which a brief but thoroughly practical summary is substituted. The resultant saving in space has permitted the introduction of new tables on other food factors.

The new data include tables on the acidity of foods, their fiber content, the occurrence of sulfur, bromine, calcium, oxalate, phytins, purins, available carbohydrates, and ionizable iron. The reaction of foods is covered by a table of pH values which embodies all the common and many uncommon foods. There is a table of organic acids in fruits, vegetables and a few miscellaneous items. Extensive information is given on the acid-ash and alkaline-ash factors.

This book is not intended as a source of material for the scientist in the field of nutrition. Such investigators have their own files replete with pertinent information. It is our purpose to provide analytical data on the largest possible number of food factors so that the student of home economics, the dietitian, the nurse, the welfare worker, the industrial chemist, the medical student and clinician may have access to practical facts presented in a readily understandable fashion. Distracting notations, therefore, have been omitted as far as possible.

The bibliography has been considerably enlarged to facilitate the task of students in contacting reference material. Full credit is accorded Elizabeth F. Carr, A.M., Assistant Librarian, New York Post-Graduate Medical School, for her splendid work in checking the bibliography for consistency and accuracy. Appreciation also is due Dorothy M. Stephens, B.S., Chief Dietitian of the New York Post-Graduate Hospital, for helpful criticisms and suggestions.

M. R. M.

NEW YORK CITY.

PREFACE TO THE FIRST EDITION.

THE material contained within these covers, it seems to the author and his associates, will fill an hiatus in the armamentarium of all those interested in nutrition.

Many years have elapsed since the publication of Bulletin 28 of the Department of Agriculture containing that epochal work of Atwater and Bryant which has become a source for all studies and treatises on nutrition in the western world. A study of the various food analytical tables published since then reveals that little, or no original investigation has been done and that they are merely readaptations, often inaccurate, of this early work.

Notwithstanding the ever-increasing use by the public of canned and packaged foods, very little dietetic recognition has been given to these products, and their analyses heretofore have been available only through contact with the manufacturers. Their use has become so general that it is impractical and archaic to insist solely upon fresh and non-commercial products.

It would seem necessary to have available the analyses of these products, in addition to those of common foods in order to prescribe a proper dietary. This volume is, therefore, offered to meet this requirement.

The material presented herein is the result of the intensive efforts of a large staff of assistants and other investigators who have thoroughly searched international records in order to correlate and evaluate present available international data. Where such data on common foods were lacking, original analyses were made and the results embodied.

Analyses of internationally recognized commercial products have been obtained from the respective manufacturers.

All of this has consumed considerable time, labor and expense, and was made possible, in part, through the generosity of the Life Extension Institute and through a gift from William A. Schutz and family in memory of Hazel V. Mitchell.

This material has been assembled under the direction of the author, with the invaluable assistance of Marjorie R. Mattice, Assistant Professor of Biochemistry of the New York Post-Graduate Medical School, Columbia University. Miss Mattice is principally responsible for the assembling, checking, correlating and correcting of the various data and for the many original analyses.

M. A. BRIDGES.

NEW YORK CITY.

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FOOD AND BEVERAGE ANALYSES.

INTRODUCTION.

ATTENTION is focussed as never before upon the needs of the human body to the end that abundant health may be realized by the masses. The foundations of nutritional science have been securely laid by innumerable investigators and the application of that knowledge is now possible. The daily requisites of the various food factors can be estimated with more or less certainty, thus providing a crude yardstick whereby the nutritional status of an individual may be ascertained. The tables provided in this book are intended to aid in analyzing any diet and compounding one more suitable when indicated.

It should be recognized, of course, that no two samples of the same foodstuff are necessarily identical in composition. It is not permissible, therefore, to list all the food consumed in a day, to set down against each item the "elements" therein as found in the appended tables, and to arrive at a total with the accuracy of a banker's ledger. The sum is a relative value which merely indicates the approximate intake. These approximations may vary considerably from reality, especially where it is necessary to employ analyses of raw products for estimating their composition when cooked.

Since many variables alter the precise requirement to a measurable degree, any general statement can hope to attain accuracy only if it can be assumed that average normal conditions exist.

IDEAL DAILY INTAKE OF FOOD FACTORS.

Carbohydrates

Adults:	300-350 g.
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Fiber

Adults:	min. 100 mg. per kilo
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Proteins

Growing children:	2-4 g. per kilo
Adults:	1 g. per kilo

Fats

Adults:	50 g. on 2500-Calorie diet
	100 g. on 3000-Calorie diet

Calcium

Children, preschool:	50 mg. per kilo
10 years	35 mg. per kilo
16 years	20 mg. per kilo
Adult:	10-15 mg. per kilo
Adult, pregnant or lactating:	30 mg. per kilo

Phosphorus

Children, preschool:	60-70 mg. per kilo
10 years	44 mg. per kilo
16 years	22 mg. per kilo
Adult:	15-20 mg. per kilo
Adult, pregnant or lactating:	35 mg. per kilo

Magnesium

Children, preschool:	11-19 mg. per kilo
Adult:	0.14-0.67 (aver. 0.34) g.

Iron

Infants:	0.8 mg. per kilo
Children, preschool:	0.6 mg. per kilo
Boys, 5 to 11:	9-11 mg. per diem
Over 11:	13
Girls, 5 to 11:	9-11
Over 11:	13-15
Men:	12-15
Women, before menopause	17
During pregnancy	20
During lactation	17-20
After menopause	12-15

Copper

Adults:	2.0-2.5 mg.
---------	-------------

Manganese

Children:	0.2-0.3 mg. per kilo
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Chlorides

Adults:	min. 2 g. NaCl
	aver. 10 g. NaCl

Sulfur

Adults:	0.5-2.8 (aver. 1.3) g.
---------	------------------------

Iodine

Children:	50-150 μ g.
Adult:	min. 15 μ g.
	opt. 40-80 μ g.

Vitamin A

Infants:	2000-4000 I.U.
Growing children:	6000-8000 I.U.
Adults:	min. 40 I.U. per kilo; min. 3000 I.U., opt. 6000 I.U.
Pregnant and lactating women:	8000-10,000 I.U.

Thiamin, Vitamin B₁

Infants:	0.3 mg. (100 I.U.)
Growing children:	0.6–1.5 mg. (200–500 I.U.) 0.07 mg. per Kg. or 0.07 mg. per 100 Calories
Adults:	min. 0.6–0.9 mg. (200–300 I.U.) 0.04 mg. per 100 Calories opt. 1.5–3.0 mg. (500–1000 I.U.)
Pregnant and lactating women:	min. 4.5 mg. (1500 I.U.)

Riboflavin, Vitamin B₂ or G

Growing children:	0.06 mg. per 100 Calories with min. 1 mg. opt. 1.5–2.0 mg.
Adults:	min. 1 mg.; opt. 2–3 mg.
Pregnant and lactating women:	3–4 mg.

Nicotinic Acid

Infants:	min. 4 mg.
Children, preschool:	6–8 mg.
7 to 12:	10–20 mg.
12 to 20:	12–20 mg.
Adults, men:	15–25 mg.
Women:	12–18 mg.
Pregnant or lactating:	20–25 mg.

Ascorbic Acid, Vitamin C

Infants:	min. 20 mg. (400 I.U.)
Growing children:	min. 40 mg. (800 I.U.)
Adults:	min. 50–60 mg.; opt. 100 mg.
Pregnant and lactating women:	100 mg. (2000 I.U.)

Vitamin D

Infants:	300–400 U.S.P. units*
Growing children:	300–400 U.S.P. units*
Adults:	100–200 U.S.P. units*
Pregnant and lactating women:	800 U.S.P. units*

Caloric requirements are considered elsewhere.

* Plus ample calcium and phosphorus.

CHAPTER I.

CARBOHYDRATES

Properties.—The simple carbohydrates fall into two main groups: (1) Sweet, crystalline compounds soluble in water, such as sugars (their chemical names terminating in -ose); and (2) tasteless, non-crystalline substances relatively insoluble in water, such as starch, glycogen, dextrin and inulin. The carbohydrates are polyhydric alcohols, with free or potential aldehyde or ketone groups, the insoluble ones being anhydrides of the sugars.

Utilization.—When mastication takes place, carbohydrate digestion is initiated by salivary enzymes; otherwise, this function devolves upon the pancreatic and intestinal juices whose enzymes bring about hydrolysis to the simple sugar stage, glucose being the chief end-product.

Not all carbohydrates can be utilized for energy purposes. Precise knowledge regarding many of the plant polysaccharides is lacking. Agar-agar is hydrolyzed only to a very limited extent. Although the human digestive juices do not attack any appreciable portion of the crude fiber ingested, there is marked variation in the degree to which this fiber is rendered inert by bacteria in the colon. The use of commercial bran or processed bran products, which are especially resistant to attack, becomes necessary when sufficient fiber does not survive bacterial action to promote regular peristalsis. Although as much as 50 per cent of the "unavailable" carbohydrates in the diet may fail to be excreted in the feces, there is no evidence that glucose is derived therefrom. These polysaccharides, therefore, are best regarded as without caloric value. Their disappearance, moreover, makes it impractical to depend upon them to furnish intestinal "roughage."

Highly purified carbohydrates are less desirable than those in the natural state since both minerals and vitamins have been removed. Use of such foods may create a thiamin deficiency (pp. 263, 264).

Carbohydrates function in two ways in their relation to fats. A variable amount of sugar is changed into fat and stored as such; this tendency to fat formation is dependent upon individual hereditary forces of which we know little. Glucose undergoing oxidation acts as a catalyst for the combustion of fats. Fatty acids proceed without the aid of sugar to degradation products containing four carbon atoms. If glucose is not being burned, the four-carbon residues, instead of being oxidized to CO_2 and H_2O , accumulate and cause acidosis.

Requirement.—Carbohydrates are the chief source of energy in the body. The average daily requirement is 350 to 500 grams. The lowest intake consistent with continued health has not been

experimentally determined, but even in diabetics it is not wise to reduce the carbohydrate intake to less than 100 grams per day for any length of time. The employment of 600-Calorie diets in treating obesity may call for as little as 35 grams of carbohydrate daily, but such a régime should not be undertaken without supervision. The carbohydrate minimum may be placed at 0.6 gram per kilogram for those who are overweight.

Depending upon individual energy requirements, taste and climate, the proportions of the calories derived from carbohydrates will vary from 45 to 75 per cent. In the average diet the carbohydrates contribute 60 to 70 per cent of the total caloric value.

Deficiency.—The ability of the body to store carbohydrates is limited. The liver serves as the general reservoir for stored carbohydrates. It is continually tapped to maintain the normal blood-sugar level. Muscle glycogen is reserved for the use of that particular tissue. Reducing diets deplete the supply of liver glycogen and may lay this organ open to irreparable damage. Carbohydrate deficiency leads to acidosis, listlessness, fatigue, lack of resistance and emotional irritability.

Sources.—Glucose is especially plentiful in grapes, young sweet corn and onions. Honey is essentially invert sugar although both sucrose and dextrin are present. Sucrose is found in most sweet fruits together with glucose and fructose. Pineapple and carrots are rich in sucrose. Pentoses are present in yeast, plums, grapes and cherries. Inulin occurs in chicory, artichokes and salsify. Glycogen is the carbohydrate of liver and muscle. Mollusks are noteworthy for their glycogen content. Bananas, chestnuts, and potatoes are particularly rich in starch.

FOODS RICH IN CARBOHYDRATES.

Bananas
Breadstuffs
Candies
Cashew nuts
Chestnuts
Cocoanut
Condensed milk
Crackers, cakes, etc.
Dried fruits
Farinaceous foods
Honey, syrups
Ice-cream
Litchi "nuts"
Mince meat
Molasses
Peanuts, popcorn
Potatoes
Preserved fruits
Ready-to-eat cereals
Starches, sugars

FOODS POOR IN CARBOHYDRATES.

Asparagus
Butter, oils, fats
Cauliflower
Cheese
Eggs
Fish
Greens
Kohlrabi
Mayonnaise
Meat
Mushrooms
Okra
Pickles, sour
Poultry
Salad vegetables
Sauerkraut juice
Soy bean milk
Specific dietetic foods
Summer squash
Vegetable marrow

CHAPTER II.

PROTEINS

Properties.—Proteins are the most important of the foodstuffs. Certain animals can subsist on a protein diet, forming from the protein such fat and carbohydrate as they require. The chemical instability and complexity of the proteins are essential for the phenomena of life, since protoplasm is fabricated from these compounds. The proteins differ from the fats and carbohydrates in that they contain nitrogen in amounts varying from 15 to 17.6 per cent. The vegetable proteins contain slightly more, the animal proteins slightly less than the average 16 per cent. Sulphur (0.3 to 2.4 per cent) is usually found in the protein molecule and occasionally phosphorus (0.4 to 0.8 per cent). In 100 grams of mixed protein an average of 1 gram of combined sulphur will be found. Other elements, such as iron and iodine, though rarely exceeding 1 per cent, occur in specialized proteins. Iron is an important constituent of hemoglobin, while iodine is an essential component of a protein derivative in the thyroid gland. Iodine is especially common in marine proteins, particularly in the crustaceans and mollusks.

The simple proteins are naturally occurring substances which on hydrolysis yield α amino-acids. They are crystalloids, most of them being readily soluble in aqueous media. This distinguishes them from the more complex proteins, which are colloids, slightly soluble, if soluble at all, with huge non-diffusible molecules. Proteins vary widely in their amino-acid content, some being composed of only a few of the twenty-two known amino-acids, others containing a great variety. Many of these acids can be manufactured by the body; others must be furnished in the diet and are referred to as "essential." Not only must the "essential" amino-acids be available in the diet, but they must be present in optimum proportions, with the result that some proteins are found to be "adequate," while others fail to sustain body weight or provide for growth. The quality of the dietary protein is as important as the quantity and becomes increasingly so as the quantity is decreased.

Utilization.—Ingested protein is subjected to the action of digestive juices in the stomach and duodenum. This process involves addition of water with separation of the constituent amino-acids. From the complex proteins, other end-products are obtained which may or may not be split up by special enzymes before absorption. The amino-acids are rapidly removed from the circulating blood and are used for building or repairing tissue, or they suffer extrac-

tion presumably in the liver; there is little storage of protein. The free nitrogenous group is immediately converted into urea, chief waste product of protein metabolism in man, and eliminated by the kidneys. The carbon-hydrogen-oxygen moiety left is utilized as though it were carbohydrate. From animal experiments, it appears that certain of the amino-acids can be transformed into ketone bodies in the diabetic organism, thus behaving like fatty acids. It is questionable whether this is duplicated in human experience.

If excessive protein is ingested and digestion is inadequate or if absorption is incomplete, various organisms will attack the protein residue in the intestine with resultant putrefaction. If the acid group of the amino-acid is removed, amines are formed, many of which are toxic and known as ptomines. Such processes do not occur in the tissues.

Some of the absorbed amino-acids may not be oxidized to CO_2 and H_2O because of their mobilization by the liver as detoxicating agents. For example, benzoic acid, the sodium salt of which is a common food preservative, is conjugated with glycine and excreted in the urine as hippuric acid. Some foods, notably cranberries, contain appreciable amounts of benzoic acid.

Requirement.—The minimum subsistence requirement *per diem* lies between 0.5 and 0.7 gram of selected proteins per kilogram of body weight. It is probably safer to regard 1 gram as a minimum because of the inadequacy of certain proteins and the unassimilable nature of part of the food nitrogen. Bed-ridden patients need less than 1 gram of protein per kilogram. If low-protein diets are indicated, two-thirds of the nitrogen should be in the form of animal proteins. According to Sherman, cereal proteins are as efficient as meat proteins, provided milk is included in the dietary. In general, vegetable proteins lack the availability of animal proteins. If both protein and caloric intake are to be limited, skill is necessary in computing a diet which is physiologically satisfactory; otherwise, there will be considerable protein wastage. During the period of active growth, the protein allowance should be 2 to 4 grams per kilogram per day.

Deficiency.—Low-protein intake over a period of time leads to improper physiological distribution of water of which edema is the clinical manifestation. There is a drop in the heat production, tissue wastage occurs and anemia results from such protein deficiency. Where the proteins ingested fail to provide certain amino-acids, the elaboration of special agents, such as thyroxin, becomes difficult; this is evident in certain endocrine disturbances.

Sources.—Animal proteins (meat, fish, eggs, cheese, milk) are usually ranked higher than those of plant origin (cereals, nuts, legumes). Neither maximum nor minimum proportions of these two groups have ever been established. Traditional preference and

economic necessity have largely determined selection. Until better guidance is available, it is suggested that diets indigenous to the locality be followed, provided they are associated with physical vigor. In temperate climates the cereals usually are not an adequate source of protein unless accompanied by generous amounts of dairy products. Booher (1940) recommends that the average adult select his protein in equal quantity from animal and vegetable sources.

As stressed by Nixon (1938) potatoes are a better crop than wheat from the economic standpoint, since an acre planted with the former will feed twice as many people as one planted with the latter. Although the potato is predominantly a carbohydrate food, tuberin (a globulin) is ranked as a protein superior to those found in the cereals. A liberal amount of potatoes in the diet is preferable to its equivalent in cereals.

The legumes or pulses generally furnish the cheapest source of protein. Although laborers may digest a pound of baked beans per day without discomfort, persons of sedentary habits cannot handle large quantities of leguminous foods (Bailey, 1928). Experiments of many different investigators show that the protein of the soy bean, unlike that of other leguminous seeds thus far studied, is adequate for promoting a normal growth; in other words, the protein of the soy bean is comparable to the perfect protein of milk or meat.

FOODS RICH IN PROTEINS.

Cheese
Eggs
Fish, roe
Gelatin, dry
Legumes, dried
Meats, lean
Milk powder
Nuts
Oatmeal
Poultry
Soy bean products
Wheat cereals

FOODS POOR IN PROTEINS.

Beef-marrow
Butter, oils, fats
Cocoanut milk
Flours
Fruits
Honey, syrups
Mayonnaise
Molasses
Pickles
Tapioca, starches
Vegetables, except
legumes

CHAPTER III.

FATS.

Properties.—Fats and related substances, known collectively as the lipoids, are widely distributed in living structures. Tissue fats differ from storage fats in three important particulars: the fatty acids are more unsaturated, they suffer no diminution except in the extremes of starvation, they are linked with cholesterol or phosphoric acid instead of glycerol.

The physiological value of the lipoids depends upon their individual character. Certain of the lipoids are as essential in the structure of protoplasm as the proteins. In these tissue lipoids are found groups containing nitrogen or nitrogen and phosphorus. The neutral or true fats are glycerides composed only of carbon, hydrogen and oxygen, in the form of fatty acids linked to glycerol. The neutral fats are heat insulators; they exercise cushioning effect by enveloping vital organs; they are the most compact form of stored energy. Carbohydrates and proteins, when stored (and storage space is limited), retain at least 3 parts of water. Fats are not only deposited without water, but have about nine times the calorific value of stored proteins or glycogen.

Cholesterol is a lipid of paramount importance. It is a vital constituent of nerve tissue, and is anti-hemolytic. It checks lipolytic action in the tissue cells, and is responsible in part for the semi-solid consistency of living cells despite their large water content (75 to 85 per cent). Increase in cholesterol concentration enables cells to hold greater quantities of water, pathologically visible as edema.

Utilization.—Digestion of fats occurs in the duodenum under the influence of the pancreatic juice and bile. Neutral fats are hydrolyzed to glycerol and soaps (salts of fatty acids). The most generally accepted theory is that fats are absorbed in a hydrolyzed condition but are immediately resynthesized to neutral fats in the absorbing cells. Soaps are toxic and are not found in normal blood. Bile salts appear to serve as the vehicle for fat absorption. As far as absorbed fat can be traced, it is collected in the lymphatic system and eventually discharged into the blood stream.

Fats are not utilized as readily as carbohydrates or proteins. A probable preliminary step in the metabolism of fats is the removal of hydrogen from the fatty acids to render them unsaturated and

more unstable. With few exceptions, natural fatty acids are composed of long chains with an even number of carbon atoms. They are believed to undergo oxidation at each alternate carbon atom with release of two-carbon fragments. Normally the acetic acid so produced is oxidized to CO_2 and H_2O , this reaction occurring in the presence of glucose which simultaneously is being burnt. Where glucose is absent or cannot be oxidized, the two-carbon fragments condense (MacKay, 1940) to form ketonic acids which deplete the blood's supply of sodium bicarbonate thus resulting in acidosis.

There is abundant proof that carbohydrates are converted into fats. There is much less tendency for protein residues to be used in this way.

The metabolism of fatty acids is inseparably bound with cholesterol and the phosphorized fats (lecithins) which are found in all living cells. Normally there is little transportation of neutral fat as such in the blood. The fatty acids are carried largely in the form of lecithin, a highly advantageous arrangement, since lecithin, unlike neutral fat, mixes with water to form permanent emulsions of a sort which can penetrate cell walls. It is probable that initiation of fat oxidation is dependent upon the formation of lecithin. Both lecithin and cholesterol enter into the structural framework of protoplasm.

Requirement.—Since adequate experimental data are not available, it is difficult to fix a safe lower limit for fat ingestion. In the treatment of obesity, where diets of 600 to 900 calories are employed the fat may be restricted to 20 to 25 grams a day. A well-balanced 2500-Calorie diet allows 50 grams of fat daily, amounting to about 18 per cent of the total caloric intake. The average 3000-Calorie diet will contain about 100 grams of fat, approximately 30 per cent of the total calories.

Fats are required in the diet when there is a high-caloric need. They are aptly described by Whiteman and King as adding "flavor, richness, and a staying quality" to the meal. They are essential as carriers of vitamins. One of the unsaturated fatty acids, linoleic, has been referred to as vitamin F. There is increasing evidence that some one or more of the unsaturated acids found in linseed, soy bean and corn oils are necessary for optimum nutrition.

Deficiency.—Animals placed on a fat-free diet fail to show maximum growth and develop skin abnormalities. Excessive skin dryness in human beings can often be traced to a low-fat diet. Inadequate intake of fats is accompanied by deficiency in the natural, fat-soluble vitamins. Since the carbohydrate reserves are limited, a fair storage of fats is desirable to meet satisfactorily the emergencies of life. The protective cushioning effect of storage fat and its heat-insulating qualities are not lightly to be cast aside if full vigor and health are to be achieved.

Sources.—Butter and cream are the most palatable and assimilable source of fats as well as carriers of vitamin A. Nuts, cocoa butter, vegetable oils, lard, and bacon, while rich in fat, are poor in vitamin A. Excessive dietary fat which does not carry vitamins may lead to loss of vitamin A.

The avocado (alligator pear) and the olive are outstanding exceptions among the fruits and vegetables in that their fat content is appreciable.

FOODS RICH IN FATS.

Avocados
Bacon and other fat meats
Bone-marrow
Butter, cream
Caviar
Cheese, whole milk
Chocolate
Egg-yolk
Fried foods
Goose, turkey
Lard
Mayonnaise
Nuts, except
 chestnuts
Oils, except mineral
Olives
Pastry
Suet

FOODS POOR IN FATS.

Bouillon
Bread
Breast of boiled fowl
Cereals, refined
Cheese, skim milk
Codfish
Egg-white
Flounder
Flour
Fruits
Haddock
Litchi "nuts"
Meat extracts
Perch
Pickerel
Shellfish
Skim milk
Vegetables

FOODS RICH
IN CHOLESTEROL.

Butter
Egg-yolk
Fish roe
Lard, suet
Organ meats

FOODS POOR
IN CHOLESTEROL.

Cereals
Egg-white
Fruits
Nuts
Vegetables

CHAPTER IV.

WATER.

Properties.—Inasmuch as water forms the bulk of the body and its loss is continuous, the physiological need is obvious. A person may be deprived of food for a long period of time, but water can be withheld only for a few days. Muscle tissue holds 40 to 45 per cent of the total body water, the skin over 20 per cent. These two tissues suffer most from dehydration when the supply of water is inadequate. In mammalian muscle, 19 to 27 per cent of the total muscle water is “bound” to the colloids and does not function as free water. The “gel” consistency of protoplasm is due to this property of imbibition. Glycogen and protein stores hold 3 or more parts of water; fat is laid up almost dry, at most 0.2 gram of water being retained for each gram of fat. Conversion of glucose to glycogen for storage purposes involves change to a colloidal form which has little effect upon the osmotic pressure of the system. The marked decrease in solubility in passing from glucose to glycogen prevents the circulating water from washing this carbohydrate from the tissues.

Water is continually shifting about the body so as to provide vehicles for digestive juices and other secretions, to transport nutriment, and to carry off waste-products. Equilibrium within narrow limits is maintained between circulating fluids, extracellular and intracellular, free and bound water. Adjustment can be made very rapidly. Forced administration of great quantities of water leads to an intoxication which is characterized by convulsions and renal fatigue.

Water retention is curtailed by a high-protein, low-salt diet in which there is an adequate supply of the vitamin B complex. A low Na:K ratio is requisite. Refer also to p. 257.

Water is produced within the body by chemical changes. Each molecule of glucose, $C_6H_{12}O_6$, converted to glycogen $(C_6H_{10}O_5)_n$, provides 1 molecule of water. Oxidation of glucose releases 6 molecules of water for every molecule burned which amounts to about 60 grams of water for every 100 grams of carbohydrate. Alcohol releases about 118 grams of water for every 100 grams oxidized. Combustion of fats and proteins likewise produce water, the former yielding over 100 grams of water, the latter 40 to 45 grams per 100 grams of food oxidized.

Ingestion.—Seventy-five to 80 per cent of the total food eaten is water, part of this being in “free” form. The amount of water demanded per day depends upon the dietary habits of the individual

and upon climatic conditions. In the California desert, 11 to 12 liters a day are needed for heat regulation; even then it is possible to suffer from thirst. Whenever the surrounding temperature equals or exceeds 98.6° F., heat is lost, not by conduction and radiation, but only by evaporation of water. The normal requirement of water approaches 2 liters per day, or about 1000 cc. more than that eliminated by the kidneys. In forcing fluids, a glass an hour is recommended. Three liters a day is the usual limit for a 150-pound adult, comparable amounts for an infant being 90 to 100 cc., for a child, aged five to eight years, 600 to 800 cc., and for one, aged eight to twelve years, 1000 to 1500 cc.

Elimination.—The kidneys excrete 1000 to 1500 cc. per twenty-four hours. The volume decreases as perspiration increases. Insensible loss of water does not exceed 21 grams per square meter of body surface per hour. According to Marriott, the average adult exercising lightly in an atmosphere of 65° to 75° F., with 35 to 60 per cent humidity, eliminates 30 to 60 grams of water per hour by evaporation, which amounts to 10 to 20 grams per kilogram of body weight per day, a total of 650 to 1400 cc. of water. This includes the water lost through the expired air—approximately 600 cc. per day. The loss of water through normal fecal excretion is 60 to 150 cc. daily.

Water Balance.—Under normal conditions the output of water balances the intake. For the average adult this means:

<i>Available Water.</i>		<i>Excreted Water.</i>	
Food .	950 cc.	Kidneys .	1300 cc.
Drink	1200 cc.	Lungs	600 cc.
Oxidation	350 cc.	Skin	500 cc.
		Intestines	100 cc.
	2500 cc.		
			2500 cc.

FOODS RICH IN WATER.
(More than 70 per cent.)

Beverages
Cream
Cream cheese
Eggs
Fruit ices
Fruits
Gelatin preparations
Gruels
Junket
Salad vegetables
Sherbets
Soups
Stews
Vegetables, boiled

FOODS POOR IN WATER.
(Less than 30 per cent.)

Butter
Cakes
Candy
Cereals, ready-to-eat
Crackers, biscuits
Dried fruits
Jellies
Molasses
Nuts
Popcorn
Potato chips
Suet
Syrups, honey
Toast

TABLE 1.—Water Content of Various Foods as Eaten.*

<i>Food items.</i>	<i>Per cent.</i>	<i>Food items.</i>	<i>Per cent.</i>
Almonds	5	Chicken, cooked	55-65
Apples	79-91	Chicory	91-96
Apricots	82-92	Chocolate	6
Artichokes, French, cooked	85	Cocoanut, canned moist	16
Artichokes, Jerusalem, cooked	80	Cocoanut, desiccated	5
Asparagus, cooked	92-95	Cocoanut, fresh	42
Avocados	55-84	Cookies	3-10
Bananas (av. 75 per cent).	65-83	Corn, † young	76-86
Beans:		Corn, † medium	69-75
Baked	68-70	Corn, † old	60-68
Kidney, cooked	72-73	Corn, canned	76
Lima, canned	80	Cornsalad	92-93
String, cooked	93-95	Crackers, biscuits	3-7
Beef, cooked	52-60	Cream	54-73
Beets, cooked	80-85	Cress, garden	81-93
Brazil nuts	8	Cucumbers	95-97
Bread, including rolls	25-36	Currants, fresh	77-84
Bread, freshly baked†	31-38	Damsons	77-78
Bread, air-dried	10-15	Dandelion greens	81-88
Bread, toasted	5-10	Dates	15-20
Broccoli, cooked	90-93	Dock or sorrel	92-95
Brussels sprouts	90-95	Egg-white	86
Butter	15-16	Egg-yolk	49
Cabbage, boiled	92-95	Eggs, whole	73-74
Cabbage, raw	88-94	Endive	91-96
Cabbage, Chinese	94-97	Fennel	93
Cake	16-30	Filberts	40
Candy	4-6	Figs, ** fresh	50-88
Carrots, raw	83-91	Fish, cooked	52-70
Carrots, cooked	81-92	Fish pastes, English	55-70
Cauliflower, cooked	94-95	Fruits:	
Celeriac	84-91	Berries	83-90
Celery	90-95	Cherries	75-85
cooked	96	Citrus	86-89
Cereals, prepared	8-10	Dried	15-30
Cheese:		Grapes	75-87
American	28-38	Melons	92-94
Camembert	43-54	Orchard	77-87
Compounded	43	Tropical	65-85
Cottage	63-72	Fruit butters	37-50
Cream	38-43	Fruit juices:	
Cream, Phila.	74	Apple	87
Parmesan	15-30	Citrus	91-96
Potted cottage	39	Grape	80
Process	40	Pineapple	85
Roquefort	37-40	Grapefruit	86-91
Soft rennet	50-60	Grapes	75-87
Swiss	25-35	Greens, cooked	90
Cherries	75-85	Ham, cooked	45-50
Chestnuts, fresh	52	Honey	17-18
		Horseradish	73-74

* "Cooked" implies boiled.

† Raw, for comparative purposes only.

‡ 38% is standard.

** Average 78 per cent.

<i>Food items.</i>	<i>Per cent.</i>	<i>Food items.</i>	<i>Per cent.</i>
Ice-cream	55-62	Potatoes, sweet, baked	52-55
Ices	70-75	Potatoes, sweet, boiled	72
Jellies	15-20	Potatoes, white:	
Lamb, cooked	45-67	Baked	45
Leeks	85-92	Boiled	75-80
Lentils, cooked	72	Chips	2- 6
Lettuce	91-97	French fried	47
Litchi, dried	18	Mashed	73
Milk:		Roast	64
Condensed	27-30	Prunes	20-25
Evaporated	74	Radishes	87-96
Whole	85-88	Raisins	18-22
Skim and buttermilk	90-91	Rhubarb	94
Molasses	20-25	Salad greens	93-96
Mushrooms, fried	60-65	Sauerkraut	88-89
Mustard greens	87-96	Shellfish	70-85
Mutton, cooked	45-67	Soups	80-95
Nectarines	83	Spinach, cooked	85
Olives, green	58	Stew, meat	83-88
Olives, ripe	65	Succotash, cooked	76
Onions, raw	80-90	Swiss chard	90-95
Onions, cooked	91-92	Syrup, corn	25
Onions, fried	40-45	Syrup, maple	25-30
Oranges	83-90	Squash, boiled	93-94
Parsley	79-88	Tangerines	88-91
Parsnips, cooked	83-90	Tomato juice	94
Peaches	82-90	Tomatoes	93-95
Peanut butter	2	Tomatoes, fried	85-87
Peanuts	5- 9	Turnip tops, cooked	92-93
Pears	76-86	Turnips, cooked	94-95
Peas, green, cooked	75-85	Turnips, raw	86-96
Peas, † young	80-84	Vegetable marrow, cooked	95-99
Peas, † medium	70-79	Vegetables	85-98
Peas, † old	57-69	Walnuts	20-25
Peppers, green	91-94	Watercress	91-97
Pineapple, fresh	81-90	Watermelon	91-93
Plums	74-91		

† Raw, for comparative purposes only.

CHAPTER V.

ANALYSIS AND CLASSIFICATION OF FOOD.

Introduction.—The analysis of foods for the nutritive constituents has occupied a period of years and the efforts of many investigators. During this time methods and standards of judgment have changed. The results, therefore, are not strictly comparable. Ideal tabulation demands food values ascertained by the same methods and under identical conditions. Since no such complete data exist, what is available must be utilized with discretion.

Fats.—Fats are usually determined by ether extraction; this includes foreign matter as well as lipoids other than neutral fats. The error involved may be considerable.

Proteins.—Proteins are ascertained by digesting the food with sulphuric acid, aided by catalysts, such as copper sulphate, potassium sulphate and selenium, or by oxidizing agents, such as hydrogen peroxide. Nitrogen compounds are converted into ammonium salts. The ammonia is determined by distillation or aëration into acid and the amount computed by titration or nesslerization. Non-protein nitrogen is usually ignored and the total nitrogen found is multiplied by 6.25 to give "protein." In the case of certain foods, notably mushrooms and truffles, the nitrogen may be largely non-protein in character and of unknown food value.

Carbohydrates.—Carbohydrates most frequently are calculated "by difference" after direct determination of fats, proteins ($N \times 6.25$), ash, water and sometimes crude fiber. The combined errors of analysis thus fall upon the carbohydrate figure. They may be ascertained, also, by direct hydrolysis with mineral acid or enzymes followed by copper reduction or polariscopic examination. Not all reducing sugars are utilized by the body. The amount of carbohydrate actually available to the individual may be quite different from any of the figures obtained by analysis. The effect of cooking, mastication and digestion, particularly upon starch trapped within cellulose, may be considerable. Furthermore, certain organic acids, not determined by hydrolysis and reduction methods, may be converted into sugar after absorption. A very few experiments have been performed to ascertain "available" carbohydrate by using phlorizinized animals.

Wherever possible, carbohydrate data have been reported in the ensuing tables without fiber or other unassimilable matter. This is denoted by an asterisk on the percentage figure. Unfortunately this designation in most instances cannot be taken as representing true availability.

Classification of Fruits and Vegetables.—Classification of foods is an inevitable evil. Unless arranged according to a preconceived plan, vast stores of knowledge become inaccessible. Since natural phenomena do not fall into line with any scheme of classification, all grouping is to a certain extent artificial and hence, at times, confusing rather than helpful.

Strict adherence to any classification leads to absurdities. Fruits and vegetables cannot be listed according to their percentage composition without definite omissions. It is customary to insert cranberries, rhubarb, quince, and gooseberries into the groups indicated by the carbohydrate content of the raw fruits. No account is taken of the large amount of sugar added according to recipe to render the food palatable. Again, eggplant is declared to be of little food value, but as served it is far from being of negligible caloric content. In the practical listing of fruits and vegetables only such can be included as have been *analyzed in the form in which they can be eaten*.

Arrangement of foods according to their percentage composition has very obvious drawbacks. Regardless of the system of demarcation into groups, items within a few tenths per cent of each other will fall into different classes. If the class unit is large (as in 3, 10, and 20 per cent carbohydrates), foods of appreciable divergence in composition are necessarily grouped together. It would be more logical for the clinician who requires a printed sheet of permissible foods for the use of patients to list the fruits and vegetables in the order of increasing carbohydrate value. If percentages are appended to this list, the separation of allowed from forbidden foods is easily achieved. Too much attention, however, should not be centered upon the percentage composition. Practically, only the amount of carbohydrate per serving need be considered. Garlic, for instance, has no nutritive value despite its 20 per cent carbohydrate. The heat value of the so-called 3 per cent vegetables varies from 1 to 30 Calories per serving. It is impossible to permit a patient to have free access to all of the 3 per cent vegetables since the caloric content of these foods is presumably of paramount importance. Intelligent dietetic management requires that physician, dietitian, and patient have access to analytical data instead of mere lists of words.

The custom of classifying foods according to the predominating foodstuff frequently leads to the assumption that those of the same type are more or less comparable. When carbohydrate must be limited, deletion should be discriminatory rather than generalized. Although the potato is primarily a carbohydrate food, tuberin (the globulin of potato) is by no means a protein of inferior rank. Carbohydrate deficiency diseases are not common where the potato

enters liberally into the diet. Its alkaline ash gives the potato a further advantage over rice and the farinaceous foods.

Classification of fruits and vegetables, however, can be very useful. Since those schemes devised in the past have not been wholly satisfactory, two new lists are presented.

Since the data in Table 22, Available Carbohydrates in Fruits and Vegetables (page 167), may be compared fairly, the following classification is offered for its practical value. Items which do not appear in Table 22 are enclosed in brackets. They are included for the sake of completeness.

VEGETABLES.

GROUP I. <i>Low-carbohydrate.</i>		GROUP II. <i>Moderate-carbohydrate.</i>	GROUP III. <i>High-carbo- hydrate.</i>
Asparagus	Kohlrabi	[Beets]	
Beans, string	Lambsquartors	Carrots	[Beans, baked]
Beet greens	Leeks	Onions	[Beans, kidney]
Broccoli	Lettuce	Parsnips	[Beans, lima]
[Brussels sprouts]	[Mushrooms]	Peas	Corn
Cabbage	[Okra]	Peppers	Dasheens
Cauliflower	Parsley	[Pimentos]	[Lentils]
Celeriac	Radishes	Rutabagas	Potatoes, sweet
Celery	[Romaine]	Turnips	Potatoes, white
[Celery cabbage]	[Sauerkraut]		[Succotash]
Chard	Spinach		Taro
Cucumbers	Squash		Yams
Dandelion greens	Tomatoes		
Dock or sorrel	[Turnip tops]		
[Endive]	[Vegetable marrow]		
Kale	[Watercress]		

FRUITS.

GROUP I. <i>Low-Carbohydrate.</i>	GROUP II. <i>Moderate-carbohydrate.</i>		GROUP III. <i>High-carbohy- drate.</i>
Grapefruit	Apples	Oranges	
Melons	Apricots	Peaches	Bananas
Strawberries	Berries, ex- cept as noted	Pears	Grapes
	Figs, fresh	Pineapple	Persimmons
	Nectarines	Plums	[Prunes]
		Tangerines	

Williams, Olmsted, and their co-workers (1940) have emphasized the fact that classification of fruits and vegetables according to their supposed carbohydrate content is unscientific. The methods whereby carbohydrate values have been obtained are not above reproach and reclassification is in order. Based on their own data, these investigators present a new grouping of fruits and vegetables which more closely approximates their actual content of utilizable carbohydrate.

Williams-Olmsted Classification.

<i>1 per cent.</i> (0.3-2.0)	<i>3 per cent.</i> (2.1-4.0)	<i>5 per cent.</i> (4.1-6.0)
Asparagus	Beans, snap, young	Beans, snap, medium
Broccoli	Brussels sprouts	Blackberries
Cauliflower	Cabbage	Carrots
Celery	Cranberries	Currants
Cucumbers	Eggplant	Muskmelon
Greens	Gooseberries	Pumpkin
Rhubarb	Lemon juice	Strawberries
Squash, summer	Radishes	Squash, winter
	Tomatoes	Watermelon
	Turnips	
<i>7 per cent.</i> (6.1-8.0)	<i>9 per cent.</i> (8.1-10.0)	<i>11 per cent.</i> (10.1-12.0)
Beets	Apricots	Apples
Grapefruit	Blueberries	Cherries
Onions	Oranges	Corn, sweet, young
Raspberries	Orange juice	Figs
Rutabagas	Peaches	Grapes
	Pears	Nectarines
	Plums	Parsnips
		Peas
		Pineapple

Classification of Flesh Foods.—As has been shown by Chatfield (1937) the present grouping of meats and poultry according to kind, cut, and method of cooking is unwieldy and none too accurate in practical application. It is suggested that a basis of comparison is possible under two headings: relative fatness and relative dryness.

TABLE 2.—**Classification of Meats.**

	Fat, per cent.	Protein, per cent.
Lean meat:		
Dry (very well done)	6	34
Medium done	6	30
Moist (rare)	6	27
Medium fat:		
Dry	18	30
Medium done	18	27
Moist	18	23
Fat, medium done	30	22
Very fat, medium done	45	17

The classification of fish is considerably more difficult because of rather wide variability in the fat content and is, therefore, not attempted.

Effect of Cooking Upon Foods.—Unless stated to the contrary, it is necessary to regard food analyses as having been made on the edible material in natural or commercial form. When such food

is cooked, its composition is frequently quite different from that reported. Unfortunately very little data on actual analyses of cooked foods are available. The chief reason has been the unwillingness of the chemist to complicate analytical procedures by the introduction of the extremely variable and often unpredictable factors which enter into the processes of food preparation.

Cooking of vegetables leads to a reduction of carbohydrate by an amount determined by the structure of the food, the method of cooking, the quantity of water used, the size of the pieces and the length of time heat is applied. In general, there is a decrease of one-third to one-half of the carbohydrate after cooking in water, the portion lost being largely of utilizable nature. "Thrice-cooked" vegetables contain little available carbohydrate; the greater part of the mineral salts and flavor also is lost. Ordinary boiling of vegetables removes about 5 per cent of the proteins, while the loss of fats is relatively slight. The analyses of cooked and uncooked foods will show marked differences when the water content changes appreciably.

The change in weight of meat during cooking is due chiefly to the loss of water, although in the case of certain meats, as bacon, it is caused by the removal of fats. Even in par-boiling, the water content diminishes. Boiling or steaming results in less removal of water due to volatilization; 3 to 20 per cent of the total solids may be found in meat broth. The loss of water and minerals is such that the percentage of salts remains the same in raw, boiled and steamed meat, but is higher in roasted meat. According to British investigators, beef, when fully cooked, loses the same amount of weight, water and salts whether cooking is commenced in hot or cold water. Ground beef free from visible fat shows changes in composition as follows:

	Water, per cent.	Protein, per cent.	Fat, per cent.	Ash, per cent.
Uncooked	75.2	21.2	2.5	1.2
Pan-broiled	61.7	33.4	3.9	1.6

TABLE 3.—Effect of Cooking Upon Composition of Meats.

Food.	Mode of cooking	Percent- age loss of weight.	Percentage distribution of total loss			
			Protein.	Fat	Salts	Water.
Bacon, very fat	Fried	61.7	0.4	52.5	1.2	45.9
Beef, 50-gram pieces	Boiled 1 hour	43.0	4.8	6.1	2.0	87.1
Beef, 1600 grams	Boiled	39.8	4.2	8.0	1.3	86.5
Beef, 1600 grams	Roasted	39.2	2.0	10.0	0.5	87.5
Catfish	Steamed	33.4	3.1	0.3	1.0	95.6
Cod	Steamed	31.5	4.7	0.8	1.0	93.5
Mutton, lean	Boiled	42.0	4.4	3.1	1.2	91.3
Mutton, very fat	Boiled	38.0	2.7	35.0	0.8	61.5

Pound for pound, overcooked meat contains more protein and probably more fat than undercooked. Investigation of nutritive

values of canned meats and fish generally reveals a marked similarity to ordinary cooked foods.

From the data shown in Table 4 it is apparent that "the amount of protein in the rib cut, greatly increased due to fat and water losses in cooking, becomes comparable with that of the lean, cooked top round ordinarily regarded as a more abundant source of protein."

Some difficulty may be encountered in estimating the caloric value of meats, as most of the analyses reported in the table are given for raw meat. The mode of cooking and serving may reduce the heat value by as much as 50 per cent. Sherman advocates crediting the meat with the protein content shown by the average of all analyses and the caloric value indicated for the lean cuts.

The increasing popularity of "water-less" cooking is to be highly commended. Nevertheless, tissue water released from plant foods on the application of heat invariably carries with it more or less mineral matter. The saving of minerals, however, is appreciable when compared to the loss on soaking or heating in added water. Actual experiments with spinach, mustard greens, cabbage, and turnip tops have shown that the conservation of salts is better when steaming or pressure-cooking methods are employed than when boiling is permitted. The iron content of broccoli diminishes 50 per cent after twenty minutes of boiling (Flanley and Johnson, 1932).

TABLE 4.—Effect of Roasting on Composition of Paired Cuts of Steer Beef.*

Cut.	Official U. S. grade.	Preparation.	Fat, per cent.	Protein, per cent.	Total solids, per cent.	Moisture, per cent.	Total ash, per cent.	Calcium, per cent.	Phosphorus, per cent.	Iron, per cent.
Clod	Good	Uncooked	18.2	21.1	41.2	58.8	0.964	0.012	0.156	0.0023
		Roasted	22.0	25.3	52.8	47.2	1.060	0.006	0.211	0.0026
Ribs	Good	Uncooked	31.0	19.8	51.8	48.3	0.812	0.009	0.136	0.0018
		Roasted	32.6	31.9	64.9	35.1	1.065	0.008	0.199	0.0021
Top round	Good	Uncooked	6.6	24.1	31.9	68.1	1.162	0.005	0.200	0.0022
		Roasted	9.0	30.6	39.3	60.7	1.117	0.011	0.214	0.0025

* Rogers, M., Gillum, I., Kuerth, B. L., and Pittman, M. S.: Jour. Am. Dietet. Assn., 13, 320, 1937.

The question of cooking water is subject to different interpretations depending upon the viewpoint. The matter of vitamin loss is considered elsewhere (p. 276). Investigations by McCance *et al.* (1936) have revealed that, while the decrease in the percentage composition of vegetables may be appreciable, these losses constitute only a very small fraction of the daily intake of minerals or carbohydrates. In other words, "the waste incurred by throwing away

the water in which vegetables have been boiled is surprisingly small . . . and not of great dietetic significance."

Potatoes boiled in salt water lose potassium readily but take up considerable sodium. As observed by McCance (*Special Report No. 213, Med. Res. Council*, 1936): "At the beginning the sodium in the potato was negligible (only 5 mg. per 100 g.) while chloride ions amounted to 114 mg. per 100 g. During the cooking each 100 g. of potato took up about 250 mg. of sodium chloride. This changed the K/Na ratio from 435/5 to 355/103. It is doubtful if life could be maintained indefinitely on a K/Na ratio of 435/5 while it is interesting to note that 355/103 is quite close to the K/Na ratios found in mammalian tissues. The improvement in taste to most palates requires no emphasis."

Acidified boiling water (vinegar) increases the removal of calcium from vegetables whereas alkalinity retards it. On the other hand, sodium bicarbonate hastens the cooking by softening the fiber which in turn allows mineral salts to escape. In the opinion of McCance, the addition of this base to cooking water for green vegetables makes little practical difference to the losses. For the effect upon vitamin potency, refer to p. 261.

Although the leaching effect of distilled water is greater than that of tap water, employment of hard water for cooking purposes is frequently undesirable. Calcium salts retard the rate of cooking unless precipitated by alkali. Heating of some proteins, notably those found in the leguminous plants, in the presence of much calcium leads to the formation of insoluble compounds which are digested, if at all, with considerable difficulty.

CHAPTER VI.

CALORIC REQUIREMENTS.

The nutritional demands of the body vary with the age, sex, height and weight of the individual and with the sum total of activity during the twenty-four hours. The variations of age are most significant during the growing periods of childhood and youth, and require greater recognition than in the more mature years.

Quoting from Sherman, in his third edition of *Chemistry of Food and Nutrition*, "The calories per hour, per pound and per kilogram can be most readily determined from the following table:

Form of activity.	Calories per hour		
	Per 70 kilograms.*	Per kilogram.	Per pound.
Sleeping	65	0 93	0 43
Awake lying still	77	1 10	0 50
Sitting at rest	100	1 43	0 65
Reading aloud	105	1 50	0 69
Standing relaxed	105	1 50	0 69
Hand sewing	111	1 59	0 72
Standing at attention	115	1 63	0 74
Knitting (23 stitches per min on sweater)	116	1 66	0 75
Dressing and undressing	118	1 69	0 76
Singing	122	1 74	0 79
Tailoring	135	1 93	0 88
Typewriting rapidly	140	2 00	0 91
Ironing (with 5-pound iron)	144	2 06	0 93
Dishwashing (plates, bowls, cups and saucers)	144	2 06	0 93
Sweeping bare floor (38 strokes per minute)	169	2 41	1 09
Bookbinding	170	2 43	1 10
"Light exercise"	170	2 43	1 10
Shoemaking	180	2 57	1 17
Walking slowly (2.6 miles per hour)	200	2 86	1 30
Carpentry, metal working, industrial painting	240	3 43	1 56
"Active exercise"	290	4 14	1 88
Walking moderately fast (3.75 miles per hour)	300	4 28	1 95
Stoneworking	400	5 71	2 60
"Severe exercise"	450	6 43	2 92
Sawing wood	480	6 86	3 12
Swimming	500	7 14	3 25
Running (5.3 miles per hour)	570	8 14	3 70
"Very severe exercise"	600	8 57	3 90
Walking very fast (5.3 miles per hour)	650	9 28	4 22

* Average man (150 pounds).

Thus a specific diet regimen may be outlined for individuals or for a group of individuals, based on the various activities in which they indulge during an average twenty-four hour period. The sum of the number of calories per pound required in the various activities of the day will determine the proper caloric maintenance intake.

Having established the number of calories required for maintenance or for the increase or decrease in poundage, a proper balance of the various elements must be determined and a diet following these principles prescribed.

The average infant requires the following:

1. Basal metabolism (at rest)	55 Cal. per kilo (25 Cal. per lb.)
2. Allowance for milk diet	10 Cal. per kilo (4.5 Cal. per lb.)
3. Allowance for activity	25 Cal. per kilo (11 Cal. per lb.)
4. Allowance for growth	15 Cal. per kilo (7 Cal. per lb.)
5. Allowance for food not utilized	10 Cal. per kilo (4.5 Cal. per lb.)

Total 115 Cal. per kilo (52 Cal. per lb.)

(From Saxl, N. T.: *Pediatric Dietetics*, Philadelphia, Lea & Febiger, 1937.)

TABLE 5.—**Estimated Total Caloric Requirements for Children of Different Ages.***

Age, years.	Minimal. Basal plus 50 per cent.		Maximum.	
	Boys, Calories.	Girls, Calories.	Boys, Calories.	Girls, Calories.
1	900	900	900	900
2	975	960	1,200	1,200
3	1,050	1,040	1,300	1,300
4	1,100	1,050	1,400	1,400
5	1,200	1,125	1,500	1,500
6	1,275	1,200	1,700	1,600
6	1,350	1,275	2,000	1,800
8	1,425	1,325	2,500	2,000
9	1,500	1,375	2,600	2,300
10	1,575	1,425	2,800	2,400
11	1,650	1,500	3,000	2,600
12	1,725	1,560	3,250	2,900
13	1,800	1,610	3,500	3,200
14	1,975	1,650	3,750	3,400
15	2,050	1,680	4,000	3,600

* Talbot, F. B.: *The Internal Secretary System and Metabolism*, New York and London, D. Appleton & Co., 1928.

TABLE 6.—Height, Weight and Age.—Boys.

	Average height, inches.	Average weight, pounds.		Average height, inches.	Average weight, pounds.
Under 1 month	21½	9½	8 mos., under 9	27½	19
1 mo., under 2	22½	10½	9 mos., under 10	28½	19½
2 mos., under 3	23½	12½	10 mos., under 11	28½	20½
3 mos., under 4	24½	14½	11 mos., under 12	29	20½
4 mos., under 5	25½	15½	1 year	29½	21½
5 mos., under 6	26½	16½	2 years	33½	26½
6 mos., under 7	26½	17½	3 years	36½	30½
7 mos., under 8	27½	18½	4 years	38	34

Height, inches.	5 years.	6 years.	7 years.	8 years.	9 years.	10 years.	11 years.	12 years.	13 years.	14 years.
38	34	34								
39	35	35								
40	36	36								
41	38	38	38							
42	39	39	39	39						
43	41	41	41	41						
44	44	44	44	44						
45	46	46	46	46	46					
46	47	48	48	48	48					
47	49	50	50	50	50	50				
48	..	52	53	53	53	53				
49		55	55	55	55	55	55			
50		57	58	58	58	58	58	58		
51		..	61	61	61	61	61	61		
52			63	64	64	64	64	64	64	
53		..	66	67	67	67	67	68	68	
54			..	70	70	70	70	71	71	72
55				72	72	73	73	74	74	74
56				75	76	77	77	77	78	78
57				..	79	80	81	81	82	83
58			..		83	84	84	85	85	86
59						87	88	89	89	90
60		..			..	91	92	92	93	94
61		..				..	95	96	97	99
62		..	..				100	101	102	103
63		..	..				105	106	107	108
64		..					..	109	111	113
65	..	..	..		..	..	..	114	117	118
66	..	..	..		..	..	..	..	119	122
67	..	..	..	..	..	..	..	..	124	128
68	..	..	..	..	..	..	..	..	..	134
69	..	..	..		..	..	..	..	..	137
70	..	..	..	..	..	..	..	..	..	143
71	..	..	..	..	..	..	..	..	..	148

* As prepared by Bird T. Baldwin and Thomas D. Wood, and accepted by The American Medical Association.

TABLE 7.—Height, Weight and Age.—Girls.

	Average height, inches.	Average weight, pounds.						Average height, inches	Average weight, pounds.
Under 1 month . .	20½	8½	8 mos., under 9 . .	27½	17½				
1 mo., under 2 . .	21½	10½	9 mos., under 10 . .	27½	18½				
2 mos., under 3 . .	23½	11½	10 mos., under 11 . .	28½	19				
3 mos., under 4 . .	24	13	11 mos., under 12 . .	28½	19½				
4 mos., under 5 . .	24½	14½	1 year	28½	20				
5 mos., under 6 . .	25½	15½	2 years	33½	25½				
6 mos., under 7 . .	26½	16½	3 years	36½	29½				
7 mos., under 8 . .	26½	17½	4 years	38	33				

Height, inches.	5 years.	6 years.	7 years.	8 years.	9 years.	10 years.	11 years.	12 years.	13 years.	14 years.
38	33	33								
39	34	34								
40	36	36	36							
41	37	37	37							
42	39	39	39							
43	41	41	41	41						
44	42	42	42	42						
45	45	45	45	45	45					
46	47	47	47	48	48					
47	49	50	50	50	50	50				
48	..	52	52	52	52	53	53			
49		54	54	55	55	56	56			
50		56	56	57	58	59	61	62		
51			59	60	61	61	63	65		
52			63	64	64	64	65	67		
53			66	67	67	68	68	69	71	
54			..	69	70	70	71	71	73	
55				72	74	74	74	75	77	78
56					76	78	78	79	81	83
57					80	82	82	82	84	88
58					..	84	86	86	88	93
59						87	90	90	92	96
60						91	95	95	97	101
61						..	99	100	101	105
62							104	105	106	109
63							..	110	110	112
64	..							114	115	117
65								118	120	121
66	..							..	124	124
67									128	130
68									131	133
69									..	135
70						..			..	136
71						..	..		..	138

* As prepared by Bird T. Baldwin and Thomas D. Wood, and accepted by The American Medical Association.

TABLE 8.—Average Weights of Men With Clothes.

Age.	5'	5' 1"	5' 2"	5' 3"	5' 4"	5' 5"	5' 6"	5' 7"	5' 8"	5' 9"	5' 10"	5' 11"	6'	6' 1"	6' 2"	6' 3"	6' 4"	6' 5"
15 . .	107	109	112	115	118	122	126	130	134	138	142	147	152	157	162	167	172	177
16 . .	109	111	114	117	120	124	128	132	136	140	144	149	154	159	164	169	174	179
17 . .	111	113	116	119	122	126	130	134	138	142	146	151	156	161	166	171	176	181
18 . .	113	115	118	121	124	128	132	136	140	144	148	153	158	163	168	173	178	183
19 . .	115	117	120	123	126	130	134	138	142	146	150	155	160	165	170	175	180	185
20 . .	117	119	122	125	128	132	136	140	144	148	152	156	161	166	171	176	181	186
21 . .	118	120	123	126	130	134	138	141	145	149	153	157	162	167	172	177	182	187
22 . .	119	121	124	127	131	135	139	142	146	150	154	158	163	168	173	178	183	188
23 . .	120	122	125	128	132	136	140	143	147	151	155	159	164	169	175	180	185	190
24 . .	121	123	126	129	133	137	141	144	148	152	156	160	165	171	177	182	187	192
25 . .	122	124	126	129	133	137	141	145	149	153	157	162	167	173	179	184	189	194
26 . .	123	125	127	130	134	138	142	146	150	154	158	163	168	174	180	186	191	196
27 . .	124	126	128	131	134	138	142	146	150	154	158	163	169	175	181	187	192	197
28 . .	125	127	129	132	135	139	143	147	151	155	159	164	170	176	182	188	193	198
29 . .	126	128	130	133	136	140	144	148	152	156	160	165	171	177	183	189	194	199
30 . .	126	128	130	133	136	140	144	148	152	156	161	166	172	178	184	190	196	201
31 . .	127	129	131	134	137	141	145	149	153	157	162	167	173	179	185	191	197	202
32 . .	127	129	131	134	137	141	145	149	154	158	163	168	174	180	186	192	198	203
33 . .	127	129	131	134	137	141	145	149	154	159	164	169	175	181	187	193	199	204
34 . .	128	130	132	135	138	142	146	150	155	160	165	170	176	182	188	194	200	206
35 . .	128	130	132	135	138	142	146	150	155	160	165	170	176	182	189	195	201	207
36 . .	129	131	133	136	139	143	147	151	156	161	166	171	177	183	190	196	202	208
37 . .	129	131	133	136	140	144	148	152	157	162	167	172	178	184	191	197	203	209
38 . .	130	132	134	137	140	144	148	152	157	162	167	173	179	185	192	198	204	210
39 . .	130	132	134	137	140	144	148	152	157	162	167	173	179	185	192	199	205	211
40 . .	131	133	135	138	141	145	149	153	158	163	168	174	180	186	193	200	206	212
41 . .	131	133	135	138	141	145	149	153	158	163	168	174	180	186	193	200	207	213
42 . .	132	134	136	139	142	146	150	154	159	164	169	175	181	187	194	201	208	214
43 . .	132	134	136	139	142	146	150	154	159	164	169	175	181	187	194	201	208	214
44 . .	133	135	137	140	143	147	151	155	160	165	170	176	182	188	195	202	209	215
45 . .	135	135	137	140	143	147	151	155	160	165	170	176	182	188	195	202	209	215
46 . .	134	136	138	141	144	148	152	156	161	166	171	177	183	189	196	203	210	216
47 . .	134	136	138	141	144	148	152	156	161	166	171	177	183	190	197	204	211	217
48 . .	134	136	138	141	144	148	152	156	161	166	171	177	183	190	197	204	211	217
49 . .	134	136	138	141	144	148	152	156	161	166	171	177	183	190	197	204	211	217
50 . .	134	136	138	141	144	148	152	156	161	166	171	177	183	190	197	204	211	217
51 . .	135	137	139	142	145	149	153	157	162	167	172	178	184	191	198	205	212	218
52 . .	135	137	139	142	145	149	153	157	162	167	172	178	184	191	198	205	212	218
53 . .	135	137	139	142	145	149	153	157	162	167	172	178	184	191	198	205	212	218
54 . .	135	137	139	142	145	149	153	158	163	168	173	178	184	191	198	205	212	219
55 and over	135	137	139	142	145	149	153	158	163	168	173	178	184	191	198	205	212	219

Actuarial Society of America, "Medical Impairment Study," 1929.

NOTE.—Deduct 1 inch for shoes and 8 pounds for clothes to determine nude weight.

TABLE 9.—Average Weights of Women With Clothes.

Age.	4' 8"	4' 9"	4' 10"	4' 11"	5'	5' 1"	5' 2"	5' 3"	5' 4"	5' 5"	5' 6"	5' 7"	5' 8"	5' 9"	5' 10"	5' 11"	6'
15	101	103	105	106	107	109	112	115	118	122	126	130	134	138	142	147	152
16	102	104	106	108	109	111	114	117	120	124	128	132	136	139	143	148	154
17	103	105	107	109	111	113	116	119	122	125	129	133	137	140	144	149	154
18	104	106	108	110	112	114	117	120	123	126	130	134	138	141	145	150	155
19	105	107	109	111	113	115	118	121	124	127	131	135	139	142	145	151	155
20	106	108	110	112	114	116	119	122	125	128	132	136	140	143	147	151	156
21	107	109	111	113	115	117	120	123	126	129	133	137	141	144	148	152	156
22	107	109	111	113	115	117	120	123	126	129	133	137	141	145	149	153	157
23	108	110	112	114	116	118	121	124	127	130	134	138	142	146	150	153	157
24	109	111	113	115	117	119	121	124	127	130	134	138	142	146	150	154	158
25	109	111	113	115	117	119	121	124	128	131	135	139	143	147	151	154	158
26	110	112	114	116	118	120	122	125	128	131	135	139	143	147	151	155	159
27	110	112	114	116	118	120	122	125	129	132	136	140	144	148	152	155	159
28	111	113	115	117	119	121	123	126	130	133	137	141	145	149	153	156	160
29	111	113	115	117	119	121	123	126	130	133	137	141	145	149	153	156	160
30	112	114	116	118	120	122	124	127	131	134	138	142	146	150	154	157	161
31	113	115	117	119	121	123	125	128	132	135	139	143	147	151	154	157	161
32	113	115	117	119	121	123	125	128	132	136	140	144	148	152	155	158	162
33	114	116	118	120	122	124	126	129	133	137	141	145	149	153	156	159	162
34	115	117	119	121	123	125	127	130	134	138	142	146	150	154	157	160	163
35	115	117	119	121	123	125	127	130	134	138	142	146	150	154	157	160	163
36	116	118	120	122	124	126	128	131	135	139	143	147	151	155	158	161	164
37	116	118	120	122	124	126	129	132	136	140	144	148	152	156	159	162	165
38	117	119	121	123	125	127	130	133	137	141	145	149	153	157	160	163	166
39	118	120	122	124	126	128	131	134	138	142	146	150	154	158	161	164	167
40	119	121	123	125	127	129	132	135	138	142	146	150	154	158	161	164	167
41	120	122	124	126	128	130	133	136	139	143	147	151	155	159	162	165	168
42	120	122	124	126	128	130	133	136	139	143	147	151	155	159	162	166	169
43	121	123	125	127	129	131	134	137	140	144	148	152	156	160	163	167	170
44	122	124	126	128	130	132	135	138	141	145	149	153	157	161	164	168	171
45	122	124	126	128	130	132	135	138	141	145	149	153	157	161	164	168	171
46	123	125	127	129	131	133	136	139	142	146	150	154	158	162	165	169	172
47	123	125	127	129	131	133	136	139	142	146	151	155	159	163	166	170	173
48	124	126	128	130	132	134	137	140	143	147	152	156	160	164	167	171	174
49	124	126	128	130	132	134	137	140	143	147	152	156	161	165	168	172	175
50	125	127	129	131	133	135	138	141	144	148	152	156	161	165	169	173	176
51	125	127	129	131	133	135	138	141	144	148	152	157	162	166	170	174	177
52	125	127	129	131	133	135	138	141	144	148	152	157	162	166	170	174	177
53	125	127	129	131	133	135	138	141	144	148	152	157	162	166	170	174	177
54	125	127	129	131	133	135	138	141	144	148	153	158	163	167	171	174	177
55 and over .	125	127	129	131	133	135	138	141	144	148	153	158	163	167	171	174	177

Actuarial Society of America, "Medical Impairment Study," 1929.

NOTE.—Deduct 1½ inches for shoes and 4 pounds for clothes to determine nude weight.

CHAPTER VII.

ADEQUATE LOW-COST DIETS.

Booher (*Jour. Am. Med. Assn.*, 114, 548, 1940) presents tabulated data showing the allowance of major food groups which will provide the nutritive essentials for persons at different age levels for a period of one year at a relatively low cost. Assuming the family to consist of "one moderately active man, one moderately active woman, a five-year-old daughter and an eight-year-old son, this family's food requirements could be adequately met by weekly supplies of the kinds and quantities of foods (shown separately for each member of the family) indicated in Table 10. These weekly allowances of food provide for the approximate daily intake of calories, protein, fat and carbohydrate as well as certain minerals and vitamins in the quantities shown in Table 11.

TABLE 10.—A Good Low-Cost Diet: Approximate Quantities Needed for One Week for Specified Individuals.*

	Unit of measure.	Moderately active man, quantity	Moderately active woman, quantity.	Boy, 8 years, quantity	Girl, 5 years, quantity.
Flour, cereal†	Pound	4½	3½	2½	2
Milk (or its equivalent)	Quart	3½	3½	5	7
Potatoes, sweet potatoes	Pound	3	2½	2½	2
Dried legumes, nuts	Ounce	6	4	3	2
Tomatoes, citrus fruits	Pound	1½	1½	1½	1½
Leafy, green and yellow vegetables	Pound	3	3½	3½	2½
Dried fruits	Pound	½	½	½	½
Other vegetables and fruits	Pound	2	1½	1½	½
Butter	Ounce	6	6	6	4
Other fats	Ounce	10	6	1	..
Sugars	Pound	1½	1	½	½
Lean meat, poultry, fish	Pound	2½	1½	1½	½
Eggs	Number	3	4	5	5

* Based on the Yearbook of Agriculture, 1939, page 338.

† Count as 1 pound of flour each 1½ pounds of bread purchased.

TABLE 11.—A Good Low-Cost Diet: Approximate Nutritive Values Daily for Specified Individuals.*

	Unit of measure.	Moderately active man.	Moderately active woman.	Boy, 8 years.	Girl, 5 years.
Food energy value	Calories	3070	2510	2130	1750
Protein	Grams	95	78	76	66
Fats	Grams	117	94	82	68
Carbohydrates	Grams	409	338	271	214
Calcium	Grams	0.92	0.88	1.10	1.36
Phosphorus	Grams	1.54	1.33	1.42	1.40
Iron	Milligrams	15.4	19.3	12.3	9.4
Vitamin A	Int. units†	9000	9600	9500	7700
Vitamin B ₁	Int. units†	610	530	500	440
Ascorbic acid	Milligrams	80	80	70	60
Riboflavin	Sherman units	720	660	730	800

* Adapted from Yearbook of Agriculture, 1939, page 338.

† International units.

TABLE 12.—A Good Low-Cost Diet.*

Kinds and quantities of foods for a year													
Family members, description		Milk (quarts)	Potatoes, sweet potatoes (pounds)	Toma- toes, citrus fruits (pounds)	Leafy, green, yellow vege- tables (pounds)	Mature, dry legumes, nuts (pounds)	Other vege- tables, fruits (pounds)	Eggs (dozen)	Lean meat, poultry, fish (pounds)	Flour, cereals (pounds)	Butter (pounds)	Other fats (pounds)	Sugars (pounds)
Children under 2 years . .		260	80	65	80	..	..	18	..	50	7	..	3
Children 2 to 3 years . .		365	90	65	130	..	40	22	15	80	10	..	7
Boys:													
4 to 6 years . .		365	100	65	130	7	75	22	25	100	15	..	15
7 to 8 years . .		260-365	120	65	180	10	100	22	65	140	20	3	25
9 to 10 years . .		260-365	130	65	200	10	140	18	80	160	20	20	40
11 to 12 years . .		260-365	140	65	200	15	140	18	90	180	20	20	40
13 to 15 years . .		260-365	160	65	160	15	175	18	100	230	20	30	50
16 to 19 years . .		260-365	220	65	160	15	175	13	140	310	20	40	65
Girls:													
4 to 7 years . .		365	100	65	130	7	75	22	25	100	15	..	15
8 to 10 years . .		260-365	120	65	180	10	100	22	65	140	20	3	25
11 to 13 years . .		260-365	130	65	200	10	140	18	80	160	20	20	40
14 to 19 years . .		260-365	140	65	200	15	140	18	90	180	20	20	40
Men 20 years and over:													
Very active . .		180	300	65	160	25	175	13	160	420	20	60	80
Moderately active . .		180	160	65	160	20	175	13	130	230	20	30	65
Sedentary . .		260	140	65	180	10	140	18	90	160	20	20	40
Women 20 years and over:													
Very active . .		180	160	65	180	15	175	18	100	230	20	30	65
Moderately active . .		180	140	65	180	15	165	18	90	180	20	20	50
Sedentary . .		260	100	65	180	10	140	18	90	120	20	20	40
In pregnancy . .		365	140	65	250	10	200	22	90	170	20	20	40
In lactation . .		365	170	65	250	10	200	22	100	210	20	30	50
Yearly total for family													
Monthly total (divide by 12)													
Weekly total (divide by 50)													

*From the 1939 Yearbook of Agriculture (Food and Life).

CHAPTER VIII.

NUTRITIVE AND CALORIC VALUES OF FOODS.

Arrangement of Tabulated Data.

Percentage values are not readily compared. A quick survey of portions will enable the clinician or nutritionist to assign to the patient a more logical diet. It is irrational to delete items from the diet merely because the percentage composition of fats, for instance, is high; the size of the portion served may be such as to make the fats negligible.

The household measure is necessarily a rough one. The metric equivalents have been brought to the nearest 5 grams, except where the total is less than 15 grams. The composition of this metric portion is calculated to the nearest first decimal, and the calories are estimated to the nearest 5 except where this value is exceedingly low.

In ascertaining average portions, the judgment of five or more persons has been considered and the accepted portion weighed. The greatest disagreement was encountered with the portions of meat. Finally, the allotment for raw meat (to be eaten cooked) was taken at $\frac{1}{2}$ pound, and for cooked meat, at $\frac{1}{4}$ pound. For some persons these items should be halved.

Internationally distributed commercial brands of food are included in the tables to increase their value, since the use of these products has become so common. This innovation should facilitate the work of physicians, dietitians and nurses. With few exceptions the manufacturers are solely responsible for the analyses.

Wherever possible, carbohydrate data have been reported in the ensuing tables without fiber or other unassimilable matter. This is denoted by an asterisk on the percentage figure. Unfortunately this designation in most instances cannot be taken as representing true availability.

These tables have been arranged to show in plain numerals the percentage relationship of the various nutritive elements of specific foods. Simultaneously, the number of grams of each element in an average portion, together with the total caloric value of the same, is indicated in **boldface numerals**.

In handling such a mass of figures, many errors are liable to enter unnoticed. It is hoped with the care taken, that the mistakes in copying, calculating, checking and rechecking have been reduced to the vanishing point. If and when such errors are detected, the reader will report them, the author will consider it a great favor.

Bridges' Food Calorie Calculator.

The production of the four editions of "Dietetics for the Clinician," together with the publication of this book, necessarily required the author to make a great number of calculations in establishing gram quantities and Caloric values of the various foods.

It was found that, irrespective of the care observed in doing the mass of calculating necessary, apparently it was impossible to avoid arithmetical errors. The calculations were found to be more complicated when the Caloric values of 4.1, 4.1, 9.3 Calories per gram were utilized in place of 4.0, 4.0 and 9.0.

When the author was faced with the task of preparing these tables he formulated the appended key, which is felt to reduce to a minimum the error incidental to calculation and replaces multiplications by additions.

Table 13 is herewith presented as a simple computing key for those called upon to calculate swiftly and accurately grams and Calories of any specific food.

By way of illustrating its application, the following example is submitted:

	Size of Portion	Value of Portion			
	Grams.	Carb.	Prot.	Fat.	Cal.
Lima beans, green, fresh . .	75 $\frac{1}{2}$ cup	16 5	5 6	0 6	95
		22 0	7 5	0 8	

The combined carbohydrate and protein gram content is 22.1.

The Caloric value of carbohydrates and proteins is 4.1 Calories per gram. The Caloric value of fat is 9.3 Calories per gram.

In order to determine the Caloric value of 22.1 grams of carbohydrates and of proteins and 0.6 of fat, additions are made as follows:

Grams from Key.	Calories from Key.
20 0 grams, carbohydrate and protein, at 4 1 Calories per gram	= 82 0
2 0 grams, carbohydrate and protein, at 4 1 Calories per gram	= 8 2
0 1 grams, carbohydrate and protein, at 4 1 Calories per gram	= 0 4
22.1 grams	
0 6 gram, fat,	at 9.3 Calories per gram = 5 6
	Total 96.2

It can readily be seen that this short cut reaches the result more rapidly and with far less likelihood of error than the orthodox methods. Needless to say the carrying of final Caloric values to decimal places is both needless and ridiculous. For practical purposes the nearest multiple of 5 is the accepted figure which in this instance is 95.

For the sake of completeness the Caloric Key also carries the alcoholic Caloric equation.

TABLE 13.—Bridges' Caloric Key.

<i>Calories Alcohol (7.0)</i>	<i>Gram Units.</i>	<i>Calories C. & P. (4.1)</i>	<i>Calories Fat (9.3)</i>
70	10	41	93
140	20	82	186
210	30	123	279
280	40	164	372
350	50	205	465
420	60	246	558
490	70	287	651
560	80	328	754
630	90	369	837
700	100	410	930
7	1	4.1	9.3
14	2	8.2	18.6
21	3	12.3	27.9
28	4	16.4	37.2
35	5	20.5	46.5
42	6	24.6	55.8
49	7	28.7	65.1
56	8	32.8	75.4
63	9	36.9	83.7
70	10	41.0	93.0
0.7	0.1	0.41	0.93
1.4	0.2	0.82	1.86
2.1	0.3	1.23	2.79
2.8	0.4	1.64	3.72
3.5	0.5	2.05	4.65
4.2	0.6	2.46	5.58
4.9	0.7	2.87	6.51
5.6	0.8	3.28	7.54
6.3	0.9	3.69	8.37
7.0	1.0	4.10	9.30
0.07	0.01	0.041	0.093
0.14	0.02	0.082	0.186
0.21	0.03	0.123	0.279
0.28	0.04	0.164	0.372
0.35	0.05	0.205	0.465
0.42	0.06	0.246	0.558
0.49	0.07	0.287	0.651
0.56	0.08	0.328	0.754
0.63	0.09	0.369	0.837
0.70	0.10	0.410	0.930

Throughout these tables, reference is constantly made to the term "Calorie." As taught in elementary physics, a calorie is that amount of heat necessary to raise the temperature of 1 cc. of water 1° C. In food chemistry a different type of heat unit is utilized, called the "large calorie" in contradistinction to the calorie just described, which is termed the "small calorie." The "large calorie" (food calorie) is the amount of heat necessary to raise 1 kg. (1000 cc.) of water 1° C. Based on this definition, the following heat values have been physiologically determined:

TABLE 14.—Food Equivalents.

1 gram carbohydrate	= 4.1 Cal.	1 gram fat	= 9.3 Cal.
1 gram protein	= 4.1 Cal.	1 gram alcohol	= 7.0 Cal.

TABLE 15.—Abbreviations.

Teaspoonful	= t.	Inch	= "
Tablespoonful	= T.	Slice	= sl.
Cup	= c.	Small	= sm.
Average	= av.	Large	= lg.
Diameter	= diam.	Strip	= str.
Square	= sq.	Medium	= med.
Pound	= lb.	Scant	= sc.
As purchased	= A.P.	Edible portion	= E.P.
Commercial	= com.	Concentrated	= Conc.

TABLE 16.—Conversion Factors.

1 Teaspoonful (fluid)	= 5 cc.	1 Teacup (fluid)	= 140 cc.
1 Dessertspoonful (fluid)	= 10 cc.	1 Cup (fluid)	= 236 cc.
1 Tablespoonful (fluid)	= 15 cc.	1 Tumbler (fluid)	= 236 cc.
1 Demi-tasse (fluid)	= 70 cc.	1 Glass (fluid)	= 236 cc.
3 Teaspoonfuls	= 1 Tablespoonful	30 Grams*	= 1 Ounce
4 Tablespoonfuls	= $\frac{1}{4}$ Cup	60 Grams†	= 2 Ounces
8 Tablespoonfuls	= $\frac{1}{2}$ Cup	85 Grams‡	= 3 Ounces
16 Tablespoonfuls	= 1 Cup	115 Grams	= $\frac{1}{4}$ Pound
1 Cup	= 1 Glass	230 Grams	= $\frac{1}{2}$ Pound
2 Cups	= 1 Pint	460 Grams	= 1 Pound
4 Cups	= 1 Quart	1 Kilogram	= 2.2 Pounds

All quantities are calculated as level and unpacked. For viscous substances the weight indicated is that held in the measuring instrument, not that delivered by rapid draining.

The cup referred to is the "Standard Measuring Cup."

* Actual value = 28.4 gm. † Actual value = 56.8 gm. ‡ Actual value = 85.2 gm.

EXPLANATION OF TABLE.

Due to the large volume of data collected subsequent to the first edition of this work, it has been necessary to delete a number of the commercial infiltrations. The remaining commercial items have been restricted to the more commonplace products.

Efforts have been made to present a table of international character inasmuch as foodstuffs of world-wide origin are available in most urban and many rural centers. It is essential that the composition of unusual foods be known so that they may be intelligently accorded a place in diet therapy.

The high incidence of blank spaces under the Carbohydrate content of meats and fish is due to the lack of available data. Carbohydrates are usually regarded as being absent in these groups. Glycogen, which is found in meats and fish, is a wholly assimilable carbohydrate and warrants determination and tabulation.

The establishment of the household measures was the result of investigation of the amounts of the various foods allotted per portion in the raw and cooked states in diet kitchens and hotels. Wherever portions could not be readily agreed upon or where it was impractical to obtain a sample of the food for examination and weight, the size of portion is presented as 100 grams.

Figures are given for the edible portion of foods in the **raw** or **fresh** state unless otherwise designated.

The several varieties of the same food are generally presented in the following order: *Raw, cooked (home), canned, commercial, dried, salted, spiced, etc.* "**Cooked**" implies boiling.

The grams in the household measures and the Calories, with few exceptions, are entered in multiples of 5 wherever the amounts are more than 15.

The **boldface** numerals indicate the number of grams and calories in an average portion. The plain numerals indicate the percentage composition thereof. *Italicized* letters indicate trade names.

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TABLE 17.—Nutritive and Caloric Values of Foods.

A	Food items.	Size of portion.		Value of portion.			
		Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Abalone	230	½ lb.	7.6	49.9	0.2	240	
Abalone, canned	100	½ c.	3 3	21.7	0 1	105	
Acidophilus milk, com.	240	1 c.	3 7	21.7	0 1	115	
Agar-agar	10	1 T.	9.0	8.2	4.8	—	
Ale yeast, dried	10	2 t.	*3 8	3 4	2 0	—	
Alewives	230	½ lb.	72 7	1.6	0 3	290	
Alfalfa bread	25	1 sl.	4.8	3.9	0.1	80	
Algae, Hawaiian:			48 4	38 9	1.2		
Limu eleele	25	2 T.	—	—	—	3	
Limu lipoa	25	2 T.	—	2 8	Trace	2	
Alimentary pastes:			—	0.4	—		
Alphabets	25	½ c.	—	1 6	Trace		
Macaroni (average)	75	½ c.	18.9	2.9	0.3	90	
Macaroni, boiled	240	1 c.	75 6	11 7	1 0	275	
Noodles	60	½ c.	55.6	10.1	0.7	220	
Spaghetti	100	½ c.	74 1	13 4	0 9	365	
Vermicelli	60	½ c.	37.9	7.2	3.6	215	
All-Bran, Kellogg	3	1 T.	15 8	3 0	1 5	9	
Alligator pear, see Avocado.			45.4	7.0	0.6		
Almond butter	15	1 T.	75 2	11 7	1 0	105	
Almond extract, Burnett, A.P.	5	1 t.	75.9	12.1	0.4	0	
Almond meal	25	2 T.	75 9	12 1	0 4		
Almond paste (Marzipan)	10	1 t.	43.2	6.5	1.2	50	
Almonds	30	20	72 0	10 9	2 0	175	
Alphabets	25	½ c.	1.7	0.4	0.1	90	
Amaranth, Chinese	100		*58 0	13 8	4 5		
American cheese, pale	15	2" x 1½" x ½"	1.2	3.2	9.2	70	
American cheese, red	15	2" x 1½" x ½"	7 9	22 1	61 5		

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 49

Food items.	Size of portion.		Value of portion.			Cal.
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Anchovy	15	1	0.2	2.3	0.5	15
			*1.7	15.3	3.6	
Anchovy, cooked	15	1		3.2	0.8	20
				21.5	5.7	
Anchovy, salted	15	1		3.1	1.2	25
				20.9	8.3	
Anchovy paste	6	1 t.	0.1	1.2	0.7	12
			*2.5	20.6	12.1	
Anserine, see Lambsquarters, Algerian.						
Apples:						
Summer	130	1, 2½" diam.	12.2	0.4	0.5	55
			*9.4	0.3	0.4	
Fall	130	1, 2½" diam.	13.5	0.4	0.4	60
			*10.4	0.3	0.3	
Winter	130	1, 2½" diam.	14.6	0.4	0.4	65
			*11.2	0.3	0.3	
Baked without sugar	120	1	12.0	0.4	—	50
			*10.0	0.3	Trace	
Baked, canned	120	1	37.0	0.8	0.5	160
			*30.8	0.7	0.4	
Stewed without sugar	135	½ c.	5.9	0.1	—	25
			*4.4	0.1	Trace	
Dried	60	½ lb.	32.4	0.8	0.6	140
			*54.0	1.4	1.0	
Apple:						
Butter	40	1 heaping T.	19.6	0.2	0.4	85
			48.9	0.4	1.1	
Butter, com.	35	1 T.	14.7	0.3	—	60
			42.0	0.7	Trace	
Dumpling	100	1	28.1	2.4	9.3	210
			*28.1	2.4	9.3	
Flour (Italian)	100	½ c.	40.8	3.4	—	180
			*40.8	3.4	—	
Juice	120	½ c.	12.6	0.1	—	50
			*10.5	0.1	—	
Pie	100	1 sl.	32.6	2.3	8.7	225
			*32.6	2.3	8.7	
Powder	10	1 T.	8.4	0.2	0.2	35
			84.1	1.5	2.5	
Sauce, canned, unsweetened	135	½ c.	10.9	0.3	0.3	50
			*7.9	0.2	0.2	
Juice pack	135	½ c.	16.2	0.3	0.3	70
			*12.0	0.2	0.2	
Sweetened	135	½ c.	23.8	0.3	0.1	100
			*17.6	0.2	0.1	
Apricots	50	2, 1½" diam.	3.3	0.3	—	15
			*6.7	0.6	—	
Canned, water pack	120	½ c.	7.7	0.6	0.1	35
			*6.4	0.5	0.1	
Canned, juice pack	120	½ c.	11.3	0.6	0.2	50
			*9.4	0.5	0.2	
Canned, in syrup	120	½ c.	25.7	0.7	0.1	110
			21.4	0.6	0.1	
Candied	10	1 half	8.7	—	—	35
			86.5	0.6	0.2	
Dried	50	10 halves	21.7	2.4	0.5	105
			*43.4	4.7	1.0	
Stewed without sugar	130	½ c. (10)	23.4	2.6	—	105
			*18.0	2.0	Trace	
Apricot jam	25	1 T.	13.7	0.2	—	55
			55.0	0.8	Trace	

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A

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure	Carb.	Prot.	Fat.	Cal.
Apricot sauce	130	$\frac{1}{2}$ c.	63.4 48.8	2.5 1.9	1.7 1.3	285
Arrowhead tubers (wappato)	50	1 sm.	11.1 *22 2	4.2 8.4	0.6 1 2	70
Arrowroot starch	26	2 T.	23.6 *90 6	0.1 0 4	— 0 1	95
Artichokes:						
Globe or French	50	1, 3" diam.	6.0 11 9	1.5 2 9	0.2 0.4	30
Globe, boiled	100	4 hearts	2.7 *2.7	1.1 1 1	— Trace	15
French, canned	125	5 hearts, sm.	5.5 *4 4	1.0 0 8	— —	25
Jerusalem	100	1 lg. tuber	17.0 17.0	2.2 2 2	0.1 0 1	80
Jerusalem, boiled	100	1 lg.	3.2 *3 2	1.6 1.6	— Trace	20
Asparagus, green	75	6, 6" stalks	1.9 *2 5	1.7 2 2	0.2 0 2	15
Cooked	85	6, $3\frac{1}{4}$ " stalks	1.2 *1 4	1.8 2 1	0.3 0 3	15
Canned	85	6, $3\frac{1}{4}$ " long	1.9 *2 3	1.3 1 5	0.1 0 1	14
Canned, com.	100	5 stalks	2.8 2 8	1.7 1 7	0.2 0 2	20
Soup, canned, conc.	140	$\frac{1}{2}$ c.	9.8 7.0	1.8 1 3	1.7 1 2	65
Soup, cream of, com.	240	1 c.	9.1 3 8	1.9 0 8	7.9 3.3	120
Asparagus-beans, pods	100	1 c.	7.8 *7 8	3.4 3 4	0.3 0 3	50
Asparagus-beans, sprouted seeds	100		3.3 *3.3	2.4 2 4	0.4 0.4	25
<i>Aunt Jemima</i> buckwheat, corn and wheat flour, Quaker	100	$\frac{1}{2}$ c.	69.0 69 0	11.2 11 2	2.1 2 1	350
<i>Aunt Jemima</i> pancake flour, Quaker	100	$\frac{1}{2}$ c.	71.6 71.6	10.4 10 4	1.5 1 5	350
Avocados:						
Calavo strain, see Calavo	85	$\frac{1}{2}$ sm.	5.1 6 0	1.8 2 1	17.0 20 0	185
Florida	85	$\frac{1}{2}$, $3\frac{1}{4}$ " long	2.8 3 3	1.4 1 7	22.4 26 4	225
Fuerte, hybrid race	85	$\frac{1}{2}$, $3\frac{1}{4}$ " long	4.3 5 1	1.5 1 7	22.4 26 4	230
Guatemalan race	85	$\frac{1}{2}$, $3\frac{1}{4}$ " long	4.6 5 4	1.7 2 0	14.6 17 2	160
Mexican race	50	$\frac{1}{2}$ med.	3.4 6.7	1.0 2.0	11.6 23.2	125
West Indian race (Alligator pear)	85	$\frac{1}{2}$, $3\frac{1}{4}$ " long	6.6 7.8	1.1 1 3	6.6 7 7	95

B

<i>Baby Ralston</i>	15	1 T.	10.7 71 6	2.2 14 8	0.3 2 0	55
<i>Bacillus acidophilus</i> milk, com.	240	1 c.	9.0 *3 8	8.2 3 4	4.8 2 0	115

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 51

Food items.	Size of portion.		Value of portion.			B
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Bacon, smoked	80	4 str. 8½" long		8.4 10 5	51.8 64 8	515
Bacon, back, pea-mealed, Canadian, fried	60	½ lb.		16.2 27.1	2.8 4 6	90
Bacon, breakfast, broiled crisp	20	4 str. 7" long¹		7.2 35 8	9.1 45 6	115
Baking Powders:						
Calumet			—	—	0	—
Davis			34 3	—	0	—
Loeb			41.2	—	0	—
Royal			0	0	0	0
Rumford			0	0	0	—
Bamboo shoots	100	½ c.	—	—	0	—
Bananas, also see Plantain.			44.0	0	0	—
Bananas	125	1, 7" x 1½"	5.1 5 1	2.5 2 5	0.3 0 3	35
Bananas, Fla.	125	1 med.	26.2 *21 0	1.6 1 3	0.8 0 6	120
Bananas, red	140	1	28.0 22 4	1.5 1 2	0.3 0 2	125
Banana or pisang flour	100	½ c.	32.0 22 7	1.8 1 3	1.1 0 8	150
Barley:			72.5 72 5	3.5 3 5	0.8 0 8	320
Whole grain	30	½ c.	23.2 77 2	3.7 12 4	0.5 1 8	115
Cream of	50	½ c.	38.0 76.1	5.6 11 1	0.8 1 6	185
Pearled	30	3 T.	23.2 77 8	2.6 8 5	0.3 1.1	110
Pearled, boiled	100	½ c.	27.6 *27.6	2.9 2 9	0.6 0 6	130
Robinson's patent	9	1 T.	7.0 *78 3	0.6 6 3	0.1 1 0	35
Scotch pearled, Quaker	30	3 T.	23.1 77 1	3.1 10 5	0.2 0 8	110
Meal and flour	130	1 c.	94.6 72 8	13.7 10 5	2.9 2 2	470
Basella, see Vinespinach.						
Bass, black	230	½ lb.		47.4 20 6	3.9 1 7	230
Bass, red	230	½ lb.		38.9 16.9	1.1 0 5	170
Bass, sea	230	½ lb.		46.0 20 0	2.3 1 0	210
Bass, striped	230	½ lb.		44.8 18 6	6.4 2 8	245
Bass, steamed	115	½ lb.		22.4 19 5	5.9 5 1	145
Batavian endive	50	½ heart	0.5 *0 9	0.6 1.1	Trace 0.1	5
<i>Battle Creek Food Co. products, see page 146.</i>						

¹ One 7" strip raw bacon weighs 12-15 g.; cooked crisp, weight is reduced to 5-8 g. depending upon leanness of strip.

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B

Food items	Size of portion.		Value of portion.			
	Grams.	Household measure	Carb.	Prot.	Fat.	Cal.
Bean flour, lima . . .	100	1½ c. sc.	63.0	21.5	1.4	360
			63 0	21.5	1.4	
Bean soup, canned, conc. .	140	½ c.	19.6	8.5	2.5	140
			14 0	6.1	1.8	
Soup, com.	250	1 c.	25.0	13.3	10.5	255
			10 0	5 3	4.2	
Beans:						
Baked, canned	250	1 c.	41.5	14.0	2.8	230
			16 6	5 6	1.1	
Baked, Boston style, com. .	250	1 c.	45.0	15.0	20.0	430
			18 0	6 0	8 0	
Baked, pork and tomato sauce, com.	250	1 c.	50.0	18.8	5.0	330
			20 0	7.5	2 0	
Baked, vegetarian, com. .	250	1 c.	50.0	17.5	—	275
			20 0	7.0	—	
Broad, green	75	½ c.	10.3	6.1	0.5	75
			*13.8	8 1	0 6	
Broad, green pods	100		11.9	3.0	0.3	65
			11.9	3 0	0 3	
Broad, cooked	125	½ c.	8.9	5.1	—	55
			*7 1	5 1	Trace	
Butter	75	½ c.	21.8	7.1	0.5	125
			29 1	9 4	0 6	
Butter, cooked	100	½ c.	17.1	7.1	—	100
			*17.1	7 1	Trace	
Carob	10	4" piece	6.7	0.6	0.1	30
			67 0	5 7	1 1	
Cranberry, young pods .	100		0.6	0.4	0	4
			0 6	0 4	0	
Cranberry, medium pods	100		1.7	1.3	0.6	20
			1.7	1 3	0 6	
Fave	75	½ c.	3.1	4.0	—	30
			4.2	5 4	—	
Fave, dried	75	½ c.	36.1	17.7	1.9	240
			48.2	23.6	2 5	
Frigoles, dried	75	½ c.	48.8	16.4	1.0	275
			65 1	21.9	1 3	
Green, canned	100	½ c.	3.4	1.2	0.1	20
			3 4	1.2	0 1	
Haricots, cooked	125	½ c.	20.7	8.2	—	120
			*16 6	6 6	Trace	
Haricots flageolets, canned	130	½ c.	14.9	5.9	0.1	85
			*11.5	4 6	0 1	
Haricots verts, canned	130	½ c.	2.6	1.4	0.1	15
			*2 0	1 1	0.1	
Kidney, baked, com.	250	1 c.	52.5	18.8	3.8	330
			21.0	7 5	1 5	
Kidney, canned	250	1 c.	43.3	17.5	0.5	255
			*17 3	7 0	0 2	
Lima, green	75	½ c.	16.5	5.6	0.6	95
			*22 0	7 5	0 8	
Lima, canned	130	½ c.	19.0	5.2	0.4	105
			14 6	4 0	0 3	
Lima, dried	75	½ c.	49.4	13.6	0.5	265
			65 9	18.1	1 5	
Lima, yellow, cooked	125	½ c.	27.5	11.2	1.0	170
			22 0	9 0	0 8	
Mesquite, dried	75	½ c.	57.8	9.2	1.9	290
			77 1	12.2	2 5	

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 53

Food items	Size of portion.		Value of portion.			B
	Grams	Household measure.	Carb.	Prot.	Fat.	
Beans:						
Mung, solid, green seed	100		59.9	23.3	1.0	350
			59.9	23.3	1.0	
Mung, sprouts	125	1 c.	4.1	3.6	0.4	35
			*3.3	2.9	0.3	
Navy, dried	75	$\frac{1}{2}$ c.	44.7	16.9	1.4	270
			59.6	22.5	1.8	
Refugee, canned	130	$\frac{3}{4}$ c.	6.5	1.0	0.1	30
			5.0	0.8	0.1	
Scarlet runner, green pods	100		4.7	1.4	0.1	25
			*4.7	1.4	0.1	
Scarlet runner, cooked	130	$\frac{3}{4}$ c.	1.2	1.0	—	10
			*0.9	0.8	Trace	
Snap	75	$\frac{3}{4}$ c.	4.7	1.8	0.2	30
			*6.3	2.4	0.2	
Soy, green	75	$\frac{1}{2}$ c.	9.9	10.2	4.9	130
			13.2	13.6	6.3	
Soy, green, cooked	125	$\frac{1}{2}$ c.	17.2	18.0	4.4	185
			13.8	14.4	3.5	
Soy, dried	100	$\frac{1}{2}$ c.	33.1	30.2	15.3	400
			33.1	30.2	15.3	
Soy, sprouts	65	$\frac{1}{2}$ c.	4.1	5.5	1.2	50
			6.3	8.5	1.8	
String	75	$\frac{1}{2}$ c.	5.8	1.8	0.2	35
			7.7	2.4	0.2	
String, cooked	130	$\frac{3}{4}$ c.	4.5	1.3	0.1	25
			3.5	1.0	0.1	
String, cooked in much water	130	$\frac{3}{4}$ c.	2.5	1.0	0.1	15
			1.9	0.8	0.1	
String, canned	130	$\frac{3}{4}$ c.	4.9	1.4	0.1	25
			3.8	1.1	0.1	
Wax	75	$\frac{1}{2}$ c.	11.0	3.5	0.2	60
			14.6	4.7	0.3	
Wax, canned	130	$\frac{3}{4}$ c.	3.2	1.3	0.1	20
			*2.5	1.0	0.1	

Beech-Nut strained foods, see page 156.

Beechnuts	20	$\frac{1}{2}$ c.	2.6	4.4	11.5	135
			13.2	21.9	57.4	
Beef, fresh:						
Brains	230	$\frac{1}{2}$ lb.	2.5	22.1	21.4	300
			1.1	9.6	9.3	
Brisket, medium fat	230	$\frac{1}{2}$ lb.	36.3	65.6	76.0	760
			15.8	28.5		
Chuck, average (<i>f'</i> , 9-32)	230	$\frac{1}{2}$ lb.	43.3	35.4	50.5	505
			19.2	15.4		
Cross ribs, average	230	$\frac{1}{2}$ lb.	36.6	64.9	75.5	755
			15.9	28.2		
Flank, average (<i>f'</i> , 30-62)	230	$\frac{1}{2}$ lb.	33.6	92.0	99.5	995
			14.6	40.0		
Fore-quarter, lean	230	$\frac{1}{2}$ lb.	43.5	30.5	46.0	460
			18.9	12.2		
Fore-shank, lean	230	$\frac{1}{2}$ lb.	50.6	14.0	34.0	340
			22.0	6.1		
Heart	115	$\frac{1}{2}$ lb.	1.2	18.4	23.5	300
			1.0	16.0	20.4	
Hind-quarter, lean	230	$\frac{1}{2}$ lb.	46.0	30.8	47.5	475
			20.0	13.4		

f', range of fat percentage.

* Largely assimilable.

Blank space indicates lack of data.

‡ Gross fat removed.
Negligible quantity is designated by —.

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Food items	Size of portion.		Value of portion.			
	Grams	Household measure.	Carb.	Prot.	Fat.	Cal.
Beef, fresh:						
Hind-shank, lean	230	½ lb.		50.4	12.4	320
				21.9	5.4	
Hind-shank, fat	230	½ lb.		46.9	43.2	595
				20.4	18.8	
Kidney	155	½ c. diced	0.6	25.7	7.4	175
			0.4	16.6	4.8	
Liver	230	½ lb.	5.8	46.9	12.4	310
			2.5	20.4	5.4	
Loin, lean	230	½ lb.		42.8	36.8	520
				18.6	16.0	
Loin, average (<i>f'</i> , 16-43)	230	½ lb.		38.9	57.5	695
				16.9	25.0	
Lungs	115	½ lb.		17.8	3.5	105
				15.5	3.0	
Marrow	20	1 T.		0.4	18.6	175
				2.2	92.8	
Muscle, not trimmed	230	½ lb.	3.0	35.7	30.2	440
			1.3	19.9	13.1	
Muscle, well trimmed	230	½ lb.	3.1	46.4	12.9	325
			1.4	20.2	5.6	
Neck, average (<i>f'</i> , 8-35)	230	½ lb.		46.2	38.0	550
				20.1	16.5	
Plate, lean	230	½ lb.		35.9	43.2	550
				15.6	18.8	
Plate and brisket, average (<i>f'</i> , 21-51)	230	½ lb.		36.3	69.0	790
				15.8	30.0	
Porterhouse steak	230	½ lb.		50.4	46.9	645
				21.9	20.4	
Ribs, average (<i>f'</i> , 12-44)	230	½ lb.		40.0	52.9	655
				17.4	23.0	
Rib rolls, lean	230	½ lb.		46.5	24.2	415
				20.2	10.5	
Round, average (<i>f'</i> , 8-24)	230	½ lb.		44.4	29.9	460
				19.3	13.0	
Rump, average (<i>f'</i> , 14-48)	230	½ lb.		35.7	71.3	810
				15.5	31.0	
Scraped	40	2 T.		9.2	1.0	45
				23.0	2.5	
Shank, fore, average (<i>f'</i> , 6-18)	230	½ lb.		46.9	20.7	385
				20.4	9.0	
Shank, hind, average (<i>f'</i> , 7-23)	230	½ lb.		46.2	23.0	405
				20.1	10.0	
Shoulder and clod	230	½ lb.		46.0	23.7	410
				20.0	10.3	
Sides, average (<i>f'</i> , 13-39)	230	½ lb.		40.3	50.6	635
				17.5	22.0	
Sirloin steak	230	½ lb.		43.5	42.5	575
				18.9	18.5	
Suet	10	1 T.		0.5	8.2	80
				4.7	81.8	
Sweetbreads	115	½ lb.		19.3	13.9	210
				16.8	12.1	
Tenderloin	230	½ lb.		37.3	56.1	675
				16.2	24.4	
Tongue	75	5 med. sl.	0.8	14.6	17.7	230
			1.1	19.4	29.6	

f', range of fat percentage.

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 55

Food items.	Size of portion.		Value of portion.			B
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Beef, cooked:						
Boiled	115	$\frac{1}{2}$ lb.	0.5	39.2	8.6	245
			0.4	34.1	7.5	
‡Boiled	115	$\frac{1}{2}$ lb.	0.8	39.3	9.4	250
			0.7	34.2	8.2	
Chipped	60	$\frac{1}{2}$ lb.		15.8	4.1	105
				26.4	6.9	
Clod, braised	115	$\frac{1}{2}$ lb.		26.2	33.8	420
				22.8	29.4	
Clod, roasted	115	$\frac{1}{2}$ lb.		29.1	25.3	355
				25.3	22.0	
Corned, cooked	115	$\frac{1}{2}$ lb.		16.4	27.3	320
				14.3	23.8	
‡Fillet, broiled	115	$\frac{1}{2}$ lb.		27.8	9.0	200
				24.2	7.9	
‡Prime ribs, roasted	115	$\frac{1}{2}$ lb.		30.9	6.2	185
				26.9	5.4	
Ribs, roasted, choice grade	115	$\frac{1}{2}$ lb.		24.7	42.7	500
				21.5	37.1	
Ribs, roasted, good grade	115	$\frac{1}{2}$ lb.		29.1	25.3	315
				25.3	22.0	
‡Roasted	115	$\frac{1}{2}$ lb.		31.6	5.6	185
				27.5	4.9	
Roasted, cold	115	$\frac{1}{2}$ lb.		30.5	27.8	400
				26.5	24.2	
‡Round of, boiled	115	$\frac{1}{2}$ lb.		32.2	3.6	165
				28.0	3.1	
Round (bottom), braised	115	$\frac{1}{2}$ lb.		34.5	18.3	315
				30.0	15.9	
Round (top), roasted, choice grade	115	$\frac{1}{2}$ lb.		32.5	19.1	310
				28.3	16.6	
Round (top), roasted, good grade	115	$\frac{1}{2}$ lb.		35.2	10.3	240
				30.6	9.0	
‡Sirloin, broiled	115	$\frac{1}{2}$ lb.		33.9	6.9	205
				29.5	5.1	
Steak, fried, med. fat	115	$\frac{1}{2}$ lb.		23.5	23.5	315
				20.4	20.4	
Steak, grilled	115	$\frac{1}{2}$ lb.		29.0	24.8	350
				25.2	21.6	
‡Steak, round, broiled	115	$\frac{1}{2}$ lb.		34.3	3.6	175
				29.8	3.1	
‡Steak, tenderloin, broiled, rare	115	$\frac{1}{2}$ lb.		27.2	14.5	250
				23.9	12.6	
‡Steak, tenderloin, broiled, well done	115	$\frac{1}{2}$ lb.		32.8	10.5	230
				28.5	9.1	
‡Sweetbreads, boiled	80	2		17.8	6.9	135
				22.2	8.6	
Top clod, roasted	115	$\frac{1}{2}$ lb.		28.3	30.4	400
				24.6	26.4	
Topside, boiled, lean	115	$\frac{1}{2}$ lb.		33.3	9.4	245
				33.3	8.2	
Topside, roast, lean	115	$\frac{1}{2}$ lb.		30.7	17.3	285
				26.7	15.0	
Topside, roast, med. fat	115	$\frac{1}{2}$ lb.		27.8	27.4	370
				24.2	23.8	
Beef, canned:						
Collops, minced	115	$\frac{1}{2}$ lb.	1.3	20.5	7.5	295
			1.1	17.8	6.8	

56 *TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS*

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Beef, canned:						
Corned	115	$\frac{1}{2}$ lb.		30.3	21.5	325
				26.3	18.7	
Kidney, stewed	115	$\frac{1}{2}$ lb.	2.4	21.2	5.9	150
			2 1	18.4	5.1	
Luncheon	115	$\frac{1}{2}$ lb.		31.7	18.3	300
				27.6	15.9	
Roasted	115	$\frac{1}{2}$ lb.		30.0	17.0	280
				25.9	14.8	
Sweetbreads	115	$\frac{1}{2}$ lb.		23.2	10.9	195
				20.2	9.5	
Tongue, ground	115	$\frac{1}{2}$ lb.		24.6	28.9	370
				21.4	25.1	
Tongue, whole	115	$\frac{1}{2}$ lb.		22.5	26.7	340
				19.5	23.2	
Tripe	115	$\frac{1}{2}$ lb.		19.3	9.8	170
				16.8	8.5	
Beef, miscellaneous:						
Dried, salted and smoked	60	$\frac{1}{2}$ lb.	0.3	18.0	3.9	110
			0 4	30.0	6.5	
Dripping	10	1 T.	0	—	9.9	90
			0	Trace	99.0	
Hash, corned, canned	230	$\frac{1}{2}$ lb.	34.9	23.0	3.9	275
			15 2	10.0	1.7	
Hash, roast, canned	230	$\frac{1}{2}$ lb.	26.2	21.8	14.7	335
			11 4	9.5	6.4	
Juice	120	$\frac{1}{2}$ c.		5.9	0.7	30
				4.9	0.6	
Sausage (beef and pork)	115	$\frac{1}{2}$ lb.		22.3	27.7	350
				19.4	24.1	
Sausage, fried	60	2 oz.	9.4	8.3	11.0	120
			*15 7	13.8	18.4	
Soup, see Soups, canned.						
Spiced, corned and pickled	115	$\frac{1}{2}$ lb.		13.8	59.1	605
				12.0	51.4	
Stew	115	$\frac{1}{2}$ lb.	2.9	12.8	6.7	125
			*2 5	11.1	5.8	
Stew, canned	115	$\frac{1}{2}$ lb.	9.0	8.3	1.6	85
			7.8	7.2	1.4	
Tongue, pickled	60	2 oz.		7.7	12.3	145
				12.8	20.5	
Tripe, corned and pickled	115	$\frac{1}{2}$ lb.	0.2	13.4	1.4	70
			0 2	11.7	1.2	
Beefsteak sauce, com.	5	1 t., sc.	0.8	0.1	Trace	4
			16.0	2.3	1.2	
Beets, common red	100	$\frac{1}{2}$ c. diced	8.8	1.6	0.1	45
			*8 8	1.6	0.1	
Beets, cooked	100	$\frac{1}{2}$ c.	6.5	2.3	0.1	35
			*6 5	2.3	0.1	
Beets, canned	100	$\frac{1}{2}$ c.	11.5	1.5	0.1	55
			11.5	1.5	0.1	
Beet greens	100	1 c.	4.2	2.0	0.3	30
			*4 2	2.0	0.3	
Beet greens, cooked	135	$\frac{1}{2}$ c.	4.3	3.0	—	30
			3 2	2.2	—	
Bel Paese, Italian cheese	30	1 oz.		6.4	7.0	90
				21.3	23.5	
"Biotes" (acorns)	100		48.0	8.1	37.4	580
			48.0	8.1	37.4	

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 57

Food items.	Size of portion.		Value of portion.			B
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Biscuits, see Crackers						
Bisquick	100	$\frac{1}{2}$ c.	61.9	8.8	12.4	405
			61.9	8.8	12.4	
Black walnuts	35	6 (whole)	4.1	9.7	19.7	240
			11.7	27.6	56.3	
Black rice, see Rice, wild.						
Blackberries	60	$\frac{1}{2}$ c.	5.0	0.8	0.6	30
			*8.4	1.3	1.0	
Blackberries, stewed without sugar	120	$\frac{1}{2}$ c.	4.6	0.8	—	25
			*3.8	0.7	Trace	
Blackberries, canned, see Fruits, canned.						
Blackberry juice	120	$\frac{1}{2}$ c.	8.4	0.4	—	35
			7.0	0.3	—	
Blackfish	230	$\frac{1}{2}$ lb.		43.0	3.0	205
				18.7	1.3	
Black-salsify	100		16.3	3.1	0.3	80
			*16.3	3.1	0.3	
Blanc-mange	50		9.1	1.6	1.8	60
			*18.2	3.2	3.7	
Bloater	115	$\frac{1}{2}$ lb.		22.7	15.6	240
				19.7	13.6	
Bloater, paste	6	1 t.	0.2	1.2	0.7	12
			*4.0	20.1	12.0	
Blood pudding or sausage	60	2 oz.		8.9	20.7	230
				14.8	34.6	
Blue pike	230	$\frac{1}{2}$ lb.		43.0	1.2	190
				18.7	0.5	
Blueberries	100	$\frac{1}{2}$ c.	9.7	0.6	0.6	50
			*9.7	0.6	0.6	
Blueberries, canned, water pack	120	$\frac{1}{2}$ c.	10.8	0.5	0.5	50
			9.0	0.4	0.4	
Blueberries, canned, juice pack	120	$\frac{1}{2}$ c.	13.2	0.5	0.5	60
			11.0	0.4	0.4	
Blueberries, canned, in syrup	120	$\frac{1}{2}$ c.	31.2	0.5	0.5	135
			26.0	0.4	0.4	
Blueberries, canned, see also Fruits, canned.						
Blueberry juice	120	$\frac{1}{2}$ c.	14.9	0.1	—	60
			*12.4	0.1	—	
Bluefish	230	$\frac{1}{2}$ lb.		44.7	2.8	210
				19.4	1.2	
Bockwurst	60	2 oz.		7.0	13.1	150
				11.7	21.8	
Bologna sausage	75	6 sl.	0.2	14.0	13.2	180
			0.3	18.7	17.6	
Bologna, all meat	75	6 sl.		10.8	13.3	170
				14.4	17.8	
Bologna, added cereal	75	6 sl.	2.7	11.1	11.9	165
			3.6	14.8	15.9	
Bondon cheese	30	2 T.		2.8	7.3	80
				9.4	24.4	
Bone-marrow	20	1 T.	0	0.4	18.6	175
			0	2.2	92.8	
Borage, leaves and stems	75	1 $\frac{1}{2}$ c.	0.2	2.1	0.3	12
			*0.3	2.8	0.4	
Bouillon, beef, canned	240	1 c.	0.7	6.2	0.2	30
			0.3	2.6	0.1	

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B	Food items.	Size of portion.		Value of portion.			
		Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
	Bouillon, beef, cube . . .	3.6	1 cube	0.2	0.4	0.1	3
				5.8	11.4	1.8	
	Bouillon, canned, conc. . .	120	½ c.	0.1	4.7	—	20
				0.1	3.9	—	
	Bouillon, tomato, canned . .	240	1 c.	1.0	2.6	0.7	20
				0.4	1.1	0.3	
	Borvil	7	1 t.	0.2	2.7	Trace	11
				3.4	38.8	0.2	
Brains, fresh:							
	Beef	230	½ lb.	2.5	22.1	21.4	300
				1.1	9.6	9.3	
	Horse	230	½ lb.	28.1	29.2	38.5	385
				12.2	12.6		
	Lamb	230	½ lb.	21.8	16.8	24.5	245
				9.5	7.3		
	Pork	230	½ lb.	26.9	23.7	33.0	330
				11.7	10.3		
	Veal	230	½ lb.	23.8	20.7	29.0	290
				10.6	9.0		
Brains, cooked:							
	Calf, boiled	115	½ lb.	13.8	6.7	12.0	120
				12.0	5.8		
	Sheep, boiled	115	½ lb.	13.5	7.7	11.7	125
				11.7	6.7		
	Bran Flakes, Kellogg	30	½ c.	21.3	4.0	0.7	110
				71.5	13.3	2.3	
	Bran Flakes, Post	30	½ c.	22.4	3.6	0.5	110
				74.6	12.0	1.8	
	Bran, wheat, Pillsbury . . .	3	1 T.	1.7	0.5	0.1	9
				57.5	16.5	4.6	
	Bran, whole, Post	3	1 T.	2.0	0.4	0.1	11
				66.6	13.9	3.0	
	Braunschweiger sausage . . .	60	2 oz.	0	9.2	14.3	170
				0	15.4	23.8	
	Brazil nuts	30	4 av.	1.2	4.1	18.4	195
				*4.1	13.8	61.5	
Breads:							
	Alfalfa	25	1 sl.	16.0	4.9	0.3	90
				64.0	19.6	1.3	
	Boston brown	30	1 sm. sl.	13.0	2.0	1.0	70
				43.3	6.7	3.3	
	Buns, cinnamon	50	1 med.	28.0	3.9	2.7	155
				56.0	7.8	5.4	
	Corn	100	4½" sq.	43.6	6.6	7.3	275
				43.6	6.6	7.3	
	Cracked wheat, Ward	25	1 sl.	11.9	2.1	0.7	65
				47.9	8.6	2.9	
	Crumbs, white, dried	55	½ c.	41.8	7.2	1.1	210
				76.0	13.0	2.0	
	Flatbread	100		73.6	14.9	0.5	365
				73.6	14.9	0.5	
	French	20	1 sl.	10.8	1.6	0.2	55
				53.8	8.1	1.0	
	Ginger	60	1 sq.	30.8	2.5	7.1	205
				51.4	4.2	11.9	
	Gluten wheat	25	1 sl.	7.2	6.2	0.9	65
				28.9	25.0	3.6	
	Graham, made with milk . .	30	1 sl.	14.1	3.0	1.2	85
				47.0	10.0	4.0	

* Largely assimilable.
Blank space indicates lack of data.

† Gross fat removed.
Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 59

Food items.	Size of portion.		Value of portion.			B
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Breads:						
Graham, made with water	30	1 sl.	14.7	2.7	0.9	80
Holland Rusk	15	1	49.0	9.0	3.0	
Peanut	30	1 sl.	10.5	1.8	0.7	55
Pilot	25	1 cracker	70.4	12.1	5.1	
Pumpernickel	25	1 sl.	5.9	10.0	3.8	100
Raisin	20	1 sl.	19.7	33.6	12.8	
Rolls:			18.6	2.8	1.3	100
Plain	50	1, 4½" x 2½"	74.2	11.1	5.0	
French	40	1	12.4	1.7	0.3	50
Vienna	50	1	49.7	6.7	1.2	
Water	40	1	10.6	1.8	0.6	55
Rye	25	1 sl.	53.0	9.0	3.0	
Rye, black	30	1 sl.	30.0	4.9	2.1	165
Rye, Jewish	30	1 sl.	59.9	9.7	4.2	
Rye, whole	30	1 sl.	22.3	3.4	1.0	115
Rye and wheat	25	1 sl.	55.7	8.5	2.5	
Vienna	20	1 sl.	28.3	4.3	1.1	145
Wheat (average)	25	1 sl.	56.5	8.5	2.2	
White, milk	25	1 sl.	21.7	3.6	1.2	115
White, fried	30	1 sl.	54.2	9.0	3.0	
Whole wheat or Graham	30	1 sl.	13.3	2.3	0.2	65
Yorkshire pudding	50	1 sq.	53.2	9.0	0.6	
Zwieback	5	1, 3" x 1½"	14.7	2.9	0.2	75
Breadfruit, Hawaiian	100	½ c.	48.9	9.6	0.6	
Breadstuffs, see Crackers, Toast, etc.			15.6	2.7	0.3	80
Breakfast foods, see Cereals.			52.0	9.1	1.1	
Br'er Rabbit molasses, Gold Label	190	½ c.	11.4	3.6	0.2	65
Brick cheese	30	½ sl. 5½" loaf	34.7	11.9	0.6	
Brick cheese, American	20	1½ cu. in.	12.9	3.0	0.1	65
Brie, fromage de, American	25	1½" x 1" x ½"	51.5	11.9	0.3	
Brie, fromage de, European	25	1½" x 1" x ½"	11.0	1.7	0.2	50
			55.2	8.4	1.0	
			13.1	2.3	0.3	65
			52.6	9.2	1.3	
			12.8	2.4	0.4	65
			51.1	9.6	1.4	
			14.3	2.1	11.2	165
			*47.5	7.0	37.2	
			15.6	2.6	0.5	75
			52.1	8.9	1.8	
			13.4	3.6	4.7	115
			*26.8	7.2	9.4	
			3.7	0.5	0.5	20
			73.5	9.8	9.9	
			35.2	0.1	0.2	145
			35.2	0.1	0.2	
			140.0	0.9	0	575
			*73.7	0.5	0	

60 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
<i>Br'er Rabbit</i> molasses, Green Label	190	½ c.	133.2 *70 1	1.7 0 9	0 0	555
Brewer's yeast, com.	11	2 t.	4.3 39.0	4.2 38 0	0.2 2.0	35
Broad beans, green	75	½ c.	10.3 *13.8	6.1 8 1	0.5 0 6	75
Broad beans, green pods	100		11.9 11.9	3.0 3 0	0.3 0.3	65
Broad beans, cooked	125	½ c.	8.9 *7.1	5.1 4 1	— Trace	55
Broccoli	120	1 c.	5.0 *4 2	4.0 3 3	0.2 0 2	40
Broccoli, cooked	100	½ c.	0.4 *0 4	3.0 3 0	0.1 0.1	15
Broilers, see page 72.						
Broth, see Soups.						
Brussels sprouts	100	1 c.	7.6 7.6	4.4 4 4	0.5 0 5	55
Brussels sprouts, cooked	100	½ c.	1.7 *1.7	2.4 2 4	— Trace	15
Brussels sprouts, canned	125	¾ c.	3.6 *2 9	1.9 1 5	0.1 0 1	25
Buckwheat, corn and wheat flour, Aunt Jemima, Quaker	100	¾ c.	69.8 69 8	11.2 11 2	1.9 1.9	350
Buckwheat flour (sifted)	115	1 c.	89.6 77.9	7.4 6 4	1.4 1 2	410
Buckwheat preparations, self-rising	115	1 c.	84.4 73 4	9.4 8 2	1.4 1 2	400
Buffalofish	230	½ lb.		41.5 18 0	5.4 2 3	220
Bullheads	230	½ lb.		33.1 14 4	47.2 20 6	575
Burdock leaves	100		7.4 7 4	4.5 4 5	0.1 0 1	50
Burdock root	100		21.1 *21 1	3.0 3 0	0.1 0 1	100
<i>Burnett</i> extracts, A.P.: †						
Almond (35%)	5	1 t.	0 0	0 0	0 0	0
Celery (65%)	5	1 t.	0 0	0 0	0 0	0
Cherry (18%)	5	1 t.	0 0	0 0	0 0	0
Lemon (80%)	5	1 t.	0 0	0 0	0 0	0
Maple, imitation (24%)	6	1 t.	1.8 30.0	0 0	0 0	7
Mint (85%)	5	1 t.	0 0	0 0	0 0	0
Onion, imitation (48%)	5	1 t.	0 0	0 0	0 0	0
Orange (82%)	5	1 t.	0 0	0 0	0 0	0

† Alcohol percentage by volume; calories not computed since there is a variable loss of alcohol through volatilization during cooking of foods.

* Largely assimilable.

‡ Gross fat removed.

Blank space indicates lack of data.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 61

Food items.	Size of portion.		Value of portion.			B
	Grams.	Household measure.	Carb.	Prot.	Fat.	
<i>Burnett extracts, A.P.: †</i>						
Pineapple (20%) . . .	6	1 t.	2.8 47.0	0	0	12
Pistachio, imitation (65%)	5	1 t.	0 0	0	0	—
Raspberry (20%) . . .	6	1 t.	2.8 47.0	0	0	12
Rose (94%) . . .	5	1 t.	0 0	0	0	0
Strawberry (20%) . . .	6	1 t.	2.8 47.0	0	0	12
Vanilla (35%) . . .	5	1 t.	0.4 7.0	0	0	2
Wintergreen (65%) . .	5	1 t.	0 0	0	0	0
Butter . . .	10	1" x 1" x ½"	— —	0.1 1 0	8.5 85 0	80
Butter, melted . . .	10	1 T.	— —	0.1 1 0	8.5 85 0	80
Butter beans . . .	75	½ c.	21.8 29.1	7.1 9 4	0.5 0 6	125
Butter beans, cooked	100	½ c.	17.1 *17 1	7.1 7.1	— Trace	100
Butterfish . . .	230	½ lb.		41.4 18 0	25.3 11.0	405
Buttermilk, see Milks, cultured.						
Butternuts . . .	20	12	0.7 3 5	5.6 27.9	12.2 61 2	140
Butterscotch	5	¾" sq. x ¾"	4.1 *82 0	0 0	0.6 12.0	20
C						
Cabbage:						
Raw	85	½ c.	3.6 *4 4	1.2 1.4	0.2 0 2	20
Spring, boiled . . .	130	½ c.	1.0 *0 8	1.4 1.1	— Trace	10
Winter, boiled . . .	130	½ c.	1.7 *1 3	1.0 0 8	— Trace	11
Chinese or celery	110	1 c.	2.6 2 4	1.5 1 4	0.1 0.1	20
Chinese, cooked . . .	100	½ c.	2.0 2.0	1.0 1 0	0.1 0.1	13
Palmetto	100	½ c.	6.1 6.1	3.3 3.3	0.6 0.6	45
Palmetto, cooked	100	½ c.	5.6 5 6	2.9 2 9	0.5 0.5	40
Red	60	½ c.	1.8 *3 5	1.1 1.8	0.1 0.2	15
Savoy.	120	1 c.	7.2 6 0	3.9 3.3	0.8 0.7	55
Savoy, boiled	100	½ c.	1.1 *1.1	1.3 1 3	— Trace	10
Caciocavallo, Italian cheese . .	5	1 t.		1.7 34 3	1.1 22.0	15
Cakes:						
Angel	50	1 sl.	29.3 *58 7	4.2 8.4	0.1 0.3	140
Foundation	50	1 sl.	27.9 55.9	2.9 5 9	5.9 11 7	180

† See footnote, page 60.

62 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

C	Food items.	Size of portion.		Value of portion.			
		Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Cakes:							
Foundation, frosted	60	1 sl.	36.2	3.0	5.6	215	
			60.4	5 0	9 3		
Fruit, dark	60	1 sl.	33.5	3.1	8.3	230	
			55.9	5.2	13.8		
Fruit, dark, com. . . .	60	1 sl.	37.8	2.9	8.3	245	
			63.0	4 8	13 8		
Fruit, light, com. . . .	60	1 sl.	39.0	2.6	7.5	240	
			65.0	4.4	12.5		
Jelly roll	50	1 sl.	27.7	2.4	9.5	210	
			*55.4	4.8	19 0		
Plain	50	1 sl.	28.5	3.2	4.1	170	
			57 0	6 4	8 2		
Plain, frosted	60	1 sl.	37.3	3.1	3.7	200	
			62.1	5.2	6.2		
Pound	50	1 sl.	24.7	3.6	11.7	225	
			49.3	7.1	23 5		
Rich	50	1 sl.	27.1	2.5	8.9	205	
			54.2	5 0	17 7		
Rich, frosted	50	1 sl.	29.1	2.2	7.3	195	
			58.2	4 4	14 7		
Scones (with egg)	100	1	59.5	9.2	10.5	380	
			*59 5	9 2	10 5		
Scones (without egg)	100	1	57.1	8.4	13.2	390	
			*57.1	8 4	13 2		
Shortbread	25	1 sq.	16.4	1.4	5.7	125	
			65 6	5 8	23 0		
Sponge	50	1 sq.	26.7	4.7	3.5	160	
			53.5	9.5	7.0		
Calavos (Avocado)	14	1 T.	0.8	0.3	2.8	30	
			6 0	2 1	20 0		
Small	85	$\frac{1}{2}$	5.1	1.8	17.0	185	
			6.0	2 1	20.0		
Diced	150	1 c.	9.0	3.2	30.0	330	
			6 0	2 1	20 0		
Pulp	230	1 c.	13.7	4.8	46.0	505	
			6.0	2.1	20.0		
Sieved pulp	230	1 c.	10.1	4.8	46.0	490	
			4.4	2 1	20 0		
California or English walnuts	35	6 (whole)	4.6	6.4	22.5	255	
			13.0	18.4	64 4		
Calf's foot jelly	45	2 T.	7.8	1.9	—	40	
			17 4	4 3	—		
Calves' liver, see Veal							
Camembert cheese, European	40	1 triangle		9.0	10.5	135	
				22.2	26.3		
Canada Dry ginger ale	225	1 c.	20.3			85	
			9.0				
Candy:							
Butterscotch	5	$\frac{1}{2}$ " sq. x $\frac{3}{8}$ "	4.1	0	0.6	20	
			*82 0	0	12.0		
Caramels	10	$\frac{1}{2}$ " sq. x $\frac{1}{2}$ "	7.8	0.2	1.2	45	
			*78 0	2.0	12.0		
Chocolate, bitter	6	$\frac{1}{2}$ " x $1\frac{1}{2}$ " x $\frac{1}{4}$ "	1.1	0.3	3.2	35	
			18 0	5 5	52.9		
Chocolate, sweetened, plain	6	$\frac{1}{2}$ " x $1\frac{1}{2}$ " x $\frac{1}{4}$ "	3.6	0.1	1.8	30	
			60 0	2.0	29 8		
Chocolate, sweetened, milk	6	$\frac{1}{2}$ " x $1\frac{1}{2}$ " x $\frac{1}{4}$ "	3.2	0.4	2.0	35	
			54 0	6.0	33 5		

* Largely assimilable.
Blank space indicates lack of data.

† Gross fat removed.
Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 63

Food items.	Size of portion.		Value of portion.			C
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Candy:						
Chocolate, sweetened, milk, with almonds	6	$\frac{1}{2}$ " x $1\frac{1}{2}$ " x $\frac{1}{2}$ "	3.1 51.0	0.5 8.0	2.3 38.6	35
Chocolate creams	14	$1\frac{1}{2}$ " diam. x $\frac{1}{2}$ "	10.1 72.0	0.6 4.0	2.0 14.0	60
Fondant	8	1" sq. x $\frac{5}{8}$ "	7.3 *91.0	0 0	0 0	30
Fudge, plain	45	2" sq. x $\frac{5}{8}$ "	39.6 88.0	0.9 2.0	1.8 4.0	185
Glacé fruits:						
Apricots	20	1 med.	17.3 86.5	— 0.6	— 0.2	70
Cherries	10	3	5.6 *55.8	— 0.6	0 0	25
Figs	15	1	11.0 73.7	0.5 3.5	— 0.2	45
Pears	30	1 oz.	22.8 75.9	0.4 1.3	0.2 0.6	95
Pineapple	50	1 sl.	40.0 80.0	0.4 0.8	0.2 0.4	165
Hard	8	3 balls, $\frac{1}{2}$ " diam.	7.9 *99.0	0 0	0 0	30
Marshmallows	30	5, $1\frac{1}{2}$ " diam.	24.0 *80.0	2.0 6.7	— —	105
Peanut brittle	15	$1\frac{1}{2}$ " x 3"	10.1 67.0	1.8 12.0	2.7 18.0	75
Toffee, home-made	10	1 sq.	8.8 *87.8	— 0.2	0.6 6.2	40
Cane, see sugars and syrups.						
Cantaloupe	100	$\frac{1}{2}$, 5" diam.	5.7 *5.7	0.6 0.6	0.2 0.2	25
Capers	5	1 t.	0.3 5.0	0.2 3.2	Trace 0.5	2
Capicollo, Italian sausage	60	2 oz.	0.8 1.4	12.5 20.8	24.1 40.2	245
Carambola juice	225	1 c.	23.2 10.3	0.2 0.1	0.2 0.1	100
Carnation milk, evaporated	15	1 T.	1.5 *9.9	1.0 6.8	1.2 7.9	20
Carob bean	10	4" piece	6.7 67.0	0.6 5.7	0.1 1.1	30
Carp	230	$\frac{1}{2}$ lb.	— —	43.7 19.0	2.3 1.0	200
Carrageen moss (Irish)	10	1 T.	— 0.4	0.7 6.8	— —	3
Carrot juice, Cellu	120	$\frac{1}{2}$ c.	7.2 *6.0	0.4 0.3	0.2 0.2	35
Carrot tops	100	1 c.	7.2 7.2	3.2 3.2	— —	45
Carrots, old, raw	80	$\frac{1}{2}$ c. grated	4.3 *5.4	0.6 0.7	— Trace	20
Young, boiled	75	$\frac{1}{2}$ c.	3.4 *4.5	0.7 0.9	— Trace	15
Old, boiled	75	$\frac{1}{2}$ c.	3.2 *4.3	0.4 0.6	— Trace	15
Canned	100	$\frac{1}{2}$ c.	7.6 7.6	1.0 1.0	0.3 0.3	40
Desiccated	100		80.3 80.3	7.7 7.7	3.6 3.6	395
Cashew nut kernels, raw	100		29.4 29.4	21.6 21.6	39.0 39.0	570

64 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

C	Food items.	Size of portion.		Value of portion.			
		Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
	Cashew nut kernels, fried in coconut oil	15	8	2.0 13.4	4.3 28.7	7.9 52.4	100
Cassava:							
	Bread	25	1 sl.	20.0 79.0	2.3 9.1	0.1 0.3	90
	Root	100		27.1 27.1	1.6 1.6	0.2 0.2	120
	Starch	60	½ c.	53.3 88.8	0.3 0.5	0.1 0.1	220
	Sweet	100		28.4 *28.4	1.1 1.1	0.2 0.2	125
	Wafers	25		20.9 *83.6	0.3 1.1	Trace 0.2	85
	Catfish	230	½ lb.		33.1 14.4	47.2 20.6	575
	Catfish, fried	115	½ lb.	7.5 *6.5	21.6 18.8	12.0 10.5	230
	Catfish, steamed . . .	115	½ lb.		23.5 20.4	4.3 3.7	135
	Catjang-peas, green pods	100		6.6 *6.6	3.3 3.3	0.4 0.4	45
	Catsup, tomato . . .	20	1 T.	4.8 24.0	0.4 2.0	0.2 1.0	25
	Cauliflower	125	1½ c.	3.9 *2.8	2.3 1.8	0.6 0.5	30
	Cauliflower, cooked . .	100	½ c.	1.4 *1.4	1.6 1.6	0.4 0.4	15
	Cauliflower, canned . .	100	½ c.	3.0 3.0	1.0 1.0	0.2 0.2	18
	Caviar, sturgeon, Russian	15	2 t.	1.1 7.6	4.5 30.0	3.0 19.7	50
	Celeriac, cooked	100	1 med.	2.0 *2.0	1.5 1.5	0.2 0.2	15
	Celeriac roots	90	1 med.	7.9 8.8	1.5 1.7	0.3 0.3	40
Celery:							
	Raw	40	2, 7" stalks	0.5 *1.3	0.4 1.1	Trace 0.1	4
	Cooked	100	½ c.	0.8 *0.8	0.3 0.3	— Trace	5
	Cabbage	110	1 c.	2.6 2.4	1.5 1.4	0.1 0.1	20
	Cabbage, cooked	100	½ c.	2.0 2.0	1.0 1.0	0.1 0.1	13
	Extract, Burnett, A.P. .	5	1 t.	0 0	0 0	0 0	0
	Root (celeriace)	90	1 med.	7.9 8.8	1.5 1.7	0.3 0.3	40
	Soup, canned	230	1 c.	11.5 5.0	4.8 2.1	6.4 2.8	125
	Soup, canned, conc. . . .	140	½ c.	9.5 6.8	2.0 1.4	2.2 1.6	70
	Soup, cream of, canned, com.	230	1 c.	9.2 4.0	1.8 0.8	11.5 5.0	150
Cellu products, see page 148.							
	Cereal coffee infusion	240	1 c.	3.4 1.4	0.5 0.2	— —	15

* Largely assimilable.

Blank space indicates lack of data.

‡ Gross fat removed
Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 65

Food items.	Size of portion.		Value of portion.			C Cal.
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Cereals:						
Ready to Eat:						
Bran:						
<i>All-Bran</i> , Kellogg . . .	3	1 T.	1.7	0.4	0.1	9
			*58.0	13.8	4.5	
<i>Flakes</i> , Kellogg . . .	30	$\frac{1}{2}$ c.	21.3	4.0	0.7	110
			71.5	13.3	2.3	
<i>Flakes</i> , Post . . .	30	$\frac{2}{3}$ c.	22.4	3.6	0.5	110
			74.6	12.0	1.8	
Wheat, Pillsbury . . .	3	1 T.	1.7	0.5	0.1	9
			57.5	16.5	4.6	
Whole, Post . . .	3	1 T.	2.0	0.4	0.1	11
			66.6	13.9	3.0	
Corn:						
<i>Flakes</i> , Kellogg . . .	30	1 $\frac{1}{2}$ c.	26.2	2.2	0.1	115
			87.4	7.4	0.2	
<i>Flakes</i> , Quaker . . .	30	1 $\frac{1}{2}$ c.	24.9	2.6	0.1	115
			82.9	8.7	0.3	
<i>Kix</i> , General Mills . . .	35	1 $\frac{1}{2}$ c.	28.8	2.8	0.7	135
			82.3	8.0	1.9	
<i>Post Toasties</i> . . .	30	1 c.	25.6	2.8	0.1	115
			85.5	7.1	0.2	
Oats:						
<i>Oaties</i> , Quaker . . .	35	$\frac{1}{2}$ c.	25.0	5.1	0.4	125
			71.6	14.6	1.2	
Rice:						
<i>Flakes</i> , Heinz . . .	30	1 c.	25.0	3.2	0.3	120
			83.2	10.5	0.9	
<i>Flakes</i> , White House . . .	30	1 c.	24.4	2.7	0.6	115
			81.2	8.9	2.0	
<i>Krispies</i> , Kellogg . . .	30	1 c.	26.5	1.8	0.1	115
			88.4	6.0	0.3	
<i>Puffed</i> , Quaker . . .	15	1 c.	13.3	0.9	—	60
			88.8	6.2	0.2	
Rye:						
Flaked . . .	30	1 c.	22.7	3.0	0.4	110
			*75.8	10.0	1.4	
Wheat:						
<i>Crackels</i> , Quaker . . .	30	1 c.	24.1	3.3	0.1	115
			80.2	10.9	0.4	
<i>Flakes</i> , Quaker . . .	30	1 c.	22.7	4.1	0.3	110
			75.6	13.7	1.1	
"Force" Whole wheat flakes, Hecker—H-O . . .	30	1 c.	23.8	3.4	0.3	115
			*79.5	11.4	1.1	
Holland Rusk . . .	15	1	10.5	1.8	0.7	55
			70.4	12.1	5.1	
<i>Krispies</i> , Kellogg . . .	30	$\frac{4}{5}$ c.	24.8	2.7	0.2	115
			83.7	8.9	0.8	
<i>Krumbles</i> , Kellogg . . .	30	$\frac{1}{2}$ c.	24.6	2.8	0.4	115
			82.0	9.2	1.2	
<i>Muffets</i> , Quaker . . .	23	1	17.5	2.6	0.3	85
			75.6	11.1	1.4	
<i>Puffed</i> , Quaker . . .	15	1 c.	11.3	2.3	0.2	55
			75.4	15.6	1.6	
<i>Rippled</i> , Loose-Wiles . . .	10	1 biscuit	7.9	1.1	0.3	40
			*78.8	11.1	2.5	
<i>Shredded</i> , N. B. C. . .	30	1	24.5	3.3	0.5	120
			81.6	11.0	1.6	
<i>Shredded Ralston</i> . . .	30	$\frac{1}{2}$ c.	23.2	2.6	0.3	110
			74.0	8.5	1.0	

66 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

C

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal
Cereals:						
Ready to Eat:						
Toasted whole wheat with added wheat germ, Blue Cross	30	1 c.	21.3 70 9	4.4 14 7	0.6 2 1	110
Wheaties	35	1 c.	27.5 78 5	4.4 12 5	0.4 1 2	135
Whole wheat biscuit, Kellogg	20	1, 2½" x 2½"	16.4 82 2	2.0 10 1	0.3 1 7	80
Whole wheat flakes, Kellogg	30	½ c.	24.0 79 9	3.1 10 4	0.3 1.1	115
Miscellaneous:						
Breakfast Crisps, Madison Health Food Co.	55	½ c.	35.7 64 9	9.2 16 7	2.1 3 8	205
Grape-Nuts, Post . . .	30	½ c.	24.9 83 2	3.2 10 6	0.2 0.6	115
Grape-Nuts Flakes, Post	30	1 c.	23.2 77 3	3.5 11.7	0.4 1 2	115
Pep, Kellogg	30	½ c.	23.1 77.1	3.7 12 2	0.6 1 9	115
Triscuit, N. B. C. . .	10	2	8.2 81.7	1.1 10 5	0.2 1.6	40
Cereals:						
Requiring Cooking:						
Barley:						
Cream of	50	½ c.	38.0 76 1	5.6 11 1	0.8 1 6	180
Corn						
Hominy Grits, Quaker	50	½ c.	38.5 77 0	5.0 9 9	0.3 0 7	180
Hominy Grits, Pillsbury	50	½ c.	39.0 77 9	4.4 8 8	0.3 0 6	180
Hominy (raw)	50	½ c.	39.5 79 0	4.2 8.3	0.3 0 6	180
Cooked	200	1 c., sc.	28.0 14.0	4.0 2 0	—	130
Hecker's cream	50	½ c.	38.6 77 3	4.9 9 8	0.2 0 4	180
Parched	45	½ c.	32.5 72.3	5.2 11 5	3.8 8 4	190
Samp, coarse hominy	50	½ c.	39.7 *79 4	4.2 8 3	0.3 0 5	185
Cornmeal:						
White, Pillsbury . . .	15	1 T.	11.7 78 3	1.2 8 3	0.2 1 1	55
White, Quaker	15	1 T.	11.6 77 3	1.3 8 9	0.2 1 5	55
Yellow, Pillsbury . . .	15	1 T.	11.8 78.7	1.2 8 3	0.2 1 3	55
Yellow, Quaker	15	1 T.	11.7 77.8	1.3 8.5	0.1 1.0	55
Cooked	100	½ c.	11.9 11 9	1.4 1 4	0.8 0.8	60
Oats:						
Crushed, Grandmother's	30	½ c.	19.6 65 4	4.5 14 9	2.0 6 5	120

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 67

Food items.	Size of portion		Value of portion			C
	Grams.	Household measure	Carb	Prot.	Fat	Cal
Cereals:						
Requiring Cooking:						
Oats:						
<i>H-O Oats</i> (New style), Hecker, H-O .	30	½ c.	19.9 *66 2	4.5 15 2	2.2 7 3	120
Mother's Quaker, Quick Mother's, or Quick Quaker	30	½ c.	19.2 64 0	5.3 17 8	1.8 6 1	120
Rolled, raw	30	½ c.	19.9 66 3	5.0 16 7	2.2 7 3	120
Rolled, cooked, calc.	250	1 c.	20.0 8 0	5.0 2 0	2.2 0 9	120
Rolled, Purity	30	½ c.	18.5 61 6	5.0 16 3	2.0 6 1	115
Rice:						
Boiled . .	100	½ c.	22.5 22 5	2.3 2 3	0.9 0 9	110
Comet cereal .	20	1 heaping T.	16.1 80 7	1.4 7 2	Trace 0 3	70
Cream of	30	½ c.	23.9 79 6	2.2 7 4	0.1 0 4	110
Natural brown, White House	20	1 heaping T.	15.3 76.1	1.3 6 7	0.5 2 2	70
White, White House	20	1 heaping T.	16.2 81 0	1.3 6 4	0.1 0 6	75
Rye						
Cream of . . .	50	½ c.	35.9 71 8	6.0 12 0	0.8 1 6	180
Wheat.						
<i>Breakfast wheat</i> , Heinz	20	2 T	15.5 77 7	2.1 10 5	0.2 0 9	75
Cracked wheat .	30	½ c.	23.0 76 5	3.3 11 1	0.5 1 7	115
Cream Farina, Hecker— H-O	30	½ c.	23.3 *77 7	2.8 9 5	0.3 1 1	110
<i>Cream of Wheat</i> .	30	½ c.	21.8 72 5	3.5 11 8	0.7 2 4	110
<i>Cream of Wheat</i> , cooked	70	½ c.	24.7 14 5	3.4 2 0	— —	115
<i>Cream of Wheat</i> , "New 5-Minute" .	20	2 T.	14.6 73 0	2.4 12 0	0.3 1 3	70
Farina, Grandmother's, A. & P. .	20	2 T	15.0 75 0	2.2 10 8	0.1 0 6	70
Farina, Pillsbury	20	2 T.	14.9 74 6	2.1 10 5	0.1 0 4	70
Farina, Quaker	20	2 T.	15.1 75 4	2.4 11 8	0.1 0 6	70
Flaked, cooked	120	½ c.	14.4 12 0	2.6 2 2	0.2 0 2	70
Maltex cereal	30	½ c.	21.3 70 9	4.6 15 3	0.5 1 5	110
Maypl cereal	30	½ c.	20.4 67 9	4.7 15 6	1.3 4.4	115

68 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

Food items.	Size of portion		Value of portion			
	Grams.	Household measure.	Carb	Prot	Fat	Cal.
Cereals:						
Requiring Cooking:						
Wheat:						
Pettijohn's, Quaker	20	2 T.	14.7	2.0	0.4	70
Ralston, wheat cereal	30	½ c.	73 3	10 1	1 9	
			21.0	4.5	0.5	110
			70 0	15 0	1 7	
Rolled, steam-cooked	30	½ c.	21.7	3.1	0.5	105
			72 3	10 2	1 8	
Rolled, with all the bran, Blue Cross	30	½ c.	22.0	3.1	0.5	110
			73 2	10 5	1 6	
Wheat Oats, Ralston	30	½ c.	20.8	4.2	1.7	120
			69 3	14 0	6 0	
Wheatena	30	½ c.	21.7	3.2	0.8	110
			72 7	10 8	2 5	
Wheatworth cereal, N. B. C	30	½ c.	21.2	4.2	0.6	110
			70 8	14 0	2 0	
Certo	100		2.9	0	0	112
			2 9	0	0	
Cervellata fresca, Milan sausage	60	2 oz.	0.3	6.0	20.6	215
			0 5	10 1	34 4	
Chard, leaves only	100	1½ c.	4.8	2.6	0.4	35
			4 8	2 6	0 4	
Chard, leaves and stalks	100	1 c.	4.4	1.4	0.2	25
			4 4	1 4	0 2	
Chard, stalks only	125	1 c.	3.6	1.3	0.1	20
			2 9	1 0	0 1	
Chard, cooked	100	¾ c.	3.0	2.4	0.2	25
			3 0	2 4	0 2	
Chayote, fruit (Chiote)	100		6.8	1.0	0.1	30
			6 8	1 0	0 1	
Chayote, leaves (Chiote)	100		3.9	3.1	0.7	35
			3 9	3 2	0 7	
Chayote, roots (Chiote)	100		19.6	1.8	0.1	90
			19 6	1 8	0 1	
Cheese:						
American, Kraft	30	¼" sl. 5 ¹¹ / ₁₆ " loaf		6.8	9.3	115
				22 5	31 0	
American, pale	15	2" x 1½" x ½"	Trace	4.3	5.4	70
			*0 3	28 8	35 9	
American, red	15	2" x 1½" x ½"		4.4	5.7	70
				29 6	38 3	
Bel Paese	30	1 oz.		6.3	7.0	90
				21 3	23 5	
Bondon	30	2 T.		2.8	7.3	80
				9 4	24 4	
Brick, American	20	1½ cu. in.		4.0	5.5	70
				20 3	27 5	
Brick, Kraft	30	¼" sl. 5 ¹¹ / ₁₆ " loaf		6.6	9.0	110
				22 0	30 0	
Brie, European	25	1½" x 1" x ½"		5.2	8.1	100
				20 9	32 4	
Caciocavallo, Italian	5	1 t.		1.7	1.1	15
				34 3	22 0	
Camembert, European	40	1 triangle		9.0	10.5	135
				22 2	26 3	
Chateau, Borden	30	3, ⅜" sl. 1 ¹¹ / ₁₆ "	1.8	5.6	7.7	100
			*6 1	18.8	25.5	

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 69

Food items.	Size of portion		Value of portion.			C
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Cheese:						
Cheddar	25	1½" x 1½" x 1½"	1.0 *4 1	6.9 27.7	9.2 36.8	120
American (store)	25	1½" x 1½" x 1½"	0.3 *1 4	7.8 21 2	9.2 37 0	120
Argentinian	25	1½" x 1½" x 1½"	0.2 *0 7	7.8 31.2	7.6 26.0	95
Canadian	25	1½" x 1½" x 1½"		6.0 24 0	8.4 33.8	105
English	25	1½" x 1½" x 1½"	0.8 *3 2	6.9 27 8	7.6 30 5	100
Skim, American	25	1½" x 1½" x 1½"		8.3 33.1	1.2 4 9	45
Cheshire	20	1 cu. in.	1.0 *5 2	5.0 25.0	6.2 30.9	80
Cottage	55	¼ c.	2.4 *4 3	11.5 20 9	0.6 1 0	65
Cottage, Jewish	50	¼ c.		14.0 28.0	4.5 9 0	100
Cottage, potted	50	¼ c.		10.5 21.1	17.0 34.0	200
Cottage, skim milk	50	¼ c.		11.6 23.3	0.5 1 0	50
Coulommieres	25	1½" x 1" x ¾"	1.2 *4 8	4.3 17.4	5.1 20.5	70
Cream, American	30	½ pkg.	Trace *0 2	3.0 10 0	11.4 38 0	120
Cream, English	30	2" x 1" x ½"	0.4 *1 3	1.6 5 3	16.8 56 1	165
Cream, demi-sel, French	30	2" x 1" x ½"		4.3 14 5	11.9 39 9	125
Creamed Old English, Kraft	30	3, ⅜" sl. ⅜ loaf		6.0 20 0	10.1 33 5	120
Derbyshire	20	1 cu. in.	0.9 *4 4	4.9 24 5	7.0 35 2	90
Dutch	30	1 oz.		11.1 37 1	5.3 17 7	95
Edam	30	1½" cube	1.9 *6 3	7.1 23.5	10.2 34.0	130
Edam, American	30	1½" cube		9.3 30 9	6.8 22 7	100
Emmenthaler	30	2 cu. in.	0.4 *1 4	8.5 28 4	8.5 28.5	115
Fromage de Brie	25	1½" x 1" x ¾"	0.3 *1 4	4.0 15 9	5.3 21 0	65
Full cream	30	2" x 1" x ½"	0.7 *2 4	7.8 25 9	10.1 33 7	130
Gammelost, Norwegian	30	1 oz.	2.9 *9 8	12.9 42 1	1.0 3 4	75
Gloucester	20	1 cu. in.	0.9 *4.4	5.6 28.0	5.6 28 0	80
Goat's milk, French	30	1 oz.	4.6 *15 3	10.0 33.6	8.7 25.9	140
Goat's milk, Norwegian	30	1 oz.	14.0 *46 8	2.2 7 6	5.9 19.9	120
Gorgonzola	15	1" x ½" x 2½"	0.2 *1 6	3.8 25 2	5.2 34.7	65
Gouda, American	30	1 oz.		8.8 29.6	7.3 24.5	105
Gouda, Hollander	30	1 oz.		8.1 27.0	8.8 29.4	115
Goya	30	1 oz.	0.4 *1 4	10.3 34 2	9.1 30 4	130

70 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

C	Food items.	Size of portion.		Value of portion.			
		Grams	Household measure	Carb	Prot	Fat.	Cal
Cheese:							
Gruyère	30	2" x 1" x 1"	1.4 *4 8	9.9 33 0	8.4 28 2	125	
Leyden	20	1 cu. in.	0.2 *1 0	7.2 35 9	2.2 11 0	50	
Liederkrantz	30	1 oz.		5.0 16 8	7.3 24 5	90	
Limburg, American	40	1 triangle		11.4 28.5	12.0 29 8	160	
Limburg, European	40	1 triangle		8.5 21 3	7.8 19 6	105	
Limburger, Kraft	30	3, $\frac{3}{16}$ " sl. $\frac{1}{4}$ "		4.8 16 0	7.5 25 0	90	
Livarot	25	1 $\frac{1}{2}$ " x 1" x $\frac{1}{4}$ "	2.0 *8 0	7.9 31 8	5.5 22 0	90	
Mainz, hand	30	2 cu. in.		11.1 37 3	1.7 5 6	60	
Mozzarella	30	1 oz.	0.5 *1 8	8.4 28 1	7.3 24.3	105	
Münster	30	1 $\frac{1}{2}$ " cube	2.0 *6 9	5.0 16 9	7.8 25 9	100	
Münster, American	30	1 $\frac{1}{2}$ " cube		6.7 22 2	9.3 31 0	115	
Mysost, American	30	1 oz.		2.9 9 9	0.8 2 8	20	
Mysost (Scandinavian Pri- most)	30	1 oz.		4.2 14 0	10.3 34 5	115	
Neufchâtel	30	2 T.	0.5 *1 5	5.6 18 7	8.2 27 4	100	
Neufchâtel, American	30	2 T.	0.8 *2 9	6.4 21 3	5.4 18.2	80	
Noekkelost	30	1 oz.	2.1 *7 0	9.2 30 6	4.9 16 3	90	
Oka, see Port du Salut							
Pabst-ett	15	1 T.	1.0 6 6	3.0 19 9	3.6 24 3	50	
Pabst-ett compounded Swiss cheese	30	1 oz.	1.4 4 6	7.1 23 6	6.5 21 8	95	
Parmesan	5	2 t.		2.2 43 5	1.0 19 1	15	
Parmesan (Formaggio)	5	2 t.		2.5 49 4	1.1 22 7	20	
Parmesan (Reggian), grated	5	2 t.		1.7 34 8	1.4 27 3	20	
Philadelphia cream, Kraft	30	$\frac{1}{2}$ pkg.	Trace *0 2	3.0 10 0	11.4 38 0	120	
Pimento (Cheddar)	20	1 cu. in.		3.2 16 0	6.4 32 2	75	
Pimento, Kraft	30	$\frac{1}{2}$ " sl. 5 $\frac{1}{16}$ " loaf		6.6 22 0	9.1 30 5	110	
Pineapple	25	1 $\frac{1}{2}$ " x 1 $\frac{1}{2}$ " x 1 $\frac{1}{4}$ "	0.7 2 6	7.5 29 9	9.7 38 9	125	
Pont l'Evêque	20	1 $\frac{1}{2}$ " x 1" x $\frac{1}{2}$ "	1.3 *6 7	4.1 20 3	5.0 25 0	70	
Pont l'Evêque, American	20	1 $\frac{1}{2}$ " x 1" x $\frac{1}{2}$ "		5.0 25 2	5.9 29 3	75	

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 71

Food items	Size of portion.		Value of portion			C
	Grams	Household measure	Carb	Prot.	Fat	
Cheese:						
Port du Salut (Oka, Trappist)	25	1½" x 1" x ¾"		5.5	6.3	80
Pot	50	¼ c.		21 2	25 2	100
Potted cottage cheese	50	¼ c.		14.0	4.5	200
Provolone	30	1 oz.		28 0	9 0	110
Reindeer milk	30	1 oz.		10.5	17.0	155
Ricotta romana	50	¼ c.		21 1	34 0	195
Ricotta salata	30	1 oz.		10.3	7.5	160
Romano (Pecorino)	30	1 oz.		34 1	25 1	115
Roquefort	15	1" x ½" x 2½"		0.9	7.1	55
Sap Sago	5	1 t. grated		*3 0	23 8	10
Sbrinz	30	1 oz.		3.4	19.7	125
Scamorzza	30	1 oz.		6 9	39 5	105
Smearcase (Schmierkase)	50	¼ c.		0.6	4.1	100
Smoked	10	2 t.		*2 0	13 8	25
Stilton	25	1½" x 1½" x 1¼"		9.3	8.3	105
Store, see Cheddar, American.				31 2	27 7	
Swiss	30	1 sl.		0.3	3.4	130
Swiss, European	30	1 sl.		*1 8	22 6	120
Swiss, Kraft	30	½" sl. 5½" loaf		2.1	29 5	105
Swiss, Russian	30	2" x 1" x 1"		41.7	2 0	125
Swiss, Swedish	30	2" x 1" x 1"		0.4	10.2	135
Trappist, see Port du Salut.				*1 3	34 0	
Velveeta, Kraft	30	3, ⅜" sl. ½"		0.5	8.0	100
Vendôme	30	2 T.		*1 8	26 6	105
Wiltshire	20	1 cu. in.		26 6	25 8	65
Yoghurt, American	30	2 T.		1.3	7.4	105
York cream	25	2" x 1½" x 1"		*4 4	24 9	30
Chenopodium, see Lambsquarters.				*6 1	23 2	
Cherries	75	¼ c.		1.8	5.4	60
Cherries, eating	75	¼ c.		*6 0	18 0	40
Cherries, canned, see Fruits, canned.				8.7	6.3	
				28 0	20 9	
				0.5	6.8	
				*2 3	34 2	
				5.2	9.0	
				17 5	30 2	
				4.5	1.6	
				17 9	6 5	

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Food items	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal
Cherries, candied	10	3	5.6 *55.8 *28.4	— 0.6 0.2	0 0 0.2	25 0
Cherries, Maraschino, bottled	10	2	2.8 —	—	—	10
Cherry extract, Burnett, A.P.	5	1 t.	0 0	0 0	0 0	0
Cherry jam	25	1 T.	22.5 55.0 77.2	0.4 0.9 1.1	— Trace —	95
Cherry jelly	45	2 T.	34.7 —	0.5 —	—	145
Chervil, leaves	20	½ c.	2.3 11.5	0.7 3.4	0.2 0.9	14
Cheshire cheese	20	1 cu. in.	1.0 *5.2	5.0 25.0	6.2 30.9	80
Chestnuts, fresh	50	8	18.3 *36.6	1.2 2.3	1.3 2.7	90
Chestnuts, dried	35	8	26.0 74.2	3.7 10.7	2.5 7.0	185
Chestnuts, roasted	50	20	17.7 35.4	2.6 5.2	2.3 4.5	105
Chicken, fresh:						
Broiler	230	½ lb.	49.6 21.5	5.8 2.5	25.5	255
Gizzard	75	1 med.	0.5 0.6	17.3 23.1	2.8 3.8	100
Heart	30	1 med.	6.2 20.7	1.7 5.5	40	
Liver	75	2 med.	1.8 2.4	16.8 22.4	3.2 4.2	105
Young, dark meat	230	½ lb.	47.8 20.8	18.9 8.2	37.5	
Young, light meat	230	½ lb.	50.2 21.9	17.0 7.4	36.5	
Chicken, cooked:						
Boiled	115	½ lb.	30.1 26.2	11.8 10.3	23.5	
Breast, roasted	115	½ lb.	35.2 30.6	2.3 2.0	160	
†Broiler, broiled	115	½ lb.	27.4 23.8	4.2 3.7	150	
Canned, boned	115	½ lb.	30.1 26.2	13.9 12.1	25.5	
†Light meat, broiled	115	½ lb.	36.6 31.8	1.3 1.1	160	
Roasted	60	2 oz.	1.3 2.1	19.3 32.1	2.6 4.4	120
Roasted, cold	115	½ lb.	27.9 24.3	7.7 6.7	190	
†Thigh and leg, boiled	115	½ lb.	31.7 27.6	8.5 7.4	210	
†Thigh and leg, roasted	115	½ lb.	31.8 27.7	9.7 8.4	220	
Chicken soups, see Soups.						
Chickpeas	100	½ c.	49.9 49.9	21.8 21.8	5.0 5.0	340
Chicory, also see Endive.						
Chicory leaves, green	15	½ sm. head	0.6 4.0	0.2 1.6	Trace 0.2	3
Chicory leaves, Italian	20	½ c.	0.2 0.8	0.4 1.9	0.1 0.4	3

* Largely assimilable. † Gross fat removed.
Blank space indicates lack of data. Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 73

Food items.	Size of portion.		Value of portion.			C
	Grams	Household measure.	Carb.	Prot.	Fat.	
Chicory root	100		15.0 15.0			60
Chili con carne, canned . . .	100	$\frac{1}{2}$ c.	4.0	13.3	4.6	115
Chili con carne, mild, Heinz	100	$\frac{1}{2}$ c.	4.0 8.5	13.3 7.5	4.6 5.5	115
Chili con carne, hot, Heinz	100	$\frac{1}{2}$ c.	8.5 9.2	7.5 7.4	5.5 6.6	130
Chili pepper, dried	100		9.2 8.6	7.4 18.0	6.6 2.7	135
Chili sauce, com.	20	1 T.	*8.6 5.2	18.0 0.5	2.7 0.2	25
Chinese or celery cabbage	110	1 c.	26.0 2.6	2.5 1.5	0.8 0.1	20
Chinese cabbage, cooked . .	100	$\frac{1}{2}$ c.	2.4 2.0	1.4 1.0	0.1 0.1	13
Chinese jujube	100		2.0 24.1	1.0 1.2	0.1 0.3	110
Chinese jujube, dried . . .	100		24.1 59.9	1.2 4.0	0.3 —	260
Chiote, see Chayote.			59.9	4.0	—	
Chipped beef	60	$\frac{1}{2}$ lb.		15.8 26.4	4.1 6.9	105
Chives, fresh	7	1 T.	0.4 *5.8	0.3 3.8	— 0.6	3
Choc-Lade, chocolate-flavored milk	250	1 c.	11.9 29.8	3.6 9.0	2.0 5.0	205
Chocolate:						
Beverage, see Cocoa, p. 163.						
Baker's unsweetened	14	$\frac{1}{2}$ oz.	3.5 25.0	1.7 12.0	7.4 53.0	90
Bitter	6	$\frac{3}{4}$ " x $1\frac{1}{2}$ " x $\frac{1}{4}$ "	1.1 18.0	0.3 5.5	3.2 52.9	35
Sweet, plain	6	$\frac{3}{4}$ " x $1\frac{1}{2}$ " x $\frac{1}{4}$ "	3.6 60.0	0.1 2.0	1.8 29.8	30
Sweet, milk	6	$\frac{3}{4}$ " x $1\frac{1}{2}$ " x $\frac{1}{4}$ "	3.2 54.0	0.4 6.0	2.0 33.5	35
Sweet, milk, with almonds	6	$\frac{3}{4}$ " x $1\frac{1}{2}$ " x $\frac{1}{4}$ "	3.1 51.0	0.5 8.0	2.3 38.6	35
Chocolate creams	14	$1\frac{1}{4}$ " diam. x $\frac{1}{4}$ "	10.1 72.0	0.6 4.0	2.0 14.0	60
Chow-chow, com.	25	1 T.	0.5 2.0	— Trace	0.8 3.0	10
Chutney, apple	20	1 T.	10.1 *50.3	0.2 0.8	— 0.1	40
Chutney, tomato	20	1 T.	7.4 *37.2	0.2 1.1	— 0.1	30
Cider, sweet apple	230	1 c.	32.7 *14.2	0.2 0.1	0 0	135
Cinnamon buns	50	1 med.	28.0 56.0	3.9 7.8	2.7 5.4	155
Citrang juice	120	$\frac{1}{2}$ c.	8.3 6.9	1.5 1.3	— —	40
Citron, fresh, unripe	100		9.4 *9.4	0.2 0.2	0.3 0.3	40
Citron, candied	75	$\frac{1}{2}$	58.6 78.1	0.4 0.5	1.1 1.5	250
Citron, preserved	10	1 sm. piece	4.5 *45.0	— 0.2	— 0.4	20

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C	Food items	Size of portion		Value of portion			
		Grams	Household measure	Carb	Prot	Fat	Cal
Clams:							
Long (soft-shell), sm.	40	6	1.1	5.4	0.7	35	
Long (soft-shell), med.	60	6	2 8	13 6	1 7		
Long (soft-shell), lg.	120	6 (½ c.)	1.7	8.1	1.0	50	
Long, canned	75	½ c.	2 8	13 6	1 7		
Round (hard-shell), sm., "Little Neck"	70	6 (½ c.)	3.4	16.3	2.0	100	
Round (hard-shell), med. "Cherrystone"	90	6 (½ c.)	2 8	13 6	1 7		
Round (hard-shell), lg.	180	6 (¾ c.)	2.2	6.8	1.0	45	
Round, canned	80	½ c.	2 9	9 0	1 3		
Clam bouillon, canned	120	½ c.	3.6	7.4	0.8	55	
Clam chowder, canned, con.	140	½ c.	5 2	10 6	1 1		
Clam chowder, canned	250	1 c.	4.7	9.5	0.9	65	
<i>Clapp's</i> Strained Foods, see page 156.							
Coca-Cola	180	1 bottle	5 2	10 6	1 1		
Cocoa beverage, see page 163.			9.4	19.0	1.9	135	
Cocoa, breakfast, W. Baker	5	2 t.	5 2	10 6	1 1		
Cocoa, powder	5	2 t.	2.4	8.5	0.6	50	
Cocoa shells	100		3 0	10 5	0 8		
Cocoanut:			1.8	1.7	0	14	
Fresh	10	1" sq.	1 5	1 4	0		
Desiccated	100	1½ c.	13.6	4.2	5.7	125	
Milk pack, F. Baker	100	½ c.	9 7	3 0	4 1		
Moist, canned	100	1½ c.	10.0	4.5	2.5	85	
Premium package, F. Baker	100	1½ c.	4 0	1 8	1 0		
Southern style, F. Baker	100	1½ c.					
Milk	120	½ c.					
Milk, prepared	100						
Cocomalt	9	1 T.					
Cod:							
Boneless, salt	60	½ lb.		15.8	0.2	65	
				26 3	0 3		

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 75

Food items.	Size of portion.		Value of portion			C
	Grams	Household measure	Carb.	Prot	Fat.	
Cod:						
Cooked	100	1 sm. piece	1.6 1.6	21.7 21.7	0.3 0.3	100
Fried	115	½ lb.	3.3 *2.9	23.8 20.7	5.4 4.7	160
Grilled	115	½ lb.		31.0 27.0	6.0 5.3	185
Steamed	115	½ lb.		20.7 18.0	1.0 0.9	95
Desiccated	60	½ lb.		43.2 72.0	2.9 4.9	205
Dressed	230	½ lb.		25.5 11.1	0.5 0.2	110
Salt, cooked	50	½ c.		21.1 42.3	0.3 0.5	90
Steaks	230	½ lb.		43.0 18.7	1.2 0.5	190
Codfish cakes, fried	50	1 med.	4.9 *9.8	6.0 12.1	6.9 13.9	110
Cod-liver oil	14	1 T.	0 0	0 0	14.0 100.0	130
Cod roe, fried	60	2 oz.	1.8 *3.0	12.4 29.6	7.1 11.9	125
Cod roe, baked in vinegar	60	2 oz.		14.4 24.0	1.9 3.2	75
Coffee, beverage	240	1 c.	1.7 0.7	0.5 0.2	— —	9
Coffee, beverage	70	1 demi-tasse	0.5 0.7	0.1 0.2	— —	3
Coffee, cereal, beverage	240	1 c.	3.4 1.4	0.5 0.2	— —	15
Coffee, pulverized	12	1 heaping T.	0.2 1.8	1.5 12.3	1.8 15.7	25
Coffee, roasted, ground	10	1 heaping T.	0.2 1.8	1.2 12.3	1.6 15.7	20
“Coffee” cream, see 20% cream, p. 105.						
Collards (Colewort)	100	1 c.	7.3 7.3	4.0 4.0	0.6 0.6	50
Collards, cooked	100	½ c.	5.0 5.0	3.5 3.5	0.5 0.5	40
Comet cereal, rice	20	1 heaping T.	16.1 80.7	1.4 7.2	Trace 0.3	70
Conch meat	115	½ lb.		21.4 18.6	0.7 0.3	95
Condiments, Relishes, etc.:						
Beefsteak sauce, com.	5	1 t., sc.	0.8 16.0	0.1 2.3	Trace 1.2	4
Capers	5	1 t.	0.3 5.0	0.2 3.2	Trace 0.5	2
Catsup, tomato	20	1 T.	4.8 24.0	0.4 2.0	0.2 1.0	25
Chili sauce, com.	20	1 T.	5.2 26.0	0.5 2.5	0.2 0.8	25
Chew-chow, com.	25	1 T.	0.5 2.0	— Trace	0.8 3.0	10
Chutney, apple	20	1 T.	10.1 *50.3	0.2 0.8	— 0.1	40
Chutney, tomato	20	1 T.	7.4 *37.2	0.2 1.1	— 0.1	30
Garlic	—	1 clove	— 20.0	— 4.4	— 0.2	—

76 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

C

Food items.	Size of portion.		Value of portion			
	Grams.	Household measure	Carb.	Prot.	Fat.	Cal
Condiments, Relishes, etc.:						
Horseradish	10	2 t.	1.9	0.3	Trace	9
			*19.0	3.2	0.2	
India relish, Heinz	25	1 T.	7.0	0.1	0.1	30
			28 0	0.5	0 3	
Ketchup, tomato	20	1 T.	5.0	0.5	0.2	25
			25 0	2 5	0 8	
Leeks	55	½ c.	2.4	1.4	0.2	15
			*4 4	2.5	0 4	
Mustard, dry	5	1 t.	—	0.1	—	—
			0.3	2.4	0 3	
Mustard, prepared	5	1 t.	0.2	0.2	0.2	5
			5.0	4.7	4 1	
Mustard, prepared, com.	10	1 heaping t.	0.3	0.4	0.7	10
			2 8	4 3	6 5	
Olives, green	25	5	2.9	0.3	6.9	75
			11 6	1 1	27.6	
Olives, ripe	20	5, 1" long	0.8	0.3	5.0	50
			4 3	1 7	25 0	
Peppers, red	25	3" piece	2.0	0.3	0.2	11
			8 1	1 3	0 7	
Pickles:						
Cucumber, fresh, com.	20	3 sl.	3.2	0.2	—	14
			15 9	1 2	0 2	
Dill	50	1 med.	1.4	0.2	0.1	5
			2 7	0 5	0 3	
Mixed, chopped	10	1 T.	0.4	0.1	—	5
			4 0	1 1	0 4	
Onions, sour, com.	10	2	0.1	—	—	0
			1 0	0 2	Trace	
Onions, sweet, com.	10	2	3.7	—	—	15
			3 70	0 1	Trace	
Sour, chopped, com.	20	1 T.	—	0.1	0.1	1
			Trace	0.5	0 3	
Sweet, chopped, com.	20	1 T.	7.2	0.1	0.1	30
			36 0	0 5	0 3	
Sweet must'd, chopped, com.	25	1 T.	6.3	—	0.2	25
			25 0	Trace	0 8	
Pimentos, canned	11	1 t.	0.8	0.1	Trace	4
			6 8	0 9	0 3	
Salad dressings, see p. 127.						
Soy bean sauce (Hawaiian)	10	2 t.	0.5	0.8	—	5
			5 0	7 8	—	
Soy sauce (Toyo)	10	2 t.	1.2	0.5	0.2	9
			*12.0	4 5	1.5	
Tabasco Sauce			0	0	0	0
			0	0	0	
Vinegars:						
Cider	5	1 t.	Trace	0	0	—
			0 8	0	0	
Malt	5	1 t.	Trace	0	0	—
			0.5	0	0	
Spiced, salad	5	1 t.	0.5	0	0	2
			10 0	0	0	
Vinegars:						
Tarragon	5	1 t.	Trace	0	0	—
			0 2	0	0	
Wine	5	1 t.	Trace	0	0	—
			0.4	0	0	

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 77

Food items.	Size of portion.		Value of portion			C
	Grams	Household measure	Carb.	Prot.	Fat.	
Condiments, Relishes, etc.:						
Worcestershire sauce . . .	5	1 t.	1.0 19 0	Trace 1.1	— Trace	4
Consommé, canned . . .	240	1 c.	Trace 0.1	3.3 4.7	Trace —	30
Consommé, canned, con. . .	120	$\frac{1}{2}$ c.	0.1 0.1	3.9 6.7	— —	20
Consommé, Madriléne, Heinz	240	1 c.	1.4 0 6	6.7 2 8	— Trace	35
Cookies, see Crackers and Biscuits.						
Corn:						
Crosby, canned . . .	115	$\frac{1}{2}$ c.	18.6 16.2	3.0 2 6	1.3 1.1	100
Golden bantam, canned	115	$\frac{1}{2}$ c.	19.0 16 6	3.0 2 6	1.0 0.9	100
Green, very young	100	$\frac{1}{2}$ c.	15.0 15 0	3.0 3 0	0.8 0 8	80
Green, canned . . .	115	$\frac{1}{2}$ c.	20.9 *18 2	3.2 2 8	1.4 1 2	115
Sweet, med.	100	1 ear, 8"	21.0 21 0	3.5 3 5	1.1 1 1	110
Sweet, med., cooked	100	1 ear, 8" ($\frac{1}{2}$ c.)	19.2 *19 2	3.1 3.1	1.0 1.0	100
Sweet, old	100	$\frac{1}{2}$ c.	26.0 26 0	4.5 4.5	1.8 1.8	140
Popped . . .	15	1 c.	11.8 78.7	1.6 10 7	0.8 5 0	60
Corn bread . . .	100	1, 4 $\frac{1}{2}$ " sq.	43.6 43 6	6.6 6 6	7.3 7.3	275
Corn chowder, Heinz	250	1 c.	20.5 8 2	3.7 1 5	6.0 2 4	155
Corn Flakes, Kellogg	30	1 $\frac{1}{2}$ c.	26.2 87 4	2.2 7.4	0.1 0.2	115
Corn Flakes, Quaker	30	1 $\frac{1}{2}$ c.	24.9 82 9	2.6 8 7	0.1 0 3	115
Corned beef, average	230	$\frac{1}{2}$ lb.	35.9 15.6	59.7 26 2	7.35 26.2	735
Corned beef, cooked	115	$\frac{1}{2}$ lb.	16.4 14.3	27.3 23.8	3.20 23.8	320
Corned beef, canned	115	$\frac{1}{2}$ lb.	30.3 26.3	21.5 18.7	3.25 18.7	325
Corned beef hash, canned	230	$\frac{1}{2}$ lb.	26.0 11 3	18.4 8 0	6.2 2.7	240
Corned mutton, canned . . .	115	$\frac{1}{2}$ lb.	33.1 28 8	26.2 22.8	3.80 22.8	380
Cornmeal:						
White, Pillsbury . . .	15	1 T.	11.7 78 3	1.2 8 3	0.2 1 1	55
White, Quaker . . .	15	1 T.	11.6 77.3	1.3 8 9	0.2 1 5	55
Yellow, Pillsbury . . .	15	1 T.	11.8 78 7	1.2 8 3	0.2 1 3	55
Yellow, Quaker . . .	15	1 T.	11.7 77 8	1.3 8 5	0.1 1 0	55
Cooked . . .	100	$\frac{1}{2}$ c.	11.9 11 9	1.4 1 4	0.8 0.8	60
Corn-oil . . .	115	$\frac{1}{2}$ c.	0 0	0 0	115.0 100.0	1070
Corn-oil . . .	14	1 T.	0 0	0 0	14.0 100.0	130
Cornsalad (fetticus) . . .	25	$\frac{1}{2}$ c.	0.9 3.6	0.5 2.0	0.1 0.4	7

78 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

C	Food items.	Size of portion		Value of portion			
		Grams.	Household measure	Carb	Prot	Fat	Cal
Cornstarch		60	$\frac{1}{2}$ c.	54.0 90 0	— —	— —	220
Cornstarch		8	1 T.	7.2 90 0	— —	— —	30
Cottage cheese		55	$\frac{1}{4}$ c.	2.4 *4 3	11.5 20 9	0.6 1 0	65
Cottage cheese, Jewish		50	$\frac{1}{2}$ c.		14.0 28 0	4.5 9 0	100
Cottage cheese, potted		50	$\frac{1}{4}$ c.		10.5 21.1	17.0 34 0	200
Cottage cheese, skim milk		50	$\frac{1}{4}$ c.		11.6 23 3	0.5 1 0	55
Cottolene		11	1 T.	0 0	0 0	11.0 100 0	100
Cotton-seed oil		11	1 T.	0 0	0 0	11.0 100 0	100
Coulommieres, French cheese		25	$1\frac{1}{2}$ " x 1" x $\frac{1}{2}$ "	1.2 4 8	4.3 17 4	5.1 20 5	70
Cowpeas, green		100	$\frac{3}{4}$ c.	22.7 22 7	9.4 9 4	0.6 0 6	135
Cowpeas, dried		100	$\frac{1}{4}$ c.	60.8 60 8	21.4 21 4	1.4 1 4	350
Crab apples		90	6, $1\frac{1}{2}$ " diam.	16.0 17 8	0.4 0 4	0.3 0 3	70
Crab apple juice		120	$\frac{1}{2}$ c.	13.4 *11 2	— —	— —	55
Crabmeat, blue (Atlantic), canned		60	2 oz.		10.8 18 0	0.2 0 4	75
Crabmeat paste		6	1 t.	0.4 *6 8	1.1 18 8	0.3 5 2	9
Crabs, Japanese		85	$\frac{1}{2}$ c.		16.9 19 9	0.7 0 8	75
Crabs, Norwegian		85	$\frac{1}{2}$ c.		16.9 19 8	2.9 3 4	95
Crabs, boiled		60	2 oz.		11.5 19 2	3.1 5 2	75
Crabs (Eastern, hard), canned		85	$\frac{1}{2}$ c.	0.6 0 7	13.4 15 8	1.3 1 5	70
Cracker meal		100	$\frac{3}{4}$ c.	72.9 72 9	10.9 10 9	6.0 6 0	400
Cracked wheat		115	1 c.	88.0 76.5	12.8 11 1	2.0 1 7	430
Crackers and Biscuits:							
Afternoon tea		3	1	2.6 77 7	0.2 6 3	0.5 14 9	15
Animal		2	1	1.9 81 0	0.1 5 9	0.3 12 6	11
Arrowroot		4	1	3.6 82 0	0.2 4 7	0.6 12 9	20
Boston		25	4	17.8 71 1	2.8 11 0	2.1 8 5	105
Butter		12	3, 2" diam.	8.6 71 6	1.2 9 6	1.2 10 0	50
Cocoanut bars		10	2	7.2 71 6	0.6 6 2	1.7 16.7	50
Cookies, crisp, thin, rich		10	1	7.0 69 8	0.8 7 8	1.8 18 0	50
Cookies, soft, thick		20	1	14.6 73 0	1.4 6 8	2.1 10 5	85

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 79

Food items	Size of portion		Value of portion			C
	Grams	Household measure	Carb	Prot	Fat	
Crackers and Biscuits:						
Cookies, iced thinly	10	1	6.3 63.4	0.6 5.7	2.5 24.9	50
Frosted thickly	20	1	15.0 75.0	0.8 4.0	2.0 10.0	85
Cream	25	2, 3" diam.	17.4 69.7	2.4 9.7	3.3 12.1	110
Egg . .	35	4	23.3 66.6	4.4 12.6	4.9 14.0	160
Fig bars	30	2	22.7 75.8	1.3 4.2	1.4 4.8	110
Fig Newtons	30	2	23.0 76.8	1.3 4.4	0.6 2.0	105
Five o'clock tea .	12	3	9.1 75.6	1.0 7.9	1.4 11.5	55
Ginger snaps	30	8, 1½" diam.	22.8 76.0	2.0 6.5	2.6 8.6	155
Graham . .	25	3, 3" sq	18.5 73.8	2.5 10.0	2.4 9.4	110
Large, N B C.	25	3	19.2 76.6	1.9 7.6	2.5 9.8	110
Old fashioned, Sunshine	7	1	5.4 77.2	0.5 7.3	0.8 11.6	30
Small, N B C.	20	6	15.5 77.7	1.5 7.7	1.9 9.4	85
Sunshine	7	1	5.6 80.8	0.5 7.2	0.8 12.3	35
Krispy crackers, Sunshine	3	1	2.5 73.4	0.3 9.9	0.4 12.2	15
Lady-fingers . .	0	5, 2½" long	21.2 70.6	2.6 8.8	1.5 5.0	110
Lorna Doone	25	3	16.4 65.7	1.7 6.9	5.5 22.1	125
Macaroons	25	2, 1½" diam.	16.3 65.2	1.6 6.5	3.8 15.2	110
Matzoth . .	20	1, 6" diam.	14.0 70.0	3.0 15.0	—	70
Matzoth, N. B. C.	25	4	21.8 86.7	2.6 10.5	0.2 0.9	100
Molasses cookies	10	1	7.7 76.7	0.6 6.4	0.9 8.9	40
Nabisco, vanilla . .	20	6	14.3 71.7	1.1 5.4	4.2 21.2	100
Oatmeal . .	35	3	24.0 69.0	4.1 11.8	3.9 11.1	150
Oyster . .	25	½ c.	17.6 70.5	2.8 11.3	2.6 10.5	110
Oyster, Sunshine . .	18	½ c.	14.2 78.7	1.7 9.6	2.0 10.9	85
Oysterettes, N. B. C. . .	13	12	9.2 70.7	1.3 9.9	1.4 10.6	55
Peanut cookies . .	10	1	5.4 53.5	1.4 14.0	2.8 27.5	55
Pilot bread . .	25	1 cracker	18.6 74.2	2.8 11.1	1.3 5.0	100
Ry-Krisp, Ralston . .	6	1	3.7 *61.9	0.8 13.1	0.1 2.0	20
Saltina Biscuit, N. B. C.	11	3	7.7 70.1	1.0 9.3	1.4 12.9	50
Saltines	20	3 double	13.7 68.5	2.1 10.6	2.5 12.7	90
Saltines, Sunshine . .	3	1	2.5 75.8	0.3 9.4	0.5 14.7	15

80 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

C	Food items.	Size of portion.		Value of portion.			
		Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Crackers and Biscuits:							
Sandwich-type, com.	15	1	10.8	0.8	2.9	75	
			72 2	5 0	19 6		
<i>Saratoga Flakes</i> , N. B. C.	11	3	7.6	1.1	1.3	50	
			69.3	10 0	12 0		
Social tea	14	3	11.1	1.2	1.3	65	
			79 4	8 2	9 9		
Soda	10	3, 2" sq.	7.3	1.0	1.0	46	
			73.1	9 8	9.1		
Soda, Loose-Wiles	7	1	5.4	0.6	0.5	30	
			80 6	9 6	7 5		
Soda, N. B. C.	20	3	15.0	1.5	1.9	85	
			74.9	7 3	9.4		
Soda, Sunshine	6	1	4.4	0.6	0.7	25	
			75 7	9 6	12 2		
<i>Toasted Dainties</i> , whole wheat, N. B. C.	13	4	10.1	1.3	1.0	55	
			77.3	9.6	7 4		
<i>Uneeda Biscuit</i>	20	3	14.5	2.2	2.1	90	
			71.8	11.1	10.5		
Vanilla wafers	10	3	7.2	0.6	1.5	45	
			72 4	6 1	14 9		
Water	18	2	13.6	2.1	0.9	75	
			75.7	11.7	5.0		
<i>Wheatworth</i> , N. B. C.	10	2	7.6	0.9	0.9	45	
			75.5	8.7	9.3		
<i>Crackels</i> , Quaker	30	1 c.	24.1	3.3	0.1	115	
			80 2	10 9	0 4		
Cranberries	50	½ c.	4.2	0.2	0.3	20	
			*8.4	0 4	0 6		
Cranberry beans, young pods	100		0.6	0.4	0	4	
			0.6	0 4	0		
Cranberry beans, medium	100		1.7	1.3	0.6	20	
			1.7	1.3	0 6		
Cranberry sauce	100	½ c.	44.6	0.2	0.3	185	
			44 6	0 2	0 3		
Crayfish (Eastern)	115	½ lb.	1.2	18.4	0.6	85	
			1 0	16.0	0 5		
Crayfish, boiled	60	2 oz.		11.6	0.5	50	
				19.3	0.8		
Cream, see Milks.							
Cream cheese, American	30	½ pkg.	Trace	3.0	11.4	120	
			*0 2	10 0	38 0		
Cream cheese, English	30	2" x 1" x ½"	0.4	1.6	17.4	170	
			*1 3	5 3	56.1		
Cream cheese, demi-sel, French	30	2" x 1" x ½"		4.3	11.9	125	
				14 5	39 9		
Cream of barley	50	½ c.	38.0	5.6	0.8	180	
			76 1	11.1	1 6		
Cream of rice	30	½ c.	23.9	2.2	0.1	110	
			79 6	7 4	0 4		
Cream of rye	50	½ c.	35.9	6.0	0.8	180	
			71.8	12.0	1.6		
<i>Cream of Wheat</i>	30	½ c.	21.8	3.5	0.7	110	
			72 5	11 8	2 4		
<i>Cream of Wheat</i> , cooked	170	½ c.	24.7	3.4	—	115	
			14 5	2 0	—		
<i>Cream of Wheat</i> , "new 5-minute"	20	2 T.	14.6	2.4	0.3	70	
			73 0	12.0	1 3		

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.
Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 81

Food items.	Size of portion.		Value of portion.			C
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Cress, garden	20	$\frac{1}{2}$ c.	0.8 *4.1	0.8 4 2	0.3 1.4	9
Cress, water	20	$\frac{1}{2}$ c.	0.8 4 0	0.2 1 0	0.2 1 0	6
Crisco	12	1 T.	—	—	12.0 100 0	110
Croaker	230	$\frac{1}{2}$ lb.	—	41.4 18 0	6.9 3 0	205
Crumbs, white, dried . . .	55	$\frac{1}{2}$ c.	41.8 76 0	7.2 13 0	1.1 2 0	210
Cucumber	75	$2\frac{1}{2}$ " x 2"	1.3 *1.7	0.6 0 8	0.2 0 2	10
Cucumber, cooked	50	2 T.	0.3 0 7	0.3 0.5	— Trace	2
Cucumber pickle, fresh, com.	20	3 sl.	3.2 15 9	0.2 1 2	— 0 2	14
Curly-kale	100	1 c.	9.9 9.9	3.8 3.8	0.9 0 9	65
Currant (black) jam, com. .	25	1 T.	17.2 *68 8	0.1 0.5	— Trace	70
Currant (black) juice . . .	120	$\frac{1}{2}$ c.	13.1 *10 9	0.6 0 5	— —	55
Currant (red) jelly, com. .	12	1 t.	7.9 *66.0	Trace 0 3	— Trace	30
Currant (red) juice	120	$\frac{1}{2}$ c.	12.1 10 1	0.4 0 3	— —	50
Currants:						
Black	50	$\frac{1}{2}$ c.	3.3 *6 6	0.5 0 9	— Trace	15
Black, stewed without sugar	80	1 c.	2.9 *4 6	0.5 0 6	— Trace	14
Red	50	$\frac{1}{2}$ c.	2.2 *4 4	0.6 1.1	— Trace	12
Red, stewed without sugar	80	1 c.	2.6 *3.2	0.6 0 8	— Trace	13
White	50	$\frac{1}{2}$ c.	2.8 *5.6	0.7 1 3	— Trace	18
Zante, dried	50	$\frac{1}{2}$ c.	31.5 *63 1	0.8 1 7	— —	130
Curried meat	60	2 oz.	5.2 *8.7	4.7 7 9	6.7 11.1	105
Curry powder	0 5	$\frac{1}{2}$ t.	—	—	—	—
Cushaw (squash)	125	1 c.	9.1 7 3	1.5 1 2	0.4 0 3	45
Custard, apple	100	1	18.1 *18 1	2.1 2 1	— Trace	90
Custard:						
Banana	50		8.9 *17.9	1.2 2.5	1.3 2 6	55
Egg, baked	50		4.7 *9.4	2.6 5.2	2.9 5.9	55
Egg, boiled	50		6.3 *12.7	2.3 4.7	2.6 5 3	60
Frozen	60	2 oz.	10.8 *18 0	2.4 4.0	5.4 9.0	105
Pie	100	1 sl.	27.7 *27 7	5.5 5.5	14.4 14 4	270
Cuttlefish	115	$\frac{1}{2}$ lb.	0.8 *0.8	16.0 14.0	1.7 1.5	85

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D

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Damson plum	50	8 med.	4.8 *9 6	0.2 0 5		20
Damson plum jam	25	1 T.	13.3 53 0	0.3 1 2	—	55
Dandelion greens	50	½ c.	5.3 10.6	1.2 2 4	0.5 1.0	30
Dasheens	100	1 tuber	23.5 *23.5	2.9 2 9	0.2 0 2	110
Date pudding, Heinz	50		24.1 48 2	1.7 3 5	4.9 9 9	150
Dates, fresh	15	3	5.4 *35 8			20
Dates, dried	13	2 lg.	9.5 *73.5	0.2 1 7	0.2 1 9	40
Derbyshire cheese	20	1 cu. in.	0.9 *4.4	4.9 24.5	7.0 35.2	90
Dill pickles, com.	20	½ sm.	0.1 0 5	0.2 0 9	0.1 0 3	2
Dock or sorrel	25	½ c.	Trace *0.1	0.5 2 1	Trace 0.2	2
"Double" cream, see 40% cream, p. 105.						
Doughnuts	45	1, 3" diam.	24.0 53 1	3.0 6.7	9.5 21 0	200
Dripping, beef	10	1 T.	0 0	0 Trace	9.9 99 0	90
Duck, domesticated	230	½ lb.		49.2 21.4	19.0 8.2	380
Duck, wild	230	½ lb.		49.0 21 3	12.0 5.2	310
Duck gizzard	100	1 lg.	0.6 0.6	21.3 21.3	3.7 3.7	125
‡Duck, roasted	115	½ lb.		38.3 31.6	5.4 4.7	200
Duck, roasted, cold	115	½ lb.		31.2 27.1	7.0 6.1	195
Duck egg, see Eggs.						
Dumpling	100		24.0 *24 0	3.3 3 3	11.1 11 1	215
Dutch heads (kohlrabi)	100	½ c.	4.2 *4.2	2.0 2 0	0.1 0 1	25

E

Edam cheese	30	1½" cube	1.9 *6 3	7.1 23 5	10.2 34.0	130
Edam cheese, American	30	1½" cube		9.2 30 9	6.8 22 7	100
Eels, Mediterranean	230	½ lb.	2.3 *1.0	37.5 16.3	40.9 17.8	530
Eels, salt water	230	½ lb.		42.8 18.6	20.9 9.1	470
Eels, smoked	115	½ lb.		21.4 18 6	32.0 27.8	385
Eels, stewed	60	2 oz.		6.6 11.0	10.9 18.1	130

* Largely assimilable.

Blank space indicates lack of data

‡ Gross fat removed.

Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion			E
	Grams.	Household measure.	Carb.	Prot.	Fat	
Eggs:						
Chinese preserved (Pidan)	100	1 lg.	—	26.8	18.5	285
			—	26 8	18.5	
Duck:						
Whole	65	1 av.	—	8.6	9.4	125
			—	13 3	14 5	
White	40	1 av.	—	4.4	—	20
			—	11.1	Trace	
Yolk	25	1 av.	—	4.2	9.3	105
			—	16 8	36 2	
Goose:						
Whole	70	1 av.	—	9.7	9.1	125
			—	13.8	14 4	
White	45	1 av.	—	5.3	—	20
			—	11 6	Trace	
Yolk	25	1 av.	—	4.4	9.1	100
			—	17 3	36 2	
Guinea-hen:						
Whole	30	1 av.	—	4.1	3.6	50
			—	13 5	12 0	
White, bulk	100			11.6	—	50
				11.6	Trace	
Yolk, bulk	100			16.7	31.8	375
				16 7	31.8	
Hen:						
Whole	50	1 av.	—	6.7	5.2	75
			—	13 4	10 5	
Pullet's egg	40	1 av.				
White	35	1 av.	—	4.3	0.1	20
			—	12 3	0 2	
Yolk	15	1 av.	—	2.4	5.0	55
			—	15 7	33 3	
Brown egg	50	1 av.	—	5.9	5.6	75
			—	11 9	11 2	
White egg	50	1 av.	—	5.9	5.4	75
			—	11.8	10 8	
Dehydrated (dried) eggs	30	1 oz.	—	12.0	13.1	170
			—	40 0	43 7	
Plover, whole	25	1 av.	—	2.7	2.9	40
			—	10 7	11 7	
Turkey:						
Whole	80	1 av.	—	10.7	9.0	130
			—	13 4	11.2	
White	50	1 av.	—	5.7	—	25
			—	11.5	Trace	
Yolk	30	1 av.	—	5.1	8.9	105
			—	17 4	32 9	
Turtle, fresh water	100		—	18.1	11.1	175
			—	18.1	11.1	
Turtle, sea water	35	1 med.	—	6.6	3.4	60
			—	18.8	9 8	
Eggs, cooked:						
Fried	100	2	0	14.1	19.5	240
			0	14.1	19.5	
Omelette	100		—	7.6	30.3	315
			—	7 6	30 3	
Poached	50	1	0	6.2	5.8	80
			0	12 4	11.7	
Scrambled	100	2	0.6	10.1	25.2	280
			*0.6	10.1	25.2	
Eggfruit	100		41.0	3.4	1.9	190
			41 0	3.4	1.9	

84 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

E	Food items.	Size of portion.		Value of portion.			
		Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Eggplant	250	2 sl.	10.8	3.0	0.8	65	
			*4 3	1 2	0 3		
Eiweissmilch	240	1 c.	3.3	7.2	5.5	95	
			*1 4	3 0	2 3		
Emmenthaler cheese	30	2 cu. in.	0.4	8.5	8.5	115	
			*1 4	28 4	28 5		
Endive, chicory, leaves	15	½ sm. head	0.6	0.2	Trace	3	
			4 0	1 6	0 2		
Endive, white chicory, French	45	1 sm. crown	1.3	0.7	0.1	9	
			2 9	1 6	0 3		
Escarole (Batavian endive)	50	½ heart	0.5	0.6	Trace	5	
			*0 9	1 1	0 1		
Eulachon (Columbia River smelt)	230	½ lb.		30.4	25.7	315	
				13 2	11 2		

F

Farina	20	2 T.	15.0	2.2	0.1	70	
			75 0	11 0	0 5		
Fats and Oils, see page 112.							
Fave beans	75	½ c.	3.1	4.0	—	30	
			4 2	5 4	—		
Fave beans, dried	75	½ c.	36.1	17.7	1.8	240	
			48 2	23 6	2 5		
Fennel	50	½ (3" diam.)	1.8	0.9	0.1	12	
			3 6	1 9	0 2		
Fetticus (cornsalad)	25	½ c.	0.9	0.5	0.1	7	
			3 6	2 0	0 4		
Figs, fresh, Florida	45	1 lg.	5.3	0.3	0.2	25	
			*11 7	0 6	0 5		
Figs, candied	15	1	11.0	0.5	—	45	
			73.7	3 5	0 2		
Figs, canned	85	3	34.8	1.0	0.3	150	
			40 9	1 2	0 3		
Figs, dried	45	2 lg.	23.8	1.6	—	105	
			*52 9	3 6	—		
Figs, Smyrna, processed	45	3	23.1	1.4	0.2	100	
			*51.3	3 0	0 4		
Fig jam	25	1 T.	12.8	0.2	—	55	
			51.2	0 7	Trace		
Fig pudding, Heinz	50		24.5	2.0	6.0	165	
			49.0	4 0	12.1		
Filberts (hazelnuts), raw, unsalted	35	20	3.3	5.2	23.0	250	
			*9.3	14 9	65 6		
Filberts (hazelnuts), roasted, salted	35	20	4.4	4.9	23.3	255	
			*12 6	14.1	66 6		
Finnan haddie	230	½ lb.		39.0	23.0	375	
				17 0	10 0		
Finocchio (fennel)	50	½ (3" diam.)	1.8	0.8	0.1	12	
			3.6	1.9	0 2		
Fish and Other Sea Food, see specific item.							

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 85

Food items.	Size of portion.		Value of portion.			F
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Fish pastes, English:						
Anchovy	6	1 t.	0.1 *2 5	1.2 20.6	0.7 12 1	12
Bloater	6	1 t.	0.2 *4 0	1.2 20.1	0.7 12 0	12
Crab	6	1 t.	0.4 *6 8	1.1 18 8	0.3 5.2	9
Lobster	6	1 t.	0.2 *3.0	0.9 15 5	0.6 9.8	10
Prawn	6	1 t.		1.3 21.6	0.5 8.6	10
Salmon and anchovy	6	1 t.	0.5 *8 5	0.8 14 0	0.5 9.1	10
Salmon and shrimp . .	6	1 t.	0.2 *4 2	1.1 18 2	0.5 9.3	10
Sardine and tomato . .	6	1 t.	0.5 *7 9	1.1 19 0	0.6 9 6	12
Shrimp	6	1 t.	0.1 *2 5	1.1 18.3	0.7 11 5	11
<i>Five-O</i> , chocolate flavored drink, made from powder .	250	1 c.	24.2 9 7	4.5 1.8	0.7 0.3	125
<i>Five-O</i> , chocolate flavored drink, made from syrup	250	1 c.	29.5 11.8	4.0 1 6	1.5 0 6	150
Flatbread	100		73.6 73 6	14.9 14.9	0.5 0 5	365
Flounder	230	$\frac{1}{2}$ lb.		32.7 14.2	1.4 0 6	145
Flounder, fried	115	$\frac{1}{2}$ lb.	7.5 *6 5	19.5 17 0	14.8 12 9	250
Flours:						
Apple (Italian)	100	$\frac{1}{2}$ c.	40.8 *40 8	3.4 3 4	— —	180
Arrowroot	26	2 T.	26.0 100 0	— —	— —	105
Banana or pisang	100	$\frac{1}{2}$ c.	72.5 72 5	3.5 3.5	0.8 0 8	320
Barley meal and flour	130	1 c.	82.2 72 8	13.7 10 5	2.9 2 2	420
Buckwheat (sifted)	115	1 c.	89.6 77 9	7.4 6 4	1.4 1 2	410
Corn	130	1 c.	99.1 76 2	10.9 8.4	2.3 1 8	470
Cottonseed	100		21.3 21 3	49.1 49 1	12.7 12 7	405
Dietetic, Lister	110	1 c.	0 0	60.0 54 5	0 0	245
Equalized, Lister	126	1 c.	27.0 *21 4	0 0	0 0	110
Gluten	100	$\frac{1}{2}$ c.	65.0 65.0	15.0 15.0	2.0 2 0	345
Gluten, Battle Creek Food Co.	100	$\frac{1}{2}$ c.	43.3 43.3	44.8 44.8	1.8 1.8	390
Gluten, see also items below.						
<i>Gold Medal</i>	100	$\frac{1}{2}$ c.	72.5 72.5	10.5 10 5	1.0 1.0	350
Graham, Wheataworth, N. B. C.	100	$\frac{1}{2}$ c.	74.6 74 6	11.4 11 4	2.4 2 4	375
Lima bean	100	1 $\frac{1}{2}$ c. sc.	63.0 63 0	21.5 21.5	1.4 1.4	360

86 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

F	Food items.	Size of portion.		Value of portion.			
		Grams.	Household measure	Carb.	Prot.	Fat.	Cal.
Flours:							
Peanut	100	1½ c.	36.5	51.2	5.0	405	
			36.5	51.2	5.0		
Oat	75	1 c.	49.3	11.3	4.8	295	
			65.7	15.1	6.4		
Pancake, Aunt Jemima, Quaker	100	¾ c.	71.6	10.4	1.5	350	
			71.6	10.4	1.5		
Pancake, Pillsbury	100	¾ c.	76.0	7.9	1.2	355	
			*76.0	7.9	1.2		
Pillsbury's Best	100	1 c.	75.0	11.2	1.0	365	
			*75.0	11.2	1.0		
Pisang (banana)	100	¾ c.	72.5	3.5	0.8	320	
			72.5	3.5	0.8		
Potato	100	¾ c.	83.0	0.5	0.1	345	
			83.0	0.5	0.1		
Prepared soy gluten casein, Loeb	100	1 c.	26.0	42.0	11.0	380	
			*26.0	42.0	11.0		
Pure gluten, Loeb	100	¾ c.	43.0	41.0	2.0	365	
			*43.0	41.0	2.0		
Rice	100	¾ c.	68.0	8.6	6.1	370	
			68.0	8.6	6.1		
Rye	100	1 c.	78.7	6.8	0.9	360	
			78.7	6.8	0.9		
Rye, light, Pillsbury	100	1 c.	78.7	9.9	1.4	375	
			*78.7	9.9	1.4		
Rye, medium, Pillsbury	90	1 c.	69.0	9.5	1.3	335	
			*76.6	10.4	1.5		
Rye, dark, Pillsbury	100	1½ c.	70.6	15.4	2.6	375	
			*70.6	15.4	2.6		
Self-rising gluten, Loeb	100	¾ c.	40.0	38.0	2.0	340	
			*40.0	38.0	2.0		
Self-rising, Wheatsworth, N. B. C.	100	¾ c.	67.9	12.3	2.1	350	
			67.9	12.3	2.1		
Sno Sheen cake	100	1 c.	78.5	7.8	1.1	365	
			*78.5	7.8	1.1		
Softasilk cake	100	1 c.	73.5	7.5	0.9	340	
			73.5	7.5	0.9		
Soya	100	1 c.	15.6	46.7	2.7	280	
			*15.6	46.7	2.7		
Soy bean	100	1 c.	8.0	45.0	11.0	320	
			8.0	45.0	11.0		
Soy, Battle Creek Food Co.	100	1 c.	33.4	33.6	21.3	475	
			33.4	33.6	21.3		
Swans Down cake	100	1 c.	78.2	7.6	0.8	360	
			78.2	7.6	0.8		
Wheat, average, high and medium grade	100	¾ c.	75.1	11.4	1.0	365	
			75.1	11.4	1.0		
Average, low grade	100	¾ c.	71.2	14.0	1.9	365	
			71.2	14.0	1.9		
California, fine	100	¾ c.	76.4	7.9	1.4	360	
			76.4	7.9	1.4		
Entire	100	¾ c.	71.9	13.8	1.9	370	
			71.9	13.8	1.9		
Graham	100	¾ c.	71.4	13.3	2.2	370	
			71.4	13.3	2.2		

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 87

Food items.	Size of portion.		Value of portion.			F
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Flours:						
Patent baker's grade	100	$\frac{1}{2}$ c.	72.7	13.3	1.5	365
			72 7	13.3	1.5	
Prepared (self-rising)	115	1 c.	84.0	11.7	1.4	405
			73 0	10 2	1.2	
Straight grade	100	$\frac{1}{2}$ c.	74.8	10.8	1.1	360
			74 8	10 8	1.1	
Whole wheat, Pillsbury	100	$\frac{1}{2}$ c.	70.8	13.4	2.0	365
			*70 8	13 4	2.0	
Flying fish, Mediterranean	115	$\frac{1}{2}$ lb.	1.3	22.1	1.3	110
			1.1	19.2	1.1	
"Force," whole wheat flakes	30	1 c.	23.8	3.4	0.3	115
			*79 5	11 4	1.1	
Fowl, see specific item.						
Frankfort sausage (Frankfurter)	120	2, 7" x $\frac{1}{2}$ "	1.3	23.5	22.3	310
			1.1	19 6	18.6	
Frankfurter, all meat	120	2, 7" x $\frac{1}{2}$ "	16.9	16.9	25.0	300
			14 1	20.8		
Frankfurter, added cereal	120	2, 7" x $\frac{1}{2}$ "	18.2	16.9	4.0	180
			15.2	14.1	3 3	
French salad dressing	11	2 t.	—	—	6.6	60
			—	—	60 0	
French salad dressing, com.	11	2 t.	2.0	0.1	3.9	45
			*18.1	0 6	35.5	
Frogs' legs	230	$\frac{1}{2}$ lb.	35.7	0.5	150	
			15 5	0 2		
Fromage de Brie, American	25	1 $\frac{1}{2}$ " x 1" x $\frac{1}{2}$ "	0.4	4.0	5.3	65
			*1.4	15 9	21.0	
Fromage de Brie, European	25	1 $\frac{1}{2}$ " x 1" x $\frac{1}{2}$ "	5.2	5.6	125	
			20 9	22.4		
Frozen custard	60	2 oz.	10.8	2.4	5.4	105
			*18.0	4 0	9.0	
Frozen foods, same analyses as raw products.						
Fruit cake, dark	60	1 sl.	33.5	3.1	8.3	230
			55.9	5 2	13.8	
Fruit cake, dark, N. B. C.	60	1 sl.	37.8	2.9	8.3	245
			63 0	4 8	13 8	
Fruit cake, light, N. B. C.	60	1 sl.	39.0	2.6	7.5	240
			65 0	4.4	12 5	
Fruit salad, see Fruits, canned.						
Fruit syrups, com.	15	1 T.	7.5	—	0	30
			*50.0	0 1	0	
Fruits, Canned: † Refer also to specific item.						
Apricots, fancy	120	$\frac{1}{2}$ c.	66.0	0.6	—	275
		3 halves	55.0	0.5	—	

† **General description of grades of canned fruits:** **Fancy**—the top grade; fruit of superlative quality packed in extra heavy syrup ranging from 40 to 70 per cent. **Choice**—the grade between the top and standard grades; fruit of fine quality packed in heavy syrup containing 10 to 15 per cent less sugar. **Standard**—the medium grade; fruit of good quality packed in medium syrup of about 20 to 25 per cent. **Second**—fruit of second quality packed in 10 per cent syrup; when packed in water, this fruit is often designated **water**; when for bakery use, it may be designated **pie** and **solid packed pie**.

Heavy syrup is used on apricots, peaches, and plums, and, beginning with 10 per cent sugar by weight on Seconds, increases in steps of 15 per cent to each grade. **Light syrup** is used on pears, cherries, and grapes, and, beginning with 10 per cent sugar by weight on Seconds, increases in steps of 10 per cent to each grade.

All carbohydrate percentages represent added syrup; available carbohydrate in the fruit itself is negligible by comparison where the syrup is 20 per cent or more. All protein percentages are approximate.

88 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

F	Food items.	Size of portion.		Value of portion			
		Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Fruits, Canned†: Refer also to specific item							
Apricots, choice . . .	120	$\frac{1}{2}$ c.	48.0	0.7	—	200	
		4 halves	40.0	0.6	—		
Apricots, standard . .	120	$\frac{1}{2}$ c.	30.0	0.8	—	125	
		6 halves	25.0	0.7	—		
Apricots, light syrup . .	120	$\frac{1}{2}$ c.	20.8	1.1	—	90	
			17.3	0.9	—		
Blackberries, extra heavy syrup	120	$\frac{1}{2}$ c.	67.7	1.0	—	280	
			56.4	0.8	—		
Blackberries, fancy . .	120	$\frac{1}{2}$ c.	48.0	1.0	—	200	
			40.0	0.8	—		
Blackberries, choice . .	120	$\frac{1}{2}$ c.	36.0	1.1	—	150	
			30.0	0.9	—		
Blackberries, standard .	120	$\frac{1}{2}$ c.	24.0	1.1	—	105	
			20.0	0.9	—		
Blueberries, fancy . .	120	$\frac{1}{2}$ c.	72.0	0.5	—	295	
			60.0	0.4	—		
Blueberries, choice . .	120	$\frac{1}{2}$ c.	48.0	0.6	—	200	
			40.0	0.5	—		
Blueberries, standard .	120	$\frac{1}{2}$ c.	24.0	0.7	—	100	
			20.0	0.6	—		
Blueberries, very light syrup	120	$\frac{1}{2}$ c.	15.4	0.7	—	65	
			12.8	0.6	—		
Cherries:							
Fancy ¹ . .	85	$\frac{1}{2}$ c., 12	34.0	0.4	—	125	
			40.0	0.5	—		
Choice ¹ . .	85	$\frac{1}{2}$ c., 15	25.5	0.5	—	105	
			30.0	0.6	—		
Standard ¹ . .	85	$\frac{1}{2}$ c., 20	17.0	0.5	—	70	
			20.0	0.6	—		
Red, pitted, fancy . .	100	$\frac{1}{2}$ c.	70.0	0.2	—	290	
			70.0	0.2	—		
Red, pitted, choice . .	100	$\frac{1}{2}$ c.	50.0	0.2	—	205	
			50.0	0.2	—		
Red, pitted, standard .	100	$\frac{1}{2}$ c.	30.0	0.3	—	125	
			30.0	0.3	—		
Figs	85	$\frac{1}{2}$ c., 3	34.8	1.0	0.3	150	
			40.9	1.2	0.3		
Fruit salad, fancy . .	140	1 c.	33.6	0.7	—	140	
			24.0	0.5	—		
Fruit salad, choice . .	140	1 c.	28.0	0.7	—	120	
			20.0	0.5	—		
Grapefruit	135	$\frac{1}{2}$ c.	17.1	0.7	0.3	75	
			12.7	0.5	0.2		
Grapes, Muscat, fancy .	120	$\frac{1}{2}$ c.	48.0	0.6	—	200	
			40.0	0.5	—		
Grapes, Muscat, choice .	120	$\frac{1}{2}$ c.	36.0	0.6	—	150	
			30.0	0.5	—		
Grapes, Muscat, standard	120	$\frac{1}{2}$ c.	24.0	0.7	—	100	
			20.0	0.6	—		
Loganberries	75	$\frac{1}{2}$ c.	21.0	0.5	—	90	
			28.0	0.7	—		
Peaches, fancy	140	2 halves	77.0	0.5	—	320	
			55.0	0.3	—		

¹ Black, white and Royal Anne cherries.

† See footnote on page 87.

* Largely assimilable.

Blank space indicates lack of data.

‡ Gross fat removed.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 89

Food items.	Size of portion.		Value of portion.			F
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Fruits, Canned†:						
Peaches, choice	140	2 halves	56.0 40 0	0.6 0.4	—	230
Peaches, standard . . .	140	3 halves	35.0 25.0	0.7 0.5	—	145
Pears, Bartlett, fancy . .	120	2 halves	48.0 40.0	0.2 0.2	—	200
Pears, Bartlett, choice . .	120	2 halves	36.0 30 0	0.3 0.3	—	150
Pears, Bartlett, standard .	120	3 halves	24.0 20.0	0.5 0.4	—	100
Pineapple, heavy syrup . .	150	2 sl.	54.6 36.4	0.6 0.4	1.1 0.7	235
Pineapple, medium syrup	150	2 sl.	37.5 25.0	0.6 0.4	1.1 0.7	165
Pineapple, light syrup . .	150	2 sl.	22.5 15 0	0.6 0.4	0.2 0.1	95
Plums, fancy	100	2, $\frac{1}{2}$ c.	55.0 55.0	0.3 0.3	—	225
Plums, choice	100	2, $\frac{1}{2}$ c.	40.0 40 0	0.4 0.4	—	165
Plums, standard	100	3, $\frac{1}{2}$ c.	25.0 25.0	0.5 0.5	—	105
Prunes	100	3	22.3 22 3	0.5 0.5	0.1 0.1	95
Raspberries:						
Black, fancy	140	$\frac{1}{2}$ c.	56.0 40 0	1.3 0.9	1.3 0.9	245
Black, choice	140	$\frac{1}{2}$ c.	42.0 30 0	1.4 1.0	1.4 1.0	190
Black, standard	140	$\frac{1}{2}$ c.	28.0 20 0	1.5 1.1	1.5 1.1	135
Red, fancy	140	$\frac{1}{2}$ c.	84.0 60 0	0.8 0.6	—	350
Red, choice	140	$\frac{1}{2}$ c.	56.0 40 0	1.0 0.7	—	235
Red, standard	140	$\frac{1}{2}$ c.	28.0 20 0	1.1 0.8	—	120
Strawberries	120	$\frac{1}{2}$ c.	33.6 28 0	0.5 0.4	0 0	140
Fruits, Dried:						
Apples	60	$\frac{1}{2}$ lb.	39.7 66.1	1.0 1.6	1.3 2.2	180
Apricots	25	6 halves	10.8 *43 4	1.2 4.7	0.3 1.0	50
Currants, Zante	50	$\frac{1}{2}$ c.	31.5 *63 1	0.8 1.7	—	130
Dates	13	2 lg.	9.5 *73 5	0.2 1.7	0.2 1.9	40
Figs	45	2 lg.	23.8 *52 9	1.6 3.6	—	105
Litchi	25	10 (large pits) 8 (small pits)	17.5 70 0	0.9 3.6	0.1 0.5	75
Peaches	50	3, $1\frac{1}{2}$ " diam.	26.5 *53 0	1.7 3.4	—	115
Pears	75	4 halves	27.0 *36.0	1.7 2.3	0.3 0.4	120
Prunes	100	8 lg.	40.3 *40.3	2.4 2.4	—	175
Raisins, Muscat, seeded . .	75	$\frac{1}{2}$ c.	48.3 *64.4	0.8 1.1	—	200

† See footnote on page 87.

90 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

F	Food items.	Size of portion.		Value of portion.			
		Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Fruits, Dried:							
Raisins, Sultan or Thompson seedless	60	½ c.	38.8 *64.7	1.0 1.7	—	165	
Raspberries	40	½ c.	32.1 80.2	2.9 7.3	0.7 1.8	150	
Fruits, Glacé:							
Apricots	20	1 med.	17.3 86.5	— 0.6	— 0.2	70	
Cherries	10	3	5.6 *55.8	— 0.6	0 0	25	
Figs	15	1	11.0 73.7	0.5 3.5	— 0.2	45	
Pears	30	1 oz.	22.8 75.9	0.4 1.3	0.2 0.6	95	
Pineapple	50	1 sl.	40.0 80.0	0.4 0.8	0.2 0.4	165	
Fruit Juices:							
Apple	120	½ c.	15.0 12.5	0.1 0.1	—	60	
Blackberry	120	½ c.	8.4 7.0	0.4 0.3	—	35	
Blueberry	120	½ c.	14.9 *12.4	0.1 0.1	—	60	
Carambola	225	1 c.	23.2 10.3	0.2 0.1	0.2 0.1	100	
Cider, sweet apple	230	1 c.	32.7 *14.2	0.2 0.1	0 0	135	
Citrag	120	½ c.	8.3 6.9	1.5 1.3	—	40	
Crab apple	120	½ c.	13.4 *11.2	—	—	55	
Currant, black	120	½ c.	13.1 *10.9	0.6 0.5	—	60	
Currant, red	120	½ c.	12.0 10.1	0.4 0.3	—	50	
Granadilla	30	1 oz.	5.7 19.1	0.2 0.6	—	25	
Grape:							
Catawba type	120	½ c.	24.2 20.2	0.5 0.4	—	105	
Concord	120	½ c.	20.8 17.3	0.4 0.3	—	85	
Delaware	120	½ c.	26.5 22.1	0.4 0.3	—	110	
Muscadine	120	½ c.	15.6 13.0	0.1 0.1	—	65	
Welch, certified	120	½ c.	18.1 15.1	0.4 0.3	—	75	
Grapefruit, California	120	½ c.	11.5 9.8	0.5 0.4	0.1 0.1	50	
Grapefruit, Florida	120	½ c.	15.2 12.7	0.6 0.5	0.2 0.2	65	
Lemon	15	1 T.	1.5 9.8	—	—	6	
Lime	15	1 T.	1.2 7.8	0.1 0.5	—	5	
Limequat	15	1 T.	1.0 *6.8	—	—	4	

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.
Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 91

Food items.	Size of portion.		Value of portion.			F
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Fruit Juices:						
Loganberry	120	$\frac{1}{2}$ c.	12.1 10 1	0.7 0 6	—	65
Muskmelon	120	$\frac{1}{2}$ c.	10.9 *9.1	—	—	45
Orange, California	120	$\frac{1}{2}$ c.	15.7 13.1	0.7 0 6	—	65
Passion fruit, natural	30	1 oz.	3.5 *11.5	0.4 1.4	—	15
Peach	120	$\frac{1}{2}$ c.	15.4 12 8	0.2 0 2	—	65
Pineapple	120	$\frac{1}{2}$ c.	15.4 12 8	0.4 0 3	0.4 0 3	70
Pineapple, Hawaiian	120	$\frac{1}{2}$ c.	15.9 *13.3	0.4 0 3	0.4 0.3	70
Pomegranate juice	120	$\frac{1}{2}$ c.	13.9 *11 6	0.2 0 2	—	60
Prune	120	$\frac{1}{2}$ c.	34.6 28 8	1.0 0 8	0 0	145
Quince	120	$\frac{1}{2}$ c.	10.9 *9 1	0.4 0 3	—	50
Raspberry, black	120	$\frac{1}{2}$ c.	12.8 10.7	0.2 0 2	—	55
Raspberry, red	120	$\frac{1}{2}$ c.	10.0 8 3	0.5 0 4	—	45
Strawberry	120	$\frac{1}{2}$ c.	6.1 5.1	0.2 0 2	—	25
Tangelo	120	$\frac{1}{2}$ c.	10.8 9.0	0.8 0 7	—	50
Tangerine	120	$\frac{1}{2}$ c.	10.0 9 2	1.1 0 9	0.4 0 3	50

G

Gammelost cheese, Norwegian	30	1 oz.	2.9 *9 8	12.6 42.1	1.0 3 4	70
Garlic	—	1 clove	—	—	—	—
Gefüllter fisch	60	$\frac{1}{2}$ lb.	20.0 3.1	4 4 9.6	0 2 5.6	105
Gelatin	3	1 t.	5.1 —	16 0 2.7	9 4 —	10
Gelatine, Knox, Sparkling	7	1 pkg.	— 0	91 4 6.0	0 1 —	25
			0	85 5	Trace	

Gerber Strained Foods, see page 157.

Ginger ale	225	1 c.	36.0 16.0	— —	— —	150
Ginger ale, Canada Dry	225	1 c.	20.3 9.0	— —	— —	85
Ginger, crystallized	25	1 sm. piece	21.9 87.5	— —	— —	90
Ginger, ground	100		60.0 *60.0	7.4 7.4	0.4 0.4	280
Ginger roots	100		9.8 *9.8	1.8 1 8	1.5 1 5	60
Ginger snaps	30	8, 1 $\frac{1}{2}$ " diam.	22.8 76.0	2.0 6 5	2.6 8 6	155
Gingerbread	60	1 sq.	30.8 51.4	2.5 4 2	7.1 11.9	205

92 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Gizzard, fresh:						
Chicken	75	1 med.	0.5 0 6	17.3 23 1	2.8 3 8	100
Duck	100		0.6 0 6	21.3 21 3	3.7 3 7	125
Goose	100		0 0	21.4 21 4	5.3 5 3	135
Turkey	100		1.3 1 3	20.5 20 5	10.6 10 6	190
Gloucester cheese	20	1 cu. in.	0.9 *4 4	5.6 28 0	5.6 28 0	80
Glucose, com.	16	1 T.	14.4 *90.0	— —	— —	60
Gluten flour, see Flours.						
Goat's milk	240	1 c.	9.1 *3 8	9.6 4 0	10.1 4 2	170
Goat's milk, evaporated, Meyer- enberg	15	1 T.	1.3 *8 8	1.0 7 0	1.0 7 1	20
Goat's milk cheese, French	30	1 oz.	4.6 *15 3	10.0 33 6	7.7 25 9	130
Goat's milk cheese, Norwegian	30	1 oz.	14.0 *46 8	2.2 7 6	5.9 19.9	120
Goose, young	230	½ lb.		37.5 16.3	83.3 36.2	940
Goose, roast	115	½ lb.		32.2 28 0	25.8 22 4	370
Goose egg, see Eggs.						
Goose gizzard	100	1 med.		21.4 21 4	5.3 5 3	135
Goose liver	100	2 med.	3.7 3.7	16.6 16 6	15.9 15 9	230
Gooseberries, green	100	½ c.	3.4 *3 4	1.1 1 1	— —	20
Gooseberries, ripe	100	½ c.	9.2 *9 2	0.6 0 6	— —	40
Gooseberries, canned, water pack	120	½ c.	7.2 6 0	0.6 0 5	0.2 0 2	35
Gooseberries, canned, in syrup	120	½ c.	22.2 18 5	0.6 0 5	0.2 0 2	95
Gooseberry pie	100	1 sl.	31.0 *31 0	2.8 2 8	9.4 9 4	225
Gorgonzola cheese	15	1" x ½" x 2½"	0.2 *1.6	4.2 28 2	5.2 34 7	65
Gouda cheese, American	30	1 oz.		8.8 29 6	7.3 24 5	105
Gouda cheese, Hollander	30	1 oz.		8.1 27 0	8.8 29 4	115
Goya cheese	30	1 oz.	0.3 *1 4	10.3 34.2	9.1 30 4	130
Graham crackers	25	3, 3" sq.	18.5 73.8	2.5 10 0	2.4 9 4	110
Graham flour, Wheatsworth, N. B. C.	100	½ c.	74.6 74.6	11.4 11.4	2.4 2 4	375
Graham or whole wheat bread	25	1 sl.	13.0 52 1	2.2 8.9	0.5 1.8	65

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed

Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.				G
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.	
Grapes, black	100	20	15.5 *15.5	0.6 0.6	—	65	
Grapes, Concord	100	24	14.9 14.9	1.4 1.4	1.4 1.4	70	
Grapes, Malaga	100	15	16.7 16.7	0.8 0.8	0.4 0.4	75	
Grapes, white	100	30	16.1 *16.1	0.6 0.6	—	70	
Grapes, canned, see Fruits, canned.							
Grape butter	35	2 T.	20.5 58.5	0.4 1.2	Trace 0.1	85	
Grape juice:							
Catawba type	120	$\frac{1}{2}$ c.	24.2 20.2	0.5 0.4	—	106	
Concord	120	$\frac{1}{2}$ c.	20.8 17.3	0.4 0.3	—	85	
Delaware	120	$\frac{1}{2}$ c.	26.5 22.1	0.4 0.3	—	110	
Muscadine	120	$\frac{1}{2}$ c.	15.6 13.0	0.1 0.1	—	65	
Welch, certified	120	$\frac{1}{2}$ c.	18.1 15.1	0.4 0.3	—	75	
Grapefruit	100	$\frac{1}{2}$, 4" diam.	5.3 *5.3	0.6 0.6	—	25	
Grapefruit, canned, water pack	135	$\frac{3}{4}$ c.	10.8 8.0	0.7 0.5	0.3 0.2	50	
Grapefruit, canned, juice pack	135	$\frac{3}{4}$ c.	12.2 9.0	0.7 0.5	0.3 0.2	55	
Grapefruit, canned, in syrup	135	$\frac{3}{4}$ c.	18.2 13.5	0.7 0.5	0.3 0.2	75	
Grapefruit juice, canned, un-sweetened	120	$\frac{1}{2}$ c.	10.2 *8.5	0.5 0.4	0.1 0.1	45	
Grapefruit juice, canned, sweet-ened	120	$\frac{1}{2}$ c.	16.8 *14.0	0.5 0.4	0.1 0.1	70	
Grapefruit peel, candied	10	1 sm. piece	8.1 80.6	— 0.4	— 0.3	35	
Grape-Nuts, Post	30	$\frac{1}{2}$ c.	24.9 83.2	3.2 10.6	0.2 0.6	115	
Grape-Nuts Flakes, Post	30	1 c.	23.2 77.3	3.5 11.7	0.4 1.2	115	
Green beans, canned	100	$\frac{1}{2}$ c.	3.4 3.4	1.2 1.2	0.1 0.1	20	
Green beans, see also beans, string.							
Greengage plums	50	3 med.	5.9 *11.8	0.4 0.8	—	25	
Greens, cooked:							
Beet	135	$\frac{1}{2}$ c.	4.3 3.2	3.0 2.2	—	30	
Broccoli	100	$\frac{1}{2}$ c.	3.7 3.7	3.0 3.0	0.1 0.1	30	
Chard	100	$\frac{1}{2}$ c.	3.0 3.0	2.4 2.4	0.2 0.2	25	
Collards	100	$\frac{1}{2}$ c.	5.0 5.0	3.5 3.5	0.5 0.5	40	
Kale	100	$\frac{1}{2}$ c.	4.0 4.0	1.8 1.8	0.3 0.3	25	

94 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

G	Food items.	Size of portion.		Value of portion.			
		Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Greens, cooked:							
Sea-kale (sea-cabbage)	100	$\frac{1}{2}$ c.	0.3	0.4	0.1	4	
Spinach	100	$\frac{1}{2}$ c.	0.3	0.4	0.1	15	
			0.8	2.0	0.2		
Turnip tops	100	$\frac{1}{2}$ c.	0.8	2.0	0.2	20	
			3.0	2.0	0.2		
Greens, salad:							
Borage	75	$1\frac{1}{2}$ c.	3.0	2.0	0.2		
Chicory or endive	15	$\frac{1}{4}$ sm. head	0.2	2.1	0.3	12	
			*0.3	2.8	0.4		
Chicory, Italian	20	$\frac{1}{2}$ c.	0.6	0.2	Trace	3	
			4.0	1.6	0.2		
Cornsalad	25	$\frac{1}{2}$ c.	0.2	0.4	0.1	3	
			0.8	1.9	0.4		
Dandelion	50	$\frac{1}{2}$ c.	0.9	0.5	0.1	7	
			3.6	2.0	0.4		
Escarole	50	$\frac{1}{2}$ heart	5.3	1.2	0.5	30	
			10.6	2.4	1.0		
Garden cress	20	$\frac{1}{2}$ c.	0.5	0.6	Trace	5	
			*0.9	1.1	0.1		
Lettuce	50	2 lg. leaves	0.8	0.8	0.3	9	
			*4.1	4.2	1.4		
Mustard	50	$\frac{1}{2}$ c.	0.5	0.6	0.2	6	
			*1.0	1.2	0.3		
Mustard and cress	20	$\frac{1}{2}$ c.	2.0	1.2	0.2	15	
			4.0	2.3	0.3		
Purslane	100	5 leaves	0.2	0.3	—	2	
			*0.9	1.6	—		
Romaine	50	5 leaves	2.5	1.6	0.4	20	
			*2.5	1.6	0.4		
Roquette	100	5 leaves	1.5	0.5	—	8	
			3.0	1.0	—		
Sorrel or dock	25	$\frac{1}{2}$ c.	0.3	0.7	0.4	8	
			*0.3	0.7	0.4		
Turnip	50	$\frac{1}{2}$ c.	Trace	0.5	Trace	2	
			*0.1	2.1	0.2		
Watercress	20	$\frac{1}{2}$ c.	3.2	2.1	0.3	25	
			6.3	4.2	0.6		
Grits, Hominy	50	$\frac{1}{2}$ c.	0.1	0.6	—	3	
			*0.7	2.9	—		
Groats, Robinson's Patent	9	1 T.	39.0	4.4	0.3	180	
			77.9	8.8	0.6		
Grouper, red	230	$\frac{1}{2}$ lb.	6.4	1.1	0.5	35	
			*71.5	12.4	6.0		
Grouse, roast	115	$\frac{1}{2}$ lb.	44.4	1.4	1.4	195	
			19.3	0.6	0.6		
Gruyère cheese	30	2" x 1" x 1"	34.6	6.0	6.0	200	
			30.1	5.3	5.3		
Guava, common	15	1 sm.	1.4	9.9	8.4	125	
			*4.8	33.0	28.2		
Guava, common, Fla.	15	1 sm.	2.6	0.2	0.1	12	
			17.1	1.0	0.6		
Guava, strawberry	15	2 sm.	0.7	0.1	0.1	4	
			*4.8	0.8	0.6		
Guinea hen	230	$\frac{1}{2}$ lb.	2.7	0.2	0.1	13	
			18.2	1.2	0.6		
			53.1	15.0	15.0	360	
			23.1	6.5	6.5		

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 95

Food items.	Size of portion.		Value of portion.			G
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Guinea hen, roast	115	$\frac{1}{2}$ lb.		37.4	9.4	240
Guinea hen egg, see Eggs.				32.5	8.2	
Gumbo (okra)	50	7, 2 $\frac{1}{2}$ " pods	2.0	0.8	0.1	12
Gumbo soup, Creole, canned .	250	1 c.	*4.0	1.6	0.2	
			7.5	1.8	0.7	45
			3.0	0.7	0.3	
H						
Haddock	230	$\frac{1}{2}$ lb.		39.6	0.7	170
Haddock, fresh, fried . . .	115	$\frac{1}{2}$ lb.		17.2	0.3	
Haddock, steamed	115	$\frac{1}{2}$ lb.	4.1	23.5	9.5	200
Haddock, smoked	115	$\frac{1}{2}$ lb.	*3 6	20.4	8.3	
Haddock, smoked	115	$\frac{1}{2}$ lb.		28.3	0.3	120
Haddock, smoked, steamed .	115	$\frac{1}{2}$ lb.		24.6	0.3	
Haddock, smoked, steamed .	115	$\frac{1}{2}$ lb.		26.8	0.2	110
Haddock, smoked, steamed .	115	$\frac{1}{2}$ lb.		23.3	0.2	
Hake	230	$\frac{1}{2}$ lb.		25.6	1.0	115
Hake, fried	115	$\frac{1}{2}$ lb.		22.3	0.9	
Hake, steamed	115	$\frac{1}{2}$ lb.	6.0	22.2	13.1	235
Hake, steamed	115	$\frac{1}{2}$ lb.	*5 3	19.3	11.4	
Halibut, cooked	115	$\frac{1}{2}$ lb.		21.3	3.8	125
Halibut, cooked	115	$\frac{1}{2}$ lb.		18.5	3.3	
Halibut, smoked	115	$\frac{1}{2}$ lb.		23.5	4.6	140
Halibut, smoked	115	$\frac{1}{2}$ lb.		20.4	4.0	
Halibut, smoked	115	$\frac{1}{2}$ lb.		23.9	17.3	260
Halibut, smoked	115	$\frac{1}{2}$ lb.		20.8	15.0	
Halibut, steamed	115	$\frac{1}{2}$ lb.		42.8	12.0	290
Halibut, steamed	115	$\frac{1}{2}$ lb.		18.6	5.2	
Halibut, steamed	115	$\frac{1}{2}$ lb.		27.7	1.9	130
Halibut, steamed	115	$\frac{1}{2}$ lb.		24.1	1.7	
Haliver oil (P. D. & Co.) . .	2.4	$\frac{1}{2}$ t.	0	0	2.4	20
Haliver oil (P. D. & Co.) . .	0.7	20 drops	0	0	100.0	6
Haliver oil (P. D. & Co.) . .	0.7	20 drops	0	0	0.7	6
Haliver oil (P. D. & Co.) . .	0.7	20 drops	0	0	100.0	6
Ham:						
Fresh, lean	230	$\frac{1}{2}$ lb.		57.5	33.1	545
Fresh, lean	230	$\frac{1}{2}$ lb.		25.0	14.4	
Fresh, medium	230	$\frac{1}{2}$ lb.		35.2	66.5	770
Fresh, medium	230	$\frac{1}{2}$ lb.		15.3	28.9	
‡Baked or boiled	115	$\frac{1}{2}$ lb.		30.4	5.6	175
‡Baked or boiled	115	$\frac{1}{2}$ lb.		26.4	4.9	
‡Broiled	115	$\frac{1}{2}$ lb.		33.0	5.0	180
‡Broiled	115	$\frac{1}{2}$ lb.		28.7	4.3	
Deviled	20	1 T.		3.8	6.8	80
Deviled	20	1 T.		19.0	34.1	
‡Smoked, boiled	33	1 sl.	—	7.3	6.8	95
‡Smoked, boiled	33	1 sl.	—	22.1	20.6	
Smoked, lean	230	$\frac{1}{2}$ lb.		25.5	47.8	630
Smoked, lean	230	$\frac{1}{2}$ lb.		19.8	20.8	
Smoked, medium	230	$\frac{1}{2}$ lb.		37.5	89.2	995
Smoked, medium	230	$\frac{1}{2}$ lb.		16.3	38.8	
‡Smoked, parboiled and baked	115	$\frac{1}{2}$ lb.		32.2	4.4	175
‡Smoked, parboiled and baked	115	$\frac{1}{2}$ lb.		28.0	3.8	
Hand cheese, Mainz	30	2 cu. in.		11.2	1.7	55
Hand cheese, Mainz	30	2 cu. in.		37.3	5.6	

96 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

H	Food items.	Size of portion		Value of portion.			
		Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
	Hare, roast	115	$\frac{1}{2}$ lb.		35.9 31.2	8.0 7 0	225
	Haricots (beans), cooked	125	$\frac{1}{2}$ c.	20.7 *16.6	8.2 6 6	— Trace	120
	Flageolets, canned	130	$\frac{1}{2}$ c.	14.9 *11 5	5.9 4 6	0.1 0 1	85
	Verts, canned	130	$\frac{1}{2}$ c.	2.6 *2 0	1.4 1 1	0.1 0 1	15
	Haws, scarlet	20	10 med.	3.7 *18 7	0.4 2 0	0.1 0 6	20
	Hazelnuts (filberts), raw, unsalted	35	20	3.3 *9.3	5.2 14 9	23.0 65 6	250
	Hazelnuts (filberts), roasted, salted	35	20	4.4 *12.6	4.9 14 1	23.3 66 6	255
	Head cheese	115	$\frac{1}{2}$ lb.		17.2 15.0	23.3 20 3	285
Heart, fresh:							
	Beef, lean	115	$\frac{1}{2}$ lb.	0.8 0.7	19.4 16 9	4.3 3 7	125
	Beef, lean with visible fat	115	$\frac{1}{2}$ lb.	0.1 0 1	17.7 15 4	23.8 20 7	295
	Chicken	30	1 med.	0.5 1 6	6.2 20 5	2.1 7 0	45
	Pork	115	$\frac{1}{2}$ lb.	0.5 0.4	19.4 16 9	5.5 4 8	135
	Sheep	115	$\frac{1}{2}$ lb.	1.2 1 0	19.3 16 8	11.0 9 6	185
	Turkey	30	1 oz.	Trace 0 2	4.9 16 2	3.8 12 7	55
	Veal	115	$\frac{1}{2}$ lb.	0.9 0 8	17.7 15 4	8.2 7 1	155
Heart, cooked:							
	Sheep, roast	60	2 oz.		15.0 25 0	8.8 14 7	145
<i>Heinz</i> Strained Foods, see page 157.							
	Herring, lake	100	1 sm.		19.0 19 0	3.0 3 0	105
	Sea	100	1 sm.		19.0 19.0	11.0 11.0	180
	Salted	100	1 sm.		19.6 19.6	11.3 11 3	185
	Baked in vinegar	100	1 sm.		16.9 16 9	12.9 12 9	190
	Fried	100	1 sm.	1.5 *1 5	21.8 21 8	15.1 15 1	235
	Canned	115	$\frac{1}{2}$ lb.		23.8 20 7	14.3 12 4	230
	Canned in tomato sauce	115	$\frac{1}{2}$ lb.	4.2 3 7	18.2 15 8	12.1 10 5	205
	Pickled	60	$\frac{1}{2}$ lb.		15.0 25 0	11.8 19 7	170
Smoked:							
	Bloaters	115	$\frac{1}{2}$ lb.		22.6 19 7	15.4 13 6	235
	Hard	50	2 $\frac{1}{2}$ " sq.		18.5 36 9	7.9 15.8	150

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 97

Food items.	Size of portion.		Value of portion.			H Cal.
	Grams.	Household measure.	Carb.	Prot.	Fat	
Herring, smoked:						
Kippered	115	½ lb.		26.2	18.8	170
				22.8	16.3	
Roe, fried	60	2 oz.	2.8	14.0	9.5	155
			*4.7	23.4	15.8	
Hickory nuts	35	½ c.	4.0	5.4	23.6	280
			11.4	15.4	67.4	
Holland rusk	15	1	10.5	1.8	0.7	55
			70.4	12.1	5.1	
Hollandaise sauce	40	2 T.	—	1.0	17.5	165
			—	2.5	43.8	
Hominy:						
Raw	50	½ c.	39.5	4.2	0.3	180
			79.0	8.3	0.6	
Hecker's cream	50	½ c.	38.6	4.9	0.2	180
			77.3	9.8	0.4	
Parched	45	½ c.	32.5	5.2	3.8	190
			72.3	11.5	8.4	
Pearl, Quaker	50	½ c.	38.6	4.6	0.5	180
			77.2	9.1	1.0	
Cooked	200	1 sc. c.	28.0	4.0	—	130
			14.0	2.0	—	
Hominy Grits, Quaker	50	½ c.	38.5	5.0	0.3	180
			77.0	9.9	0.7	
Hominy Grits, Pillsbury	50	½ c.	39.0	4.4	0.3	180
			77.9	8.8	0.6	
Honey	25	1 T.	20.3	0.1	—	85
			81.2	0.4	—	
Alfalfa	25	1 T.	20.4	Trace	—	85
			81.7	0.1	—	
Buckwheat	25	1 T.	19.5	Trace	—	80
			78.1	0.1	—	
Orange	25	1 T.	19.7	Trace	—	80
			78.6	0.1	—	
White clover	25	1 T.	19.4	Trace	—	80
			77.5	0.1	—	
Honeydew melon	240	½ c. diced	14.2	1.4	0.2	65
			5.9	0.6	0.1	
Horlick's Malted Milk	8	1 T.	5.4	1.3	0.7	35
			*68.0	16.4	8.8	
Horseradish, evaporated, Heinz	3	1 T.	2.0	0.5	—	10
			66.8	15.6	0.9	
Horseradish, roots, fresh	10	2 t.	1.9	0.3	Trace	9
			*19.0	3.2	0.2	
Huckleberries	100	½ c.	9.7	0.6	0.6	50
			*9.7	0.6	0.6	

I

Ice-cream:						
50% overrun	50	1 "roll"	10.5	2.0	6.0	110
			*21.0	4.0	12.0	
High-grade	50	1 "roll"	9.0	1.7	11.5	150
			*18.0	3.5	23.0	
Junket	85	1 gill	18.2	2.3	15.3	225
			*21.5	2.7	18.0	
Commerical flavors:						
Chocolate	85	1 gill	21.2	4.5	9.4	195
			*24.9	5.3	11.0	
Coffee	85	1 gill	19.1	3.8	8.1	170
			*22.5	4.5	9.5	

98 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Ice-cream, com.:						
Strawberry	85	1 gill	18.3	3.4	7.7	160
			*21 5	4 0	9 0	
Vanilla	85	1 gill	19.1	3.8	10.2	190
			*22 5	4 5	12 0	
Ice-cream cones, Trumpet, N.						
B. C.	5	1	4.2	0.4	0.1	20
			83 9	8 1	1.7	
Iceland moss (lichen)	10	1 T.	—	0.9	—	3
			70 0	8 7	—	
Ices, fruit	60	2 oz.	16.2	0.1	0.1	65
			*27 0	0 1	0 1	
Ices, water, com.	120	½ c.	39.5	0.6	0	165
			33 0	0 5	0	
Indian nuts, see Pine nuts.						
Irish moss (algæ)	10	1 T.	—	0.7	—	3
			*0 4	6 8	—	
Irish stew	115	½ lb.	9.0	4.4	12.6	170
			*7 8	3 8	11 0	
Isinglass, sturgeon	3	1 t.	—	2.7	Trace	10
			—	89 3	1 6	

J

Jellies, preserves, av.	12	1 t.	7.7	—	—	30
			64 0	—	—	
Jell-O	25	½ box	21.5	2.8	0	100
			86 0	11 0	0	
Jelly roll	50	1 sl.	27.7	2.4	9.5	210
			*55 4	4 8	19 0	
Jujube, Chinese	100		24.1	1.2	0.3	110
			24.1	1 2	0 3	
Jujube, Chinese, dried	100		59.9	4.0	—	260
			59.9	4.0	—	
Jujube, Fla.	25	10 av.	3.1	0.2	0.1	14
			*12.3	1.0	0 4	
Julienne soup, canned, conc. .	120	½ c.	1.1	3.1	—	15
			0 9	2 6	—	
Junior Foods see p. 160.						
Junket:						
Ice-cream	85	1 gill	18.2	2.3	15.3	225
			*21.5	2 7	18 0	
Powder, caramel	12	1 T. (¼ pkg.)	11.8	—	—	50
			98 8	0 1	0 1	
Lemon	11	1 T. (¼ pkg.)	10.9	—	—	45
			98.8	0.1	0 1	
Chocolate	14	1 T. (¼ pkg.)	12.3	0.3	0.6	55
			87.7	2 1	4 1	
Orange	11	1 T. (¼ pkg.)	10.9	—	—	45
			98 8	0 1	0.1	
Raspberry	11	1 T. (¼ pkg.)	10.8	—	—	45
			98 0	0 1	0 1	
Vanilla	11	1 T. (¼ pkg.)	10.8	—	—	45
			98 0	0 2	0 1	
Tablet	0.5	1	—	—	—	—
			—	—	—	—

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

K							K
Food items.	Size of portion.		Value of portion.				
	Grams.	Household measure	Carb.	Prot.	Fat.		
Kaki, Japanese persimmon	100	1 lg.	20.0 20.0 12.6 7.2	0.8 0.8 6.8 3.9	0.4 0.4 1.1 0.6	90 80	
Kale, leaves	175	1½ c.	4.0 4.0	1.8 1.8	0.3 0.3	25	
Kale, cooked	100	½ c.	7.6 *95 0	0 0	0 0	30	
Karo, powdered	8	1 T.	14.8 *74 0	0 0	0 0	60	
Karo syrup, Blue Label	20	1 T.	120.0 *75 0	0 0	0 0	490	
Karo syrup, Green Label	160	½ c.	120.0 *75 0	0 0	0 0	490	
Karo syrup, Red Label	160	½ c.	1.6 1.6	3.1 3.1	2.0 2.0	40	
Kephir	100	1 wine glass	5.0 25 0	0.5 2.5	0.2 0.8	25	
Ketchup, tomato	20	1 T.	52.5 21 0	18.8 7.5	3.8 1.5	330	
Kidney beans, baked, com.	250	1 c.	43.3 *17 3	17.5 7.0	0.5 0.2	255	
Kidney beans, red, canned	250	1 c.					
Kidneys, fresh:							
Beef	155	½ c. diced	1.4 0.9	23.3 15.0	12.6 8.1	220	
Pork	115	½ lb.	0.8 0.7	17.8 15.5	5.6 4.8	130	
Sheep	115	½ lb.	1.1 1.0	19.0 16.5	3.5 3.2	115	
Veal	115	½ lb.	0.2 0.2	19.3 16.8	6.0 5.2	135	
Kidneys, cooked:							
Ox, stewed	115	½ lb.		29.6 25.7	6.7 5.8	185	
Sheep, fried	115	½ lb.		32.2 28.0	10.5 9.1	230	
Kingfish	230	½ lb.		43.5 18.9	2.1 0.9	200	
Kippered herring, canned	115	½ lb.	0 0	26.2 22.8	18.8 16.3	290	
Kippers, baked	60	2 oz.		13.9 23.2	6.8 11.4	120	
Kippers, salted	115	½ lb.		23.6 20.5	9.8 8.5	190	
Kix, General Mills	35	1½ c	28.8 82.3	2.8 8.0	0.7 1.9	135	
Kohlrabi (Dutch heads)	100	½ c.	4.2 *4.2	2.0 2.0	0.1 0.1	25	
Kohlrabi, stems	50	½ c.	3.4 6.7	1.1 2.1	0.1 0.1	20	
Kohlrabi, cooked	100	½ c.	2.5 *2.5	1.0 1.0	— —	14	
Kola nut	100		45.4 *45.4	4.9 4.9	1.3 1.3	220	
Koumiss	100	1 wine glass	3.6 3.6	2.7 2.7	7.0 7.0	90	
Krim-Ko, chocolate-flavored drink	250	1 c.	27.8 11.1	7.5 3.0	3.8 1.5	180	
Kumquats	50	3 med.	7.5 15.0	0.3 0.7	0.1 0.3	35	

100 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

L	Food items.	Size of portion.		Value of portion.			
		Grams.	Household measure.	Carb.	Prot.	Fat.	Cal
	Lactic Acid milk; see milks, powdered.						
	Lady-fingers	30	5, 2½" long	21.2 70.6	2.6 8 8	1.5 5 0	110
	Lamb, fresh:						
	Brains	230	½ lb.		21.8 9.5	16.8 7.3	245
	Breast	230	½ lb.		43.9 19 1	54.3 23.6	685
	Fore-quarter	230	½ lb.		42.1 18 3	59.3 25.8	725
	Hind-quarter	230	½ lb.		45.1 19.6	43.9 19.1	595
	Leg, hind, medium fat	230	½ lb.		44.2 19 2	37.0 16.5	525
	Loin	230	½ lb.		43.0 18.7	65.1 28.3	780
	Muscle	230	½ lb.	1.6 0 7	34.8 15 1	62.1 27.0	725
	Neck	230	½ lb.		40.7 17.7	57.0 24.8	695
	Shoulder	230	½ lb.		41.6 18 1	68.3 29 7	805
	Side	230	½ lb.		40.5 17.6	53.1 23.1	660
	Lamb, cooked:						
	†Chop, broiled	115	½ lb.		35.6 31 0	8.6 7 5	225
	†Leg, spring, roasted	115	½ lb.		35.2 30.6	6.8 5 9	210
	Roasted, cold	115	½ lb.		28.4 24 7	13.8 12 0	245
	Stew, canned	115	½ lb.	8.6 7 5	7.8 6 8	5.2 4 5	115
	Tongue, canned	115	½ lb.		14.8 12.9	22.2 19.3	265
	Lambsquarters (Chenopodium)	75	1½ c.	6.2 8 3	2.9 3.8	0.5 0 7	40
	Lambsquarters, Algerian	70	1½ c.	7.4 10 5	5.3 7 6	0.6 0 9	60
	Lard, refined	15	1 T.	0 0	0 0	15.0 100 0	140
	Lard, unrefined	15	1 T.	— —	0.3 2 2	14.1 94 0	130
	Larsen Strained Foods, see page 158.						
	Leeks, bulbs and leaves	55	½ c.	2.4 *4 4	1.4 2 5	0.2 0 4	15
	Leeks, cooked	100	½ c.	4.0 *4 0	2.0 2 0	0.2 0 2	25
	Lemon	100	1, 2" diam.	7.4 *7.4	1.0 1 0	0.7 0 7	40
	Lemon juice	15	1 T.	1.5 9 8 ¹	— —	— —	6

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.
Negligible quantity is designated by —.¹ Sugar content 2.3 per cent, remainder citric acid.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 101

Food items.	Size of portion.		Value of portion.			L
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Lemon juice, canned	15	1 T.	1.2 8.0	— 0 4	— 0 3	5
Lemon peel, candied . . .	10	1 sm. piece	8.1 80 6	— 0 4	0 0.3	35
Lemon extract, Burnett, A.P. .	5	1 t.	0 0	0 0	0 0	0
Lentils, cooked .	100	$\frac{1}{2}$ c.	28.0 28.0	12.0 12.0	4.5 4 5	205
Lentils, dried .	60	$\frac{1}{2}$ c.	32.8 54.7	15.4 25.7	0.6 1.0	205
Lettuce . .	50	2 lg. leaves	0.5 *1.0	0.6 1 2	0.2 0.3	6
Lettuce, cooked . .	100	$\frac{1}{2}$ c.	0.5 0.5	0.5 0 5	0.1 0.1	5
Leyden cheese	20	1 cu. in.	0.2 *1.0	7.2 35.9	2.2 11.0	50
<i>Libby</i> , homogenized foods, see page 158.						
Lichi nuts, see Litchi.						
Lichens, see Iceland moss.						
Liederkrantz cheese . . .	30	1 oz.		5.0 16.8	7.3 24.5	90
Lima beans, green . . .	75	$\frac{1}{2}$ c.	16.5 *22.0	5.6 7.5	0.6 0 8	95
Lima beans, yellow, cooked .	125	$\frac{1}{2}$ c.	27.5 22 0	11.2 9 0	1.0 0 8	170
Lima beans, canned . . .	130	$\frac{1}{2}$ c.	19.0 14 6	5.2 4 0	0.4 0 3	105
Lima beans, dried . . .	75	$\frac{1}{2}$ c.	49.4 65 9	13.6 18.1	0.5 1.5	265
Lima bean flour . . .	100	1 $\frac{1}{2}$ c. sc.	63.0 63 0	21.5 21.5	1.4 1.4	360
Limburg cheese, American	40	1 triangle		11.4 28.5	12.0 29.8	160
Limburg cheese, European .	40	1 triangle		8.5 21.3	7.8 19.6	105
Limes	40	1, 1 $\frac{1}{2}$ " long	4.9 12.3	0.3 0.8	Trace 0.1	20
Limes, Florida	40	1 med.	0.2 0 5	0.3 0.8	Trace 0.1	2
Lime juice	15	1 T.	1.2 7.8	0.1 0 5	— —	5
Limequat juice, Florida . .	15	1 T.	1.0 *6 8			4
Limu, see Algae, Hawaiian.						
Ling cod	230	$\frac{1}{2}$ lb.		37.0 16.1	— Trace	150
Ling, fried	115	$\frac{1}{2}$ lb.	7.2 *6.3	19.3 16.8	14.3 12.4	240
Ling, steamed	115	$\frac{1}{2}$ lb.		25.8 22.4	0.9 0.8	115
Litchi	25	10 (large pits) 8 (small pits)	17.5 70.0	0.9 3.6	0.1 0.5	75
Livarot cheese	25	1 $\frac{1}{2}$ " x 1" x $\frac{1}{4}$ "	2.0 *8.0	7.9 31.8	5.5 22.0	90

102 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

Food items.	Size of portion.		Value of portion.			
	Grams	Household measure.	Carb.	Prot.	Fat.	Cal
Liver, fresh:						
Beef	230	½ lb.	5.8 2 5	46.9 20 4	12.4 5 4	310
Chicken	75	2 med.	1.8 2 4	16.8 22 4	3.2 4 2	105
Goose	100	2 med.	3.7 3 7	16.6 16 6	15.9 15 9	230
Mutton	230	½ lb.	11.6 5 0	53.2 23.1	20.8 9 0	460
Pork	230	½ lb.	3.2 1 4	49.2 21.4	10.4 4 5	310
Turkey	100		0.7 0 7	22.0 22.0	4.8 4 8	140
Liver, cooked:						
Calves', fried	115	½ lb.	2.8 2 4	33.3 29 0	16.7 14 5	305
Ox, fried	115	½ lb.	4.6 4 0	33.9 29 5	18.3 19 5	330
Liver paste (paté de foie gras)	6	1 t.	0.3 4.8	0.7 11 4	2.6 43 8	30
Liver sausage or pudding	60	2 oz.	0.9 1 5	10.0 16 7	12.4 20 6	195
Lobster, cooked	100	1 av.	0.4 0 4	17.2 17.2	1.9 1 9	90
Lobster, flaked	100	¾ c.	0.4 0 4	16.4 16 4	1.8 1 8	85
Lobster, canned	90	¾ c.	0.4 0 5	16.3 18 1	1.0 1 1	80
Lobster paste	6	1 t.	0.2 *3 0	0.9 15 5	0.6 9 8	10
<i>Loeb products, see page 151.</i>						
Loganberries	75	¾ c.	2.5 *3 4	0.8 1 1	— —	15
Loganberries, canned	120	¾ c.	33.6 28.0	0.8 0 7	0 0	140
Loganberry juice	120	¾ c.	12.1 10.1	0.7 0.6	— —	65
Log Cabin syrup	18	1 T.	11.9 *66 0	0 0	0 0	50
Loquat	25	1 med.	2.5 *10.1	0.1 0 4	Trace 0.2	10
Loquat, Japanese	15	1 lg.	1.6 *10 9	0.1 0 4	— 0 1	7
Lungs, fresh:						
Beef	115	½ lb.		17.8 15 5	3.5 3.0	105
Calf	115	½ lb.		19.7 17 1	5.8 5.0	135
Sheep	115	½ lb.		23.2 20 2	3.2 2.8	125
Lychee, see Litchi						

* Largely assimilable.

Blank space indicates lack of data.

‡ Gross fat removed.

Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			M
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Macadamia nuts, Hawaiian, fried in oil and salted . . .	30	14	2.4 8.2	2.6 8.6	23.5 78.5	240
Macaroni	75	$\frac{1}{2}$ c.	55.6 74 1	10.1 13 4	0.7 0 9	275
Macaroni, Quaker	75	$\frac{1}{2}$ c.	55.1 73.5	10.5 14.0	0.7 0.5	275
Macaroni, boiled	240	1 c.	37.9 15 8	7.2 3 0	3.6 1 5	220
Macaroni and cheese	115	$\frac{1}{2}$ lb.	17.2 *15 0	8.7 7 6	14.7 12 8	245
Macaroni in cream sauce, Heinz	240	1 c.	33.6 14 0	9.1 3 6	10.3 4 3	270
Macaroons	25	2, $1\frac{1}{2}$ " diam.	16.3 65.2	1.6 6 5	3.8 15.2	110
Macedoine (mixed vegetables), canned	80	$\frac{1}{2}$ c.	3.1 *3 9	1.1 1 4	— —	15
Mackerel:						
Raw	230	$\frac{1}{2}$ lb.		43.0 18 7	16.3 7.1	330
Cooked	115	$\frac{1}{2}$ lb.	4.2 3 7	19.2 16 7	7.3 6.4	165
Fried	115	$\frac{1}{2}$ lb.		23.0 20 0	13.0 11.3	215
Canned	100	$\frac{1}{2}$ c.		22.6 22 6	7.9 7 9	165
Salt	115	$\frac{1}{2}$ lb.		24.3 21.1	26.0 22 6	340
Smoked	115	$\frac{1}{2}$ lb.		27.4 23 8	15.0 13 0	250
Malt Breakfast Food	30	$\frac{1}{2}$ c.	22.7 75 8	3.2 10 7	0.3 1.0	110
Malted milk, Borden	8	1 T.	5.6 70 1	1.2 15 1	0.8 9 2	35
Malted milk, Horlick	8	1 T.	5.4 *68 0	1.3 16 4	0.7 8 8	35
Malted milk, Thompson, chocolate	10	1 T.	8.2 82 3	0.8 7.8	0.6 5 8	40
Maltex cereal	30	$\frac{1}{2}$ c.	21.3 70 9	4.6 15 3	0.5 1 5	110
Mandarinen (tangerines)	100	2, 2" diam.	10.9 10.9	0.8 0 8	0.3 0 3	50
Mango, Florida	160	1 av.	19.2 *12.0	0.3 0 5	0.3 0.5	85
Manioca starch (tapioca)	40	$\frac{1}{2}$ c.	35.2 88 0	0.2 0 4	Trace 0.1	145
Maple extract, imitation, Bur-						
nett, A.P.	6	1 t.	1.8 30.0	0 0	0 0	7
Maple sugar	60	1, $1\frac{1}{2}$ " sq.	49.7 *82.8	— —	— —	205
Maple syrup	18	1 T.	12.8 *71 4	— —	— —	50
Margarine, nut	15	1 T.	— —	0.2 1 4	12.7 84 8	120
Marmalade, orange	25	1 T.	21.1 84.5	0.2 0.6	Trace 0.1	85

104 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

M

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
<i>Marmite, see Vezex.</i>						
Marrow, beef	20	1 T.		0.4	18.6	175
				2 2	92 8	
Marrow, vegetable	100	1 c.	1.4	0.5	0.1	10
			*1.4	0 5	0 1	
Marshmallows	30	5, 1½" diam.	24.0	2.0	—	105
			80.0	6.7	—	
Marzipan (almond paste)	10	1 t.	1.1	1.3	3.5	50
			10.9	13 2	34 5	
Matzoth	20	1, 6" diam.	14.0	3.0	—	70
			70.0	15 0	—	
Mayonnaise, com.	20	1 T.	0.4	0.3	16.0	150
			2.0	1.4	80.0	
Maypl cereal	30	½ c.	20.4	4.7	1.3	115
			67.9	15 6	4 4	
<i>Mazola</i>	15	1 T.	0	0	14.7	135
			0	0	98.1	
<i>Mead products, see page 152.</i>						
Meal, barley	130	1 c.	82.2	13.7	2.9	420
			66 3	10 5	2 2	
Corn, granular	130	1 c.	98.0	12.0	2.5	475
			75 4	9 2	1 9	
Pea	100	½ c.	28.0	35.9	17.5	390
			28 0	35.9	17 5	
Rye	130	1 c.	93.0	17.7	2.6	465
			71.5	13 6	2 0	
Soy bean	100	1½ c.	—	36.5	17.5	310
			—	36.5	17 5	
Meat juice, Valentine, A.P.	30	1 oz.	0	6.4	—	25
			0	21.3	—	
Meat paste (chicken, ham, tongue)	20	1 T.	0.8	3.9	2.5	45
			*4 2	19.7	12.7	
Meats, General Classification (see p. 31):						
Lean, very well done	115	½ lb.		39.1	6.9	225
				34 0	6 0	
Medium done	115	½ lb.		34.5	6.9	205
				30 0	6 0	
Rare	115	½ lb.		31.0	6.9	190
				27.0	6 0	
Medium fat, well done	115	½ lb.		34.5	20.7	335
				30.0	18 0	
Medium done	115	½ lb.		31.0	20.7	320
				27.0	18.0	
Rare	115	½ lb.		26.4	20.7	300
				23.0	18.0	
Fat, medium done	115	½ lb.		25.3	34.5	425
				22.0	30.0	
Very fat, medium done	115	½ lb.		19.5	51.7	560
				17.0	45.0	
Melba toast, white bread	20	2 sl., 4" sq.	15.8	2.8	0.4	80
			79.0	14 0	1.8	
Melon pawpaw, see Papaya.						
Melons, see specific item.						

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			M
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Milks and Cream, cow:						
Whole	240	1 c.	12.0	7.9	9.6	170
			*5 0	3 3	4.0	
Whole	30	1 oz.	1.5	1.0	1.2	20
			*5.0	3.3	4.0	
Top (6 oz.)	170	6 oz.	7.6	5.3	11.9	165
			*4.5	3 1	7.0	
Top	28	1 oz.	1.3	0.8	2.0	35
			*4 5	3.1	7.0	
Skim, ¹ hand	240	1 c.	11.3	8.6	1.7	95
			*4.7	3 6	0.7	
Skim, ¹ hand	30	1 oz.	1.4	1.1	0.2	12
			*4 7	3.6	0.7	
Skim, ¹ separator	240	1 c.	12.0	8.9	0.5	90
			*5.0	3 7	0 2	
Skim, ¹ separator	30	1 oz.	1.5	1.1	0.1	12
			*5.0	3.7	0.2	
Whey	225	1 c.	11.4	2.3	0.7	65
			*5 0	1.0	0 3	
Cream, light (20% fat)	230	1 c.	9.2	6.9	46.0	495
			*4.0	3.0	20.0	
Cream, light (20% fat)	27	1 oz.	1.1	0.8	5.0	55
			*4 0	3 0	20 0	
Cream, light (20% fat), sour	15	1 T.	0.4	0.5	3.0	30
			*3 0	3.1	20.0	
Cream, medium (30% fat)	225	1 c.	7.9	5.9	67.0	680
			*3.5	2 6	30.0	
Cream, medium (30% fat)	25	1 oz.	0.9	0.6	7.5	75
			*3 5	2.6	30.0	
Cream, whipping (32% fat)	225	1 c.	7.4	5.6	72.0	725
			*3 3	2 5	32 0	
Cream, heavy (40% fat)	25	1 oz.	0.9	0.5	10.0	100
			*3.0	2.2	40 0	
Cream, heavy (40% fat), sour	14	1 T.	0.4	0.3	5.6	55
			*2 7	2 3	40 0	
Cream (32% fat), whipped	10	1 T.	0.3	0.3	3.2	30
			*3 3	2 5	32 0	
Condensed	25	1 T.	13.5	2.2	2.1	85
			*54 1	8.8	8.3	
Condensed, Eagle Brand, Borden	25	1 T.	13.4	2.0	2.2	80
			*53 5	8 1	9 0	
Condensed, Lion	25	1 T.	14.0	1.9	2.0	85
			*56.0	7 6	8.1	
Evaporated	15	1 T.	1.5	1.0	1.2	20
			*10.1	6.7	8.2	
Evaporated, Borden	15	1 T.	1.4	1.0	1.2	20
			*9 7	6.9	7 9	
Evaporated, Carnation	15	1 T.	1.5	1.0	1.2	20
			*9.9	6.8	7.9	
Evaporated, Lion	15	1 T.	1.5	1.0	1.2	20
			*9.9	6 8	7.9	
Evaporated, Pet	15	1 T.	1.5	1.1	1.2	20
			*9 0	7.1	7.9	
Evaporated, Van Camp	15	1 T.	1.5	1.0	1.2	20
			*10.2	7 7	7.8	
Reconstituted	240	1 c.	12.7	7.5	8.6	165
			*5 3	3.1	3.6	
Milks, cultured:						
Acidophilus, Lederle	240	1 c.	7.2	8.4	8.4	145
			*3.0	3.5	3.5	

¹ The term "skimmed" is not acceptable.

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M	Food items	Size of portion.		Value of portion.			
		Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Milks, cultured:							
Acidophilus, Walker-Gordon	240	1 c.	9.1	8.2	4.8	115	
Buttermilk, skim, com.	240	1 c.	*3.8	3.4	2.0		
Buttermilk, whole, com.	240	1 c.	10.8	7.9	1.0	85	
Buttermilk, sour cream	240	1 c.	*4.5	3.3	0.4		
Buttermilk, sweet cream	240	1 c.	10.8	7.9	9.1	160	
Kephir	100	1 wine glass	*4.5	3.3	3.8		
Koumiss	100	1 wine glass	9.4	8.0	1.2	85	
Yoghurt	240	1 c.	*3.9	3.3	0.5		
	240	1 c.	10.6	8.4	1.0	85	
	100	1 wine glass	*4.4	3.5	0.4		
	100	1 wine glass	1.6	3.1	2.0	40	
	100	1 wine glass	1.6	3.1	2.0		
	100	1 wine glass	3.6	2.7	7.0	90	
	100	1 wine glass	*3.6	2.7	7.0		
	100	1 wine glass	9.4	7.4	7.2	135	
	100	1 wine glass	*9.4	7.4	7.2		
Milks, powdered:							
Whole, dried	15	2 T.	5.5	4.3	4.0	75	
Skim, dried	15	2 T.	*36.5	28.7	26.9		
Whey, dried	8	1 T.	5.8	5.3	0.3	50	
Dryco, skim ¹	7	2 T.	*38.8	35.4	1.7		
Klim, whole	8	1 T.	*6.0	1.0	—	30	
Malted, Borden	8	1 T.	*74.5	13.0	0.5		
Malted, Horlick	8	1 T.	3.2	2.2	0.8	30	
Malted, chocolate, Thompson	10	1 T.	*46.0	32.0	12.0		
Protein, Merrell-Soule	8	1 T.	3.0	2.1	2.2	40	
Skim, Merrell-Soule	8	1 T.	*38.0	26.7	28.0		
Skim, lactic acid, Merrell-Soule	8	1 T.	5.6	1.2	0.8	35	
Whole, lactic acid, Merrell-Soule	8	1 T.	70.1	15.1	9.2		
Whole, lactic acid, Merrell-Soule	8	1 T.	5.4	1.3	0.7	35	
Whole, lactic acid, Merrell-Soule	8	1 T.	*68.0	16.4	8.8		
Whole, lactic acid, Merrell-Soule	10	1 T.	8.2	0.8	0.6	40	
Protein, Merrell-Soule	8	1 T.	82.3	7.8	5.8		
Skim, Merrell-Soule	8	1 T.	1.8	3.0	2.2	40	
Skim, lactic acid, Merrell-Soule	8	1 T.	*23.0	37.0	27.0		
Skim, lactic acid, Merrell-Soule	8	1 T.	4.0	3.0	0.1	30	
Whole, lactic acid, Merrell-Soule	8	1 T.	*49.9	37.7	1.4		
Whole, lactic acid, Merrell-Soule	8	1 T.	3.8	2.9	0.1	30	
Whole, lactic acid, Merrell-Soule	8	1 T.	*47.8	36.0	1.0		
Whole, lactic acid, Merrell-Soule	8	1 T.	2.6	2.1	2.2	40	
Whole, lactic acid, Merrell-Soule	8	1 T.	*32.5	26.5	28.0		
Milks, various species:							
Ass	245	1 c.	14.9	4.9	3.7	115	
Buffalo	245	1 c.	*6.1	2.0	1.5		
Camel	235	1 c.	11.7	11.7	18.1	265	
Carabao	240	1 c.	*4.8	4.8	7.4		
Ewe's (sheep)	245	1 c.	13.1	9.1	6.6	150	
Goat	240	1 c.	*5.6	3.9	2.8		
	240	1 c.	10.3	13.0	24.0	240	
	245	1 c.	*4.3	5.4	10.0		
	245	1 c.	13.9	14.2	15.9	255	
	240	1 c.	*4.8	5.8	6.5		
	240	1 c.	9.1	9.6	10.1	170	
	240	1 c.	*3.8	4.0	4.2		

* Largely assimilable.

Blank space indicates lack of data.

¹ The term "skimmed" is not acceptable.† Gross fat removed
Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			M
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Goat, evaporated, Meyenberg	15	1 T.	1.3 *8.8	1.0 7.0	1.0 7.1	20
Human	30	1 oz.	1.9 *6 5	0.4 1.5	0.9 3 3	20
Llama	245	1 c.	13.7 *5 6	9.5 3.9	7.8 3.2	170
Mare's	245	1 c.	14.2 *5.8	4.9 2 0	2.9 1.2	105
Reindeer	250	1 c.	5.2 *2 1	25.0 10 0	42.7 17 1	300
Millet	100		70.5 *70 5	8.2 8.2	4.2 4 2	360
Mince meat, homemade	115	½ lb.	36.9 32 1	5.5 4.8	7.7 6 7	245
Mince meat, com.	115	½ lb.	69.2 60 2	7.7 6.7	1.6 1.4	330
Mince meat, Heinz	115	½ lb.	51.9 45 1	3.2 2 8	3.3 2 9	255
Mince pie	100	1 sl.	42.6 *42 6	4.7 4 7	19.7 19.7	375
Mineral oil	14	1 T.	0 0	0 0	0 0	0
Mint extract, Burnett, A.P.	5	1 t.	0 0	0 0	0 0	0
Minute Tapioca	40	½ c.	35.2 88.0	0.2 0 4	Trace 0 1	145
Miracle Whip, Kraft	20	1 T.	1.7 8 5	0.2 1.2	10.2 50 9	105
Mock turtle soup, canned, conc.	130	½ c.	7.8 6.0	7.5 5 8	1.0 0 8	75
Mock turtle soup, canned	240	1 c.	12.9 5 4	3.8 1 6	1.2 0 5	80
Molasses, Br'er Rabbit, Gold Label	190	½ c.	140.0 73 7	0.9 0 5	0 0	575
Molasses, Br'er Rabbit, Green Label	190	½ c.	133.2 70 1	1.7 0 9	0 0	555
Molasses, Cane:						
Light	25	1 T.	16.5 *65 0	— —	— —	65
Medium	25	1 T.	15.0 *60 0	— —	— —	60
Dark	25	1 T.	13.8 *55 0	— —	— —	55
Molasses cookies	10	1	7.7 76 7	0.6 6 4	0.9 8 9	40
Mountain spinach (Orach)	75	1½ c.	3.5 4 7	3.3 4 5	0.3 0 4	30
Mozzarella, Italian cheese	30	1 oz.	0.5 *1.8	8.4 28 1	7.3 24.3	105
Muffets, Quaker	23	1	17.5 75 6	2.6 11 1	0.3 1 4	85
Mulberries, black	75	½ c.	6.1 *8 1	1.0 1 3	— —	30
Mulberries, black, white, and red	75	½ c.	11.0 14 6	0.9 1.2	0.5 0 6	50
Mullet, grey	50	2 av.	0.4 0 8	7.9 15.8	3.4 6.8	65
Mullet, grey, steamed	50	2 av.		10.8 21.6	2.0 4.0	65

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M	Food items.	Size of portion.		Value of portion.			
		Grams.	Household measure	Carb.	Prot.	Fat.	Cal.
	Mullet, red	100	2 av.	1.3 1.3	15.7 15 7	4.7 4.7	115
	Mullet, red, steamed	100	2 av.		21.4 21.4	4.3 4 3	130
	Mulligatawny soup, canned, conc.	150	½ c.	16.1 10 7	4.1 2 7	0.8 0 5	90
	Mung beans, solid green seed	100		59.9 59 9	23.3 23 3	1.0 1 0	350
	Mung beans, sprouts	125	1 c.	5.0 4 0	3.6 2 9	0.4 0 3	35
	Münster cheese	30	1½" cube	2.1 *6 9	5.1 16 9	7.7 25 9	100
	Münster cheese, American	30	1½" cube		6.7 22 2	9.3 31 0	115
Mushrooms:							
	Fresh	50	½ c. diced	— 6.8	— 3 5	0.2 0 4	2
	Boiled	100	½ c.	— —	— —	0.2 0 2	2
	Fried	60	½ c.	— *0.0	— 2 2	13.4 22 3	130
	Canned, whole	80	½ c.	— 6 2	— 1 9	0.2 0 3	2
	Canned, fancy buttons	80	½ c.	— 3 2	— 4 5	0.2 0 2	2
	Canned, sliced	80	½ c.	— 3 7	— 4 4	0.2 0 2	2
	Canned, sliced stems and pieces	80	½ c.	— 3 0	— 3 1	0.2 0 2	2
	Dried	100		— 64 0	— 15 5	1.5 1 5	14
	Mushroom broth, canned	120	½ c.	— 1.2	— 1.1	0.2 0.2	2
	Mushroom soup, cream of, canned, conc.	140	½ c.	13.2 5 5	4.1 1 7	6.0 2 5	125
	Mushroom soup, cream of, canned	240	1 c.	9.6 4 0	5.8 2 4	10.6 4 4	160
	Muskellunge	230	½ lb.		46.5 20.2	5.6 2 5	245
	Muskmelon	200	½, 5" diam.	11.8 *5 9	1.2 0 6	0.2 0 1	55
	Muskmelon, California	200	½, 5" diam.	14.4 *7.2	1.2 0 6	0.2 0.1	65
	Muskmelon juice	120	½ c.	10.9 *9 1	— —	— —	45
	Mussels	230	½ lb.	9.4 4 1	20.0 8 7	2.5 1 1	145
	Mussels, boiled	60	2 oz.	— Trace	10.1 16 8	1.2 2 0	55
	Mussels, canned	100	½ c.	1.5 *1.5	18.2 18.2	3.3 3 3	110
	Mustard, dry	5	1 t.	— 0 3	0.1 2 4	— 0 3	—
	Mustard, prepared, com.	10	1 heaping t.	0.3 2.8	0.4 4 3	0.7 6 5	10

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			M
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Mustard greens	50	$\frac{1}{2}$ c.	2.0	1.2	0.2	15
Mustard and cress	20	$\frac{1}{2}$ c.	4.0	2.3	0.3	
			0.2	0.3	—	2
			*0.9	1.6	—	
Mutton, fresh:						
Chuck, all analyses	230	$\frac{1}{2}$ lb.		33.6	84.6	925
				14.6	36.8	
Chuck, lean	230	$\frac{1}{2}$ lb.		40.9	37.5	515
				17.8	16.3	
Flank, medium fat	230	$\frac{1}{2}$ lb.		35.0	88.1	965
				15.2	38.3	
Fore-quarter	230	$\frac{1}{2}$ lb.		35.9	71.0	810
				15.6	30.9	
Heart	115	$\frac{1}{2}$ lb.		19.4	14.5	210
				16.9	12.6	
Hind-quarter	230	$\frac{1}{2}$ lb.		38.4	64.6	780
				16.7	28.1	
Kidney	115	$\frac{1}{2}$ lb.		19.0	3.5	110
				16.5	3.2	
Leg, hind, lean	230	$\frac{1}{2}$ lb.		45.5	28.5	450
				19.8	12.4	
Leg, hind, medium fat	230	$\frac{1}{2}$ lb.		42.6	41.4	560
				18.5	18.0	
Liver	230	$\frac{1}{2}$ lb.	11.6	53.2	20.8	460
			5.0	23.1	9.0	
Loin, free fat removed	230	$\frac{1}{2}$ lb.		54.5	42.6	630
				23.7	18.5	
Loin, medium fat	230	$\frac{1}{2}$ lb.		38.8	76.1	860
				16.0	33.1	
Lungs	115	$\frac{1}{2}$ lb.		23.2	3.2	125
				20.2	2.8	
Neck, medium fat	230	$\frac{1}{2}$ lb.		38.9	46.6	595
				16.9	24.6	
Shoulder, lean	230	$\frac{1}{2}$ lb.		44.9	29.7	460
				19.5	12.9	
Shoulder, medium fat	230	$\frac{1}{2}$ lb.		40.7	45.8	595
				17.7	19.9	
Side	230	$\frac{1}{2}$ lb.		37.3	68.3	690
				16.2	29.8	
Mutton, cooked:						
‡Boiled, lean	75	1 sl.		23.2	3.4	125
				30.8	4.4	
Brains, boiled	115	$\frac{1}{2}$ lb.		13.5	7.7	125
				11.7	6.7	
‡Chop, lean, broiled	100	1 chop		22.6	4.5	135
				22.6	4.5	
Chop, fried, lean	100	1 chop	5.7	22.8	25.2	350
			*5.7	22.8	25.2	
Chop, fried, med. fat	100	1 chop	2.6	15.4	60.1	635
			*2.6	15.4	60.1	
Chop, grilled, lean	100	1 chop		26.5	17.5	270
				26.5	17.5	
Chop, grilled, med. fat	100	1 chop		19.9	45.0	500
				19.9	45.0	
Corned, canned	115	$\frac{1}{2}$ lb.		33.1	26.2	380
				28.8	22.8	
Heart, roasted	115	$\frac{1}{2}$ lb.		28.7	16.9	275
				25.0	14.7	
Kidney, fried	115	$\frac{1}{2}$ lb.		32.2	10.5	230
				28.0	9.1	
Leg, boiled	75	1 sl.		19.3	12.4	195
				25.8	16.6	

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M	Food items.	Size of portion.		Value of portion.			
		Grams.	Household measure.	Carb.	Prot.	Fat	Cal
Mutton, cooked:							
‡Leg, roasted . . .	75	1 sl.		18.7	16.9	235	
				25 0	22.5		
‡Roasted, cold . . .	115	½ lb.		33.4	30.8	425	
				29 0	26 8		
Scrag and neck, stewed	115	½ lb.		27.8	28.0	375	
				24 2	24 4		
Tongue, canned . . .	115	½ lb.		28.1	27.6	370	
				24 4	24 0		
Mutton soup, canned, conc.	140	½ c.	6.9	6.4	0.8	60	
			4 9	4 6	0 6		
Mysost cheese, American .	30	1 oz.		2.9	0.8	20	
				9 9	2 8		
Mysost cheese (Primost) .	30	1 oz.		4.2	10.3	115	
				14 0	34.5		

N

Navy beans. See Beans, baked.

Nectarines	125	1, 2" diam.	15.5	1.1	—	70
			*12 4	0 9	—	
Nettle, leafy shoots	100		7.1	5.5	0.7	60
			*7 1	5 5	0 7	
Neufchâtel cheese	30	2 T.	0.5	5.6	8.2	100
			*1 5	18 7	27 4	
Neufchâtel cheese, American .	30	2 T.	0.8	6.4	5.4	80
			*2 9	21 3	18 2	
Noekkelost cheese, Scandina- vian	30	1 oz.	2.1	9.2	4.9	90
			*7 0	30 6	16 3	
Noodles, raw	60	½ c.	45.4	7.0	0.6	220
			75 6	11 7	1 0	
Noodles, egg, Quaker	60	½ c.	43.3	7.1	2.2	225
			72 2	11 9	3 6	
Nut margarine	15	1 T.	—	0.2	12.7	120
			—	1.4	84.8	
Nuts:						
Almonds	30	20	1.3	6.1	16.0	175
			*4 3	20 5	53 5	
Beechnuts	20	½ c.	2.6	4.4	11.5	135
			13 2	21 9	57 4	
Brazil	30	4	1.2	4.1	18.4	195
			*4 1	13 8	61 5	
Butternuts	20	12	0.7	5.6	12.2	140
			3 5	27 9	61 2	
Cashew nut kernels, fried in cocoanut oil	15	8	2.0	4.3	7.9	100
			13 4	28.7	52.4	
Chestnuts, fresh	50	8	18.3	1.2	1.3	90
			*36 6	2 3	2 7	
Chestnuts, dried	35	8	26.0	3.7	2.5	185
			74.2	10.7	7.0	
Chestnuts, roasted	50	20	17.7	2.6	2.3	240
			35.4	5.2	4.5	
Cocoanut, fresh	50	2½" sq.	14.0	2.9	25.0	300
			27.9	5.7	50.6	
Cocoanut, canned moist	90	1 c.	27.0	4.0	37.3	485
			*30 0	4 4	41 4	

* Largely assimilable.

Blank space indicates lack of data.

‡ Gross fat removed.

Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			N
	Grams.	Household measure	Carb	Prot.	Fat	
Nuts:						
Cocoanut, desiccated . . .	45	$\frac{1}{2}$ c.	17.1 *38 1	1.9 4 3	18.5 41 0	250
Filberts (hazelnuts), raw, unsalted	35	20	3.3 *9 3	5.2 14 9	23.0 65.6	250
Filberts (hazelnuts), roasted, salted	35	20	4.4 *12 6	4.9 14 1	23.3 66 6	255
Hickory	35	$\frac{1}{2}$ c.	4.0 11 4	5.4 15 4	23.6 67.4	260
Kola	100		45.4 *45 4	4.9 4 9	1.3 1.3	220
Litchi. See Fruits, dried.						
Macadamia, Hawaiian, fried in oil and salted . . .	30	14	2.4 8 2	2.6 8 6	23.5 78 5	240
Peanuts	60	$\frac{1}{2}$ c. or 30	5.1 *8 6	16.9 28 1	29.4 49 0	360
Peanut butter	15	1 T.	2.6 17 1	4.4 29.3	7.0 46 5	95
Peanut butter com.	15	1 T.	1.7 11 0	3.8 25 0	7.5 50 0	90
Pecans	25	6 (whole)	1.0 *3 9	2.4 9 4	18.2 73 0	185
Pignolias	10	1 T.	0.7 *6 9	3.4 33 9	4.9 49 4	60
Pine (pignolias)	10	1 T.	0.7 *6 9	3.4 33 9	4.9 49 4	60
Pine (piniones)	10	1 T.	2.6 *26 2	0.6 6 5	6.1 60 7	70
Pine (sabine)	10	1 T.	0.8 *8 4	2.8 28 1	5.4 53 7	65
Piñon	10	1 T.	1.7 *17 3	1.5 14 6	6.2 61 9	70
Pistachios	20	$\frac{1}{2}$ c.	3.3 16 3	4.5 22 3	10.8 54 0	130
Walnuts, California or English	35	6 (whole)	1.8 *5 0	4.4 12 5	18.0 51 5	195
Walnuts, black	35	6 (whole)	4.1 11 7	9.7 27 6	19.7 56 3	240
Walnuts, soft-shelled	35	6 (whole)	4.7 13 5	5.8 16 6	22.2 63 4	250
O						
Oatmeal	20	$\frac{1}{2}$ c.	13.5 67.5	3.2 16 1	1.4 7.2	80
Oaties, Quaker	35	$\frac{1}{2}$ c.	25.0 71 6	5.1 14 6	0.4 1 2	125
Oats:						
Crushed, Grandmother's	30	$\frac{1}{2}$ c.	19.6 65 4	4.5 14 9	2.0 6 5	120
Mother's, Quaker, Quick Quaker and Quick Mother's	30	$\frac{1}{2}$ c.	19.2 64 0	5.3 17 8	1.8 6 1	120
Rolled	30	$\frac{1}{2}$ c.	19.9 66 3	5.0 16 7	2.2 7 3	120
Rolled, cooked, calc.	250	1 c.	20.0 8 0	5.0 2 0	2.2 0 9	120

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Food items.	Size of portion		Value of portion			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Oats:						
Rolled, Purity	30	$\frac{1}{2}$ c.	18.5	5.0	2.0	115
			61 6	16.3	6.1	
Oats, tubers	100		14.7	1.4	0.2	70
			*14.7	1.4	0.2	
Oils and Fats:						
Butter	10	1" x 1" x $\frac{1}{2}$ "	—	0.1	8.5	80
			—	1 0	85 0	
Cod-liver	14	1 T.	0	0	14.0	130
			0	0	100 0	
Corn	14	1 T.	0	0	14.0	130
					100 0	
Cottolene	11	1 T.	0	0	11.0	100
					100 0	
Cotton-seed	11	1 T.	0	0	11.0	100
					100 0	
Crisco	12	1 T.	—	—	12.0	110
			—	—	100 0	
Lard, refined	15	1 T.	0	0	15.0	140
			0	0	100 0	
Lard, unrefined	15	1 T.	—	0.3	14.1	130
			—	2 2	94 0	
Margarine, nut	15	1 T.	—	0.2	12.7	120
			—	1.4	84 8	
Mazola	15	1 T.	0	0	14.7	135
			0	0	98.1	
Mineral	14	1 T.	0	0	0	0
			0	0	0	
Oleomargarine	15	1 T.	—	0.1	12.3	115
			0 5	0 9	82 0	
Olive	14	1 T.	0	0	14.0	130
			0	0	100 0	
Peanut	14	1 T.	—	—	14.0	130
			—	—	100 0	
Pork fat, salt	15	$\frac{1}{2}$ oz.		0.3	12.9	120
				1 9	86 2	
Suet, beef	10	1 T.		0.5	8.2	80
				4 7	81 8	
Wesson oil	10	1 T.		—	10.0	95
				Trace	99.7	
Okra	50	7, 2 $\frac{1}{2}$ " pod	2.0	0.8	0.1	12
			*4 0	1 6	0 2	
Okra, cooked	100	$\frac{1}{2}$ c. (5 pods)	3.0	1.0	0.1	15
			3 0	1 0	0 1	
Okra, canned	65	$\frac{1}{2}$ c.	1.9	0.5	Trace	10
			*2 9	0 7	0.1	
Oleomargarine	15	1 T.	—	0.1	12.3	115
			0 5	0 9	82.0	
Olive butter	15	1 T.	2.8	0.2	3.4	45
			18 6	1 5	22 6	
Olive oil	14	1 T.	0	0	14.0	130
			0	0	100.0	
Olives:						
Brined	15	5	—	0.1	1.6	15
			*0 0	0.9	11 0	
Manzanilla, green, bottled	15	5	1.5	0.2	3.0	35
			10 0	1 0	20 0	
Queen, green, bottled	15	3	1.5	0.2	2.1	25
			10 0	1.0	13.5	

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 113

Food items.	Size of portion.		Value of portion.			Cal.
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Olives:						
Ripe	20	5, 1" long	0.8	0.3	5.0	50
			4 3	1.7	25 0	
Ripe, canned or bottled	14	3	0.6	0.2	2.4	25
			4 0	1.5	17.0	
Omelette	100		—	7.6	30.3	315
			—	7 6	30.3	
Omelette, cheese	100		—	17.8	30.9	360
			Trace	17.8	30.9	
Omelette, jelly	100		55.4	4.8	19.0	425
			*55.4	4 8	19.0	
Onion extract, imitation Burnett, A.P.	5	1 t.	0	0	0	0
			0	0	0	
Onion pickle, sour, com.	10	2	0.1	—	—	0
			1.0	0 2	Trace	
Onion pickle, sweet, com.	10	2 c.	3.7	—	—	15
			37 0	0 1	Trace	
Onion soup, com.	250	1 c.	7.5	4.7	6.0	105
			3 0	1 9	2 4	
Onion soup, cream of, com.	240	1 c.	11.3	4.1	5.0	110
			4 7	1.7	2 1	
Onions:						
Brown, seasoning	35	1 onion	2.9			12
			*8.3			
Boiled	75	5 sm.	2.0	0.4	—	10
			*2.7	0 6	—	
Fried	60	½ c.	6.1	1.1	20.0	215
			*10 1	1.8	33 3	
Green	25	5 sm.	2.1	0.2	Trace	10
			*8 5	1 0	0 1	
Red skin, large	200	1 onion	14.4			60
			*7 2			
Spanish (large, yellow jack- et) ¹	300	1 onion	11.6			50
			*3 9			
Spanish ²	565	1 onion ³	8.1			35
			*8 5			
Welsh	100		6.3	2.2	0.6	40
			*6 3	2 2	0 6	
White, med.	50	1, 2" diam.	4.0	0.8	0.2	20
			*8 0	1.6	0 3	
White, sm.	15	1 onion	1.0			4
			*7.0			
White, boiled	15 2	1 onion	1.0			4
			*6.9			
Opihi, Australian limpet	115	½ lb.		3.2	1.4	25
				2.8	1 2	
Opossum	115	½ lb.		14.9	46.0	490
				13 0	40 0	
Orach (mountain spinach)	75	1½ c.	2.8	3.3	0.3	30
			*3.7	4.5	0 4	
Orach, Peruvian, see Quinoa.						
Oranges	100	1 sm.	8.5	0.8	0.2	40
			*8 5	0 8	0 2	
Canned	135	½ c.	19.9	1.1	0.3	90
			15 5	0.8	0 2	
Mandarin type (loose-skin- ned)	100	2, 2" diam.	10.9	0.8	0.3	50
			10 9	0.8	0.3	

¹ Prior to season.

² In season.

³ Serving: 2 slices, 95 grams.

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Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal
Oranges:						
Satsuma	100	2, 2" diam.	8.7	0.8	0.3	40
			*8.7	0.8	0.3	
Seville	100	1 sm.	11.4	0.8	0.2	55
			11.4	0.8	0.2	
Orange:						
Extract, Burnett, A.P.	5	1 t.	0	0	0	0
			0	0	0	
Juice, California	120	$\frac{1}{2}$ c.	15.7	0.7	—	65
			13.1	0.6	—	
Juice, Florida	120	$\frac{1}{2}$ c.	11.3	0.7	—	50
			*9.4	0.6	—	
Juice, Mandarin type	120	$\frac{1}{2}$ c.	10.0	1.1	0.4	50
			9.2	0.9	0.3	
Juice, canned	120	$\frac{1}{2}$ c.	10.8	0.7	0.1	50
			*9.0	0.6	0.1	
Marmalade, com.	25	1 T.	17.5	0.1	—	70
			*69.9	0.3	Trace	
Peel, candied	10	1 sm. piece	8.1	—	—	35
			80.6	0.4	0.3	
Ovaltine, A.P.	9	1 T.	4.3	0.9	4.4	60
			72.1	14.3	7.4	
Oxo (cubes)	5		0	1.6	0.2	8
			0	31.9	3.8	
Oxo (extract)	10	1 heaping t.	0.1	1.6	0	8
			1.0	16.0	0	
Oxtail soup, canned, conc.	140	$\frac{1}{2}$ c.	11.9	5.5	2.4	95
			8.5	3.9	1.7	
Oysters:						
"Lynnhaven" (lg.)	135	6 ($\frac{1}{2}$ c.)	5.0	8.3	1.6	70
			3.7	6.2	1.2	
"Cape Cod" (med.)	110	6 ($\frac{1}{2}$ c.)	4.0	6.8	1.3	55
			3.7	6.2	1.2	
"Blue Point" (sm.)	100	6	3.7	6.2	1.2	50
			3.7	6.2	1.2	
Canned	60	$\frac{1}{2}$ c.	2.3	5.3	1.4	45
			3.9	8.8	2.4	
Solids	120	$\frac{1}{2}$ c.	4.0	7.2	1.6	60
			3.3	6.0	1.3	
Oyster soup, cream of, canned	240	1 c.	10.5	3.6	4.1	95
			4.4	1.5	1.7	
Oyster plant (salsify)	100	2, 6" long	15.5	3.5	1.0	85
			15.5	3.5	1.0	
Oyster plant, cooked	80	$\frac{1}{2}$ c.	7.2	0.9	Trace	35
			9.0	1.2	0.1	

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Pai-tsai, Chinese cabbage	110	1 c.	2.6	1.5	0.1	20
			2.4	1.4	0.1	
Pakchoi, see Chinese cabbage.						
Palmetto buds, see Palmetto cabbage.						
Palmetto cabbage	100	$\frac{1}{2}$ c.	6.1	3.3	0.6	45
			6.1	3.3	0.6	
Palmetto cabbage, cooked	100	$\frac{1}{2}$ c.	5.6	2.9	0.5	40
			5.6	2.9	0.5	

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			P
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Pancake flour, see <i>Aunt Jemima</i> .						
Pancakes	50	3	18.2	2.5	7.5	155
			*36.4	5.1	15.1	
Pancreas, fresh:						
Beef, thin	100	2		14.9	17.0	220
				14.9	17.0	
Medium	100	2		13.5	25.0	290
				13.5	25.0	
Fat	100	2		12.8	29.0	320
				12.8	29.0	
Very fat	100	2		11.8	34.0	365
				11.8	34.0	
Calf	100			19.2	8.8	160
				19.2	8.8	
Hog	100			14.5	23.8	280
				14.5	23.8	
Papaw, tropical, see Papaya.						
Papaw	50	1, 4" long	8.4	2.6	0.4	50
			16.8	5.2	0.9	
Papaya (melon pawpaw)	100	$\frac{1}{2}$, 5" diam.	10.0	0.6	0.1	45
			10.0	0.6	0.1	
Papaya, Florida	120	$\frac{1}{10}$ av.	6.9	0.4	0.6	35
			*5.8	0.3	0.5	
Parmesan cheese	5	2 t. grated		2.2	1.0	20
				43.5	19.1	
Parmesan cheese, Formaggio	5	2 t.		2.5	1.1	20
				49.4	22.7	
Parmesan cheese, Reggiano	5	2 t.		1.7	1.4	20
				34.8	27.3	
Parsley leaves	1	1 t.	0.1	Trace	Trace	—
			9.0	3.7	1.0	
Parsley roots, Hamburg	100		8.1	2.1	0.2	45
			8.1	2.1	0.2	
Parsnip leaves	25	$\frac{1}{2}$ c.	1.6	0.5	—	9
			6.3	2.0	—	
Parsnips	120	$\frac{1}{2}$ c., diced	13.2	1.8	0.6	70
			*11.0	1.5	0.5	
Parsnips, boiled	80	$\frac{1}{2}$ c.	8.0	1.0	0.3	40
			*10.0	1.3	0.4	
Partridge, roast	115	$\frac{1}{2}$ lb.		40.5	8.3	245
				35.2	7.2	
Passion fruit	50	2 med.	3.1	1.4	—	20
			*6.2	2.8	—	
Passion fruit juice, natural	30	1 oz.	3.5	0.4	—	15
			*11.5	1.4	—	
Passion fruit juice, purple or granadilla	30	1 oz.	5.7	0.2	—	25
			19.1	0.6	—	
Passion fruit beverage	240	1 c.	33.5	0.2	—	140
			*14.0	0.1	—	
Pastry, flaky, baked	25		10.9	1.5	8.9	135
			*43.5	5.9	35.8	
Pastry, short, baked	25		13.7	1.8	7.6	135
			*54.8	7.3	30.4	
Paté de foie gras	6	1 t.	0.3	0.7	2.6	30
			4.8	11.4	43.8	
Patience dock	25	$\frac{1}{2}$ c.	8.0	1.0	0.3	40
			*10.0	1.3	0.4	
Pea meal	100	$\frac{1}{2}$ c.	28.0	35.9	17.5	390
			28.0	35.9	17.5	
Pea soup, canned, conc.	140	$\frac{1}{2}$ c.	17.4	6.7	2.2	120
			12.4	4.8	1.6	

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P	Food items.	Size of portion.		Value of portion.			
		Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
	Pea soup, cream of, canned	240	1 c.	15.4 6.4	4.8 2.0	8.6 3.6	165
	Peaches:	150	2, 2" diam.	13.2 *8.8	0.8 0.5	0.2 0.1	60
	Georgia	150	1 lg.	14.1 *9.4			60
	Maryland	150	1 lg.	12.9 *8.6			55
	North Carolina	150	1 lg.	13.8 *9.2			55
	New Jersey	150	1 lg.	11.4 *7.6			45
	Peaches, canned, water pack	140	2 halves	6.4 *4.6	0.7 0.5	0.1 0.1	30
	Peaches, canned, juice pack	140	2 halves	10.2 *7.3	0.6 0.4	0.3 0.2	45
	Peaches, canned, in syrup	140	2 halves	25.5 18.2	0.6 0.4	0.1 0.1	110
	Peaches, canned, also see Fruits, canned.						
	Peaches, dried	50	3, 1½" diam.	26.5 *53.0	1.7 3.4	— —	115
	Peach jam	25	1 T.	16.2 57.0	0.2 0.7	— Trace	65
	Peach juice	120	½ c.	15.4 12.8	0.2 0.2	— —	65
	Peanuts	60	30	5.1 *8.6	16.9 28.1	29.4 49.0	360
	Peanut:						
	Brittle	15	1½" x 3"	10.1 67.0	1.8 12.0	2.7 18.0	75
	Butter	15	1 T.	2.6 17.1	4.4 29.3	7.0 46.5	95
	Butter, com.	15	1 T.	1.7 11.0	3.8 25.0	7.5 50.0	90
	Cookies	10	1	5.4 53.5	1.4 14.0	2.8 27.5	55
	Flour	100	1½ c.	36.5 36.5	51.2 51.2	5.0 5.0	405
	Meal	100	1½ c.	6.7 *6.7	51.6 51.6	10.5 10.5	335
	Meal, high grade	100	1½ c.	21.7 21.7	50.9 50.9	7.5 7.5	385
	Meal, med. grade	100	1½ c.	23.0 23.0	44.9 44.9	8.8 8.8	360
	Oil	115	½ c.	— —	— —	115.0 100.0	1070
	Pears:						
	Bartlett	150	1, 3" long	12.5 *8.3	0.6 0.4	0.6 0.4	60
	Canned, water pack	120	2 halves	4.9 *4.1	0.4 0.3	0.1 0.1	25
	Canned, juice pack	120	2 halves	9.6 *8.0	0.2 0.2	0.1 0.1	40
	Canned, in syrup	120	2 halves	22.1 18.4	0.2 0.2	0.1 0.1	90
	Canned, see also Fruits canned.						
	Candied	30	1 oz.	22.8 75.9	0.4 1.3	0.2 0.6	95

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			P
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Pears:						
Dried	75	4 halves	27.0	1.7	0.3	120
			*36.0	2.3	0.4	
Prickly	100	1 av.	10.4	0.8	—	45
			10.4	0.8	—	
Pear jam	25	1 T.	14.0	0.2	—	60
			56.0	0.7	Trace	
Peas, black-eye, see Cowpeas.						
Green, very young	75	$\frac{1}{2}$ c.	7.5	4.2	0.2	40
			10.0	5.5	0.3	
Green, av.	75	$\frac{1}{2}$ c.	8.0	4.3	0.4	55
			*10.6	5.8	0.5	
Green, very old	75	$\frac{1}{2}$ c.	19.5	6.0	0.3	105
			26.0	8.0	0.4	
Green, cooked	70	$\frac{1}{2}$ c.	5.4	3.5	—	35
			*7.7	5.0	—	
Marrowfat	80	$\frac{1}{2}$ c.	8.8	5.3	—	60
			11.0	6.7	—	
"Petits pois"	75	$\frac{1}{2}$ c.	5.2	2.5	—	30
			7.0	3.4	—	
Very young, canned	70	$\frac{1}{2}$ c.	6.0	2.5	0.1	35
			*8.6	3.6	0.2	
Young, canned	70	$\frac{1}{2}$ c.	7.8	3.2	0.1	55
			11.2	4.6	0.2	
Dried	100	$\frac{1}{2}$ c.	57.5	24.6	1.0	345
			*57.5	24.6	1.0	
Dried, boiled	120	$\frac{1}{2}$ c.	22.9	8.3	—	130
			*19.1	6.9	—	
Split, boiled	120	$\frac{1}{2}$ c.	26.3	10.0	—	150
			*21.9	8.3	—	
Pecans	25	6 (whole)	1.9	2.4	18.2	185
			*3.9	9.4	73.0	
Pep, Kellogg	30	$\frac{1}{2}$ c.	23.1	3.7	0.6	115
			77.1	12.2	1.9	
Peppers:						
Green, sweet	25	3" piece	1.0	0.2	Trace	5
			4.1	0.8	0.1	
Green, dried	5	1 t.	3.1	0.8	0.4	20
			63.0	15.5	8.5	
Neapolitan	25	3" piece	1.4	0.3	0.1	8
			5.7	1.1	0.3	
Red, fresh	25	3" piece	2.0	0.3	0.2	11
			8.1	1.3	0.7	
Red, dried	5	1 t.	3.5	0.5	0.4	20
			70.0	9.4	7.7	
Pepper-pot soup, canned, conc.	140	$\frac{1}{2}$ c.	11.5	6.4	4.2	115
			8.2	4.6	3.0	
Pepper-pot soup, canned	240	1 c.	12.0	5.5	3.1	100
			5.0	2.3	1.3	
Perch, white	100			19.3	4.0	115
				19.3	4.0	
Perch, yellow	100			18.7	0.8	85
				18.7	0.8	
Persimmons, American	50	1 sm.	9.5	0.4	0.2	40
			*18.9	0.8	0.4	
Persimmons, Japanese	100	1 lg.	15.9	0.8	0.4	70
			*15.9	0.8	0.4	
Pet milk, evaporated	15	1 T.	1.5	1.1	1.2	20
			*9.8	7.1	7.9	
Pettijohn's, Quaker	20	2 T.	14.7	2.0	0.4	70
			73.3	10.1	1.9	

118 *TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS*

P	Food items.	Size of portion.		Value of portion.			
		Grams	Household measure.	Carb.	Prot.	Fat.	Cal.
	Petty rice, see Quinoa.						
	Pheasant . . .	230	½ lb.		56.1	11.0	335
					24 4	4 8	
	Pheasant, roasted .	115	½ lb.		35.4	10.7	245
					30 8	9 3	
	Pickarel (pike) .	230	½ lb.		43.0	1.2	190
					18 7	0 5	
	Pickled tripe	115	½ lb.		23.6	2.3	120
					20 5	2 0	
	Pickles:						
	Cucumber, fresh, com.	20	3 sl.	3.2	0.2	—	14
				15 9	1 2	0 2	
	Dill . .	50	1 med.	1.4	0.2	0.1	5
				2 7	0 5	0 3	
	Mixed, chopped .	20	1 T.	0.8	0.2	—	4
				4 0	1 1	0 4	
	Onions, sour, com.	10	2	0.1	—	—	0
				1 0	0 2	Trace	
	Onions, sweet, com.	10	2	3.7	—	—	15
				37 0	0 1	Trace	
	Sour, chopped, com.	20	1 T.	—	0.1	0.1	1
				Trace	0 5	0 3	
	Sweet, chopped, com. . .	20	1 T.	7.2	0.1	0.1	30
				36 0	0 5	0 3	
	Sweet, mustard, chopped, com.	25	1 T.	6.3	—	0.2	25
				25 0	Trace	0 8	
	Pidan (Chinese preserved egg)	100	1 lg.	—	26.8	18.5	285
				—	26 8	18 5	
	Pies:						
	Apple .	100	1 sl.	32.6	2.3	8.7	225
				*32 6	2 3	8 7	
	Custard	100	1 sl.	27.7	5.5	14.4	270
				*27.7	5 5	14 4	
	Gooseberry	100	1 sl.	31.0	2.8	9.4	225
				*31 0	2 8	9 4	
	Mince	100	1 sl.	42.6	4.7	19.7	375
				*42 6	4 7	19 7	
	Rhubarb .	100	1 sl.	29.8	2.6	9.4	220
				*29 8	2 6	9 4	
	Pigeon, red meat .	20	1 av.	0.2	3.6	1.2	25
				1 2	17 9	6 2	
	Pigeon, white meat	80	1 av.	0.2	12.0	4.2	50
				0 3	17 5	5 2	
	Pigeon, whole .	180	1 av.	0.5	33.4	22.5	350
				0 3	18 5	12 5	
	Pigeon, roasted	80	1 lg.		21.4	10.6	185
					26 8	13 2	
	Pigeon, see also Squab.						
	Pignolias	10	1 T.	0.7	3.4	4.9	60
				*6 9	33 9	49 4	
	Pig's blood, prepared, Chinese	100			9.7	1.1	50
					9 7	1 1	
	Pig's feet, boiled .	115	½ lb.	0.7	16.6	12.1	185
				0 6	14 4	10 5	
	Pig's feet, pickled	115	½ lb.		18.7	17.0	235
					16 3	14 8	
	Pike (pickarel) .	230	½ lb.		43.0	1.2	190
					18 7	0 5	

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			P
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Pilchard	50	3 av.	0.6	7.6	2.7	60
			1 3	15.3	5.2	
Pilchard, canned	50	3 av.		8.0	7.5	105
				16 0	15.0	
Pilot Bread	25	1 cracker	18.6	2.8	1.3	100
			74.2	11 1	5 0	
Pimento (cheddar) cheese	20	1 cu. in.		3.2	6.4	75
				16 0	32.2	
Pimento cheese, Kraft	30	$\frac{1}{4}$ " sl. 5 $\frac{1}{2}$ " loaf		6.6	9.1	110
				22 0	30 5	
Pimentos, canned	11	1 t.	0.8	0.1	Trace	4
			6 8	0.9	0.3	
Pine nuts (pignolias)	10	1 T.	0.7	3.4	4.9	60
			*6 9	33 9	49.4	
Pine nuts (piniones)	10	1 T.	2.6	0.6	6.0	70
			*26 2	6 5	60 7	
Pine nuts (sabine)	10	1 T.	0.8	2.8	5.4	65
			*8 4	28 1	53.7	
Pineapple:						
Fresh	150	1 c. diced	13.9	0.6	0.5	65
			*9 3	0.4	0 3	
Canned, water pack	150	2 sl.	15.2	0.4	0.1	65
			*10.1	0 3	0 1	
Canned, juice pack	150	2 sl.	18.8	0.6	0.1	80
			*12.5	0.4	0 1	
Canned, in syrup	150	2 sl.	27.9	0.6	0.1	120
			*18 6	0 4	0.1	
Canned, see also Fruits, canned.						
Candied	50	1 sl.	40.0	0.4	0.2	165
			80 0	0 8	0 4	
Extract, Burnett, A.P.	6	1 t.	2.8	0	0	12
			47.0	0	0	
Juice	120	$\frac{1}{2}$ c.	15.4	0.4	0.4	70
			12.8	0.3	0.3	
Juice, natural, canned, Hawaiian	120	$\frac{1}{2}$ c.	15.9	0.4	0.4	70
			*13 3	0 3	0 3	
Pifon	10	1 T.	1.7	1.5	6.2	70
			*17.3	14 6	61 9	
Pisang or banana flour	100	$\frac{1}{2}$ c.	72.5	3.5	0.8	320
			72.5	3.5	0 8	
Pistachios	20	$\frac{1}{2}$ c.	3.3	4.5	10.8	130
			16.3	22 3	54.0	
Pistachio extract, imitation, Burnett, A.P.	5	1 t.	0	0	0	0
			0	0	0	
<i>Pixie</i> Strained Foods, see page 158.						
Plaice, fried	115	$\frac{1}{2}$ lb.	8.0	20.7	16.6	270
			*7 0	18 0	14 4	
Plaice, steamed	115	$\frac{1}{2}$ lb.		20.8	2.2	105
				18.1	1.9	
Plantain (baking banana)	100		32.0	1.5	0.4	140
			32 0	1.5	0 4	
Plums:						
Fresh	50	2, 2 $\frac{1}{2}$ " long	4.2	0.4	0.1	20
			*8.3	0.7	0 2	
Canned, water pack	100	3, $\frac{1}{2}$ c.	4.5	0.4	0.1	20
			*4.5	0.4	0 1	
Canned, in syrup	100	3, $\frac{1}{2}$ c.	20.4	0.4	0.1	115
			20.4	0.4	0.1	

120 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Plums:						
Canned, see also Fruits, canned.						
Damson	50	4 med.	4.8 *9 6	0.2 0.5	—	20
Greengage	50	3 med.	5.9 *11 8	0.4 0.8	—	25
Prune, fresh	50	2 med.	6.7 *13 3	0.5 0 9	0.1 0 2	30
Prune, see also Prunes.						
Japanese, red, pickled . . .	100		4.9 4 9	0.5 0 5	1.3 1 3	35
Plum jam	25	1 T.	12.2 49 0	0.3 1.1	— Trace	50
Plum pudding, canned . . .	90	3 oz.	29.7 33.0	4.1 4.5	12.6 14 0	255
Plum pudding, English, canned	90	3 oz.	46.9 52 1	3.9 4 3	7.3 8.1	275
Plum pudding, Heinz . . .	90	3 oz.	42.2 46.9	3.8 4.2	9.3 10 3	275
Poi, Hawaiian ¹	230	1 c.	34.5 15.0	2.1 0 9	0.2 0 1	150
Poi, Hawaiian ²	100		28.6 *28.6	0.3 0.3	0.1 0 1	120
Poi, Hawaiian, sour	100		9.8 *9 8			40
Pokeberry	100		3.7 3.7	2.6 2 6	0.4 0.4	30
Pollack	230	$\frac{1}{2}$ lb.	49.7 21.6	1.8 0.8		220
Pollack, fried	115	$\frac{1}{2}$ lb.	7.6 *6 6	19.0 16 5	7.9 6.9	185
Pollack, steamed	115	$\frac{1}{2}$ lb.	22.4 19 5	0.9 0 8		100
Pomegranates	155	$\frac{1}{2}$, 6 $\frac{1}{2}$ " diam.	26.0 *16.8	2.3 1.5	2.5 1 6	140
Pomegranates, Florida . . .	250	1 av.	17.8 *7.1	1.2 0.5	2.2 0.9	105
Pomegranate juice	120	$\frac{1}{2}$ c.	13.9 *11 6	0.2 0 2	—	60
Pompano	230	$\frac{1}{2}$ lb.	43.2 18.8	17.3 7.5		340
Pont l'Evêque cheese . . .	20	1 $\frac{1}{2}$ " x 1" x $\frac{1}{2}$ "	1.3 *6 7	4.1 20 3	5.0 25 0	70
Pont l'Evêque cheese, American	20	1 $\frac{1}{2}$ " x 1" x $\frac{1}{2}$ "		5.0 25 2	5.9 29 3	75
Pop corn, popped	15	1 c.	11.8 78.7	1.6 10 7	0.8 5.0	60
Porgy	230	$\frac{1}{2}$ lb.	42.8 18 6	11.7 5.1		285
Pork, fresh:						
Brains	115	$\frac{1}{2}$ lb.	13.5 11.7	11.9 10 3		165
Chops, loin, lean	230	$\frac{1}{2}$ lb.	46.7 20 3	43.7 19 0		600
Chops, loin, medium . . .	230	2, $\frac{1}{2}$ lb.	38.2 16.6	69.2 30.1		800

¹ 83 per cent water, as eaten.

* Largely assimilable.

Blank space indicates lack of data.

² 69 per cent water, as prepared.

† Gross fat removed.

Negligible quantity is designated by —.

Food items.	Size of portion		Value of portion.			P
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Pork, fresh:						
Chuck ribs and shoulder	230	½ lb.		39.8	71.5	830
				17.3	31.1	
Ham, lean	230	½ lb.		57.5	33.1	545
				25.0	14.4	
Ham, medium	230	½ lb.		35.2	66.5	770
				15.3	28.9	
Heart	115	¼ lb.		19.7	7.2	150
				17.1	6.3	
Kidney	115	¼ lb.	0.8	17.8	5.6	130
			0.7	15.5	4.8	
Liver	230	½ lb.	3.2	49.2	10.4	310
			1.4	21.4	4.5	
Lungs	115	¼ lb.		13.7	4.6	100
				11.9	4.0	
Middle cuts	230	½ lb.		36.1	83.5	925
				15.7	36.3	
Side	230	½ lb.		20.9	127.2	1270
				9.1	55.3	
Shoulder	230	½ lb.		30.6	87.7	940
				13.3	34.2	
Tenderloin	230	½ lb.		43.5	29.9	455
				18.9	13.0	
Pork, cooked:						
Bacon, back, pea-mealed, Canadian, fried	60	½ lb.		16.2	2.8	90
				27.1	4.6	
Bacon, breakfast, broiled crisp	20	4 str., 7" long (raw)		7.2	9.1	115
				35.8	45.6	
†Chop, broiled	115	½ lb.		32.9	8.3	215
				28.6	7.2	
Chop, grilled, lean	100	1 chop		25.3	23.7	325
				25.3	23.7	
Chop, grilled, med. fat	100	1 chop		18.6	50.3	545
				18.6	50.3	
†Ham, baked or boiled	115	½ lb.		30.3	5.7	175
				26.4	4.9	
†Ham, broiled	115	½ lb.		33.0	5.0	180
				28.7	4.3	
Ham, deviled	20	1 T.		3.8	6.8	80
				19.0	34.1	
Ham, smoked, parboiled and baked	115	½ lb.		32.2	4.4	175
				28.0	3.8	
†Leg, roasted	115	½ lb.		38.4	5.2	205
				33.4	4.5	
Leg, roasted, med. fat	115	½ lb.		28.3	26.7	365
				24.6	23.2	
†Loin, roasted	115	½ lb.		34.1	6.4	200
				29.7	5.6	
Loin, roasted, lean	115	½ lb.		27.1	23.1	325
				23.6	20.1	
Loin, roasted, med. fat	115	½ lb.		22.4	46.5	525
				19.5	40.4	
Loin, smoked, lean, cooked	115	½ lb.		27.3	18.1	280
				23.7	15.7	
Pig's feet, boiled	115	½ lb.	0.7	16.6	12.1	185
			0.6	14.4	10.5	
Roasted, cold	115	½ lb.		37.5	22.6	365
				32.6	19.7	
Sausage, fried	60	2 oz.	7.6	6.9	14.9	200
			*12.7	11.5	24.8	

122 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

P	Food items.	Size of portion.		Value of portion.			
		Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Pork, cooked:							
Stomach, cooked	115	$\frac{1}{4}$ lb.	0	19.0	10.4	175	
			0	16 5	9 0		
Pork, miscellaneous:							
Bacon, smoked .	80	4 str. $8\frac{1}{2}$ " long		8.4	51.8	515	
				10.5	64.8		
Dry-salted backs	115	$\frac{1}{4}$ lb.		8.9	83.6	815	
				7.7	72.7		
Dry-salted bellies	115	$\frac{1}{4}$ lb.		9.7	83.0	810	
				8 4	72 2		
Fat, salt	60	2 oz.		1.0	51.7	480	
				1 9	86.2		
Ham, smoked, lean .	230	$\frac{1}{4}$ lb.		45.5	47.8	630	
				19 8	20 9		
Ham, smoked, medium fat .	230	$\frac{1}{4}$ lb.		37.5	89.2	995	
				16.3	38 8		
Head cheese	200	1, $\frac{3}{8}$ " sl.	—	39.0	67.6	790	
			—	19 5	33.8		
Pig's feet, pickled .	115	$\frac{1}{4}$ lb.		18.7	17.0	235	
				16 3	14 8		
Pig's tongue, pickled	115	$\frac{1}{4}$ lb.		20.4	22.8	295	
				17.7	19 8		
Sausage	35	2, $3\frac{1}{2}$ " long	0.4	4.5	15.5	165	
			1 1	13 0	44 2		
Sausage, Arles	115	$\frac{1}{4}$ lb.		30.8	58.2	700	
				26 8	50 6		
Sausage (pork and beef) .	60	$\frac{1}{4}$ lb.		11.6	14.5	180	
				19 4	24 1		
Shoulder, smoked, medium fat	230	$\frac{1}{4}$ lb.		36.6	74.8	845	
				15 9	32 5		
Port du Salut cheese	25	$1\frac{1}{2}$ " x $1\frac{1}{2}$ " x $\frac{3}{4}$ "		5.3	6.3	80	
				21 2	25 2		
Postum Cereal .	2	1 t.	1.4	0.3	0.1	7	
			68 8	12 3	2 7		
Postum, Instant	2	1 t.	1.7	0.1	0	6	
			82 3	6 6	0		
Potatoes:							
Sweet	150	1, 6" x $1\frac{1}{4}$ "	39.2	2.7	1.1	180	
			*26 1	1 8	0 7		
Sweet, baked .	100	$\frac{1}{2}$ lg.	32.2	2.1	0.8	150	
			32 2	2 1	0 8		
Sweet, boiled	100	1 med.	20 1	1.1	0.5	90	
			*20 1	1 1	0 5		
Sweet, canned .	75	2 sm.	31.1	1.4	0.3	135	
			41 4	1 9	0 4		
White	100	1 med.	18.0	2.2	0.1	85	
			*18 0	2 2	0 1		
White, baked .	150	1 med.	38.1	4.6	0.1	175	
			25 4	3 1	0 1		
White, new, boiled	100	3 sm.	18.3	1.6	—	80	
			*18 3	1 6	—		
White, old, boiled	150	1 med.	29.6	2.1	—	130	
			*19 7	1 4	—		
French fried .	110	1 heaping c.	41.0	4.2	9.9	275	
			*37 3	3 8	9 0		
Roasted .	150	1 med.	41.0	4.2	1.5	200	
			*27 3	2 8	1 0		
White, desiccated .	100		80.9	8.5	0.4	370	
			80 9	8 5	0 4		

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			P
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Potato chips, Saratoga	30	1 $\frac{1}{2}$ c.	14.0 46.7 83.0	2.0 6.8 0.5	11.9 39.8 0.1	175 345
Potato flour . . .	100	$\frac{1}{2}$ c.	83 0 27.5 *11 0	0.5 5.2 2 1	0 1 11.0 4 4	235
Potato soup . . .	250	1 c.				
Prawn paste	6	1 t.		1.3 21.6	0.5 8 6	10
Prawns . . .	110	8 lg.		25.1 22 8	1.4 1 3	115
Prawns, cooked . . .	60	2 oz.		12.7 21 2	1.0 1 8	60
Prawns, canned . . .	60	2 oz.		13.9 23 2	0.8 1.5	65
Preserves, jellies, com. . .	12	1 t.	7.7 64 0	— —	— —	30
Pretzels . . .	25	6 med.	18.2 72 8	2.4 9 7	1.0 3 9	95
Prickly pear . . .	100	1 av.	10.4 10 4	0.8 0 8	— —	45
Primost cheese, Mysost . . .	30	1 oz.		4.2 14 0	10.3 34.5	115
Printanier soup, canned, conc.	140	$\frac{1}{2}$ c.	1.4 1 0	8.5 6 1	— —	40
Provolone, Italian cheese . . .	30	1 oz.		10.2 34 2	7.5 25 1	110
Prunes:						
Fresh	50	2 med.	6.7 *13 3	0.5 0 9	0.1 0 2	30
Canned, water pack	100	3, $\frac{1}{2}$ c.	6.4 *6 4	0.4 0 4	0.1 0 1	30
Canned, juice pack . . .	100	3, $\frac{1}{2}$ c.	19.0 19 0	0.4 0 4	0.1 0 1	80
Canned, in syrup . . .	100	3, $\frac{1}{2}$ c.	22.3 22 3	0.5 0 5	0.1 0 1	95
Dried	100	8 lg.	40.3 *40 3	2.4 2 4	— —	175
Dried, cooked . . .	100	4 med	29.3 29 3	0.8 0 8	— —	125
Juice	120	$\frac{1}{2}$ c.	34.6 28 8	1.0 0 8	0 0	145
Juice, canned	120	$\frac{1}{2}$ c.	15.6 *13 0	0.5 0 4	0 0	65
Meat	100	$\frac{1}{2}$ c.	21.5 21 5	1.2 1 2	— Trace	95
Puddings:						
Apple dumpling	100		28.1 *28 1	2.4 2 4	9.3 9 3	210
Banana custard . . .	50		8.9 *17.9	1.2 2 5	1.3 2.6	55
Blanc-mange . . .	50		9.1 *18 2	1.6 3.2	1.8 3.7	60
Chocolate cornstarch . . .	50		10.6 *21 2	1.6 3 3	1.9 3.8	70
Custard, egg, baked	50		4.7 *9.4	2.6 5.2	2.9 5 9	55
Boiled	50		6.3 *12.7	2.3 4 7	2.6 5 3	60
Date, Heinz . . .	50		24.1 48.2	1.7 3.5	4.9 9 9	150
Fig, Heinz	50		24.5 49.0	2.0 4.0	6.0 12.1	165

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Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
P						
Puddings:						
Plum, Heinz	90	3 oz.	42.2	3.8	9.3	275
			46.9	4.2	10.3	
Rice (with milk)	100		20.8	4.5	9.3	190
			*20.8	4.5	9.3	
Sago (with milk)	100		5.8	0.9	1.1	40
			*5.8	0.9	1.1	
Semolina (with milk)	100		5.5	1.2	1.1	40
			*5.5	1.2	1.1	
Suet	100		36.6	4.3	18.1	335
			*36.6	4.3	18.1	
With raisins	100		40.8	3.8	15.6	330
			*40.8	3.8	15.6	
Tapioca (with milk)	100		20.8	3.2	3.8	135
			*20.8	3.2	3.8	
Puffed corn	23	1 c.	19.4	2.2	0.1	90
			84.3	9.6	0.4	
Puffed Rice, Quaker	15	1 c.	13.3	0.9	—	60
			88.8	6.2	0.2	
Puffed Wheat, Quaker	15	1 c.	11.3	2.3	0.2	55
			75.4	15.6	1.6	
Pumpnickel bread	25	1 sl.	12.4	1.7	0.3	50
			49.7	6.7	1.2	
Pumpkin	120	$\frac{1}{2}$ c.	4.8	1.2	0.1	25
			*4.0	1.0	0.1	
Pumpkin, canned	125	$\frac{1}{2}$ c.	8.4	1.0	0.3	40
			6.7	0.8	0.2	
Purée foods, see page 156.						
Purity oats, rolled	40	$\frac{1}{2}$ c.	24.4	6.5	2.4	150
			61.1	16.3	6.1	
Purslane	100		2.5	1.6	6.4	20
			*2.5	1.6	6.4	

Q

Quail	100	1 whole	24.0	6.4	160	
			24 0	6.4		
Quail, broiled	100	1 whole	22.0	6.0	145	
			22.0	6 0		
Quinces	240	1, 3" x 2½"	1.4	0.7	10	
			*0.6	0.3		
Quince juice	120	½ c.	10.9	0.4	45	
			*9.1	0 3	—	
Quince-apple jam	25	1 T.	13.5	0.2	55	
			54.0	0 7	Trace	
Quinoa, dry seed	100		58.6	22.8	5.7	385
			*58 6	22.8	5 7	
Quinoa flour, "petty rice"	100	½ c.	60.0	19.0	5.0	370
			*60.0	19 0	5 0	
Quinoa, leafy shoots	100		2.4	0.2	10	
			2.4	0 2		

R

†Rabbit, front quarter, boiled	115	$\frac{1}{2}$ lb.	31.6	1.1	140
			27.5	1.0	
†Rabbit, hind quarter, boiled	115	$\frac{1}{2}$ lb.	33.2	1.3	150
			28.9	1.1	

* Largely assimilable.
Blank space indicates lack of data.

† Gross fat removed.
Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			R
	Grams.	Household measure.	Carb.	Prot.	Fat.	
‡Rabbit, front quarter, broiled	115	½ lb.		34.6	4.9	185
				30 1	4.3	
‡Rabbit, hind quarter, broiled	115	½ lb.		35.6	2.8	170
				31 0	2 4	
Rabbit, stewed	115	½ lb.		30.6	8.9	210
				26.6	7.7	
Radishes	50	6 med.	1.7	0.7	0.1	11
			*3.5	1 3	0 1	
Raisins, Muscat, dried (seeded)	75	½ c.	48.3	0.8	—	200
			*64.4	1.1	—	
Raisins, Sultana or Thompson seedless, dried	60	½ c.	38.8	1.0	—	165
			*64 7	1.7	—	
<i>Ralston, Shredded</i>	30	½ c.	23.2	2.6	0.3	110
			74 0	8 5	1.0	
<i>Ralston</i> , wheat cereal	30	½ c.	21.0	4.5	0.5	110
			70 0	15 0	1 7	
Raspberries:						
Black	75	½ c.	7.3	1.3	0.8	45
			*9 7	1.7	1.0	
Red	75	½ c.	7.3	0.8	0.4	35
			*9.7	1 0	0 6	
Canned, water pack	140	½ c.	14.0	1.3	1.3	75
			10.0	0.9	0.9	
Canned, juice pack	140	½ c.	18.2	0.8	0.6	85
			13.0	0 6	0 4	
Canned, in syrup	140	½ c.	38.9	0.8	0.7	170
			27.8	0.6	0 5	
Canned, see also Fruits, canned.						
Dried	40	½ c.	32.1	2.9	0.7	150
			80 2	7.3	1.8	
Raspberry, black, juice	120	½ c.	12.8	0.2	—	55
			10 7	0 2	—	
Raspberry, red, juice	120	½ c.	10.0	0.5	—	45
			8 3	0 4	—	
Raspberry extract, Burnett, A.P.	6	1 t.	2.8	0	0	12
			47.0	0	0	
Raspberry jam	25	1 T.	14.3	0.2	—	60
			57.3	0.7	Trace	
Red banana	140	1	32.0	1.8	1.1	150
			22 7	1.3	0 8	
Red cabbage	60	½ c.	3.5	1.1	0.1	20
			5.8	1.8	0 2	
Reindeer, see Venison.						
Reindeer milk cheese	30	1 oz.	0.9	7.1	12.9	155
			*3 0	23 8	43.1	
Relish, pickle, com.	25	1 T.	7.0	0.1	0.1	30
			28.0	0 5	0 3	
Rhubarb	90	1 c. diced	2.3	0.5	0.6	20
			*2 5	0.6	0.7	
Rhubarb, cooked without sugar	100	½ c.	2.2	0.4	0.4	15
			2.2	0.4	0.4	
Rhubarb, canned, water pack	100	½ c.	3.0	0.4	0.4	18
			3.0	0 4	0 4	
Rhubarb pie	100	1 sl.	29.8	2.6	9.4	220
			*29.8	2.6	9.4	
Rice:						
Fermented, Japanese	100		69.6	5.5	0.2	310
			69.6	5.5	0.2	
Hulled	20	1 heaping T.	15.4	1.4	0.4	75
			*76.8	7.2	2.0	

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R	Food items.	Size of portion.		Value of portion			
		Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Rice:							
Natural brown, White House	20	1 heaping T.	15.3	1.3	0.5	70	
			76.1	6.7	2.2		
Polished	20	1 heaping T.	15.5	1.4	0.1	70	
			*77.4	6.9	0.4		
White, White House	20	1 heaping T.	16.2	1.3	0.1	75	
			81.0	6.4	0.6		
Wild (Indian)	20	½ c.	13.1	2.8	0.2	65	
			65.4	14.0	0.9		
Boiled	100	½ c.	22.5	2.3	0.9	110	
			22.5	2.3	0.9		
Rice Flakes, Heinz	30	1 c.	25.0	3.2	0.3	120	
			83.2	10.5	0.9		
Rice Flakes, White House	30	1 c.	24.4	2.7	0.6	115	
			81.2	8.9	2.0		
Rice flour	100	½ c.	68.0	8.6	6.1	370	
			68.0	8.6	6.1		
Rice Krispies, Kellogg	30	1 c.	26.5	1.8	0.1	115	
			88.4	6.0	0.3		
Rice polishings	100		64.0	11.6	10.1	405	
			64.0	11.6	10.1		
Rice pudding (with milk)	100		20.8	4.5	9.3	190	
			*20.8	4.5	9.3		
Rice, Puffed, Quaker	15	1 c.	13.3	0.9	0.1	60	
			88.8	6.2	0.2		
Ricena, White House	20	1 heaping T.	16.1	1.3	0.1	70	
			80.3	6.6	0.6		
Ricotta Romano, Italian cheese	50	½ c.		3.4	19.7	195	
				6.9	39.5		
Ricotta salata, Italian cheese	30	1 oz.	0.6	4.1	15.4	145	
			2.0	13.8	51.3		
Rippled Wheat, Loose-Wiles	10	1 biscuit	7.9	1.1	0.3	40	
			*78.8	11.1	2.5		
Robinson's Patent Barley	9	1 T.	7.0	0.6	0.1	35	
			*78.3	6.6	1.0		
Robinson's Patent Groats	9	1 T.	6.4	1.1	0.5	35	
			*71.5	12.4	6.0		
Roe, cod, fried	60	2 oz.	2.4	12.4	7.1	125	
			*3.0	20.6	11.9		
Roe, herring, fried	60	2 oz.	2.8	14.0	9.5	155	
			*4.7	23.4	15.8		
Roe, shad	140	½ lg.	3.6	29.3	5.3	185	
			2.6	20.9	3.8		
Roe, sturgeon (caviar)	15	2 t.	1.1	4.5	3.0	50	
			7.6	30.0	19.7		
Rolled Oats	20	½ c.	13.3	3.3	1.5	80	
			66.3	16.7	7.3		
Rolled Oats, cooked	120	½ c.	16.8	4.2	1.8	105	
			14.0	3.5	1.5		
Rolls:							
Aver.	50	1	28.4	4.5	2.1	155	
			56.7	8.9	4.1		
French	40	1	22.3	3.4	1.0	115	
			55.7	8.5	2.5		
Plain	50	1, 4½" x 2½"	30.0	4.9	2.1	165	
			59.9	9.7	4.2		
Vienna	50	1	28.3	4.3	1.1	145	
			56.5	8.5	2.2		
Water	40	1	21.7	3.6	1.2	115	
			54.2	9.0	3.0		

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			R
	Grams.	Household measure.	Carb.	Prot.	Fat	
Romaine	50	5 leaves	1.5 3.0	0.5 1.0	— —	8
Romano cheese (Pecorino)	30	1 oz.		9.3 31 2	8.3 27 7	115
Root beer	230	1 c.	18.4 8 0	— —	— —	75
Root beer beverage, Hires .	230	1 c.	21.4 *9.3	0 0	0 0	90
Roquefort cheese	15	1" x ½" x 2½"	0.3 *1 8	3.4 22 6	4.4 29 5	55
Roquette (Rocket salad)	100		0.3 *0 3	0.7 0 7	0.4 0 4	8
Rose extract, Burnett, A.P. .	5	1 t.	0 0	0 0	0 0	0
Runko, with malt	15	1 T.	12.6 83 7	0.6 3.8	0.4 2 6	60
Russian dressing	18	1 T.	1.6 9 0	0.3 1 9	9.3 51.7	95
Russian turnips	120	½ c.	8.7 *7 3	1.3 1 1	0.1 0 1	40
Rutabagas (Swedish turnips) .	120	½ c.	8.7 *7 3	1.3 1 1	0.1 0 1	40
Rye bread	25	1 sl.	13.3 53 2	2.3 9 0	0.2 0 6	65
Rye bread, black	30	1 sl.	14.7 48 9	2.9 9 6	0.2 0 6	75
Rye bread, Jewish	30	1 sl.	15.6 52 0	2.7 9 1	0.3 1 1	80
Rye bread, whole	30	1 sl.	11.4 34 7	3.6 11 9	0.2 0 6	65
Rye, whole grain	30	½ c.	21.2 *70 8	3.2 10 6	0.5 1.7	105
Rye, cream of	50	½ c.	35.9 71 8	6.0 12 0	0.8 1 6	180
Rye, flaked	30	1 c.	22.7 *75 8	3.0 10 0	0.4 1 4	110
Rye flour, see Flours.						
Rye meal	130	1 c.	93.0 71 5	17.7 13 6	2.6 2 0	465
Ry-Krisp, Ralston	6	1	4.4 74 0	0.7 12 0	0.1 1 0	20

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Sago	40	½ c.	37.6 *94 0	0.1 0 3	0.1 0 2	155
Sago meal	100		83.9 83 9	0.9 0 9	0.2 0 2	350
Sago pudding (with milk) . .	100		5.8 *5 8	0.9 0 9	1.1 1 1	40
Salad dressings:						
Boiled	20	1 T.	3.0 15 0	0.9 4 5	2.0 10 0	35
French	11	2 t.	— —	— —	6.6 60.0	60
French, com.	11	2 t.	2.0 *18 1	0.1 0 6	3.9 35.5	45
Mayonnaise, com.	20	1 T.	0.4 2 0	0.3 1 4	16.0 80 0	150
Mineral oil (Mayonnaise type)	15	1 T.	0.5 3.0	0.2 1.5	0.4 2 7	7

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S	Food items.	Size of portion.		Value of portion.			
		Grams.	Household measure.	Carb.	Prot.	Fat.	Cal
Salad dressings:							
<i>Miracle Whip</i>	20	1 T.	1.7	0.2	10.2	105	
			8 5	1 2	50 9		
Russian	18	1 T.	1.6	0.3	9.3	95	
			9 0	1 9	51.7		
<i>Salad Cream</i> , com.	20	1 T.	2.0	0.4	5.6	60	
			10 0	2 0	28.0		
Thousand Island, com.	15	1 T.	2.6	0.1	5.9	65	
			17 3	0.8	39 0		
Salami	60	2 oz.		14.3	22.1	265	
				23 9	36 8		
Salmon:							
Raw	230	½ lb.		50.6	29.4	480	
				22 0	12 8		
†Boiled	115	½ lb.		29.5	1.4	135	
				25 7	1 2		
Boiled	115	½ lb.	6.2	22.7	11.7	225	
			5 4	19 7	10 2		
Steamed	115	½ lb.		22.0	14.9	230	
				19 1	13 0		
Canned, Atlantic	100	½ c.		21.1	12.5	200	
				21 1	12 5		
Canned, Blueback	100	½ c.		20.0	4.5	125	
				20 0	4 5		
Canned, Chinook	100	½ c.		17.7	15.7	220	
				17 7	15 7		
Canned, Chum	100	½ c.		20.7	6.7	150	
				20 7	6 7		
Canned, Coho	100	½ c.		21.1	8.5	165	
				21 1	8 5		
Canned, Pink	100	½ c.		21.4	7.0	155	
				21 4	7 0		
Canned, Sockeye	100	½ c.		20.8	11.2	190	
				20 8	11 2		
Canned, steelhead trout	100	½ c.		21.3	9.0	170	
				21 3	9 0		
Salmon paste	6	1 t.		1.2	0.5	9	
				20 1	8 9		
Salmon-anchovy paste	6	1 t.	0.5	0.8	0.5	10	
			*8 5	14 0	9 1		
Salmon-shrimp paste	6	1 t.	0.2	1.1	0.5	10	
			*4 2	18 2	9 3		
Salsiccia, fresca di Napoli	60	2 oz.	0.4	6.8	14.5	165	
			0 6	11 4	24.1		
Salsiccia, secca di Basilicata	60	2 oz.	0.5	12.4	26.5	300	
			0 8	20 7	44 2		
Salsify (vegetable oyster)	100	2, 6" long	15.5	3.5	1.0	85	
			15 5	3 5	1 0		
Salsify, cooked	80	½ c.	7.2	0.9	Trace	35	
			9 0	1 2	0 1		
Samp, coarse hominy	50	½ c.	39.7	4.2	0.3	185	
			79 4	8 3	0 5		
<i>Sandwich spread</i> , Heinz	20	1 T.	3.4	—	7.4	80	
			17 0	0 3	36 8		
Sap Sago cheese	5	1 t. grated		2.1	0.1	10	
				41 7	2 0		
Sapodilla, Cuban	200	1 av.	22.0	1.0	—	95	
			*11.0	0 5	—		
Sapodilla, Florida	200	1 av.	16.8	0.6	2.0	50	
			*8.4	0 3	1 0		

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 129

Food items.	Size of portion.		Value of portion			S
	Grams.	Household measure	Carb.	Prot.	Fat.	
Sardine-tomato paste . . .	6	1 t.	0.5 *7 9	1.1 19 0	0.6 9 5	12
Sardines in mustard or <i>Souse</i> sauce	100		2.2 2 2	20.0 20 0	11.8 11 8	200
Sardines in oil (American)	50	4, 2½" long		9.6 19.2	12.8 25 5	160
Sardines in oil (French) .	75	3, 3¼" long		18.6 24.8	9.5 12.7	165
Sardines in tomato sauce (American) . . .	95	1, 5" long		17.2 18 1	5.3 5.6	120
Sauces:						
Chili, com.	20	1 T.	5.2 26 0	0.5 2 5	0.2 0 8	25
Cranberry	100	½ c.	44.6 44 6	0.2 0 2	0.3 0 3	185
Hollandaise	40	2 T.	—	1.0 2 5	17.5 43 8	165
Soy (Toyo), Philippine	10	2 t.	1.2 *12 0	0.5 4 5	0.2 1 5	9
Soy bean, Hawaiian . .	10	2 t.	0.5 5 0	0.8 7 8	—	5
Worcestershire, Lea & Perrins	5	1 t.	1.0 19 0	Trace 1.1	— Trace	4
Sauerkraut, raw	80	½ c.	3.0 3 8	1.4 1 7	0.4 0 5	20
Sauerkraut, cooked . .	100	½ c.	3.5 3 5	1.5 1 5	0.4 0 4	25
Sauerkraut, canned . . .	100	½ c.	3.4 3 4	1.1 1 1	0.2 0 2	20
Sauerkraut juice . . .	120	½ c.	0.8 0 7	—	—	3
Sausages:						
Arles	115	¼ lb.		30.8 26 8	58.2 50 6	700
Beef, fried	60	2 oz.	9.4 *15 7	8.3 13 8	11.0 18 4	175
Black	60	2 oz.	8.8 *14 7	3.2 5 3	13.5 22 5	175
Blood	60	2 oz.		8.9 14 8	20.8 34 6	230
Bockwurst	60	2 oz.	0 0	7.0 11 7	13.1 21 8	150
Bologna	75	6 sl.	0.2 0 3	14.0 18 7	13.2 17 6	180
Bologna, all meat . . .	75	6 sl.		10.8 14 4	13.3 17 8	170
Bologna, added cereal . .	75	6 sl.	2.7 3 6	11.1 14 8	11.9 15 9	165
Braunschweiger	60	2 oz.	0 0	9.2 15 4	14.3 23 8	170
Breakfast	60	2 oz.	10.1 *16.8	5.2 8 7	12.2 20 4	175
Country style	115	¼ lb.		18.6 16 2	31.5 27 4	370
Deerfoot Farm, cooked .	115	¼ lb.	—	22.9 Trace	62.3 19 9	670
Farmer	115	¼ lb.		33.4 29 0	48.3 42 0	585
Frankfort (Frankfurter) .	120	2, 7" x ½"	1.3 1 1	23.5 19.6	22.3 18.6	310

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S

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Sausages:						
Frankfurter, all meat . .	120	2, 7" x $\frac{1}{4}$ "		16.9	25.0	300
				14 1	20 8	
Frankfurter, added cereal .	120	2, 7" x $\frac{1}{4}$ "	18.2	16.9	4.0	180
			15 2	14 1	3 3	
Head cheese	115	$\frac{1}{4}$ lb.		17.2	23.3	285
				15.0	20.3	
Italian:						
Capicollo	60	2 oz.	0.8	12.5	24.1	280
			1 4	20 8	40 2	
Cervellata fresca	60	2 oz.	0.3	6.0	20.6	215
			0 5	10 1	34 4	
Salsiccia, fresca di Napoli	60	2 oz.	0.4	6.8	14.5	165
			0 6	11 4	24 1	
Salsiccia secca di Basilicata	60	2 oz.	0.5	12.4	26.5	300
			0 8	20 7	44 2	
Liver	60	2 oz.	0.9	10.0	12.4	195
			1 5	16 7	20 6	
Polish style	60	2 oz.	0	9.8	13.9	130
			0	16 4	23 1	
Pork	35	2, 3 $\frac{1}{4}$ " long	0.4	4.6	15.5	165
			1 1	13 0	44 2	
Pork, fried	60	2 oz.	7.6	6.9	14.9	200
			*12 7	11 5	24 8	
Pork and beef	60	$\frac{1}{4}$ lb.		11.6	14.5	180
				19 4	24 1	
Salami	60	2 oz.		14.3	22.1	265
				23 9	36 8	
Souse	60	2 oz.	0	7.9	7.4	100
			0	13 2	12 3	
Summer	60	$\frac{1}{4}$ lb.		15.6	26.7	310
				26 0	44 5	
Savoy cabbage	120	1 c.	7.2	4.0	0.8	55
			6 0	3 3	0 7	
Savoy cabbage, boiled . .	100	$\frac{1}{2}$ c.	1.1	1.3	—	10
			*1 1	1 3	—	
Sbrinz cheese	30	1 oz.	0.4	10.2	8.6	125
			*1 3	34 0	28 6	
Scallions, bulbs	12	4 sm.	2.1	0.1	Trace	9
			17 3	1 2	0 2	
Scallops, sm.	100	10 ($\frac{1}{2}$ c.)	3.4	14.8	0.1	75
			3 4	14 8	0 1	
Scallops, med.	175	10 ($\frac{1}{2}$ c.)	5.9	25.9	0.2	130
			3 4	14 8	0 1	
Scallops, lg.	220	6 (1 c.)	7.4	32.5	0.2	165
			3 4	14 8	0 1	
Scallops, steamed	100	$\frac{1}{2}$ c.	—	22.4	1.4	105
			Trace	22 4	1 4	
Scamorzza, Italian cheese .	30	1 oz.	0.5	8.0	7.7	105
			*1 8	26 6	25 8	
Schmierkäse	50	$\frac{1}{4}$ c.		14.0	4.5	100
				28 0	9 0	
Scones (with egg)	100	1	59.5	9.2	10.5	380
			*59 5	9 2	10 5	
Scones (without egg) . . .	100	1	57.1	8.4	13.2	390
			*57 1	8 4	13 2	
Scotch broth, canned . . .	240	1 c.	8.9	4.8	13.2	180
			3 7	2 0	5 5	
Screw bean (Mesquite), dried	100		77.1	12.2	2.5	390
			77 1	12 2	2 5	

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 131

Food items.	Size of portion.		Value of portion.			S
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Scup	230	$\frac{1}{2}$ lb.		43.7	11.5	285
				19.0	5.0	
Sea-kale (sea-cabbage)	100	$1\frac{1}{2}$ c.	3.8	1.4	0.4	25
			3.8	1.4	0.4	
Sea-kale, cooked	100	$\frac{1}{2}$ c.	0.3	0.4	0.1	4
			*0.3	0.4	0.1	
Sea-trout	230	$\frac{1}{2}$ lb.		43.7	4.6	220
				19.0	2.0	
Sea-perch	230	$\frac{1}{2}$ lb.	1.4	41.2	1.6	190
			0.6	17.9	0.7	
Semolina	20	2 T.	16.5	2.3	0.4	75
			*77.5	11.7	1.8	
Semolina pudding (milk)	100		5.5	1.2	1.1	40
			*5.5	1.2	1.1	
Sesame seeds, black	100		8.9	19.7	45.4	540
			8.9	19.7	45.4	
Shad	230	$\frac{1}{2}$ lb.		43.2	21.9	380
				18.8	9.5	
Shad roe	140	$\frac{1}{2}$ lg.	3.6	29.3	5.3	185
			2.6	20.9	3.8	
Shallots, bulbs	12	4 sm.	2.1	0.1	Trace	9
			17.3	1.2	0.2	
Shepherd's pie	230	$\frac{1}{2}$ lb.	28.1	16.3	12.4	295
			*12.2	7.1	5.4	
Sherbet	60	2 oz.	15.0	1.2	1.8	85
			*25.0	2.0	3.0	
Shortbread	25	1 sq.	16.4	1.4	5.7	125
			65.6	5.8	23.0	
Shredded Ralston	30	$\frac{1}{2}$ c.	23.2	2.6	0.3	110
			74.0	8.5	1.0	
Shredded Wheat, N. B. C.	30	1 biscuit	24.5	3.3	0.5	120
			81.6	11.0	1.6	
Shrimps	65	8 med.	1.1	12.5	0.3	60
			1.7	19.3	0.4	
Shrimps, boiled	65	6 med.		14.1	0.5	60
				21.7	0.8	
Shrimps, canned (dry pack)	65	8 med.		16.6	0.5	75
				25.5	0.8	
Shrimps, canned (wet pack)	65	6 med.		13.0	0.3	55
				20.0	0.5	
Shrimp paste	6	1 t.	0.1	1.1	0.7	11
			*2.5	18.3	11.5	
Shrimp soup, cream of, canned	240	1 c.	11.5	3.8	5.0	110
			4.8	1.6	2.1	
"Single" cream, see 20% Cream, p. 105.						
Skate, fried	115	$\frac{1}{2}$ lb.	8.6	17.2	18.9	285
			*7.5	15.0	16.4	
Smelts	120	$3, 5\frac{1}{2}$ " long		21.1	2.2	105
				17.6	1.8	
Smelts, fried	100	3	5.0	25.0	30.8	410
			*5.0	25.0	30.8	
Snails, boiled	30	6 lg.		3.3	0.5	20
				11.0	1.6	
Snapbeans	75	$\frac{1}{2}$ c.	5.8	1.8	0.2	35
			7.7	2.4	0.2	
Sole, American, is usually fillet of flounder.						
Sole, European	230	$\frac{1}{2}$ lb.	2.1	36.6	3.9	195
			0.9	15.9	1.7	
Sole, European, fried	115	$\frac{1}{2}$ lb.	6.2	23.1	21.2	315
			*5.4	20.1	18.4	

132 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

S

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure	Carb.	Prot.	Fat.	Cal.
Sole, European, steamed	115	$\frac{1}{2}$ lb.		20.2 17 6	1.5 1 3	95
Sorghum syrup	20	1 T.	12.7 *63.3		—	50
Sorgo	160	$\frac{1}{2}$ c.	100.8 *63 0	3.8 2 4	—	430
Sorrel or dock	25	$\frac{1}{2}$ c.	Trace *0 1	0.5 2 1	Trace 0 2	2
Soups and Broths, canned:						
Asparagus, Campbell, A.P.	140	$\frac{1}{2}$ c.	9.8 7 0	1.8 1 3	1.7 1 2	65
Asparagus, cream of, Heinz	240	1 c.	9.1 3 8	1.9 0 8	7.9 3 3	120
Bean, Campbell, A.P.	140	$\frac{1}{2}$ c.	19.6 14 0	3.5 6 1	2.5 1 8	140
Bean with smoked pork, Heinz	250	1 c.	20.8 8.3	13.3 5 3	10.5 4 2	235
Beef, Campbell, A.P.	120	$\frac{1}{2}$ c.	9.8 8 2	6.7 5 6	1.6 1 3	85
Bouillon, beef	240	1 c.	0.7 0 3	6.2 2 6	0.2 0 1	30
Bouillon, Campbell, A.P.	120	$\frac{1}{2}$ c.	0.1 0 1	4.7 3 9	—	20
Celery	230	1 c.	11.5 5 0	4.8 2 1	6.4 2 8	125
Celery, Campbell, A.P.	140	$\frac{1}{2}$ c.	9.5 6 8	2.0 1 4	2.2 1 6	70
Celery, cream of, Crosse & Blackwell	240	1 c.	11.5 4 8	4.1 1 7	5.3 2 2	115
Celery, cream of, Heinz	230	1 c.	10.1 4 4	2.1 0 9	11.7 5 1	160
Celery, Pixie	230	1 c.	4.7 2 0	1.3 0 6	0.2 0 1	25
Chicken, Campbell, A.P.	120	$\frac{1}{2}$ c.	3.1 2 6	4.3 3 6	1.4 1 2	45
Chicken, country style, Heinz	250	1 c.	9.2 3 7	3.3 1.3	2.7 1 1	75
Chicken gumbo, Campbell, A.P.	140	$\frac{1}{2}$ c.	12.0 8 6	4.2 3 0	1.0 0 7	75
Chicken noodle, Campbell, A.P.	120	$\frac{1}{2}$ c.	8.0 6 7	4.7 3 9	1.8 1 5	70
Chicken noodle, Heinz	240	1 c.	10.3 4 3	3.8 1 6	2.4 1 0	80
Clam chowder, Campbell, A.P.	140	$\frac{1}{2}$ c.	13.6 9 7	4.2 3 0	5.7 4.1	125
Clam chowder, Heinz	250	1 c.	10.5 4 2	4.5 1 8	2.5 1 0	85
Consommé, Campbell, A.P.	120	$\frac{1}{2}$ c.	0.1 0 1	4.7 3 9	—	20
Consommé, Heinz	240	1 c.	—	8.8	—	35
Consommé Madriléne, Heinz	240	1 c.	Trace 1.4 0 6	3.7 6.7 2 8	Trace — Trace	35
Corn chowder, Heinz	250	1 c.	20.5 8 2	3.7 1 5	6.0 2 4	155

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			S
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Soups and Broths, canned:						
Gumbo, Creole, Heinz . . .	250	1 c.	7.5 3.0	1.8 0.7	0.7 0.3	45
Julienne, Campbell, A.P. . .	120	$\frac{1}{2}$ c.	1.1 0.9	3.1 2.6	—	15
Mock turtle, Campbell, A.P.	130	$\frac{1}{2}$ c.	7.8 6.0	7.5 5.8	1.0 0.8	75
Mock turtle, Heinz	240	1 c.	12.9 5.4	3.8 1.6	1.2 0.5	80
Mulligatawny, Campbell, A.P.	150	$\frac{1}{2}$ c.	16.1 10.7	4.1 2.7	0.8 0.5	90
Mushroom broth	120	$\frac{1}{2}$ c.	— 1.2	— 1.1	0.2 0.2	2
Mushroom, cream of, Camp- bell, A.P.	140	$\frac{1}{2}$ c.	13.2 9.4	5.0 3.6	8.5 6.1	155
Mushroom, cream of, Crosse & Blackwell	240	1 c.	11.5 4.8	4.6 1.9	5.3 2.2	115
Mushroom, cream of, Heinz	240	1 c.	13.2 5.5	4.1 1.7	6.0 2.5	125
Mutton, Campbell, A.P. . .	150	$\frac{1}{2}$ c.	6.9 4.9	6.4 4.6	0.8 0.6	60
Onion, Heinz	250	1 c.	7.5 3.0	4.7 1.9	6.0 2.4	105
Onion, cream of, Crosse & Blackwell	240	1 c.	11.3 4.7	4.1 1.7	5.0 2.1	110
Oxtail, Campbell	140	$\frac{1}{2}$ c.	11.9 8.5	5.5 3.9	2.4 1.7	95
Oyster, cream of, Crosse & Blackwell	240	1 c.	10.3 4.3	3.6 1.5	5.5 2.3	110
Oyster, cream of, Heinz	240	1 c.	10.5 4.4	3.6 1.5	4.1 1.7	95
Pea, Campbell, A.P.	140	$\frac{1}{2}$ c.	17.4 12.4	6.7 4.8	2.2 1.6	120
Pea, cream of, Heinz	240	1 c.	15.4 6.4	4.8 2.0	8.6 3.6	165
Pepper-pot, Campbell, A.P.	140	$\frac{1}{2}$ c.	11.5 8.2	6.4 4.6	4.2 3.0	115
Pepper-pot, Heinz	240	1 c.	12.0 5.0	5.5 2.3	3.1 1.3	100
Printanier, Campbell, A.P. .	140	$\frac{1}{2}$ c.	1.4 1.0	8.5 6.1	—	40
Scotch broth, Heinz	240	1 c.	8.9 3.7	4.8 2.0	13.2 5.5	180
Shrimp, cream of, Crosse & Blackwell	240	1 c.	11.5 4.8	3.8 1.6	5.0 2.1	110
Spinach, cream of, Heinz . .	240	1 c.	13.4 5.6	4.6 1.9	15.2 5.9	215
Spinach, cream of, Crosse & Blackwell	240	1 c.	11.5 4.8	4.3 1.8	5.0 2.1	110
Tomato bouillon, Heinz . . .	240	1 c.	1.0 0.4	2.6 1.1	0.7 0.3	20
Tomato, Campbell, A.P. . . .	140	$\frac{1}{2}$ c.	13.4 8.9	2.2 1.6	2.0 1.4	80
Tomato, cream of, Heinz . . .	240	1 c.	21.6 9.0	2.9 1.2	5.7 2.4	155
Turtle (genuine), Heinz . . .	240	1 c.	8.2 3.4	2.6 1.1	1.0 0.4	55

S	Food items.	Size of portion.		Value of portion.			
		Grams.	Household measure	Carb.	Prot.	Fat.	Cal.
Soups and Broths, canned:							
Vegetable, Campbell, A.P. . .	140	$\frac{1}{2}$ c.	17.4 12.4	5.2 3.7	2.0 1.4	110	
Vegetable beef, Campbell, A.P.	140	$\frac{1}{2}$ c.	7.8 5 6	11.1 7.9	2.9 2.1	105	
Vegetable, beef, Heinz	250	1 c.	11.5 4 6	5.5 2 2	2.2 0 9	90	
Vegetable (with beef stock), Heinz	250	1 c.	12.5 5 0	3.5 1 4	2.7 1.1	90	
Vegetarian vegetable, Heinz	250	1 c.	10.0 4.0	2.5 1 0	2.0 0 8	70	
Soursop, "sour apple," West Indies	115	$\frac{1}{2}$ av.	19.7 17.2	0.9 0.8	0.1 0 1	85	
Souse	60	2 oz.	0 0	7.9 13 2	7.4 12.3	100	
Soy beans:							
Green	75	$\frac{1}{2}$ c.	9.9 13 2	10.2 13.6	4.9 6.3	130	
Green, cooked	125	$\frac{1}{2}$ c.	17.2 13 8	18.2 14.4	4.4 3 5	195	
Baked	100	$\frac{1}{2}$ c.	16.5 16.5	15.1 15.1	7.6 7.6	200	
Fermented	100		3.1 3.1	18.7 18 7	9.4 9 4	175	
Ripe, canned	250	1 c.	10.0 4.0	50.0 20 0	32.6 13 0	550	
Dried	100	$\frac{1}{2}$ c.	33.1 33.1	30.2 30 2	15.3 15 3	400	
Soy bean:							
Curd (Tofu)	100		1.6 1.6	9.0 9.0	4.1 4.1	80	
Flour	100	$1\frac{1}{2}$ c. sc.	8.0 8.0	45.0 45.0	11.0 11.0	320	
Meal	100	$1\frac{1}{2}$ c. sc.	8.2 *8.2	38.3 38 3	14.9 14 9	325	
Milk	100		0.6 0 6	3.5 3 5	2.4 2.4	40	
Sauce, Hawaiian	10	2 t.	0.5 5 0	0.8 7 8	— —	5	
Sauce (Toyo), Philippines	10	2 t.	1.2 *12.0	0.5 4.5	0.2 1.5	9	
Sprouts	65	$\frac{1}{2}$ c.	4.1 6 3	5.5 8 5	1.2 1 8	50	
Spanish melon	200	$\frac{1}{2}$ med.	10.0 *5.0	1.2 0.6	— —	45	
Spaghetti	100	$\frac{1}{2}$ c.	75.9 75.9	12.1 12 1	0.4 0.4	365	
Spaghetti, Quaker	100	$\frac{1}{2}$ c.	72.9 72.9	13.9 13 9	0.5 0.5	360	
Spaghetti in tomato sauce, Heinz	240	1 c.	30.7 12.8	5.0 2.1	1.2 0.5	155	
Spinach	75	$1\frac{1}{2}$ c.	1.7 *2 3	1.6 2.1	0.2 0.3	15	
Spinach, cooked	100	$\frac{1}{2}$ c.	0.8 *0.8	2.0 2 0	0.2 0.2	13	

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			S
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Spinach, canned	225	1 c.	5.4 2 4	5.4 2 4	0.7 0 3	50
Spinach, New Zealand	75	1½ c.	3.1 4 1	1.7 2 2	0.2 0 2	20
Spinach soup, cream of, canned	240	1 c.	13.4 5 6	4.6 1 9	15.2 5 9	215
Spleen, fresh:						
Beef and veal	115	¼ lb.		20.8 18 1	3.5 3 0	120
Hog	115	¼ lb.		19.7 17 1	4.4 3 8	120
Sheep	115	¼ lb.		21.6 18 8	4.5 3 9	130
Sponge cake	50	1 sq.	26.7 *53 5	4.7 9 5	3.5 7 0	160
Sprats	230	½ lb.		39.3 17 1	33.3 14 5	470
Sprats, fresh, fried	60	2 oz.		13.4 22 3	22.7 37 9	265
Sprats, smoked, grilled	60	2 oz.		15.1 25 1	13.9 23 2	190
Spring greens, boiled	100	½ c.	0.9 *0 9	1.7 1 7	—	10
Squab (pigeon)	50	1 whole		9.3 18 6	11.0 22 1	140
Squab, with skin, cooked	50	1 whole		9.5 19 0	11.0 22 0	140
Squash:						
Cushaw	125	1 c.	9.1 7 3	1.5 1 2	0.4 0 3	45
Summer, white	250	1½ c. diced	9.8 3 9	1.5 0 6	0.3 0 1	50
Summer, boiled	100	½ c.	3.5 3 5	0.5 0 5	— Trace	15
Winter	250	1½ c. diced	22.0 8 8	3.8 1 5	0.8 0 3	115
Winter, boiled	100	½ c.	4.0 *4 0	1.0 1 0	0.3 0 3	25
Canned	125	½ c.	13.1 10 5	1.1 0 9	0.6 0 5	65
Squeteague (sea-trout)	230	½ lb.		43.7 19 0	4.6 2 0	220
Stachys, raw	50	6 med.	8.3 *16 6	1.3 2 7	— Trace	40
Steak and kidney pie	115	½ lb.	19.2 *16 7	17.7 15 4	21.7 18 9	355
Stilton cheese	25	1½" × 1½" × 1½"	— —	7.3 29 0	7.8 31 2	105
St. John's bread (carob bean) .	10	4" piece	6.7 67 0	0.6 5 7	0.1 1 1	30
<i>Stokely Puréed Foods, see page 159.</i>						
<i>Strained foods, see page 156.</i>						
Strawberries:						
Fresh	100	½ c.	6.0 *6 0	1.0 1 0	0.6 0 6	35
Stewed	120	½ c.	28.8 24 0	0.8 0 7	— —	120
Canned, water pack	120	½ c.	7.0 5 8	0.7 0 6	0.5 0 4	35
Canned, juice pack	120	½ c.	9.6 8 0	1.0 0 8	1.0 0 8	50
Canned, in syrup	120	½ c.	33.6 28 0	0.6 0 5	0.2 0 2	125

136 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

S	Food items.	Size of portion.		Value of portion.			
		Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
	Strawberry extract, Burnett, A.P.	6	1 t.	2.8 47 0	0 0	0 0	12
	Strawberry jam, com.	25	1 T.	17.1 *68 5	0.1 0.5	— Trace	70
	Strawberry juice	120	$\frac{1}{2}$ c.	6.1 5 1	0.2 0 2	—	25
	String beans	75	$\frac{1}{2}$ c.	5.8 7 7	1.8 2 4	0.2 0 2	35
	String beans, cooked	130	$\frac{1}{2}$ c.	4.5 3 5	1.3 1 0	0.1 0 1	25
	String beans, boiled in much water	130	$\frac{1}{2}$ c.	2.5 1 9	1.0 0.8	0.1 0 1	15
	String beans, canned	130	$\frac{1}{2}$ c.	4.9 3 8	1.4 1 1	0.1 0 1	25
	Sturgeon	230	$\frac{1}{2}$ lb.*	35.4 15 4	3.7 1 6	—	180
	Sturgeon, steamed	115	$\frac{1}{2}$ lb.	28.4 24 7	6.6 5 7	—	180
	Sturgeon caviar	15	2 t.	1.1 7 6	4.5 30 0	3.0 19 7	50
	Succotash, canned	210	$\frac{1}{2}$ c.	37.1 *17 7	7.5 3 6	2.1 1 0	200
	Suet, beef	10	1 T	— 4 7	0.5 81 8	8.2	80
	Suet pudding	100		36.6 *36 6	4.3 4 3	18.1 18 1	335
	Suet pudding with raisins	100		40.8 *40 8	3.8 3 8	15.6 15 6	330
Sugars:							
	Cane, brown	10	1 T.	9.1 *91 0	— —	— —	35
	Demerara	10	1 T.	9.9 *99 3	— 0 5	— —	40
	Cane, granulated	105	$\frac{1}{2}$ c.	104.9 *99 9	— —	— —	430
	Cane, granulated	13	1 T.	13.0 *99 9	— —	— —	50
	Cane, coarse, powdered	90	$\frac{1}{2}$ c.	89.9 *99 9	— —	— —	370
	Corn, anhydrous	10	1 T.	10.0 *?100 0	— —	— —	40
	Crystal squares, Domino	3	1	2.8 *99 9	— —	— —	12
	Crystal tablets, Domino	5	1	4.9 *99 9	— —	— —	20
	Granulated	105	$\frac{1}{2}$ c.	104.9 *99 9	— —	— —	425
	Granulated	5	1 t.	5.0 *99 9	— —	— —	20
	Maple	60	1, $1\frac{1}{2}$ " sq.	49.7 *82 8	— —	— —	205
	Old fashioned brown, Domino	10	1 T.	9.3 *92 8	0 0	0 0	40
	Tablet	5	1 tablet	5.0 *?100 0	— —	— —	20
	Surinam-cherry	30	10	6.7 22 3	0.3 1 0	— 0 1	30

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 137

Food items.	Size of portion.		Value of portion.			S
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Swedes	120	$\frac{1}{2}$ c.	5.2	1.7	—	30
Swedes, boiled	120	$\frac{1}{2}$ c.	*4 3	1.4	—	25
			4.6	1.1	—	
			*3 8	0.9	—	
Sweetbreads:¹						
Beef	115	$\frac{1}{4}$ lb.		19.3	13.9	210
Beef, med. fat	115	$\frac{1}{4}$ lb.		16 8	12 1	335
Beef, boiled†	80	2		17.8	6.8	135
Beef, broiled†	115	3		22 2	8 6	220
Beef, canned	115	$\frac{1}{4}$ lb.		29.6	10.5	195
Hog	115	$\frac{1}{4}$ lb.		25 7	9 1	325
Veal	115	$\frac{1}{4}$ lb.		23.2	10.9	185
Stewed	60	2 oz.		20 2	9 5	105
Sweet potatoes	150	1, 6" x 1 $\frac{1}{2}$ "	39.2	2.7	1.1	180
Sweet potatoes, baked	100	$\frac{1}{2}$ lg.	*26 1	1 8	0.7	150
Sweet potatoes, boiled	100	1 med.	32.2	2.1	0.8	90
Sweet potatoes, canned	75	2 sm.	32 2	2 1	0 8	135
Sweetpotato tops	100		20.1	1.1	0.5	40
Swiss chard, leaves only	100	1 $\frac{1}{2}$ c.	*20 1	1 1	0 5	35
Swiss chard, leaves and stalks	100	1 c.	31.1	1.4	0.3	25
Swiss chard, stalks only	125	1 c.	41 4	1 9	0 4	20
Swiss chard, cooked	100	$\frac{1}{2}$ c.	6.3	2.3	0.3	25
Swiss cheese	30	2 cu. in.	4.8	2.6	0.4	130
Swiss cheese, European	30	2 cu. in.	4 8	2 6	0 4	120
Swiss cheese, Kraft	30	$\frac{1}{2}$ in. 5 $\frac{1}{4}$ loaf	4 4	1 4	0 2	105
Swiss-Swedish cheese	30	2 cu. in.	3.6	1.3	0.1	135
Swiss-Russian cheese	30	2" x 1" x 1"	2 9	1 0	0 1	125
Swordfish	230	$\frac{1}{2}$ lb.	3.0	2.4	0.2	360
			3 0	2 4	0 2	
			0.4	8.3	10.4	
			*1 3	27 6	34 9	
				8.7	9.2	
				29 2	30 6	
				7.9	7.8	
				26 5	26 0	
				1.8	6.9	
				*6 1	23 2	
				1.3	7.4	
				*4 4	24 9	
				39.1	23.0	
				17 0	10 0	
Syrups:						
Corn and cane	160	$\frac{1}{2}$ c.	118.7	0.4	—	490
Domino	160	$\frac{1}{2}$ c.	*74 2	0 2	—	470
English golden	20	1 T.	115.2	0	0	65
Karo, Blue Label	20	1 T.	*72 0	0	0	60
Karo, Green Label	160	$\frac{1}{2}$ c.	15.8	—	—	490
			*79 0	0 3	—	
			14.8	0	0	
			*74 0	0	0	
			120.0	0	0	
			*75.0	0	0	

¹ Generally thyroid gland.

138 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

S

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Syrups:						
Karo, Green Label	20	1 T.	15.0	0	0	60
			*75.0	0	0	
Karo, Red Label	160	½ c.	120.0	0	0	490
			*75.0	0	0	
Log Cabin	18	1 T.	11.9	0	0	50
			*66.0	0	0	
Maple	18	1 T.	1.28	—	—	50
			*71.4	—	—	
Sorghum	20	1 T.	12.7	—	—	50
			*63.3	—	—	
Sorgo	160	½ c.	100.8	3.8	—	430
			*63.0	2.4	—	
Sugar cane	160	½ c.	110.6	0.8	—	450
			*69.1	0.4	—	

T

Tabasco Sauce			0	0	0	0
			0	0	0	
Tangerines, Mandarin orange .	100	2, 2" diam.	8.0	0.9	—	35
			*8.0	0.9	—	
Tamarind, Florida	5	1 lg.	3.9	0.5	0.3	20
			*29.4	2.7	1.3	
Tangelo juice	120	½ c.	10.8	0.8	—	50
			9.0	0.7	—	
Tangerine juice	120	½ c.	10.0	1.1	0.4	50
			9.2	0.9	0.3	
Tapioca	40	½ c.	35.2	0.2	Trace	145
			88.0	0.4	0.1	
Tapioca, Minute	40	½ c.	35.2	0.2	Trace	145
			88.0	0.4	0.1	
Tapioca pudding	100		20.8	3.2	3.8	135
			*20.8	3.2	3.8	
Taro, leaves and stems . . .	100		5.8	2.7	0.7	40
			*5.8	2.7	0.7	
Taro, shoots	100		2.2	0.9	0.1	14
			2.2	0.9	0.1	
Taro, tuber	150	1 med.	33.6	2.7	0.3	150
			*22.4	1.8	0.2	
Taro, steamed	100		26.4	1.2	0.2	115
			*26.4	1.2	0.2	
Tea, black leaves	2.3	1 ball ¹	—	0.4	—	1
			*1.7	16.0	Trace	
Tea infusion	140	1 teacup	—	—	—	—
			Trace	0.1	Trace	
Terrapin	115	½ lb.	24.4	4.0	—	135
			21.2	3.5	—	
Thousand Island dressing, com.	15	1 T.	2.6	0.1	5.9	65
			17.3	0.8	39.0	
Toasts:						
Graham bread	20	1 sl.	13.0	2.2	0.5	65
			65.0	11.0	2.5	
Melba, white bread	20	2 sl., 4" sq.	15.8	2.8	0.4	80
			79.0	14.0	1.8	
Rye bread	18	1 sl.	13.3	2.3	0.2	65
			73.9	12.8	1.1	
White bread	15	1 sl.	10.7	1.9	0.3	55
			71.1	13.3	2.2	

¹ Contents of 1 standard tea ball, 2.3 grams.

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			T
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Toffee, home-made	10	1 sq.	8.8 *87.8	— 0 2	0.6 6.2	40
Tomatoes:						
Fresh, ripe	125	1 small	4.1 *3 3	1.1 0 9	0.5 0.4	25
Fried	100		3.3 *3 3	1.0 1 0	5.9 5.9	70
Green or unripe	125	1, 2½" diam.	4.1 3 3	1.5 1 2	0.3 0.2	25
Cooked	130	½ c.	5.2 4 0	1.3 1.0	0.3 0 2	30
Canned	130	½ c.	4.5 *3 5	1.6 1 2	0.3 0 2	25
Dried	100		62.3 62.3	12.9 12.9	8.1 8.1	385
Tomato:						
Bouillon, canned	240	1 c.	1.0 0.4	2.6 1.1	0.7 0.3	20
Catsup	20	1 T.	4.8 24.0	0.4 2.0	0.2 1.0	25
Juice, canned	120	½ c.	4.3 3 6	1.2 1.0	0.1 0.1	25
Juice cocktail	60	½ c.	2.1 *3.6	1.1 0.9	— 0 1	13
Ketchup, com.	20	1 T.	5.0 25 0	0.5 2 5	0.2 0 8	25
Paste, canned	15	1 T.	2.8 18 7	0.7 4 7	0.2 1.4	16
Pomace	100			24.0 24 0	4.0 4 0	135
Sauce, canned	15	1 T.	1.4 9 0	0.1 0 4	0.1 0 3	5
Soup, canned, conc.	140	½ c.	13.4 8 9	2.2 1.6	2.0 1 4	80
Soup, cream of, canned	240	1 c.	21.6 9 0	2.9 1.2	5.7 2 4	155
Tomcod, whole	230	½ lb.		39.6 17.2	0.9 0.2	170
Tongue, fresh:						
Beef, lean	115	½ lb.	0.5 0 4	20.0 17.4	12.7 11.0	200
Beef, medium	115	½ lb.	0.5 0 4	18.9 16.4	17.3 15.0	240
Beef, fat	115	½ lb.	0.5 0 4	17.9 15 7	20.7 18 0	270
Beef, very fat	115	½ lb.	0.5 0 4	16.6 14 4	26.5 23.0	315
Calf	115	½ lb.	1.0 0.9	21.3 18 5	6.1 5 3	150
Lamb	115	½ lb.	0.6 0 5	16.0 13 9	17.6 15 3	230
Sheep	115	½ lb.	2.8 2.4	15.8 13 7	25.1 21 8	310
Pork	115	½ lb.	0.6 0 5	19.3 16 8	17.9 15 6	250
Tongue, cooked:						
Anterior, boiled†	115	½ lb.		25.1 21 8	17.6 15 3	265
Posterior, boiled†	115	½ lb.		24.1 21 0	29.3 25 5	370
Beef, canned	50	3 sl.		9.7 19 5	16.6 23.2	205

140 *TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS*

T	Food items.	Size of portion.		Value of portion			
		Grams.	Household measure	Carb.	Prot.	Fat.	Cal.
Tongue, cooked:							
Beef, pickled		60	2 oz.		7.7	12.3	145
					12 8	20 5	
Ox, pickled		60	2 oz.	1.4	11.5	14.3	185
				*2.3	19 1	23 9	
Potted or deviled		6	1 t.	—	1.1	1.4	18
				0 7	18 6	23 0	
Sheep, stewed		115	½ lb.		20.7	27.6	340
					18 0	24 0	
Trappist cheese		25	1½" x 1" x ¾"		5.3	6.3	80
					21 2	25 2	
Treacle, black		25	1 T.	16.8	0.3	0	10
				*67 2	1 2	0	
Tripe, stewed		115	½ lb.		20.7	3.4	115
					18 0	3 0	
Tripe, beef, canned		115	½ lb.		19.3	9.8	170
					16 8	8 5	
Tripe, pickled		115	½ lb.	0.2	13.5	1.4	70
				0 2	11 7	1 2	
Triscuit, N. B. C.		10	2	8.2	1.1	0.2	40
				81 7	10 5	1 6	
Trout, brook		230	½ lb.		44.2	4.8	235
					19 2	2 1	
Trout, brook, cooked		115	½ lb.	1.3	24.3	2.7	130
				1 2	21 2	2 4	
Trout, salmon or lake		230	½ lb.		40.9	23.7	490
					17 8	10 3	
Trout, steamed		115	½ lb.		25.6	5.2	155
					22 3	4 5	
Trout, sea, steamed		115	½ lb.		24.3	5.5	150
					21 1	4 8	
Truffles		100		—	—	0.6	5
				6 0	6 1	0 6	
Truffles, black		100		—	—	0.5	5
				7 6	8 7	0 5	
Truffles, white		100		—	—	0.6	5
				7 9	8 9	0 6	
Tuna (tunny fish)		230	½ lb.		75.2	26.2	550
					26 6	11 4	
Tuna in oil		90	½ c.		22.9	17.6	260
					25 4	19 6	
Turbot		230	½ lb.		34.0	33.1	445
					14 8	14 4	
Turbot, steamed		115	½ lb.		23.8	1.8	115
					20 7	1 6	
Turkey		230	½ lb.		48.5	52.7	690
					21.1	22 9	
Turkey gizzard		100		1.3	20.5	10.6	190
				1 3	20 5	10 6	
Turkey heart		30	1 oz.	0.1	4.9	3.8	55
				0 2	16 2	12 7	
†Turkey, breast, roasted		115	½ lb.		36.5	2.6	175
					31 8	2 3	
†Turkey, thigh and leg, roasted		115	½ lb.		31.3	8.5	205
					27 3	7.4	
Turkey egg, see Eggs.							
Turnip cabbage (kohlrabi)		100	½ c.	4.2	2.0	0.1	25
				*4 2	2 0	0 1	

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 141

Food items.	Size of portion.		Value of portion.			T
	Grams.	Household measure.	Carb.	Prot.	Fat.	
Turnip salad greens . . .	50	$\frac{1}{2}$ c.	3.2 6 3	2.1 4 2	0.3 0 6	25
Turnip tops . . .	100	1 c.	5.4 5 4	2.9 2 9	0.4 0 4	35
Turnip tops, boiled	100	$\frac{1}{2}$ c.	0.1 *0 1	2.7 2 7	—	12
Turnips, white . . .	120	$\frac{1}{2}$ c. diced	8.2 *6 8	1.6 1 3	0.2 0 2	40
Turnips, yellow . . .	120	$\frac{1}{2}$ c. diced	7.3 *6 1	1.6 1 3	0.2 0 2	40
Turnips, yellow, boiled . .	125	$\frac{1}{2}$ c.	5.5 *4 4	1.1 0 9	0.1 0 1	30
Turnip-rooted celery (celeriac)	90	1 med.	7.9 8 8	1.3 1 7	0.3 0 3	40
Turnip-rooted parsley, roots .	100		9.2 9.2	2.1 2 1	0.2 0 2	50
Turtle, green	115	$\frac{1}{2}$ lb.		22.7 19 8	0.6 0 5	100
Turtle, green, canned . . .	75	$\frac{1}{2}$ lb.		17.5 23 4	0.5 0 7	75
Turtle egg, see Eggs.						
Turtle soup, canned	240	1 c.	8.2 3 4	2.6 1 1	1.0 0 4	55

U

Udo, shoots	100		2.4 *2 4	1.0 1 0	0.2 0 2	15
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V

Van Camp's Puréed Foods, see page 159.

Vanilla extract, Burnett . . .	5	1 t.	0.4 7 0	0 0	0 0	2
Veal, fresh:						
Brains	230	$\frac{1}{2}$ lb.		23.8 10 6	20.7 9 0	290
Breast, very lean . . .	230	$\frac{1}{2}$ lb.		53.1 23 1	5.8 2.5	270
Breast, lean	230	$\frac{1}{2}$ lb.		48.8 21 2	18.4 8 0	370
Breast, all analyses	230	$\frac{1}{2}$ lb.		46.7 20 3	25.3 11 0	425
Chops, med. fat	100	1 chop, $\frac{1}{2}$ " thick		19.9 19.9	10.8 10.8	180
Chuck, lean	230	$\frac{1}{2}$ lb.		47.4 20 6	4.4 1 9	210
Chuck, all analyses . . .	230	$\frac{1}{2}$ lb.		45.3 19 7	13.3 5.8	310
Cutlet	230	$\frac{1}{2}$ lb.		46.7 20.3	17.7 7.7	355
Flank	230	$\frac{1}{2}$ lb.		46.2 20.1	29.2 12.7	460
Fore-quarter	230	$\frac{1}{2}$ lb.		46.0 20 0	18.4 8.0	360
Heart	115	$\frac{1}{2}$ lb.		19.3 16.8	11.0 9.6	180
Kidneys	115	$\frac{1}{2}$ lb.	0.2 0 2	19.3 16.8	6.0 5.2	135
Leg, lean	230	$\frac{1}{2}$ lb.		49.0 21.3	9.4 4.1	290

142 *TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS*

V	Food items.	Size of portion.		Value of portion.			
		Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Veal, fresh:							
Leg, all analyses	230	½ lb.			47.6 20 7	15.4 6 7	340
Liver	230	½ lb.			43.7 19 0	12.2 5 3	295
Loin, lean	230	½ lb.			46.9 20 4	12.9 5 6	310
Loin, all analyses	230	½ lb.			45.8 19 9	23.0 10 0	400
Lungs	115	½ lb.			19.7 17.1	5.8 5 0	135
Muscle	230	½ lb.		3.5 1.5	40.9 17 8	36.7 16 0	510
Neck	230	½ lb.			46.7 20 3	15.9 6 9	340
Rib, medium fat	230	½ lb.			47.6 20 7	14.0 6 1	325
Rib, all analyses	230	½ lb.			46.5 20 2	21.6 9 4	390
Rump	230	½ lb.			45.5 19 8	37.2 16 2	535
Shank, fore	230	½ lb.			47.6 20 7	12.0 5 2	305
Shank, hind, medium fat	230	½ lb.			47.6 20 7	10.6 4 6	295
Shoulder, lean	230	½ lb.			47.6 20 7	10.6 4 6	295
Side	230	½ lb.			46.5 20 2	18.6 8 1	365
Veal, cooked:							
Brains, boiled	115	½ lb.			13.8 12 0	6.7 5 8	120
†Cutlet, broiled	80	1 av.			22.7 28 4	2.7 3 4	120
Cutlet, fried	80	1 av.		3.5 *4 4	24.3 30 4	6.5 8 1	175
Cutlet, roasted	80	1 av.			23.2 29 0	9.6 12 0	180
†Leg, roasted	115	½ lb.			33.4 29 1	0.8 0 7	145
†Liver, fried	115	½ lb.			27.6 24 0	9.8 8 5	205
Roasted, cold	115	½ lb.			37.0 32 2	13.1 11 4	275
Vegetable marrow	100	½ c.		1.4 *1 4	0.5 0 5	0.1 0 1	10
Vegetable marrow, cooked	100	½ c.		0.2 *0 2	0.1 0 1	— Trace	1
Vegetable-oyster (salsify)	100	2, 6" long		15.5 15 5	3.5 3 5	1.0 1 0	85
Vegetable-oyster, cooked	80	½ c.		7.2 9 0	0.9 1 2	Trace 0 1	35
Vegetable pear, see Chayote.							
Vegetable soup, canned, conc.	140	½ c.		17.4 12 4	5.2 3.7	2.0 1 4	110
Vegetable soup, canned	250	1 c.		15.0 6 0	3.8 1 5	1.3 0.5	90
Vegetable soup, see also Soups, canned.							
Vegetables, mixed, canned	80	½ c.		3.1 *3 1	1.1 1 4	— —	15

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 143

Food items.	Size of portion.		Value of portion			V
	Grams.	Household measure.	Carb.	Prot.	Fat.	
<i>Velveeta</i> , Kraft	30	3, $\frac{1}{8}$ " sl. $\frac{1}{4}$ "	1.8 *6 0	5.4 18 0	7.5 25 0	100
Vendôme cheese	30	2 T.		8.4 28 0	6.3 20 9	105
Venison, fresh:						
Forequarter	230	$\frac{1}{2}$ lb.		50.1 21.8	21.6 9.4	405
Hindquarter	230	$\frac{1}{2}$ lb.		44.6 19 4	44.2 19.2	595
Lean meat only	230	$\frac{1}{2}$ lb.		46.0 20.0	13.8 6.0	315
Side	230	$\frac{1}{2}$ lb.		47.2 20.5	33.1 14.4	500
Venison, roasted	115	$\frac{1}{2}$ lb.		38.5 33 5	7.4 6.4	225
<i>Vegez</i> (Marmite)	4	1 t.	0 0	1.3 32 6	0.3 0 8	8
Vermicelli, uncooked	60	$\frac{1}{2}$ c.	43.2 72 0	6.5 10 9	1.2 2 0	215
Vinegars:						
Cider	5	1 t.	Trace 0 8	0 0	0 0	—
Malt	5	1 t.	Trace 0 5	0 0	0 0	—
Spiced, salad	5	1 t.	0.5 10 0	0 0	0 0	2
Tarragon	5	1 t.	Trace 0 2	0 0	0 0	—
Wine	5	1 t.	Trace 0 4	0 0	0 0	—
Vinespinach	75	1 $\frac{1}{2}$ c.	1.8 *2 4	1.5 2 0	0.2 0 3	15

W

Walnuts, black	35	6 (whole)	3.5 *10 0	9.7 27 6	19.7 56 3	235
Walnuts, California or English	35	6 (whole)	1.8 *5 0	4.4 12 5	18.0 51 5	195
Walnuts, soft-shell	35	6 (whole)	4.7 13 5	5.8 16 6	22.2 63 4	250
Water chestnuts	100	10, 1 $\frac{1}{2}$ " diam.	15.6 *15 6	1.5 1 5	0.1 0 1	70
Water crackers	18	2	12.9 71 9	1.9 10 7	1.6 8 8	75
Water ices, com.	120	$\frac{1}{2}$ c.	39.5 33 0	0.6 0 5	0 0	165
Water oats (wild rice)	20	$\frac{1}{2}$ c.	13.1 65 4	2.8 14.0	0.2 0.9	65
Water rolls	40	1	21.7 54 2	3.6 9 0	1.2 3.0	115
Watercress	20	$\frac{1}{2}$ c.	0.1 *0.7	0.6 2 9	— —	3
Watermelon	240	1 c. diced	16.0 6 7	0.9 0 4	0.4 0 2	75
Waternut, tubers	100		16.5 *16 5	1.5 1 5	0.1 0 1	75
Wax beans	75	$\frac{1}{2}$ c.	11.0 14.6	3.5 4 7	0.2 0 3	60
Wax beans, canned	130	$\frac{1}{2}$ c.	3.2 *2 5	1.3 1 0	0.1 0 1	20
Weakfish	230	$\frac{1}{2}$ lb.		40.9 17.8	5.5 2 4	220

144 TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS

W	Food items.	Size of portion.		Value of portion.			
		Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
	Welsh rarebit	50		10.3	7.6	17.7	250
	Wesson oil	10	1 T.	*20 7	15 2	35 5	95
	Wheat cereals, see pp. 65, 67.				Trace	99.7	
	Wheat embryo	9	1 heaping t.	4.3	2.4	1.0	35
				48 1	27 2	11 2	
	Wheat flours:						
	Av. high and medium grade	100	$\frac{1}{2}$ c.	75.1	11.4	1.0	365
				75 1	11 4	1 0	
	Av. low grade	100	$\frac{1}{2}$ c.	71.2	14.0	1.9	365
				71 2	14 0	1 9	
	California, fine	100	$\frac{1}{2}$ c.	76.4	7.9	1.4	360
				76 4	7 9	1 4	
	Entire	100	$\frac{1}{2}$ c.	71.9	13.8	1.9	370
				71 9	13 8	1 9	
	Graham	100	$\frac{1}{2}$ c.	71.4	13.3	2.2	370
				71 4	13 3	2 2	
	Patent baker's grade	100	$\frac{1}{2}$ c.	72.7	13.3	1.5	365
				72 7	13 3	1 5	
	Prepared (self-rising)	115	1 c.	84.0	11.7	1.4	405
				73 0	10 2	1 2	
	Straight grade	100	$\frac{1}{2}$ c.	74.8	10.8	1.1	360
				74 8	10 8	1 1	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	
	Wheat, whole, ground	75	$\frac{1}{2}$ c.	56.6	8.3	1.3	280
				56 6	8 3	1 3	
	Wheatena	30	$\frac{1}{2}$ c.	21.7	3.2	0.8	110
				21 7	3 2	0 8	
	Wheaties	35	1 c.	27.5	4.4	0.4	135
				27 5	4 4	0 4	
	Wheatworth cereal, N. B. C.	30	$\frac{1}{2}$ c.	21.2	4.2	0.6	110
				21 2	4 2	0 6	

TABLE OF NUTRITIVE AND CALORIC VALUES OF FOODS 145

Food items.	Size of portion.		Value of portion			W
	Grams.	Household measure.	Carb.	Prot	Fat	
Winkles, boiled	30	1 oz.	—	5.3	0.8	30
			Trace	17 6	2.6	
Witloof chicory (French endive)	45	1 sm. crown	1.3	0.7	0.1	9
			2.9	1 6	0 3	
Worcestershire sauce, Lea & Perrins	5	1 t.	1.0	Trace	—	4
			19 0	1 1	Trace	

Y

Yams, tubers, fresh	125	1, 5½" x 1½"	23.6	2.6	0.3	110
			*18 7	2.1	0 2	
Yautia (taniens, yaye, cocoas)	100	1 tuber	25.5	2.2	0.2	115
			*25 5	2 2	0 2	
Yeast, ale, dried	10	2 t.	4.8	3.9	0.1	35
			48 4	38 9	1 2	
Yeast, brewer's, Mead	11	2 t.	4.3	4.2	0.2	35
			39 0	48 0	2 0	
Yeast, compressed, baker's	12	1½" sq.	2.5	1.4	—	15
			21 0	11 7	0 4	
Yeast, Fleischmann	15	1 cake	1.2	2.1	0.1	14
			*8 2	14 1	0 5	
Yoghurt¹	100	1 wine glass	9.4	7.4	7.2	135
			9 4	7 4	7 2	
Yoghurt cheese, American	30	2 T.		5.2	9.0	105
				17 5	30 2	
York cream cheese	25	2" x 1½" x 1"		4.5	1.6	35
				17 9	6 5	
Yorkshire pudding	50	1 sq.	13.4	3.6	4.7	115
			*26 8	7 2	9 4	

Z

Zucchini	75	2½" x 2"	1.6	1.8	—	15
			2 1	2 4	—	
Zwieback	5	1, 3" x 1½"	3.7	0.5	0.5	20
			73 5	9 8	9 9	
Zwieback, Sunshine	7	1 piece	5.2	0.7	0.8	30
			77 3	9 8	12 1	
Zwieback toast, N. B. C. . . .	7	1 piece	5.5	0.7	0.4	30
			79 1	10 6	6 2	

¹ Alcohol, 0.2 per cent.

CHAPTER IX.

SPECIAL DIETETIC AND COMMERCIAL FOODS.

Introduction.—The following table has been assembled for the benefit of those who find occasion to prescribe special foods. The listing is not complete, but it comprises a moderate number of the nationally recognized dietetic food products.

The **boldface numerals** indicate the number of grams and the calories in an average portion. The plain numerals indicate the percentage composition thereof. *Italicized* letters indicate trade names.

TABLE 18.—Special Dietetic and Commercial Foods.

Food items	Size of portion.		Value of portion			
	Grams.	Household measure	Carb	Prot.	Fat.	Cal.
<i>Battle Creek Food Co.:</i>						
Apple sauce	135	½ c	10.8	0.3	0.7	50
			8 0	0 2	0 5	
Apricots	120	½ c.	11.3	0.5	—	50
			9 4	0 4	trace	
Asparagus	100	5 stalks	3.2	2.2	0.1	25
			3 2	2 2	0 1	
Beans, refugee	130	¾ c.	4.7	1.8	2.0	45
			3 6	1 4	1 5	
Beets	100	½ c.	12.5	1.3	0.1	60
			12 5	1 3	0 1	
Blackberries	120	¾ c.	7.2	1.2	1.3	45
			6 0	1 0	1 1	
Blueberries	120	½ c	18.0	0.7	1.1	85
			15 0	0 6	0 9	
Bran biscuit	6	1	4.1	0.8	0.4	25
			69 5	14 0	7 5	
Bran, cooked	20	¼ c.	13.1	3.2	1.7	80
			65 7	16 0	8 5	
Bran-Fig flakes	18	¾ c	14.9	1.5	0.4	70
			83 0	8 6	2 2	
Bran, washed	30	1 oz.	0.3	5.6	0.9	30
			*1 0	18 7	2 9	
Cherries, red	100	½ c.	10.4	0.6	0.5	50
			10 4	0 6	0 5	
Cherries, Royal Anne	85	15	1.9	0.5	0.1	11
			2 2	0 6	0 1	
Fig bran	20		11.1	1.7	0.5	55
			*55 6	8 7	2 6	
Fig-Bran cookies	6 6	1	4.9	0.4	0.8	30
			74 6	6 8	11 7	
Figs, Kadota	85	3	9.9	0.4	0.1	45
			*11.7	0 5	0 1	
<i>Food Ferrin</i>	20	1 T.	14.1	0.3	0.4	60
			*70 7	1 6	1 8	
<i>Ferrin</i>	15	1 T.	2.9	0.1	—	12
			19 0	0 5	0 3	
Fruit cocktail	140	1 c.	12.9	1.1	0.1	60
			8 5	0 8	0 1	

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
<i>Battle Creek Food Co.:</i>						
Fruits for salad . . .	140	1 c.	9.2 6 6	0.4 0 3	— trace	40
Gluten biscuit, 40%	2.6	1	1.2 *46 5	1.1 42 5	— 0 8	9
Gluten biscuit, pure	2 5	1	0.4 15 5	1.9 77.7	— 1 2	9
Gluten bran flakes	14	½ c.	3.1 *22 5	6.8 48 6	0.5 3 8	45
Gluten bread . . .	25	1 sl.	7.8 31 2	6.9 27 5	0.3 1.2	65
Gluten flour	100	¾ c.	49.7 49 7	40.2 40 2	1.6 1 6	385
Grapefruit	135	¾ c.	16.2 *12 0	0.7 0 5	— —	70
Kaba . . .	7	1 t.	3.4 *48 7	0.4 6 6	— 0 2	15
Krusty bran	18	½ c.	9.5 *52 9	2.4 13 4	0.5 2 6	55
Lacto-Dextrin . . .	9 5	1 T.	9.1 *95 5	0 0	0 0	35
L-D Lax . . .	4	1 t.	3.6 88.8	0.1 3 0	0.1 2.5	15
Malted nuts . . .	12	1 T.	5.4 45.4	2.5 20.4	3.8 31 5	70
Mellose "honey" . . .	18 6	1 T.	12.7 *68 4	0 0	0 0	50
Nutlose . . .	50		5.1 10.3	7.2 14.4	9.8 19.6	140
Olives, ripe	22	4	0.8 3 5	0.3 1 4	4.6 21 0	45
Peaches	140	3 halves	10.9 7 8	0.6 0 4	— —	45
Pears	120	2 halves	8.4 7 0	0.5 0 4	— —	35
Peas . . .	70	½ c.	6.3 9 0	4.7 6 7	0.3 0 4	50
Pineapple juice . . .	120	½ c.	16.4 13 7	0.4 0 3	0.4 0 3	70
Pineapple tidbits	120	½ c.	18.2 15 2	0.5 0 4	— trace	75
Protose . . .	60	2 oz.	7.2 12 0	12.2 20 3	3.7 6 2	115
Prune concentrate	60	2 oz.	17.9 29.8	0.8 1 4	— —	75
Red raspberries . . .	140	¾ c.	7.3 5 2	1.1 0 8	0.1 0 1	35
Rice biscuit . . .	7	2	5.7 81 9	0.5 7 6	— 0 8	25
Rusk, whole wheat	13	1	8.7 67 1	1.8 13 6	1.1 8 9	45
Sal-Savita . . .	1	½ t.	— *1 0	0.1 12 4	— 4 8	—
Saucettes . . .	45	1	14.9 33.0	2.2 4 9	2.0 4.4	90
(Sauce) . . .	10		0.4 4 0	0.2 2 3	0.2 2 3	4
Savita . . .	7	1 t.	0.6 8 4	2.7 38 5	0.1 1.3	14
Savita soup cubes . . .	3 8	1	— 17.6	0.7 7.1	0.3 —	5
Savita yeast tablets . . .	10	20	3.4 34 4	4.9 49 4	0.4 3.7	40

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
<i>Battle Creek Food Co.:</i>						
Savor yeast	5	1 T.	3.5 70 2	0.9 18 8	0.2 3 5	20
Soy beans, cooked	75	2½ oz.	3.4 5 9	7.2 9 6	7.3 9 7	110
Soy beans, green	100		5.0 5 0	15.0 15 0	9.7 9 7	170
Soy flour	100	1 c.	33.4 33 4	33.6 33 6	21.3 21 3	475
Soy gluten bread	30	1 sl.	10.1 33 8	8.1 27 0	1.0 3 5	85
Soy gluten wafer	10	3	2.6 26 3	4.9 49 5	1.5 15 3	45
Solac	240	1 c.	9.6 *4 0	7.2 3 0	9.6 4 0	160
Soy spread	18	1 T.	1.8 10 2	1.9 10 6	1.6 8 9	30
Spinach	225	1 c.	6.3 *2 8	6.3 2 8	0.9 0 4	60
Tomatoes	130	½ c.	6.0 4 6	1.6 1 2	0.3 0 2	35
Tomato juice	120	½ c.	4.8 4 0	1.2 1 0	— trace	25
Vegetable gelatine	10	1 T.	8.0 80 0†	0.2 2 2	— 0 6	35
Vegetable soup	100		10.3 10 3	1.4 1 4	1.0 1 0	60
Vita wheat	10	1 T.	7.9 79 4	1.2 12 1	0.2 2 3	40
Wheat germ	30	1 oz.	15.1 50 3	7.8 25 9	3.4 11 4	125
Whole wheat, cooked	65	2 2 oz.	17.1 26 3	2.7 4 1	— 0 1	80
Whole wheat flour	100	¾ c.	75.9 75 9	11.1 11 1	1.7 1 7	375
Wheatmeal	100		19.3 19 3	10.3 10 3	4.5 4 5	165
(Sauce)	10		0.3 3 0	0.2 1 7	0.5 5 5	7
Zo	30	1 oz.	23.1 77 1	4.0 13 4	0.2 0 8	115
Zo Flakes	30	1 oz.	24.4 81 3	2.6 8 8	0.5 1 7	115
<i>Cellu, Water Pack Fruits</i>						
Apple Sauce	120	½ c.	10.8 9 0	0.4 0 3	0.4 0 3	50
Apricots	100	4	7.0 7 0	0.6 0 6	0.1 0 1	30
Blackberries	85	½ c.	6.0 7 0	0.9 1 0	0.7 0 8	35
Cherries, Red Pitted	100	½ c.	10.0 10 0	0.6 0 6	0.5 0 5	50
Cherries, Royal Anne	100	11	9.0 9 0	0.6 0 6	0.5 0 5	45
Figs, Kadota	100	3	11.0 11 0	0.5 0 5	0.1 0 1	50
Fruits for Salad	85	½ c.	6.0 7 0	0.3 0 4	0.7 0 8	30
Grapefruit	120	½ c.	6.4 5 3	0.6 0 5	0.6 0 5	25
Grapes, Thompson Seedless	100	½ c.	10.0 10 0	0.4 0 4	0.7 0 7	50

* Largely assimilable.

† Probably not utilizable.

Blank space indicates lack of data.

‡ Gross fat removed.

Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
<i>Cellu, Water Pack Fruits:</i>						
Loganberries . . .	100	$\frac{1}{2}$ c.	7.0 7.0	1.0 1.0	0.6 0.6	35
Peaches, Yellow Cling	75	$\frac{1}{2}$	4.5 6.0	0.1 0.2	0.1 0.1	20
Pears, Bartlett	85	$\frac{1}{2}$	5.1 6.0	0.3 0.3	0.2 0.2	25
Pineapple, Sliced	100	2 sl.	13.0 13.0	0.3 0.3	0.2 0.2	55
Prune Plums .	100	3	9.5 9.5	0.5 0.5	0.1 0.1	40
Raspberries, Black	85	$\frac{1}{2}$ c.	7.7 9.0	0.9 1.1	0.9 1.1	45
Raspberries, Red .	100	$\frac{1}{2}$ c.	8.0 8.0	0.6 0.6	0.6 0.6	40
Strawberries .	100	$\frac{1}{2}$ c.	6.0 6.0	0.9 0.9	0.6 0.6	35
<i>Cellu, Juice-pak Fruits:</i>						
Apricots, halves .	120	4	13.2 11.0	0.5 0.4	0.2 0.2	60
Apricots, whole	120	2	13.2 11.0	0.5 0.4	0.2 0.2	60
Blueberries .	85	$\frac{1}{2}$ c.	8.5 10.0	0.6 0.7	0.5 0.6	40
Cherries, Bing	100	$\frac{1}{2}$ c.	17.0 17.0	0.7 0.7	0.8 0.8	80
Cherries, Red Pitted	100	$\frac{1}{2}$ c.	14.0 14.0	0.8 0.8	0.8 0.8	70
Cherries, Royal Anne	100	$\frac{1}{2}$ c.	14.0 14.0	0.8 0.8	0.1 0.1	60
Fruit Cocktail	100	$\frac{1}{2}$ c.	12.0 12.0	0.5 0.5	0.5 0.5	55
Grapefruit .	120	$\frac{1}{2}$ c.	9.6 8.0	0.6 0.5	1.1 0.1	50
Peaches, Yellow Cling	75	$\frac{1}{2}$	6.8 9.0	0.2 0.3	0.1 0.2	30
Peaches, Elberta .	85	$\frac{1}{2}$	10.2 12.0	0.4 0.5	0.4 0.5	45
Pears, Bartlett	120	2	13.2 11.0	0.2 0.2	0.1 0.1	55
Pineapple, Crushed	100	$\frac{1}{2}$ c.	15.0 15.0	0.6 0.6	0.1 0.1	65
Pineapple, Sliced .	100	2 sl.	15.0 15.0	0.3 0.3	0.1 0.1	65
Raspberries, Red	100	$\frac{1}{2}$ c.	10.0 10.0	1.0 1.0	0.6 0.6	50
Strawberries	100	$\frac{1}{2}$ c.	7.0 7.0	1.0 1.0	0.8 0.8	40
<i>Cellu, Fruit Juices:</i>						
Apple	120	$\frac{1}{2}$ c.	13.2 11.0	0.1 0.1	0.2 0.2	55
Apricot	120	$\frac{1}{2}$ c.	12.0 10.0	0.6 0.5	0.5 0.4	55
Blackberry	120	$\frac{1}{2}$ c.	16.8 14.0	0.1 0.1	0.7 0.6	65
Cherry, Red	120	$\frac{1}{2}$ c.	13.2 11.0	0.6 0.5	0.7 0.6	65
Grape .	120	$\frac{1}{2}$ c.	16.8 14.0	0.4 0.3	0.0 0.0	70
Grapefruit .	120	$\frac{1}{2}$ c.	8.4 7.0	0.5 0.4	0.5 0.4	40
Loganberry	120	$\frac{1}{2}$ c.	9.6 8.0	0.2 0.2	1.2 1.0	50
Orange	120	$\frac{1}{2}$ c.	13.8 11.5	1.3 1.1	0.1 0.1	65

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
<i>Cellu, Fruit Juices:</i>						
Peach	120	$\frac{1}{2}$ c.	12.0	0.5	0.5	55
			10 0	0 4	0 4	
Pear	120	$\frac{1}{2}$ c.	13.2	0.4	0.6	60
			11 0	0 3	0 5	
Pineapple	120	$\frac{1}{2}$ c.	15.6	0.4	0.4	70
			13 0	0 3	0 3	
Prune Plum	120	$\frac{1}{2}$ c.	15.6	0.4	0.6	70
			13 0	0 3	0 5	
Red Raspberry	120	$\frac{1}{2}$ c.	10.8	0.4	0.1	45
			9 0	0 3	0 1	
<i>Cellu, Vegetable Juices</i>						
Beet	120	$\frac{1}{2}$ c.	8.4	0.7	0.1	40
			7 0	0 6	0 1	
Carrot	120	$\frac{1}{2}$ c.	7.2	0.4	0.2	35
			6 0	0 3	0 2	
Celery	120	$\frac{1}{2}$ c.	1.8	0.6	0.2	12
			1 5	0 5	0 2	
Spinach	120	$\frac{1}{2}$ c.	1.3	0.7	0.2	10
			1 1	0 6	0 2	
Tomato	120	$\frac{1}{2}$ c.	4.8	1.2	0.4	30
			4 0	1 0	0 3	
<i>Cellu, Vegetables:</i>						
Asparagus Tips	85	9	2.6	1.4	0.1	17
			3 0	1 7	0 1	
Asparagus, Green Cut	100	$\frac{1}{2}$ c.	2.0	1.5	0.2	16
			2 0	1 5	0 2	
Beans, Green and Wax	85	$\frac{1}{2}$ c.	2.6	0.9	0.1	15
			3 0	1 0	0 1	
Beets	80	4	7.2	1.3	0.2	35
			9 0	1 6	0 2	
Carrots	100	$\frac{3}{4}$ c.	7.0	1.0	0.3	30
			7 0	1 0	0 3	
Corn	100	$\frac{1}{2}$ c.	11.5	1.8	0.7	60
			11 5	1 8	0 7	
Peas	100	$\frac{1}{2}$ c.	7.0	3.1	0.2	45
			7 0	3 1	0 2	
Rhubarb	90	$\frac{3}{4}$ c.	1.8	0.4	0.6	15
			2 0	0 5	0 7	
Spinach	120	$\frac{1}{2}$ c.	2.9	2.4	0.5	25
			2 4	2 0	0 4	
Tomatoes	120	$\frac{1}{2}$ c.	3.6	1.0	0.5	25
			3 0	0 8	0 4	
Vegetable Combination	100	$\frac{1}{2}$ c.	6.2	2.0	0.2	35
			6 2	2 0	0 2	
<i>Cellu, Miscellaneous:</i>						
Chili sauce	20	1 T.	1.2	0.4	0.0	7
			6 0	2 0	0 0	
Cucumber pickles	20		0.6	0.4	0.0	4
			3 0	2 0	0 0	
French dressing	15	1 T.	0.1	0.0	10.5	100
			0 5	0 3	70 0	
Gelatin dessert		1 serving	0.2	3.0	0.0	13
Hi-Fat Chocolate	10		1.2	1.3	5.4	60
			12 0	13 0	54 0	
Macaroons	8	1	1.3	2.0	3.4	45
			16 0	23 5	42 5	
Pickled peaches	80	1	6.9	0.4	0.5	35
			8 6	0 5	0 6	
Popped Soys	25	$\frac{1}{2}$ c.	2.3	11.3	2.0	75
			9 0	45 0	8 0	
Soyamaise	15	1 T.	0.1	0.3	12.4	115
			0 6	2 0	83 0	

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

Food items	Size of portion		Value of portion			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
<i>Cellu, Miscellaneous:</i>						
Soy bean flour	85	1 c.	6.8	34.9	19.6	355
			8.0	41 0	23.0	
Soy bean spread	15	1 T.	1.1	4.5	6.0	80
			7.0	30.0	40 0	
Soy bean wafers	16	2	1.3	5.2	5.8	80
			8.0	33 0	36.0	
Soy beans, whole dry	50	½ c.	4.0	19.0	7.5	165
			8 0	38 0	15 0	
Soy beans in tomato sauce	120	½ c.	4.8	14.4	7.2	145
			4.0	12 0	6 0	
Soy Flakes	20		1.3	8.4	5.0	85
			6 5	42 0	25 0	
Soy Grits	25	2½ T.	2.3	11.3	2.0	75
			9 0	45 0	8 0	
Soy Nuts	20	½ c.	1.7	7.2	5.0	85
			8 5	36 0	25.0	
Soy Oat Cookies	10	2	3.9	2.0	2.9	50
			39.0	20.0	29 0	
Topping	15	1 T.	0.0	0.1	0.1	—
			0 0	1 0	1 0	
Vegetable relish	20	1 T.	0.6	0.4	0.0	4
			3.0	2 0	0 0	
Vegetable soup	250	1 c.	3.5	2.3	0.3	35
			1.4	0.9	0.1	
<i>Loeb:</i>						
Agar agar	8	1 T.	0	0	0	0
			0	0	0	
Baking powder			0	0	0	0
			0	0	0	
Biscotten, Karlsbader style	12	1	2.2	3.8	4.8	70
			*18.0	32 0	40.0	
Bran and gluten cereal	25	½ c.	5.2	8.5	5.0	105
			*21.0	34.0	20.0	
Bran, starch-free	25	½ c.	1.3	4.8	1.5	40
			*5 0	19 0	6.0	
Bread, aŕated, gluten	2	¼ sl.	0.7	0.9	0.2	8
			*35 0	45 0	9 0	
Bread, genuine gluten	13	1 sl.	3.6	4.7	0.7	40
			*28.0	36.0	5.0	
Bread, genuine gluten, sliced and toasted	12	1 sl.	4.2	5.3	0.7	45
			*35.0	44.0	6.0	
Breadsticks, gluten	4	1	1.4	1.7	0.2	15
			*36.0	43 0	6.0	
Breakfast cereal, gluten	40	½ c.	10.8	14.8	6.8	170
			*27.0	37.0	17.0	
Candy, imitation	100	1½ pkg.	3.0	—	—	12
			*3.0	—	—	
Cheese tid-bits, gluten	30	12	5.1	10.3	11.4	170
			*17.0	34.0	38.0	
Chocolate bar, almond, dietetic	15	1	1.4	2.3	7.7	85
			*9.0	15.0	51.0	
Chocolate bar, plain, dietetic	15	1	1.4	2.1	7.4	85
			*9.0	14.0	49.0	
Chocolate dessert, dietetic	6	1 serving	1.0	3.0	0.1	20
			*17.0	50.0	2.0	
Cocoa, dietetic	6	1 T.	0.8	2.2	1.0	20
			*13.0	36.0	17.0	
Cookies, casein sponge	10	12	0.5	5.4	2.4	46
			*5.0	54.0	24 0	
Cookies, gluten	15	3	4.5	5.7	2.7	65
			*30.0	38.0	18.0	
Crackers, gluten dietetic	20	3	2.8	7.0	3.4	70
			*14.0	35.0	17.0	

TABLE OF SPECIAL DIETETIC FOODS

Food items.	Size of portion.		Value of portion			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
<i>Loeb:</i>						
Croutons, gluten	10	10	4.1 *41.0	4.3 43.0	0.6 6.0	40
Flour, prepared soy gluten casein	100	1 c.	26.0 *26.0	42.0 42.0	11.0 11.0	380
Flour, pure gluten	100	$\frac{1}{2}$ c.	43.0 *43.0	41.0 41.0	2.0 2.0	365
Flour, self-rising gluten . .	100	$\frac{1}{2}$ c.	40.0 *40.0	38.0 38.0	2.0 2.0	340
Ginger ale	225	1 c.	0 0	0 0	0 0	0
Ginger snaps, dietetic . . .	20	3	2.4 *12.0	8.4 42.0	1.0 20.0	55
India gum	10	1 T.	0 0	0 0	0 0	0
Jelly, grape, dietetic . . .	20	1 T.	1.0 *5.0	0.1 0.3	0 0	5
Lady fingers, casein	3	3	0.2 *6.0	1.5 50.0	0.8 27.0	15
Lemon snaps, dietetic . . .	20	3	2.4 *12.0	8.4 42.0	1.0 20.0	55
Macaroons, casein, almond .	14	3	0.7 *5.0	4.2 30.0	5.6 40.0	70
Maple syrup, imitation . . .	6	1 T.	0 0	0 0	0 0	0
Mayonnaise, dietetic	15	1 T.	0 0	— —	— —	0
Meal, cracker, dietetic . . .	100	$\frac{1}{2}$ c.	34.0 *34.0	42.0 42.0	10.0 10.0	405
Noodles, plain, gluten . . .	25	1 oz. sc.	10.5 *42.0	10.0 40.0	1.5 6.0	100
Orange marmalade	20	1 T.	0.6 *3.0	— Trace	0 0	3
Rolls, breakfast, aerated . .	10	1	3.6 *36.0	4.4 44.0	0.9 9.0	40
Rusk, gluten, dietetic	14	1 sl.	4.9 *35.0	6.2 44.0	0.8 6.0	55
Saccharin, crystal			0 0	0 0	0 0	0
Saccharin tablets	1	30	0 0	0 0	0 0	0
Soya Farinette, dietetic . . .	60	$\frac{1}{2}$ c.	7.2 *12.0	27.0 45.0	3.6 6.0	175
Spaghetti, gluten, dietetic . .	25	1 oz. sc.	10.5 *42.0	10.0 40.0	1.5 6.0	100
Sugarless sweetener			0 0	0 0	0 0	0
Wafers, bran, dietetic	20	3	1.0 *5.0	4.6 23.0	2.0 10.0	40
Zwieback, gluten	6	1	2.0 *34.0	2.6 43.0	0.4 7.0	25
<i>Mead:</i>						
Alaota	8	1 T.	3.7 46.5	2.6 33.0	0.9 12.0	35
Casec	5	2 T.	— —	4.4 88.0	0.1 2.0	20
Cemac	16	1 T.	1.9 11.2	1.0 6.2	1.0 6.4	20
Cereal	7	1 T.	5.0 71.8	1.0 15.0	0.2 3.0	25

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
<i>Mead:</i>						
Dextri-Maltose I . . .	7	1 T.	6.5 93 0	—	—	25
Dextri-Maltose II . . .	7	1 T.	6.7 95 0	—	—	25
Dextri-Maltose III . . .	7	1 T.	6.4 92 0	—	—	25
Dextri-Maltose with vitamins B and G	5	1 T.	4.6 92 4	—	—	20
Pablum	5	2 T.	3.5 *70 2	0.7 15 0	0.1 3.0	20
Recolac	30	4 T.	15.7 52 3	4.8 16 0	8.1 27.0	160
Sobee	5	1 T.	1.9 38 4	1.6 32 0	0.9 19.2	25
<i>Miscellaneous:</i>						
Akrelac, Merrell-Soule . . .	8	1 T.	3.8 *47 8	2.9 36 0	0.1 1 0	30
Alacta	8	1 T.	3.7 46 5	2.6 33 0	1.0 12 0	35
Albulactin	100			95.0 95 0		390
Alerdex, Smaco (333) S.M.A.	12	1 T.	11.6 *97 0	0 0	0 0	50
All-Bran, Kellogg	22	1 T.	— 65 9	— 12.7	— 3.2	—
Baby Ralston	15	1 T.	10.7 71 6	2.2 14 8	0.3 2 0	55
Banana powder, Merck . . .	8	1 T.	6.8 *84.7	0.4 4.8	0.1 1.5	30
Bemax, American Vitamins, Inc.	9	1 heaping T.	3.2 36 0	3.4 37 2	0.8 9 0	35
Beta Lactose, National . . .	10	1 T.	10.0 *99 5	0 0	0 0	40
Bouillon, cube	3 6	1 cube	0.2 5 8	0.4 11.4	0.1 1 8	3
Bovril	7	1 t.	0.2 3.4	2.7 38 8	Trace 0.2	11
Cal-C-Tose, "Roche" . . .	20	2 heaping t.	13.9 69 4	3.2 16 0	1.1 5.7	80
Cartose	20	1 T.	14.9 74 5	Trace 0 1	0 0	60
Casac	5	2 T.	— —	4.4 88 0	0.1 2 0	20
Cemac (Mead)	16	1 T.	1.9 11 2	1.0 6.2	1.0 6 4	20
Cerelose	90	½ c.	82.8 92.0	0 0	0 0	340
Cerevim	30	½ c.	19.8 65 9	6.0 19 9	0.7 2.4	110
Cerophyl	10		3.5 35.0	2.5 25.0	0.5 5.0	30
Certo	100		2.9 2 9	0 0	0 0	712
Chemm	30	3 heaping t.	24.7 82 5	2.2 7 4	1.3 4 4	125
Cocomalt	9	1 T.	6.7 76 3	1.3 14 7	0.3 3 1	35
Dexin (B. W. & Co.) . . .	5	1 T.	4.4 97 8	— 0 4	— 0 2	20
Dextro-Vivatose	13	1 T.	12.0 *92.0	0.7 5.0	0 0	50

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
Miscellaneous:						
<i>Dryco</i>	7	2 T.	3.2 *46.0	2.2 32.0	0.8 12 0	30
<i>Dyno</i>	70	$\frac{1}{2}$ c.	64.0 91.5	0 —	0 —	280
<i>D-Zerta</i> , A.P.	3	1 serving	0 0	3.0 99 5	0 0	12
<i>Embo</i>	8	1 T.	3.8 47.3	2.5 31.0	0.9 11.7	35
<i>Eskay's Food</i>	8	1 T.	4.5 55 8	0.5 6.7	0.3 3.5	25
<i>Farina</i> , Cere-Jel, Beech-Nut	20	4 t.	1.9 9.3	0.3 1.4	— Trace	9
<i>Haliver</i> oil (P. D. & Co.) .	2.4	$\frac{1}{2}$ t.	0 0	0 0	2.4 100 0	20
<i>Hidex</i>	7	1 T.	6.7 96 0	0.3 0 5	0 0	30
<i>Hylac</i> , Nestlé	15	1 T.	10.4 *69 0	0.8 5 5	3.2 21 5	75
<i>Imperial Granum</i>	9	1 T.	0.2 *1 8	1.2 14 0	0.1 1 0	7
<i>Jell-O</i>	25	$\frac{1}{2}$ box	21.5 86.0	2.8 11.0	0 0	100
<i>Junket Powder</i> , caramel . .	12	1 T. ($\frac{1}{2}$ pkg.)	11.8 98 8	— 0 1	— 0 1	50
<i>Junket Powder</i> , chocolate .	14	1 T. ($\frac{1}{2}$ pkg.)	12.3 87.7	0.3 2 1	0.6 4.1	55
<i>Junket Powder</i> , lemon . . .	11	1 T. ($\frac{1}{2}$ pkg.)	10.9 98.8	— 0.1	— 0.1	45
<i>Junket Powder</i> , orange . . .	11	1 T. ($\frac{1}{2}$ pkg.)	10.9 98.8	— 0 1	— 0 1	45
<i>Junket Powder</i> , raspberry . .	11	1 T. ($\frac{1}{2}$ pkg.)	10.9 98.8	— 0 1	— 0 1	45
<i>Junket Powder</i> , vanilla . . .	11	1 T. ($\frac{1}{2}$ pkg.)	10.9 98 8	— 0 2	— 0 1	45
<i>Junket Tablet</i>	0.5	1	— —	— —	— —	—
<i>Klim</i> , whole milk powder . .	8	1 T.	3.0 *38.0	2.1 26 7	2.2 28.0	40
<i>Lactogen</i> , Nestlé	15	1 T.	8.0 *53.3	2.4 16 2	3.8 25 0	80
<i>Larosán</i> milk	20	$\frac{1}{2}$ oz.	0.4 2.2	0.7 3 4	0.3 1 7	8
<i>Malt Breakfast Food</i>	30	$\frac{1}{2}$ c.	22.7 75 8	3.2 10.7	0.3 1 0	110
<i>Maltine</i> , plain ¹	20	1 T.	13.0 65 0	1.0 4 9	0 0	60
<i>Maltine</i> with cod-liver oil ² .	18	1 T.	7.9 44 2	0.5 2 8	4.0 22 4	70
<i>Maltine</i> with spleenmarrow and iron ³	19	1 T.	12.4 65.0	1.1 5 8	Trace 0.1	55
<i>Mammala</i>	8	1 T.	4.4 *55.3	2.0 24 4	1.0 12 1	35
<i>Mellin's Food</i>	15	2 T.	11.9 *79 6	1.6 10.3	Trace 0 2	55
<i>Melotose</i> No. 1	9	1 T.	7.5 *84.0	0.4 5 0	0.2 2.0	35

¹ Alcohol, 3.9 per cent.² Alcohol, 5.0 per cent.³ Largely assimilable.

Blank space indicates lack of data.

² Alcohol, 1.9 per cent.† Gross fat removed.
Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
<i>Miscellaneous:</i>						
<i>Melotose No. 2</i>	9	1 T.	8.4	0.2	Trace	35
			*93.4	2.2	0.5	
<i>Melotose No. 3</i>	9	1 T.	8.5	0.1	Trace	35
			*94.8	1.2	0.5	
<i>Merck banana powder</i>	8	1 T.	6.8	3.8	0.1	45
			*84.7	4.8	1.5	
<i>Nestlé's Food</i>	8	1 T.	5.6	1.2	0.7	40
			*69.5	15.0	9.8	
<i>Nutrivoid bread</i>	13	1 sl.	—	2.0	1.0	20
			—	15.4	7.7	
<i>Oatmeal, Cere-Jel, Beech-Nut</i>	20	4 t.	1.7	0.4	0.1	9
			8.3	2.2	0.3	
<i>Ovaltine, A.P.</i>	9	1 T.	4.3	0.9	4.4	60
			72.1	14.3	7.4	
<i>Oxo</i>	9	1 heaping t.	0.1	1.6	0	8
			1.1	17.8	0	
<i>Pabulum</i>	5	2 T.	3.5	0.7	0.1	20
			70.2	15.0	3.0	
<i>Pectin-agar in Dextri-maltose, Mead's</i>	10	1 T.	9.4	0.1	—	35
			94.2	1.0	—	
<i>Protein milk, powdered, Merrell-Soule</i>	8	1 T.	1.8	3.0	3.2	35
			*23.0	27.0	27.0	
<i>Ralston, wheat cereal</i>	30	½ c.	21.6	4.3	0.6	110
			72.0	14.2	2.0	
<i>Ralston Wheat Oats</i>	30	½ c.	20.8	4.2	1.7	120
			69.3	14.0	6.0	
<i>Robinson's Patent Barley</i>	9	1 T.	7.0	0.6	0.1	35
			*78.3	6.6	1.0	
<i>Robinson's Patent Groats</i>	9	1 T.	6.4	1.1	0.5	35
			*71.5	12.4	6.0	
<i>Similac</i>	9	1 T.	4.9	1.1	2.4	45
			*54.4	12.5	27.1	
<i>Smaco (300)</i>	240	1 c.	8.8	7.9	1.0	75
			*3.7	3.3	3.5	
<i>Smaco (303)</i>	240	1 c.	11.8	7.7	0.2	80
			*4.9	3.2	0.1	
<i>Smaco (333) Alerdex</i>	12	1 T.	11.6	0	0	50
			*97.0	0	0	
<i>Sobee</i>	5	1 T.	1.9	1.6	1.0	25
			38.4	32.0	19.2	
<i>Spintrate</i>	3	2 T.	1.0	0.9	0.1	9
			*34.2	31.5	4.5	
<i>V.B.W. (Vitamin B₁ Wafers)</i>	10	3 wafers	7.9	0.7	1.1	45
			78.6	6.6	11.4	
<i>Vegex (Marmite), Vitamin Food Co., Inc.</i>	4	1 t.	0	1.3	0.3	8
			0	32.6	0.8	
<i>Vitab</i>	8	1 T.	3.4	1.0	1.1	20
			*42.8	12.1	13.2	
<i>Vitarose, Squibb</i>	13	1 T.	10.1	2.0	0	50
			*78.0	15.0	0	
<i>Vitarose, chocolate, Squibb</i> .	13	1 T.	10.7	1.3	0.2	50
			82.5	9.7	1.8	

CHAPTER X

STRAINED FOODS.

The **boldface numerals** indicate the number of grams and the calories in an average portion. The plain numerals indicate the percentage composition thereof. *Italicized* letters indicate trade names.

TABLE 19.—**Strained Foods.**

Food items.	Size of portion		Value of portion			
	Grams.	Household measure	Carb	Prot	Fat	Cal
<i>Beech-Nut:</i>						
Apple sauce . . .	135	$\frac{1}{2}$ c.	15.9	0.3	0.3	70
			11 8	0.2	0 2	
Apricots . . .	20	4 t.	4.9	0.2	—	20
			24.6	0.7	Trace	
Baby soup . . .	30	2 T.	2.4	0.4	—	12
			8.1	1 3	Trace	
Beets . . .	20	4 t.	1.1	0.2	—	6
			5.5	1 2	Trace	
Carrots . . .	20	4 t.	1.2	0.1	Trace	6
			5 9	0 4	0 2	
Green beans . . .	15	1 T.	0.4	0.2	—	2
			2 8	1 1	0 1	
Peas . . .	25	5 t.	2.1	0.9	0.1	15
			8 3	3 5	0 3	
Prunes . . .	25	5 t.	7.2	Trace	Trace	30
			28 9	0 1	0 2	
Spinach . . .	25	5 t.	0.6	0.5	0.1	5
			2 4	2 0	0 4	
<i>Clapp:</i>						
Apple sauce . . .	135	$\frac{1}{2}$ c.	14.7	0.1	0.8	70
			*10 9	0 1	0 7	
Apricots . . .	20	4 t.	2.1	0.1	0.1	10
			*10 7	0 7	0 5	
Asparagus . . .	14	1 T.	0.4	0.2	—	2
			*2.6	1.4	0.2	
Baby soup, strained . . .	240	1 c.	21.6	2.4	—	100
			*8 6	1 0	0 1	
Beef broth . . .	240	1 c.	0.5	2.4	—	12
			*0 2	1 0	—	
Beets . . .	14	1 T.	0.9	0.2	—	5
			*6 6	1 1	0 2	
Carrots . . .	15	1 T.	0.8	0.1	—	4
			*5 8	1 0	0 2	
Green beans . . .	15	1 T.	0.7	0.2	—	4
			5 0	1 6	0 2	
Greens, mixed . . .	15	1 T.	0.4	0.2	0.1	3
			2 9	1 6	0 4	
Liver soup . . .	30	1 oz.	2.3	1.0	0.2	15
			7 8	3 3	0 5	
Peas . . .	15	1 T.	1.3	0.6	0.1	9
			*8.9	3 9	0 4	
Prunes . . .	16	1 T.	4.3	0.2	0.2	20
			*27 0	1 0	1 4	
Spinach . . .	15	1 T.	0.3	0.2	Trace	2
			*1.9	1.7	0.3	

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
<i>Clapp:</i>						
Tomatoes	15	1 T.	0.6 *4.2	0.1 0.9	Trace 0.3	3
Vegetable soup	240	1 c.	23.4 *9.8	4.5 1.9	— 0.1	115
Wax beans	15	1 T.	0.6 *4.2	0.2 1.2	— 0.1	3
Wheatheart cereal (unsieved)	15	1 T.	1.5 *9.9	0.3 2.1	0.1 0.4	8
<i>Gerber:</i>						
Apricots and applesauce	25	5 t.	4.0 16.0	0.1 0.5	Trace 0.2	20
Beans, green	25	5 t.	1.2 4.8	0.3 1.3	— Trace	6
Beets	20	4 t.	1.4 7.2	0.3 1.3	Trace 0.1	7
Carrots	20	4 t.	1.4 7.1	0.2 0.8	— Trace	7
Cereal	25	5 t.	2.1 8.5	0.8 3.3	0.6 2.7	20
Liver soup with vegetables, barley, wheat germ	30	1 oz.	9.3 31.0	1.2 4.0	0.2 0.6	65
Peas	25	5 t.	2.3 9.0	1.1 4.3	0.1 0.4	15
Prunes	25	5 t.	8.8 *35.3	0.3 1.1	0.2 0.6	40
Spinach	25	5 t.	0.7 2.8	0.6 2.5	0.1 0.4	7
Tomatoes	25	5 t.	2.5 9.9	0.6 2.4	Trace 0.1	13
Vegetable soup	250	1 c.	21.4 8.6	4.6 1.9	0.1 0.1	105
<i>Heinz:</i>						
Apricots and apple sauce	15	1 T.	2.2 *14.4	0.1 0.6	— 0.1	9
Asparagus	14	1 T.	0.8 *5.5	0.3 1.9	— 0.3	5
Beef and liver soup	15	½ oz.	0.8 *5.6	0.8 5.1	0.1 1.0	8
Beets	15	1 T.	1.2 *7.5	0.2 1.5	— 0.1	5
Carrots	15	1 T.	0.7 *5.7	0.1 1.0	— 0.2	3
Cereal	15	1 T.	1.3 *8.4	0.4 2.6	— 0.1	7
Green beans	14	1 T.	0.5 *3.8	0.3 2.2	— 0.2	3
Mixed greens	14	1 T.	0.3 *2.3	0.3 2.3	— 0.2	3
Pears and pineapple	15	1 T.	1.9 *12.9	0.1 0.4	0.1 0.4	10
Peas	15	1 T.	1.3 *8.7	0.7 4.9	— 0.5	8
Prunes	15	1 T.	4.1 *27.5	0.1 1.1	— 0.2	15
Spinach	14	1 T.	0.2 *1.5	0.3 2.2	— 0.5	2
Tomato juice	30	1 oz.	1.3 *4.4	0.3 1.0	— 0.1	7
Tomato soup	30	1 oz.	4.1 *12.6	0.6 2.0	— 0.1	19

Food items	Size of portion.		Value of portion			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
<i>Heinz:</i>						
Tomatoes	14	1 T.	1.1 *8.2	0.3 2.1	— 0.2	6
Vegetable soup	15	1 T.	1.3 *8.7	0.3 1.8	— 0.1	6
<i>Larsen:</i>						
Apples and Apricots	25	5 t.	4.0 16.0	0.2 0.8	Trace 0.2	17
Beans, green	25	5 t.	0.5 *1.9	0.4 1.4	0.1 0.2	4
Beets	20	4 t.	0.8 *4.1	0.3 1.4	0.1 0.2	5
Carrots	20	4 t.	0.5 *2.4	0.1 0.7	0.1 0.3	3
Celery	20	4 t.	0.2 *1.0	0.1 0.6	Trace 0.1	2
Peas	25	5 t.	1.4 *5.4	1.0 3.8	0.1 0.4	10
Prunes	25	5 t.	5.6 *22.4	0.3 1.1	0.1 0.3	25
Spinach	25	5 t.	0.1 *0.5	0.7 2.6	0.1 0.4	5
Tomatoes	25	5 t.	1.6 *6.2	0.5 1.8	0.1 0.3	9
Vegetable soup	25	5 t.	2.1 *8.5	0.5 2.0	0.1 0.2	11
<i>Libby ("Homogenized"):</i>						
Cereal combination (fresh whole milk and cereal)	13	1 T.	1.8 13.5	0.8 6.0	0.3 2.6	14
Fruit combination (prunes, pineapple juice, lemon juice)	14	1 T.	4.3 30.5	0.1 1.0	0.1 0.7	20
Soup combination (tomatoes, carrots, celery, liver, barley, onions)	13	1 T.	0.7 5.0	0.2 1.8	Trace 0.1	4
Vegetable combination 1 (beets, peas, asparagus tips)	14	1 T.	0.9 6.3	0.3 2.1	Trace 0.1	5
Vegetable combination 2 (string beans, pumpkin, tomatoes)	12	1 T.	0.5 4.2	0.1 0.9	Trace 0.1	3
Vegetable combination 3 (spinach, carrots, peas)	13	1 T.	0.7 5.2	0.3 2.0	Trace 0.2	4
<i>Pizis:</i>						
Apple sauce	135	½ c.	19.0 14.1	0.1 0.1	0.1 0.1	80
Beans, green	25	5 t.	1.2 4.9	0.3 1.3	— Trace	6
Beets	20	4 t.	1.6 8.5	0.3 1.7	Trace 0.1	8
Carrots	20	4 t.	0.8 4.1	0.1 0.5	Trace 0.1	4
Celery soup	230	1 c.	4.7 2.0	1.3 0.6	0.2 0.1	25
Peas	25	5 t.	2.5 9.9	1.2 4.6	Trace 0.1	15

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
<i>Pirie:</i>						
Prunes	25	5 t.	5.9	0.2	Trace	25
			*23.7	0.9	0.1	
Spinach	25	5 t.	0.2	0.5	0.1	3
			0.8	1.8	0.3	
Tomatoes	25	5 t.	1.9	0.5	Trace	10
			7.5	1.9	0.1	
Vegetables, mixed	25	5 t.	1.6	0.5	—	9
			6.5	1.8	Trace	
<i>Stokely:</i>						
Apple sauce	15	1 T.	2.6	—	0.1	12
			17.5	0.2	0.8	
Apricots	15	1 T.	3.2	0.2	—	14
			*21.0	1.3	Trace	
Beets	15	1 T.	1.6	0.2	—	7
			10.9	1.4	0.2	
Carrots	15	1 T.	1.1	0.2	—	5
			*7.4	1.1	Trace	
Cereal	15	1 T.	1.2	0.4	0.2	8
			*8.3	2.6	1.3	
Green beans	15	1 T.	0.7	0.2	Trace	4
			*4.4	1.4	0.2	
Liver soup	30	1 oz.	2.5	1.1	0.1	16
			8.2	3.8	0.5	
Peas	15	1 T.	1.1	0.5	Trace	7
			*7.6	3.5	0.4	
Prunes	15	1 T.	4.7	0.2	—	20
			*31.3	1.2	Trace	
Spinach	15	1 T.	0.3	0.3	Trace	3
			*2.3	2.3	0.3	
Tomatoes	15	1 T.	0.7	0.2	—	4
			*4.6	1.1	Trace	
Vegetable soup	15	1 T.	1.5	0.5	—	8
			*10.2	3.0	Trace	
<i>Van Camp (Purée):</i>						
Apricots	20	4 t.	3.6	0.3	—	15
			18.0	1.3	0.1	
Carrots	20	4 t.	1.8	0.5	—	9
			8.8	2.4	0.1	
Green beans	25	5 t.	1.1	0.3	—	6
			4.4	1.3	0.2	
Mixed vegetables	25	5 t.	2.7	0.8	—	14
			10.7	3.0	Trace	
Peas	25	5 t.	2.6	0.6	—	13
			10.5	3.5	0.2	
Prunes	25	5 t.	6.4	0.3	—	25
			25.5	1.2	Trace	
Spinach	25	5 t.	0.3	0.6	0.1	5
			1.2	2.3	0.3	
Tomatoes	25	5 t.	0.8	0.2	—	4
			3.1	1.0	Trace	

CHAPTER XI

CHOPPED OR JUNIOR FOODS

The **boldface numerals** indicate the number of grams and the calories in an average portion. The plain numerals indicate the percentage composition thereof. *Italicized* letters indicate trade names.

TABLE 20.—Chopped or Junior Foods.

Food items.	Size of portion.		Value of portion.			
	Grams.	Household measure.	Carb.	Prot.	Fat.	Cal.
<i>Beech-Nut:</i>						
Apricots	30	1 oz.	6.8	0.4	—	30
			*22 7	1.3	0 1	
Beets	30	1 oz.	1.7	0.4	—	9
			*5 6	1 4	Trace	
Carrots	30	1 oz.	2.3	0.2	—	10
			*7 7	0 8	0 1	
Green beans	30	1 oz.	1.4	0.4	—	7
			*4.7	1 3	0 1	
Prunes	30	1 oz.	8.4	0.3	—	35
			*28 0	1 0	0 1	
Spinach	30	1 oz.	0.7	0.6	0.1	6
			*2 4	2 1	0 4	
Vegetable soup	30	1 oz.	2.8	0.4	—	13
			*9 4	1 2	0 1	
<i>Clapp:</i>						
Apple sauce	30	1 oz.	3.3	—	0.2	15
			*10.9	0 1	0 7	
Beets	30	1 oz.	1.7	0.3	—	8
			*5.7	1 0	0 2	
Carrots	30	1 oz.	1.3	0.2	—	6
			*4 2	0 7	0 2	
Green beans	30	1 oz.	1.5	0.5	0.1	9
			*5 0	1 6	0 3	
Mixed greens	30	1 oz.	0.8	0.5	0.1	6
			*2 8	1 6	0 4	
Prunes (with lemon)	30	1 oz.	7.3	0.3	0.4	35
			*24 3	1 1	1 5	
Soup, liver with cereals and beef broth	30	1 oz.	2.3	0.9	0.1	14
			*7 8	3.1	0 4	
Soup, vegetable with cereals and beef broth	30	1 oz.	3.6	0.4	0.1	17
			*12.1	1 4	0.4	
Spinach	30	1 oz.	0.6	0.4	0.1	5
			*2.0	1 4	0.4	
<i>Heinz:</i>						
Apple, fig and date dessert	30	1 oz.	7.1	0.2	—	30
			*23.6	0 6	0 2	
Chicken farina vegetable porridge	30	1 oz.	2.1	0.9	0.2	14
			*7.1	2.9	0 6	
Chopped carrots	30	1 oz.	1.3	0.3	—	6
			*4 4	0 9	0 1	

* Largely assimilable.

Blank space indicates lack of data.

† Gross fat removed.

Negligible quantity is designated by —.

Food items.	Size of portion.		Value of portion.			
	Household Grams. measure.		Carb.	Prot.	Fat.	Cal.
<i>Heinz:</i>						
Chopped mixed vegetables	30	1 oz.	2.3	0.2	—	10
			*7.7	0.8	0.1	
Chopped spinach	30	1 oz.	0.5	0.5	—	4
			*1.7	1.8	0.2	
Creamed diced potatoes .	30	1 oz.	2.7	0.5	0.7	20
			*9.0	1.7	2.5	
Creamed diced vegetables	30	1 oz.	2.6	0.6	0.4	17
			*8.8	2.1	1.2	
Creamed green vegetables	30	1 oz.	1.6	0.8	0.8	17
			*5.3	2.6	2.6	
Creamed tomato and rice	30	1 oz.	3.4	0.6	0.7	23
			*11.4	2.1	2.2	
Lamb and liver stew .	30	1 oz.	2.5	0.8	0.7	20
			*8.2	2.9	2.2	
Pineapple rice pudding	30	1 oz.	8.3	0.1	0.2	35
			*27.8	0.3	0.6	
Prune pudding	30	1 oz.	7.3	0.7	0.4	35
			*24.5	2.4	1.2	

CHAPTER XII

RECIPED FOODS.†

Reciped foods have not been included in the main table of food nutrients unless subject to rigid commercial control or actually analyzed after "home" preparation. To complete such data the items in Table 21 have been calculated from standard recipes utilizing the analyses of the component parts. The data, when applied to specific instances, must be regarded as merely approximate.

Recipes from two sources have been incorporated in the following table: (1) Certain foods are shown with appended caloric ingredients for which the recipes are common knowledge; (2) all other items follow the recipes given in *The Boston Cooking School Cook Book* by Fannie Merritt Farmer, 1936 revised edition, Little, Brown and Company, Boston.

The calories have been entered in the nearest multiple of 5.

Italicized numbers in parentheses indicate the number of servings per recipe.

TABLE 21.—**Nutritive Value of Some Common Foods, Prepared According to Recipe.**

Food items.	Size of portion, household measure	Value of portion			
		Carb.	Prot	Fat	Cal
Albumen water . . .	1 c.	—	4.5	Trace	20
1 egg white					
Albumenized fruit juice	1 c.	4.5	4.5	Trace	40
½ c. orange juice added to albumen water					
Beef, creamed chipped on toast (3)	½ c. on	21.0	11.0	13.5	255
½ c. dried beef	1 sl. toast				
1 c. white sauce II					
Biscuits, baking powder (20)	1 biscuit	11.0	2.0	2.0	70
Broth . . .	1 c.	0.1	5.0	—	20
Bouillon . . .	1 c.	0.7	6.2	0.2	30
Cakes:					
Chocolate (16)	1 piece	26.0	3.0	5.5	170
2 T. cocoa added to plain cake					
Corn (Johnny cake) (15)	1 piece	19.0	3.0	1.5	105
½ c. cornmeal					
1½ c. white flour					
½ c. sugar					
5 t. baking powder					
1 c. milk					
1 egg					
2 T. butter					

† From the Dietary Department of the New York Post-Graduate Hospital.

Blank space indicates lack of data.

Negligible quantity is designated by —.

Food items.	Size of portion, household measure.	Value of portion			
		Carb.	Prot.	Fat.	Cal.
Cakes.					
Gingerbread (20)	1 piece	24.5	2.0	3.0	135
1 c. molasses					
2½ c. white flour					
4 T. butter					
Plain (16)	1 piece	26.0	3.0	5.0	165
½ c. butter					
1 c. sugar					
2 eggs					
¾ c. milk					
1½ c. white flour					
2½ t. baking powder					
Cake icing:					
Chocolate (16)	2 T.	15.0	0.5	1.5	80
1½ oz. chocolate added to plain icing					
Plain (16)	2 T.	14.5	0.5	—	60
1 c. sugar					
1 eggwhite					
Cereal gruel (2)	1 c.	6.5	1.5	1.0	40
4 T. cereal					
With cream (2)	1 c.	8.0	2.5	6.5	105
½ c. light cream added to cereal gruel					
With milk (2)	1 c.	9.5	3.5	3.0	80
½ c. milk added to cereal gruel					
With water (2)	1 c.	3.3	0.7	0.5	20
2 T. cereal					
Chicken, creamed	½ c.	6.0	11.0	16.5	225
Chocolate syrup (8)	2 T.	11.5	1.0	1.0	60
½ c. cocoa					
½ c. sugar					
Cocoa, all milk	1 c.	17.0	7.0	8.5	180
One-half milk	1 c.	12.0	4.0	5.0	110
With cream	1 c.	17.5	1.0	12.0	210
Cookies, plain (50),	1	10.5	1.0	2.0	65
½ c. butter					
1 c. sugar					
½ c. milk					
2 eggs					
3 c. white flour					
2 t. baking powder					
Custard.					
Baked (8)	1 custard c.	20.5	8.0	8.0	190
Soft (4)	½ c.	21.0	6.0	8.5	190
Egg:					
Nog	1 c.	18.0	12.0	11.5	230
1 egg					
2 teaspoons sugar					
¾ c. milk					
Omelet (2)	Individual	1.5	14.5	24.5	295
Scrambled (3)	½ c.	2.0	0.5	3.5	45

Food items.	Size of portion household measure	Value of portion			
		Carb	Prot.	Fat	Cal.
Gelatin, lemon flavor (8)	$\frac{1}{2}$ c.	30.0	2.0	—	130
Gravy, brown (8)	2 T.	2.0	0.5	3.5	45
Ice, orange (12)	$\frac{1}{2}$ c.	42.5	0.6	0	175
Junket (2) 1 c. milk 1 T. sugar	$\frac{1}{2}$ c.	13.5	4.0	5.0	120
Lemonade (5)	1 c.	24.5	0	0	100
Macaroni and cheese (5) $\frac{1}{2}$ c. uncooked macaroni $\frac{1}{2}$ c. grated cheese 1 T. white flour 1 $\frac{1}{2}$ T. butter 3 T. bread crumbs	1 c.	24.0	9.0	14.0	265
Milk.					
Chocolate malted 2 T. chocolate syrup added to malted milk	1 c.	37.5	9.5	8.0	270
Malted $\frac{1}{2}$ c. milk 3 T. malted milk	1 c.	26.0	8.5	7.0	205
Mousse, vanilla (5)	$\frac{1}{2}$ c.	10.5	2.0	18.0	220
Muffins:					
Cornmeal (8)	1 large	22.0	4.0	3.0	135
Plain (10)	1	24.0	4.5	3.5	150
Potatoes:					
Creamed (6)	$\frac{1}{2}$ c.	14.5	4.0	12.0	190
Scalloped (6) 4 med. potatoes 1 T. white flour 1 T. butter 1 c. milk	$\frac{1}{2}$ c.	15.0	3.0	4.0	110
Hashed brown (4)	$\frac{1}{2}$ c.	15.5	2.0	10.5	170
Mashed (6)	$\frac{1}{2}$ c.	27.0	3.5	7.0	190
Prune whip (8)	$\frac{1}{2}$ c.	18.0	3.0	Trace	85
Puddings.					
Bread (12)	$\frac{1}{2}$ c.	33.0	10.5	10.0	270
Butterscotch (6)	$\frac{1}{2}$ c.	33.0	4.0	5.5	205
Chocolate bread (12) $\frac{1}{2}$ c. cocoa added to bread pudding	$\frac{1}{2}$ c.	36.0	12.5	13.0	320
Chocolate cornstarch (2) $\frac{1}{2}$ oz. chocolate, or 3 T. cocoa, added to cornstarch pudding	$\frac{1}{2}$ c.	31.0	6.5	8.0	230
Cornstarch (2)	$\frac{1}{2}$ c.	26.5	4.0	5.0	170
Rice (7)	$\frac{1}{2}$ c.	29.0	5.5	5.5	195

Blank space indicates lack of data.

Negligible quantity is designated by —.

Food items.	Size of portion. household measure.	Value of portion.			
		Carb.	Prot.	Fat.	Cal.
Puddings:					
Rice custard (4)	$\frac{1}{2}$ c.	29.0	5.0	6.0	195
1 c. cooked rice					
1 c. milk					
$\frac{1}{2}$ T. butter					
1 egg					
2 T. sugar					
$\frac{1}{2}$ c. raisins					
Tapioca (6)	$\frac{1}{2}$ c.	19.5	5.0	5.0	145
Salads:					
Chicken (4)	$\frac{1}{2}$ cup on 2 lettuce leaves	1.5	9.5	16.0	195
Cole slaw (8)	$\frac{1}{2}$ c.	3.5	1.0	8.5	100
1 c. shredded cabbage					
2 T. cream dressing					
Fruit	1 c.	13.0	0.5	18.0	225
2 T. cream dressing					
Fresh fruit as desired					
Green	1 c.	3.0	1.0	20.0	200
1 c. salad greens					
2 T. French dressing					
Potato (4)	$\frac{1}{2}$ c. on 2 lettuce leaves	8.0	3.5	13.5	175
Salmon (8)	$\frac{1}{2}$ c. on 2 lettuce leaves	0.5	17.5	23.5	295
1 c. salmon					
$\frac{1}{2}$ c. diced celery					
1 egg					
6 lettuce leaves					
3 T. mayonnaise					
Waldorf (6)	$\frac{1}{2}$ c. on 2 lettuce leaves	5.5	3.5	22.5	245
Salad dressings:					
Cream mayonnaise (8)	1 T.	0.2	0.1	9.0	85
$\frac{1}{2}$ c. mayonnaise					
4 T. whipped cream					
Russian (8)	1 T.	1.5	0.3	8.0	85
$\frac{1}{2}$ c. mayonnaise					
2 T. cream					
2 T. chili sauce					
Salmon, creamed	$\frac{1}{2}$ c. on 1 sl. of toast	22.0	11.0	17.0	295
Sandwiches.					
Cheese	1 sandwich	26.0	12.0	22.0	360
2 sl. bread					
2 t. butter					
1 sl. cheese					
Lettuce					
1 t. mayonnaise					
Egg	1 sandwich	26.0	10.5	19.5	330
2 sl. bread					
2 t. butter					
1 egg					
Lettuce					
1 t. mayonnaise					

TABLE OF RECIPED FOODS

Food items	Size of portion, household measure	Value of portion.			
		Carb.	Prot.	Fat.	Cal.
Sandwiches:					
Marmalade	1 sandwich	47.0	4.0	9.5	300
2 sl. bread					
2 t. butter					
1 t. marmalade					
Meat or fish	1 sandwich	26.0	12.0	15.5	300
2 sl. bread					
2 t. butter					
1 oz. meat or fish					
Lettuce					
1 t. mayonnaise					
Vegetable, 3 per cent	1 sandwich	29.0	4.0	14.0	265
2 sl. bread					
2 t. butter					
3 per cent vegetable					
1 t. mayonnaise					
Sauces:					
Caramel (8)	2 T.	28.5	—	—	115
Chocolate fudge (1½)	2 T.	32.0	3.0	6.0	200
Custard	4 T.	10.5	3.0	4.5	100
Hard (8)	2 T.	44.0		8.0	255
Tomato, thin	½ c.	4.0	1.0	3.5	55
Vanilla	2 T.	30.0	—	6.5	185
White I, thin (soup base) . . .	½ c.	5.5	3.0	7.5	105
White II, medium (creamed foods)	2 T.	3.0	1.0	4.5	60
White III, thick (sauces) . . .	2 T.	4.0	1.5	6.0	80
Tomatoes, scalloped (8)	½ c.	9.5	2.0	5.0	95
1 c. tomatoes					
½ sl. bread					
½ t. sugar					
2 t. butter					
Toast, milk (6)	1 sl.	19.5	5.0	8.0	175
Vegetables, creamed:					
Creamed 3 per cent vegetable . .	½ c.	6.0	1.5	4.5	75
2 T. white sauce II					
½ c. 3 per cent vegetable					
Creamed 6 per cent vegetable . .	½ c.	9.0	1.5	4.5	85
2 T. white sauce II					
½ c. 6 per cent vegetable					
Creamed 9 per cent vegetable . .	½ c.	12.0	1.5	4.5	100
2 T. white sauce II					
½ c. 9 per cent vegetable					
Creamed 12 per cent vegetable . .	½ c.	15.0	1.5	4.5	110
2 T. white sauce II					
½ c. 12 per cent vegetable					
Creamed 15 per cent vegetable . .	½ c.	18.0	1.5	4.5	120
2 T. white sauce II					
½ c. 15 per cent vegetable					

Blank space indicates lack of data.

Negligible quantity is designated by —.

CHAPTER XIII.

SPECIFIC ORGANIC COMPONENTS OF FOODS.

Introduction.—Increasing interest is attached to the presence or absence of specific chemical entities in food. Although the information now in hand leaves much to be desired, available data presents useful, if somewhat limited, information.

Available Carbohydrates.

In the preceding tables an effort has been made to designate assimilable carbohydrates by the use of an asterisk on the percentage value. It is recognized that this does not represent true availability in every instance. The complex nature of naturally-occurring carbohydrates renders the problem a difficult one, affected not only by lack of chemical data but by modes of cooking and differences in digestibility. Table 22, therefore, provides desirable data regarding a restricted group of foods.

The analyses shown in Table 22 are from E. M. Widdowson and R. A. McCance (*Biochem. Jour.*, **29**, 151, 1935). McCance and his co-workers have made outstanding contributions to our knowledge of the chemical composition of foodstuffs. Further analyses on the carbohydrates of various classes of foods will be found in Special Report No. 213 of the Medical Research Council of Great Britain (1936). The total carbohydrate available in stewed fruit (apart from that which may be added) is as follows: apples 4.4, dried apricots 18, blackberries 3.2, cherries 4.1,¹ black currants 4.6, red currants 3.2, damsons 6.6,¹ dried figs 30, gooseberries 1.7, green gages 7.6,¹ dried peaches 18, pears 6.5, plums 6.1,¹ dried prunes 15.5¹, raspberries 3.8, and rhubarb 0.7 grams per 100 grams.

TABLE 22.—Available Carbohydrates in Fruits and Vegetables.

<i>Food items.</i>	<i>Sugar, per cent.</i>	<i>Total available carbohydrate, per cent</i>	<i>Water content, per cent</i>
Apples, baked	12.0		
Crab	12.6		81.1
Crab, juice	11.2		85.0
Empire, eating* . . .	.	12.2	84.1
English, cooking* . .	.	9.6	85.6
English, eating* . .	.	11.7	84.5
Fall	10.4		85.4
George Washington . .	12.7		
Northern Spy	14.0		
Summer	9.4		86.5
Winter	11.2		83.6
Apple juice	10.5		87.1
Apricots, American . .	10.4		85.4

¹ Weighed with stones.

* Flesh only; no skin.

<i>Food items.</i>	<i>Sugar per cent.</i>	<i>Total available carbohydrate, per cent.</i>	<i>Water content, per cent.</i>
Apricots, English		6.7	86.6
Asparagus, boiled	0.8		
Asparagus-beans, green pods		7.8	84.5
Avocados, Fuerte	0.6		65.4
Bananas		19.2	74.8
Very green	1.8		
Green	5.8	21.4	
Medium ripe	15.4		
Very ripe	18.2	18.9	
Beans, lima, canned	1.6		
Beans, snap		2.6	88.9
Beans, string, green, raw	3.4		91.4
Beans, string, boiled	1.5		94.6
Beet greens	0.5		90.4
Blackberries	6.1		85.3
Blackberry juice	5.4		92.3
Blueberries	9.7		83.4
Blueberry juice	12.4		85.9
Broccoli	1.9		89.9
Burdock root		7.6	72.4
Cabbage		5.1	92.4
Cabbage, boiled	1.1		96.6
Cabbage, raw	4.9	5.8	91.5
Cabbage, Chinese		1.1	95.2
Cantaloupe		5.3	93.6
Carrots		7.6	88.2
Carrots, boiled	3.7		
Carrots, raw	8.7	9.0	88.2
Cauliflower, boiled once	1.7		93.9
Cauliflower, boiled "thrice"	0.7	0.8	95.0
Cauliflower, raw	1.9	2.9	92.6
Celeriac		0.9	88.3
Celery		1.3	93.7
Celery hearts, raw	1.9		
Celery, outside portion, raw	0.5	0.6	95.2
Celery, outside portion, cooked	0.3	0.4	96.7
Chard, leaves		0.9	91.0
Chard, stalks		1.8	95.2
Cherries, American, sour	9.5		84.4
Cherries, American, sweet	11.6		80.0
Cherries, English, cooking	11.6		79.8
Cherries, English, eating	11.9		81.5
Corn, young		13.9	80.3
Corn, medium		20.1	72.4
Corn, old		24.8	65.7
Cranberries, American	4.2		87.4

<i>Food stems</i>	<i>Sugar, per cent.</i>	<i>Total available carbohydrate, per cent.</i>	<i>Water content, per cent.</i>
Cranberries, English		3.5	87.0
Cucumber	2.6		96.1
Currants, black		6.6	77.4
Currants, red		4.4	82.8
Currants, white		5.6	83.3
Currant juice, black	10.9		
Currant juice, red	6.2		89.1
Damson plums, American	8.7		78.8
Damson plums, English		9.6	77.5
Dandelion greens		0.9	85.8
Dasheens		23.5	66.6
Dates		63.9	14.6
Dock or sorrel		0.1	93.3
Figs	16.2		78.0
Figs, green		9.5	84.6
Gooseberries, green		3.4	89.9
Gooseberries, ripe		9.2	83.7
Grapefruit		5.3	90.7
Grapefruit	6.5		88.8
Grapefruit juice	6.8		89.7
Grapes, American	11.5		81.9
Black*		15.5	80.7
European	14.9		81.6
Malaga	22.5		
White		16.1	79.3
Grape juice:			
Catawba type	17.9		79.1
Concord	15.7		82.1
Delaware	19.9		77.3
European	19.8		77.1
Muscadine	12.5		86.7
Greengage plums		11.8	78.2
Guavas, common	6.1		80.6
Guavas, strawberry	6.7		79.3
Kale		1.4	86.6
Kohlrabi	2.2		90.1
Lambsquarters		1.7	84.2
Leeks		4.0	88.2
Lemon		3.2	85.2
Lemon	2.2		89.3
Lemon juice		1.6	91.3
Lettuce, green leaves	0.9		
Lettuce, white leaves	1.7		94.8
Limes	0.5		86.0
Limes, sweet	6.0		89.6

* Flesh only; no skin.

170 CARBOHYDRATES IN FRUITS AND VEGETABLES

<i>Food items.</i>	<i>Sugar, per cent.</i>	<i>Total available carbohydrate, per cent.</i>	<i>Water content, per cent</i>
Lime juice	0.3		91.3
Loganberries, American . .	6.0		82.9
Loganberries, English . . .		3 4	85 0
Loganberry juice	6.5		88.9
Mandarin orange	8.7		87.3
Mandarin orange juice . . .	7.8		89 2
Mangos	13 7		81.4
Melons, yellow, English . .		5 0	94 2
Mulberries		8 1	85 0
Muskmelon	5 4		92 8
Muskmelon juice	9 1		87.2
Nectarines	11 8		82 9
Oca, tubers		14 7	80 9
Oranges		8 5	86 1
Oranges, Seville	6 0		87 0
Orange juice		9 4	87 7
Orange juice	6.8		
Onions, average		7 2	87.5
Onions, boiled	6 1		
Onions, raw	8.3		
Onions, young green		4.2	87 6
Papaya	9.0		88 7
Parsley	2.8		87 6
Parsnips, raw		11 9	78 6
Peaches, English		9.1	86.7
Georgia	9.4		85.8
Maryland	8.6		87.1
New Jersey	7.6		88 8
North Carolina	9.2		86 4
Peach juice	11.8		86 5
Pears, Bartlett	8.3		83 5
Empire eating*		10.8	83 0
English cooking*		10.4	83.4
English eating*		9 3	83.0
Winter	11.9		
Peas, green, young		7 2	81 4
Peas, green, medium		9.0	75 8
Peas, green, old		14.6	65.0
Peas, green, boiled	2.8		
Peppers, green		5.9	92.4
Peppers, red	3.0		89.2
Persimmons, Japanese	15.9		78.2
Persimmons, native American .	18.9		64.4
Pineapple, fresh		11 6	84 3

* Flesh only, no skin.

<i>Food items.</i>	<i>Sugar, per cent.</i>	<i>Total available carbohydrate, per cent.</i>	<i>Water content, per cent.</i>
Pineapple juice	11.8		86.2
Plantains	25.3		64.7
Plums, American	8.3		85.7
Plums, English cooking		6.2	85.1
Plums, English dessert		9.6	85.1
Pomegranate, pulp with seeds	11.9		75.8
Pomegranate juice		11.6	85.4
Potatoes, sweet	5.4	25.6	68.5
Potatoes, white		24.4	78.3
Potatoes, white, boiled		17.8	
Pumpkin		5.1	90.5
Quince	9.1		85.3
Quince juice	6.3		
Radishes	3.4		93.6
Raspberries, American black	7.9		80.7
American black, juice	7.6		88.4
American red	7.2		83.4
American red, juice	7.3		90.8
English		5.6	83.2
Rhubarb	0.4		94.9
Rutabagas	6.7		89.1
Soy beans, green, shelled		4.6	64.7
Spinach	0.3		92.7
Spinach, New Zealand	0.9		91.4
Squash, raw, cushaw		5.1	90.4
Raw, summer		1.4	95.0
Raw, winter		4.9	88.6
Boiled once	2.9		93.7
Boiled thrice	2.6		94.0
Raw	5.0		91.1
Strawberries, American	5.3		90.0
Strawberries, American, medium ripe	4.1		
Strawberries, English		6.2	88.9
Strawberry juice	3.6		94.2
Taro		19.6	75.1
Tangerines	8.7		87.3
Tangerine juice	7.8		89.2
Tomatoes, ripe, American, raw		3.5	94.1
Ripe, American, boiled		2.5	
Ripe, American, canned		3.3	
Ripe, English		2.8	
Green		1.6	94.7
Turnips	4.6		90.9
Watermelon	6.0		92.1
Yams		18.7	72.6

TABLE 23.—Crude Fiber Content of Some Foods.

Those items designated *mws* show analyses by R. A. McCance, E. M. Widdowson and L. R. B. Shackleton on foods purchased in Great Britain (Medical Research Council Special Report No. 213, 1936). Otherwise analytical data was obtained largely from U. S. Department of Agriculture Circulars 50 and 146. An asterisk (*) denotes that the figure is based on the weight of raw material contained in an average serving of $\frac{1}{2}$ cup; data in part from J. L. Kantor and L. F. Cooper (*Ann. Internal Med.*, 10, 965, 1937). A double dagger indicates that the analyses were made by F. C. Hummel, M. L. Shepherd, I. G. Macy (*Jour. Am. Dietet. Assn.*, 16, 199, 1940); the figure in parenthesis represents the *percentage* of the total fiber in the form of the highly indigestible lignin. It will be noted that the English values for unavailable carbohydrate are consistently higher than the others.

Food items.	Size of portion.		Fiber.	
	Grams.	Household measures.	Per cent.	Grams per portion.
Almond butter . . .	15	1 T.	3 9	0 58
Meal . . .	25	2 T.	2 9	0 73
Paste . . .	10	1 t.	7 8	0 78
Almonds . . .	30	20	3 0	0 90
<i>mws</i> . . .	30	20	12 0	3 60
Apple, fig and date dessert, Heinz	60	2 oz.	1 0	0 60
Apple powder	8	1 T.	6 7	0 54
Sauce	135	$\frac{1}{2}$ c.	0 8	1 08
Sauce, strained, canned	135	$\frac{1}{2}$ c.	0 5	0 68
Apples	130	1, 2 $\frac{1}{2}$ " diam.	1 0	1 30
Apples†	130	1, 2 $\frac{1}{2}$ " diam.	0 8 (27)	1 04
Eating, <i>mws</i>	130	1, 2 $\frac{1}{2}$ " diam.	2 2	2 86
Cooking, <i>mws</i>	130	1, 2 $\frac{1}{2}$ " diam.	2 4	3 12
Baked, canned	120	1, 2 $\frac{1}{2}$ " diam.	0 7	0 84
Apricots	50	2 med.	0 6	0 30
<i>mws</i>	50	2 med.	2 1	1 05
Canned	70	3 halves	0 5	0 35
<i>mws</i>	70	3 halves	1 3	0 91
Strained, canned	15	1 T.	0 6	0 09
Dried	10	1 T.	3 2	0 32
<i>mws</i>	10	1 T.	24 0	2 40
Artichokes, globe	50	1 lg.	3 2	1 60
Jerusalem	100	1 lg.	0 8	0 80
Asparagus	75	6, 6" stalks	0 7	0 52
Boiled, <i>mws</i>	75	5 spears	1 5	***
*** Only 50 per cent of cooked weight is edible				
Tips, canned	75	5 spears	0 6	0 45
Strained, canned	14	1 T.	0 5	0 07
Avocados, av.	85	$\frac{1}{2}$, 3 $\frac{1}{2}$ " long	1 4	1 19
<i>mws</i>	85	$\frac{1}{2}$, 3 $\frac{1}{2}$ " long	2 0	1 70
Bamboo shoots	100	$\frac{1}{2}$ c.	0 8	0 80
Banana powder	8	1 T.	3 3	0 26
Bananas	100	1 sm.	0 6	0 60
<i>mws</i>	100	1 sm.	3 4	3 40
Ripe†	100	1 sm.	0 8 (60)	0 80
Barley, pearled	30	3 T.	0 3	0 09
Bean soup	250	1 c.	0 4	1 00
Bean sprouts	65	$\frac{1}{2}$ c.	1 0	0 65
Beans, baked	250	1 c.	1 4	3 50
<i>mws</i>	250	1 c.	5 1	12 75
Baked, canned	250	1 c.	1 0	2 50
Broad, green, shelled	75	$\frac{1}{2}$ c.	2 0	1 50
Broad, boiled, <i>mws</i>	125	$\frac{1}{2}$ c.	4 2	5 25
Butter, boiled, <i>mws</i>	100	$\frac{1}{2}$ c.	5 1	5 10
Lima, green	60	$\frac{1}{2}$ c.*	1 5	0 90
Canned	130	$\frac{1}{2}$ c.	1 2	1 56
Baby, canned	130	$\frac{1}{2}$ c.	1 0	1 30

Food items.	Size of portion.		Fiber.	
	Grams	Household measures.	Per cent.	Grams per portion.
Beans, baked:				
String	75	$\frac{1}{2}$ c.*	1.4	1 05
Small, whole stringless, canned	100	$\frac{1}{2}$ c.	0.4	0.40
Strained, green, canned	14	1 T.	1.0	0.14
Dried, navy	75	$\frac{1}{2}$ c.	4.4	3.30
Soy	100	$\frac{1}{2}$ c.	4.6	4.60
Beef and liver soup, Heinz	30	1 oz.	0.2	0.06
Beef (roast) hash, canned	230	$\frac{1}{2}$ lb.	0.3	0.69
Beef stew, canned	115	$\frac{1}{4}$ lb.	0.3	0.35
Beet greens	75	$\frac{1}{2}$ c.*	1.4	1.05
Beets	75	$\frac{1}{2}$ c.*	0.9	0.68
Boiled, <i>mws</i>	75	$\frac{1}{2}$ c.	2.5	1.87
Strained, canned	15	1 T.	0.5	0.08
<i>Bemax</i>	9	1 heaping T.	1.5	0.14
Biscuits, baking powder	75	1 lg.	0.2	0.15
Blackberries	75	$\frac{2}{3}$ c.	4.1	3.08
<i>mws</i>	75	$\frac{2}{3}$ c.	7.3	5.47
Canned	120	$\frac{2}{3}$ c.	2.5	3.00
Blueberries	100	$\frac{2}{3}$ c.	1.2	1.20
Canned	120	$\frac{1}{2}$ c.	1.0	1.20
Bran flakes	30	$\frac{2}{3}$ c.	5.1	1.53
<i>Bran Flakes</i> , Post's 40%	30	$\frac{2}{3}$ c.	3.9	1.17
Bran, prepared	3	1 T.	8.5	0.25
<i>Bran Shreds</i> , Post's	3	1 T.	8.3	0.25
Bran, wheat, crude	3	1 T.	11.3	0.34
Brazil nuts	30	4 av.	3.9	1.17
<i>mws</i>	30	4 av.	14.7	4.41
Bread, pumpernickel	30	1 sl.	1.3	0.39
Rye	25	1 sl.	0.5	0.12
Rye, whole	30	1 sl.	1.2	0.36
White	25	1 sl.	0.5	0.12
White†	25	1 sl.	0.8 (8)	0.20
Whole wheat	30	1 sl.	1.2	0.36
Whole wheat†	30	1 sl.	2.8 (16)	0.84
<i>Breakfast Crisp</i> , Cellu	3	1 T.	22.6	0.68
<i>Breakfast Wheat</i> , Heinz	20	2 T.	5.6	1.12
Broccoli	100	1 med. stalk	1.3	1.30
Boiled, <i>mws</i>	100	1 med. stalk	4.2	4.20
Brussels sprouts	100	1 c.	1.3	1.30
Boiled, <i>mws</i>	100	1 c.	4.8	4.80
Butter			0.0	
Cabbage†	85	1 c.	1.0 (10)	0.85
Boiled, <i>mws</i>	100	$\frac{1}{2}$ c.	2.2	2.20
Chinese	110	1 c.	0.6	0.66
Red, <i>mws</i>	85	1 c.	3.4	2.89
Cakes, various types	60	1	0.1	0.06
Fruit (dark)	60	1	1.2	0.72
Candied peel (lemon, orange, grapefruit)	10	1 sm. piece	2.3	0.23
Cantaloupe	100	$\frac{1}{2}$, 5" diam.	0.3	0.30
<i>mws</i>	100	$\frac{1}{2}$, 5" diam.	1.0	1.00
Carrageen moss, dried	10	1 T.	71.3	7.13
Carrots†	75	$\frac{1}{2}$ c.*	1.1 (10)	0.83
Boiled, <i>mws</i>	75	$\frac{1}{2}$ c.	3.0	2.25
Chopped, Heinz	30	1 oz.	0.7	0.21
Strained, canned	15	1 T.	0.6	0.09
Cashew nuts, cooked, salted	15	10	1.3	0.20
Catsup, tomato	20	1 T.	0.4	0.08
Cauliflower	75	$\frac{1}{2}$ c.*	0.9	0.68
Boiled, <i>mws</i>	75	$\frac{1}{2}$ c.	2.4	1.80

<i>Food items.</i>	<i>Size of portion.</i>		<i>Fiber.</i>	
	<i>Grams.</i>	<i>Household measures.</i>	<i>Per cent.</i>	<i>Grams per portion.</i>
Celeriac	100	1 med.	1.4	1.40
Boiled, <i>mws</i>	100		4.9	4.90
Celery	40	2, 7" stalks	0.7	0.28
<i>mws</i>	40	2, 7" stalks	1.8	0.72
Boiled, <i>mws</i>	50	$\frac{1}{2}$ c.	2.2	1.10
Strained, canned	20	4 t.	0.8	0.16
Celmac, Mead	15	1 T.	0.3	0.05
Cereal, Strained, Beech-Nut	25	5 t.	0.2	0.05
Wheatheart, Clapp	15	1 T.	0.2	0.03
Cerevim	30	$\frac{1}{2}$ c.	2.5	0.75
Chard, leaves only	100	$1\frac{1}{2}$ c.	0.8	0.80
Cheese			0.0	
Cherries	75	$\frac{1}{2}$ c.	0.3	0.23
<i>mws</i>	75	$\frac{1}{2}$ c.	1.7	1.27
Black, canned	85	15	0.1	0.09
Maraschino, bottled	5	1	0.3	0.02
Royal Anne, canned	85	15	0.2	0.17
Chestnuts	25	4	1.5	0.38
<i>mws</i>	25	4	9.3	2.32
Chickory, leaves	20	$\frac{1}{2}$ c.	0.8	0.16
Chili sauce	20	1 T.	0.7	0.14
Chives	55	$\frac{1}{2}$ c.	2.0	1.10
Chocolate, sweetened	30	1 oz.	2.0	0.60
Unsweetened	30	1 oz.	2.5	0.75
Citron, candied	10	1 sm. piece	1.4	0.14
Cocoa powder	5	2 t.	4.0	0.20
Cocanut	10	1" sq.	3.4	0.34
<i>mws</i>	10	1" sq.	7.6	0.76
Desiccated	4	1 T.	4.1	0.16
Moist, canned	5	1 T.	4.2	0.21
Cocanut milk, <i>mws</i>			0.0	
Collards	50	$\frac{1}{2}$ c.	1.0	0.50
Cookies				
Fig bars	30	2	1.7	0.51
Gingersnaps	20	3	0.4	0.08
Home-made type	20	1	0.2	0.04
Macaroons	40	1 lg.	1.1	0.44
Molasses	20	1	0.4	0.08
Oatmeal	20	1	0.3	0.06
Peanut	20	1, 3" diam.	0.8	0.16
Sandwich-type	25	2	0.3	0.07
Shortbread	25	3	0.1	0.02
Wafers	15	4	0.2	0.03
Corn, sweet	75	$\frac{1}{2}$ c *	0.8	0.60
Cream style, canned	115	$\frac{1}{2}$ c	0.3	0.35
Whole kernel, canned	100	$\frac{1}{2}$ c	0.6	0.60
Corn Flakes, Kellogg's	30	$1\frac{1}{4}$ c.	0.4	0.12
Corn Flakes†	30	$1\frac{1}{4}$ c.	1.4 (15)	0.42
Corn beef hash, canned	230	$\frac{1}{2}$ lb.	0.5	1.15
Cornmeal	20	$\frac{1}{2}$ c *	0.4	0.08
Yellow, old-type	100	$\frac{3}{4}$ c.	1.8	1.80
Cornsalad	25	$\frac{1}{2}$ c	0.8	0.20
Cracked wheat	30	$\frac{1}{2}$ c.	2.7	0.81
Crackers, Graham	25	3, 3" sq.	1.5	0.38
Graham‡	25	3, 3" sq.	2.2 (40)	0.55
Soda	10	2, 2" sq.	0.3	0.03
Cranberries	50	$\frac{1}{2}$ c.	1.4	0.70
<i>mws</i>	50	$\frac{1}{2}$ c.	4.2	2.10
Cranberry sauce, canned	100	$\frac{1}{2}$ c.	0.4	0.40
Cream of Wheat, "5-minute"	20	$\frac{1}{2}$ c.*	0.5	0.10
Cress, garden	20	$\frac{1}{2}$ c.	1.2	0.24

Food items.	Size of portion.		Fiber.	
	Grams.	Household measures.	Per cent.	Grams per portion.
Cucumbers	75	2" x 2½"	0 5	0.38
<i>mws</i>	75	2" x 2½"	0 4	0.30
Currants, all, av.	50	½ c.	3 2	1.60
Black, <i>mws</i>	25	½ c.	8 7	2 17
Red, <i>mws</i>	25	½ c.	8 2	2 05
White, <i>mws</i>	25	½ c.	6 8	1 70
Dried, <i>mws</i>	50	½ c.	6 5	3 25
Damson plums, <i>mws</i>	50	4 med.	4 1	2 05
Dandelion greens	50	½ c.	1 8	0 90
Dasheens	100	1 tuber	0 7	0 70
Dates, dried	15	3 sm.	2 2	0.33
<i>mws</i>	15	3 sm.	8 7	1 30
Dock or Sorrel	25	½ c.	0 8	0 20
Doughnuts	45	1, 3" diam.	0 2	0 09
Eggplant	75	½ c.*	0 9	0.68
<i>mws</i>	75	½ c.	2 5	1 87
Eggs			0 0	
Embo	8	1 T	2 0	0 16
Endive, chicory, leaves	15	½ sm. head	0 8	0 12
<i>mws</i>	15	½ sm. head	2 2	0 33
Farina	20	½ c.*	0 2	0 04
strained, Beech-Nut	25	5 t.	0 1	0 03
Fennel	50	½, 3" diam.	0 8	0 40
Figs, fresh	75	3	1 7	1 28
Dried	45	3	5 8	2 61
Dried, <i>mws</i>	45	3	18 5	8 32
Kadota, canned	85	3	0 8	0 68
Filberts (hazelnuts)	35	30	3 0	1 05
<i>mws</i>	35	30	10 3	3 60
Fish			0 0	
Flour, buckwheat	115	1 c.	0 4	0 46
Rye	100	1 c.	0 4	0 40
Soybean	100	1¼ c. sc.	3 7	3 70
White	100	¾ c.	0 7	0 70
Force, whole wheat flakes	30	1 c.	1 2	0 36
French dressing, com.	11	2 t.	0 3	0 03
Fruit salad, canned	140	1 c.	0 4	0 56
<i>mws</i>	140	1 c.	1 1	1 54
Gelatin			0 0	
Ginger, crystallized	10	1 sm. piece	0 7	0 07
Gingerbread	60	1 sq.	0 1	0 06
Gooseberries	100	¾ c.	2 5	2 50
Ripe, <i>mws</i>	100	¾ c.	3 5	3 50
Canned	120	½ c.	1 5	1 80
Grapefruit	100	½, 4" diam.	0 3	0 30
Canned	135	¼ c.	0 2	0 27
Grape-Nuts	30	¼ c.	2 4	0 72
Grapes, American types (slip skin)	100	24	0 5	0 50
European types (adherent skin)	100	15 lg.	0 5	0 50
Thompsonseedless, canned	120	½ c.	0 2	0 24
Greengage plums, <i>mws</i>	50	3 med.	2 6	1 30
Guavas, common	15	1 sm.	5 5	0 83
Hazelnuts (filberts)	35	30	3 0	1 05
<i>mws</i>	35	30	10 3	3.60
Hickory nuts	35	½ c.	2 0	0.70
Hominy grits	20	½ c.*	0 7	0.14
Cooked or canned	100	½ c.	0 1	0.10
Honey			0 0	
Honeydew melon	240	¾ c. diced	0 5	1.20
Horseradish, prepared	10	1 t.	1.0	0 10

Food items.	Size of portion.		Fiber.	
	Grams.	Household measures.	Per cent.	Grams per portion.
Horseradish roots	5	$\frac{1}{2}$ t.	2 4	0 12
<i>mws</i>	5	$\frac{1}{2}$ t.	8 3	0 41
Huckleberries	100	$\frac{3}{4}$ c.	1 2	1 20
Jams and preserves, com.	25	1 T.	0 6	0 15
Home-cooked	25	1 T.	1 2	0 30
Jellies	..		0 0	
Kale, leaves	75	$\frac{1}{2}$ c.*	1 2	0 90
Kohlrabi	75	$\frac{1}{2}$ c.*	1 1	0 76
<i>Krumbles</i>	30	$\frac{1}{2}$ c.	1 9	0 57
Kumquats	50	3 med.	3 7	1 85
Lamb stew, canned	115	$\frac{1}{2}$ lb.	0 4	0 46
Lambsquarters	75	$1\frac{1}{2}$ c.	2 6	1 95
Leeks, bulbs and leaves	55	$\frac{1}{2}$ c.	1 3	0 72
Boiled, <i>mws</i>	75	$\frac{1}{2}$ c.	3 9	2 92
Lemons, whole, <i>mws</i>	..		5 2	
Lemon juice, <i>mws</i>	..		0 0	
Lentils	60	$\frac{1}{4}$ c.	3 0	1 80
Boiled, <i>mws</i>	250	1 c.	2 4	6 00
Lettuce†	50	1 lg. leaf	0 6 (12)	0 30
<i>mws</i>	50	1 lg. leaf	1 4	0 70
Litchi "nuts"	25	10	3 2	0 80
Loganberries	75	$\frac{3}{4}$ c.	1 4	1 05
<i>mws</i>	75	$\frac{3}{4}$ c.	6 2	4 65
Canned	120	$\frac{3}{4}$ c.	2 0	2 40
Loquats	25	1 med.	0 5	0 12
Macadamia nuts	30	14	2 5	0 75
Macaroni	25	$\frac{1}{2}$ c.*	0 4	0 10
Boiled	240	1 c.	0 1	0 24
Macaroons	40	1 lg	1 1	0 44
Malt Breakfast Food	30	$\frac{1}{2}$ c.	1 5	0 45
Malted milk	8	1 T.	0 3	0 02
Mangoes	160	1 sm.	1 0	1 60
Meat			0 0	
Melba toast	20	2, 4" sq.	0 4	0 08
Mellin's Food	15	2 T.	0 2	0 03
Melotose	9	1 T.	1 0	0 09
Milk			0 0	
Molasses	..		0 0	
Mushrooms	50	$\frac{1}{2}$ c.*	0 9	0 45
<i>mws</i>	50	$\frac{1}{2}$ c.*	2 5	1 25
Buttons, canned	50	$\frac{1}{2}$ c.	0 7	0 35
Slices, canned	50	$\frac{1}{2}$ c.	0 7	0 35
Stems and pieces	50	$\frac{1}{2}$ c.	2 9	1 45
Muskmelons, av.	100	$1\frac{1}{2}$, 5" diam.	0 7	0 70
Mustard and cress, <i>mws</i>	20	$\frac{1}{2}$ c.	3 7	0 74
Mustard greens	75	$\frac{1}{2}$ c.*	0 8	0 60
Nectarines	100	1 med.	0 4	0 40
<i>mws</i>	100	1 med.	2 4	2 40
Nestlé's Food	8	1 T.	0 9	0 07
Noodles	25	$\frac{1}{2}$ c.*	0 4	0 10
Oatmeal, strained, Beech-				
Nut	25	5 t.	0 2	0 05
Oats, rolled	20	$\frac{1}{2}$ c.*	0 9	0 18
Oils			0 0	
Okra	50	7, 2½" pods	1 0	0 50
Olives, green, brined	14	3	1 2	0 17
Ripe, brined, med.	14	3	1 8	0 25
Mammoth	15	2	2 6	0 39
Onions	75	$\frac{1}{2}$ c.*	0 8	0 60
<i>mws</i>	75	$\frac{1}{2}$ c.	1 3	0 97
Young, green	25	5 sm.	1 8	0 45
Young, green, <i>mws</i>	25	5 sm.	3 1	0 77

Food items.	Size of portion.		Fiber.	
	Grams.	Household measures.	Per cent.	Grams per portion
Oranges	100	1 sm.	0 6	0 60
<i>mws</i>	100	1 sm.	2 0	2 00
Canned	135	$\frac{1}{2}$ c.	0 5	0 67
Orange juice, <i>mws</i>			0 0	
Pabulum	5	2 T.	0 9	0 05
Papaya	120	$\frac{1}{10}$ av.	0 9	1 08
Parsley	1	1 t.	1 8	0 02
Parsnips	75	$\frac{1}{2}$ c.*	2 2	1 65
<i>mws</i>	75	$\frac{1}{2}$ c.*	4 0	3 00
Boiled, <i>mws</i>	75	$\frac{1}{2}$ c.*	2 5	1 87
Passion fruit, <i>mws</i>	100		15 9	15 90
Peaches	100	1 sm.	0 6	0 60
<i>mws</i>	100	1 sm.	1 4	1 40
Yellow cling, canned	140	2 halves	0 3	0 42
Strained, canned	15	1 T.	0 5	0 07
Dried	50	3 med.	3 5	1 75
Dried, <i>mws</i>	50	3 med.	14 3	7 15
Peanuts	60	30	2 4	1 44
<i>mws</i>	60	30	9 4	5 64
Peanut butter	15	1 T.	2 2	0 33
Peanut butter†	15	1 T.	1 3 (12)	0 20
Pears	150	1, 3" long	1 4	2 10
<i>mws</i>	150	1, 3" long	2 5	3 75
Bartlett, canned	100	2 halves	0 6	0 60
Dried	75	4 halves	6 1	4 58
Peas, green	75	$\frac{1}{2}$ c.*	2 2	1 65
Green, <i>mws</i>	75	$\frac{1}{2}$ c.	5 2	3 90
Green, boiled, <i>mws</i>	75	$\frac{1}{2}$ c.	5 2	3 90
Young, canned	70	$\frac{1}{2}$ c.	1 0	0 70
Canned, <i>mws</i>	70	$\frac{1}{2}$ c.	4 4	3 08
Strained, canned	25	5 t.	0 7	0 17
Dried, boiled, <i>mws</i>	70	$\frac{1}{2}$ c.	4 8	3 36
Dried, split	50	$\frac{1}{2}$ c.	1 2	0 60
Peas and carrots, canned	75	$\frac{1}{2}$ c.	1 2	0 90
Pecans	25	6	2 2	0 55
Peppers, green	25	3" piece	1 4	0 35
Red	25	3" piece	1 6	0 40
Persimmons	50	1 sm	1 5	0 75
Pettigohn's	20	2 T.	2 2	0 44
Pickles, cucumber	20	1 T. (chopped)	0 4	0 08
Pimentos, canned	11	1 t.	0 6	0 06
Pineapple	75	$\frac{1}{2}$ c. diced	0 4	0 30
<i>mws</i>	75	$\frac{1}{2}$ c. diced	1 2	9 00
Candied	50	1 slice	0 8	0 40
Crushed, canned	75	$\frac{1}{2}$ c.	0 4	0 30
Sliced, canned	75	1 sl.	0 3	0 23
Tidbits, canned	75	$\frac{1}{2}$ c.	0 2	0 15
Pineapple rice pudding, Heinz	60	2 oz.	0 3	0 18
Pine nuts (pignolias)	10	1 T.	1 0	0 10
Pistachios	20	$\frac{1}{2}$ c.	2 5	0 50
Plums	50	2, 2 $\frac{1}{2}$ " long	0 5	0 25
<i>mws</i>	100	4	2 1	2 10
Popcorn, popped	15	1 c.	1 7	0 25
Potatoes, sweet	100	1 med.	1 0	1 00
Sweet, boiled, <i>mws</i>	100	1 med.	2 3	2 30
White	100	1 med.	0 4	0 40
White†	100	1 med.	0 5 (11)	0 50
White, new, boiled, <i>mws</i>	100	3 med.	2 0	2 00
White, old, boiled, <i>mws</i>	100	1 med.	1 0	1 00
Poultry			0 0	
Pretzels	25	6 med.	0 3	0 08

<i>Food items.</i>	<i>Size of portion.</i>		<i>Fiber.</i>	
	<i>Grams.</i>	<i>Household measures.</i>	<i>Per cent.</i>	<i>Grams per portion.</i>
Prune pudding, Heinz	60	2 oz.	1 2	0 07
Prunes, fresh	100	4 med.	0 5	0 50
Canned	100	3 med.	0 3	0 30
Strained, canned	15	1 T.	0 7	0 10
Dried	50	4 lg.	1 6	0 80
Dried, <i>mws</i>	50	4 lg.	16 1	8 05
<i>Puffed Rice</i>	15	1 c.	0 5	0 08
<i>Puffed Wheat</i>	15	1 c.	1 6	0 24
Pumpkin	100	$\frac{1}{2}$ c.	1 3	1 30
<i>mws</i>	100	$\frac{1}{2}$ c.	0 5	0 50
Canned	125	$\frac{1}{2}$ c.	1 2	1 50
Radishes	50	6 med.	0 7	0 35
<i>mws</i>	50	6 med.	1 0	0 50
Raisins	60	$\frac{1}{2}$ c.	1 7	1 02
<i>mws</i>	60	$\frac{1}{2}$ c.	6 8	4 08
Raspberries, black	75	$\frac{1}{2}$ c.	3 5	2 62
Red	75	$\frac{1}{2}$ c.	2 8	2 10
Canned, water pack	100	$\frac{1}{2}$ c.	2 5	2 50
Canned, heavy syrup	140	$\frac{1}{2}$ c.	1 9	2 66
Rhubarb	100	$\frac{1}{2}$ c.	0 7	0 70
<i>mws</i>	100	$\frac{1}{2}$ c.	2 6	2 60
Rice, natural brown	20	1 heaping T.	0 9	0 18
White	20	1 heaping T.	0 3	0 06
White, boiled	100	$\frac{1}{2}$ c.	0 1	0 10
Wild Indian	20	$\frac{1}{2}$ c.	1 4	0 28
Rice bran	3	1 T.	10 7	0 32
<i>Rice Flakes</i>	30	1 c.	0 7	0 21
Rusk, white flour	15	1	0 2	0 03
Whole wheat	15	1	1 9	0 29
Rutabagas	50	$\frac{1}{2}$ c *	1 3	0 65
<i>Ry-Krisp</i>	6	1	1 3	0 08
Salsify	100	2, 6" long	1 8	1 80
Sauerkraut	80	$\frac{1}{2}$ c.	1 0	0 80
Savoy cabbage, boiled, <i>mws</i>	100	$\frac{1}{2}$ c.	2 5	2 50
Seakale	100	$1\frac{1}{2}$ c.	0 8	0 80
<i>Shredded Wheat</i>	30	1 biscuit	2 6	0 78
<i>Shredded Wheat</i> †	30	1 biscuit	5 9 (13)	1 77
<i>Sobee</i> , Mead	5	1 T.	1 4	0 07
Sorrel or dock	25	$\frac{1}{2}$ c.	0 8	0 20
Soups				
Clear			0 0	
Cream of vegetable	250	1 c.	0 1	0 25
Soybean curd or cheese	100		0 1	0 10
Spaghetti	25	$\frac{1}{2}$ c *	0 4	0 10
Spanish melon	240	$\frac{1}{2}$ c. dried	0 5	1 20
<i>mws</i>	240	$\frac{1}{2}$ c. dried	0 9	2 16
Spinach	75	$\frac{1}{2}$ c.*	0 7	0 53
Spinach†	75	$\frac{1}{2}$ c.	0 5 (23)	0 38
Boiled, <i>mws</i>	75	$\frac{1}{2}$ c.	6 3	4 72
Chopped, Heinz	30	1 oz.	0 7	0 21
Strained, canned	25	5 t.	0 7	0 18
Spring greens, boiled, <i>mws</i>	75	$\frac{1}{2}$ c.	3 8	2 85
Squash, summer	100	$\frac{1}{2}$, 5"	0 5	0 50
Winter	100	2 x 2 x 1"	1 4	1 40
Starches	8	1 T.	0 1	0 01
Strawberries	100	$\frac{1}{2}$ c.	1 2	1 20
<i>mws</i>	100	$\frac{1}{2}$ c.	2 2	2 20
Swedes, boiled, <i>mws</i>	50	$\frac{1}{2}$ c.*	2 8	1 40
Syrups			0 0	
Tangerines	100	2, 2" diam.	1 0	1 00
<i>mws</i>	100	2, 2" diam.	1 9	1 90
Tapioca	40	$\frac{1}{2}$ c.	0 1	0 04

Food items.	Size of portion.		Fiber.	
	Grams.	Household measures.	Per cent.	Grams per portion.
Thousand Island Dressing, com.	20	1 T.	0.6	0.12
Tomato juice†	120	$\frac{1}{2}$ c.	0.1 (7)	0.12
Tomato paste, canned	30	1 oz.	0.9	0.27
Tomatoes	100	1 sm.	0.6	0.60
<i>mw</i> s	100	1 sm.	1.5	1.50
Strained, canned	25	5 t.	0.4	0.10
Turnips	50	$\frac{1}{2}$ c.*	1.1	0.55
<i>mw</i> s	50	$\frac{1}{2}$ c.*	2.8	1.40
Boiled, <i>mw</i> s	50	$\frac{1}{2}$ c.*	2.2	1.10
Turnip tops	100	1 c.	1.2	1.20
Boiled, <i>mw</i> s	100	1 c.	3.9	3.90
Vegetable marrow, boiled, <i>mw</i> s	100	$\frac{3}{4}$ c.	0.6	0.60
Vegetable mixture, canned	80	$\frac{1}{2}$ c.	0.7	0.56
Vegetable soup	250	1 c.	0.5	1.25
Vegetables, green, creamed, Heinz	80	$\frac{1}{2}$ c.	0.9	0.72
mixed, chopped, Heinz	80	$\frac{1}{2}$ c.	0.5	0.40
Vitab	8	1 T.	0.7	0.06
Walnuts, black	35	6	1.9	0.66
English	35	6	2.1	0.73
English, <i>mw</i> s	35	6	22.6	7.91
Watercress	20	$\frac{1}{2}$ c.	0.5	0.10
<i>mw</i> s	20	$\frac{1}{2}$ c.	3.3	0.66
Watermelon	240	1 c. diced	0.6	1.44
Wheat Flakes	30	$\frac{1}{2}$ c.	1.8	0.54
Wheat-germ	9	1 heaping T.	2.5	0.23
Wheat, whole	75	$\frac{1}{2}$ c.	1.8	1.35
Wheatena	20	$\frac{1}{2}$ c.*	0.6	0.12
Wheaties	35	1 c.	1.8	0.63
Yams	125	1 med.	0.8	1.00
Yautia	100	1 tuber	0.6	0.60
Zwieback	7	1 piece	0.3	0.02
Yeast, brewer's	11	2 t.	0.8	0.09
Compressed	15	1 square	0.3	0.05

Purins.

Foods which contain nucleic acid (and hence the purin ring) are designated as purin foods. The end-product of purin metabolism is uric acid. All animal foods except milk, cheese, and fresh eggs contain purins. Glandular organs and meat extracts show the highest concentration. In Table 24 A no uric acid equivalent for purin N is shown for items containing methylated purins since it is questionable whether such are converted under physiologic conditions into uric acid. The theobromine of cocoa and chocolate does not form uric acid.

Purin analyses are shown in two separate tables, 24 A presenting older data which do not necessarily agree with the newer figures of Table 24 B from McCance and Widdowson ("Chemical Composition of Foods," Medical Research Council, 1940).

The only analyses of these investigators which appear in Table 24 A are those for coffee and tea which are designated (*mw*). Fish roe has been reported as containing no purin nitrogen but McCance and Widdowson found high concentrations.

TABLE 24 A.—Purin Content of Various Foods.

<i>Food items</i>	<i>Purin N, mg. per cent.</i>	<i>Calculated as uric acid, mg. per cent</i>
Anchovies	145.0	465 0
Apricots	None	
Apples	None	
Arrowroot	None	
Asparagus, cooked	8.6	25.8
Bananas	None	
Barley	None	
Beans	25.0	75 0
Beef, muscle	60.0	180 0
Pancreas	183 0	549 0
Rib	45.5	136.5
Sirloin	52.2	156 6
Steak	82 6	247.8
Beer, Lager	5.0	15 0
Pale ale	5.9	17.7
Porter	6.0	18.0
Blueberries	None	
Bouillon	10.0	30.0
Bread, white	None	
Butter	None	
Cabbage	None	
Calves' liver	120 0	360 0
Calves' spleen	160 0	480 0
Calves' thymus	440 0	1320 0
Carp	60.0	180 0
Carrots	None	
Cauliflower	None	
Caviar	None	
Celery	5.0	15.0
Cheese	None	
Chicken	51 8	155 4
Cod	23 3	69 9
Coffee	29 4	
Coffee, ground, roasted (<i>mw</i>)	38 0	
Coffee, infusion (<i>mw</i>)	Trace	
Corn	None	
Crab	20.0	60.0
Cucumbers	None	
Eel, smoked	27.0	81.0
Eggs, fresh	None	
Farina	None	
Filberts	None	
Flour, white	None	
Fruits	None	
Gelatin	None	
Goose	33.0	99.0

<i>Food items.</i>	<i>Purin N, mg. per cent.</i>	<i>Calculated as uric acid, mg. per cent.</i>
Grapes	None	
Halibut	40.8	122.4
Ham	46.2	138.6
Ham, boiled	25.0	75.0
Herring	69.0	207.0
Lentils	25.0	75.0
Lentils, malted	15.0	45.0
Lettuce	None	
Liver, beef	110.0	330.0
Liver, calves'	120.0	360.0
Liverwurst	38.0	114.0
Lobster	22.0	66.0
Milk	None	
Mushrooms	18.0	54.0
Mutton, Australian	38.6	115.8
Oatmeal	None	
Olive oil	None	
Onions	3.1	9.3
Oranges	None	
Oysters	29.0	87.0
Pancreas, beef	183.0	549.0
Pancreas, pig's	123.0	369.0
Peas	18.0	54.0
Peameal	15.6	46.8
Peaches	None	
Pears	None	
Pheasant	34.0	102.0
Pineapple	None	
Pike	45.0	135.0
Plaice	31.8	95.4
Plums	None	
Pork, loin	48.5	145.8
Pork, neck	22.7	68.1
Potatoes	0.8	2.4
Rabbit	38.0	114.0
Radishes	5.0	15.0
Rice, polished	None	
Rolls	None	
Salmon	46.6	139.8
Sardines in oil	116.7	350.0
Shell beans	27.0	81.0
Spinach	26.6	80.0
Squab	58.0	174.0
String beans	2.0	6.0
Sweetbreads*	330.0	990.0
Tapioca	None	

* Thyroid glands are frequently sold as sweetbreads.

<i>Food items.</i>	<i>Purin N, mg. per cent.</i>	<i>Calculated, as uric acid mg. per cent</i>
Tea, Ceylon	16.4	
Tea, China	10.7	
Tea, Indian	14.7	
Tea, Indian (<i>mw</i>)	72.0	
Tea, infusion (<i>mw</i>)	Trace	
Thymus, beef	402.5	1207.5
Thymus, calves'	440.0	1320.0
Tomatoes	None	
Tongue, smoked	55.0	165.0
Tripe	22.9	68.7
Trout	56.0	168.0
Turkey	50.4	151.2
Veal broth	423.3	1270.0
Veal, loin	46.5	139.5
Veal, muscle	60.0	180.0
Venison	39.0	117.0
Walnuts	None	
Wines (Claret, Volnay, Sherry, Port)	None	

TABLE 24 B.—Purin Content of Cooked Meat and Fish Products.

<i>Food items.</i>	<i>Purin N, mg. per cent.</i>	<i>Calculated as uric acid, mg. per cent</i>
Bacon, fried	66-86	198-258
Bass, steamed	73	219
Beef, corned, canned	36	108
Beef, sirloin, roasted, lean	60	180
Lean and fat	46	138
Beef, silverside, boiled	55	165
Beef, steak, fried	61	183
Grilled	85	255
Beef, topside, boiled, lean only	72	216
Beef, topside, roasted, lean only	73	219
Lean and fat	66	198
Beef, stewed, lean only	61	183
Beef stew	32	96
Bloaters, grilled	133	399
<i>Bovril</i>	324	972
Brains, calves', boiled	40	120
Brains, sheep, boiled	31	93
Catfish, steamed	60	180
Fried	65	195
Chicken, boiled	61	183
Chicken, roasted	72	216
Cod, steamed	62	186
Cod steaks, fried	63	189
Grilled	82	246
Cod roe, baked in vinegar	130	390

<i>Food items</i>	<i>Purin N, mg. per cent.</i>	<i>Calculated as uric acid, mg. per cent.</i>
Cod roe, fried	112	336
Crab, boiled	61	183
Curried meat	18	54
Duck, roasted	64	192
Eel, stewed	23	69
Fish cakes	36	108
Flounder, steamed	86	258
Fried	61	183
Goose, roasted	100	300
Grouse, roasted	98	294
Guinea-fowl, roasted	142	426
Haddock, fresh, steamed	72	216
Fried	83	249
Haddock, smoked, steamed	65	195
Halibut, steamed	68	204
Hake, fried	52	156
Hake, steamed	42	126
Ham, boiled, lean only	64	192
Lean and fat	45	135
Hare, roasted	99	297
Stewed	60	180
Heart, sheep, roasted	174	522
Herring, baked in vinegar	160	480
Herring, fried	172	516
Herring roe (soft), fried	484	1452
Irish stew	11	33
Kidney, ox, stewed	147	441
Kidney, sheep, fried	137	411
Kippers, baked	91	273
Lard	0	0
Ling, steamed	60	180
Fried	56	168
Liver, Calves', fried	143	429
Liver, ox, fried	143	429
Lobster, boiled	73	219
Mackerel, fried	100	300
Mullet, gray, steamed	73	219
Mullet, red, steamed	81	243
Mussels, boiled	154	462
Mutton chop, fried, lean only	63	189
Mutton chop, fried, lean and fat	40	120
Mutton chop, grilled, lean only	61	183
Mutton chop, grilled, lean and fat	46	138
Mutton, leg, boiled	91	273
Mutton, leg, roasted	77	231
Mutton, scrag and neck, stewed	56	168
Oxo cubes	236	708

<i>Food items.</i>	<i>Purin N, mg. per cent.</i>	<i>Calculated as uric acid, mg. per cent.</i>
Oysters	44	132
Partridge, roasted	145	435
Pigeon, boiled	83	249
Pigeon, roasted	96	288
Pheasant, roasted	95	285
Plaice, steamed	53	159
Fried	47	141
Pollack, steamed	71	213
Fried	75	225
Pork, leg, roasted	66	198
Pork loin, roasted lean only	64	192
Lean and fat	51	153
Pork loin, smoked, cooked, lean only	50	150
Pork, loin chops, grilled, lean only	68	204
Lean and fat	49	147
Prawns, cooked	70	210
Rabbit, stewed	61	183
Salmon, canned	101	303
Salmon, steamed	78	234
Sardines, canned	234	702
Sausage, black	2	6
Scallops, steamed	117	351
Shepherd's pie	15	45
Shrimps, cooked	72	216
Skate, fried	41	123
Smelts, fried	168	504
Sole, steamed	53	159
Fried	52	156
Sprats, fried	125	375
Sprats, smoked, grilled	250	750
Steak and kidney pie	49	147
Sturgeon, steamed	50	150
Sweetbreads, stewed	426	1278
Tongue, ox, pickled	48	144
Tongue, sheep, stewed	52	156
Tripe, stewed	22	66
Trout, steamed	92	276
Trout, sea, steamed	95	285
Turbot, steamed	64	192
Turkey, roasted	79	237
Veal cutlet, fried	106	318
Veal fillet, roasted	89	267
<i>Vegetex (marmite)</i>	356	1068
Venison, roasted	97	291
Whelks, cooked	65	195
Whiting, steamed	90	270
Fried	94	282
Winkles, boiled	70	210

CHAPTER XIV.

ACIDITY OF FOODS.

FOODS as eaten create an impression of neutrality or acidity; this reaction can be stated in terms of pH. Some slight alteration may occur in the alimentary tract but the major change awaits combustion in the tissues. An extraordinarily acid-tasting food may be converted in the body (but not in the digestive organs) to a definitely alkaline substance. Neutral foods, on the other hand, may give rise to acids during the course of metabolism. If a food is to be classed as alkaline or acid, it is necessary to specify whether it is to be regarded from the standpoint of its own reaction or its metabolic ash. The succeeding tables present data on both aspects.

Nature of Mineral Residues.—Oxidation of food within the body results in the formation of a *residue* or *ash*. When sodium, potassium, calcium, and magnesium predominate over sulfate, phosphate, chloride, and uncombusted organic acid radicals, they are designated as “alkaline-ash” foods. Most vegetables and fruits are *alkaline* in their final reaction within the body whereas meats, poultry, fish, cheese, eggs, and cereals are *acidic*. It should be noted that a “vegetarian” diet does not necessarily produce an alkaline residue. As Blatherwick has pointed out, a high-cereal intake may have a more acidic effect than an ordinary mixed diet. From the standpoint of reaction, starchy foods fall into two groups: (1) Cereal and grain products which yield acid substances on oxidation; and (2) tubers and roots which produce an alkaline reaction. The banana is an alkaline starchy fruit. The legumes, except peanuts and lentils, are usually regarded as potential alkalinizers. Since the mineral content of practically pure fats and pure carbohydrates is negligible, they are classed as *neutral-ash* substances. Such foods include tapioca, table sugar and syrups, cream, butter, etc.

The reaction of a food as ingested is no criterion as to the ultimate effect upon the acid-base balance of the body. When foods are ashed in the laboratory, some show a strongly alkaline reaction whereas others yield a nearly neutral ash. This residue gives no clue as to its origin nor to those substances lost through volatilization. Since, in general, the basic elements are retained in the ash, a neutral residue is indicative of a preponderance of acid-forming constituents in the actual food. Sulfur, which exists chiefly in protein combination, is almost entirely expelled during ignition. The sulfate of the ash represents only a very small part of the food sulfur. If the base-

forming elements predominate, loss of acid-forming elements is largely prevented. To obtain numerical values for food "ash" it is necessary to determine the concentrations of the various elements separately, to compute them in terms of equivalents, and to express the excess of one group over the other as cubic centimeters (or milli-equivalents) of normal acid or base per 100 grams of edible food material. Such figures are referred to as *degrees of acidity or alkalinity*. Since this involves an enormous amount of painstaking analytical work, accumulation of data has been limited to a few investigators, notably Sherman in this country, McCance and Widdowson in Great Britain, and Berg in Germany.

It is interesting to note that this tabulated data from the literature shows macaroni, whether cooked or raw, as acidifying. Cheddar cheese also rates an acid ash, yet "macaroni and cheese" as served is found to give an alkaline ash. Although cheese is usually listed as acidic, Gruyère and Parmesan are reported as leaving an alkaline residue. Raw peas give an alkaline ash, but when cooked or canned are acidic. An English apple pie is metabolically acid, an American one alkaline. An English rice pudding is alkaline, an American one with raisins (a highly "alkaline" food) is reported to be acid! Rusk, which might be thought to fall into the same category as bread or Zwieback, is found to be alkaline, as is German pumpernickel bread. Boiled sea-kale is acid and fried smelts alkaline. Cream of pea and tomato soups are alkaline, but potato soup is acid.

The data shown in Table 29 are to be used, if at all, with the greatest discretion. For more than a quarter of a century, Sherman has questioned the merit of balancing acid-forming and base-forming foods although the less well informed have not hesitated to work out diets of specific ash values. For *metabolic* purposes, the diet should be "balanced" with reference to protein, carbohydrate, fat, minerals, vitamins and water; there is no need to consider the ash left by such a diet.

The conventional classification of "ash" constituents is as follows:

<i>Group I.</i>	<i>Group II.</i>	<i>Group III.</i>
<i>Acidic-Ash Foods</i>	<i>Neutral-Ash Foods</i>	<i>Alkaline-Ash Foods.</i>
Meats, fish, poultry	Butter	Fruits, except as shown
Eggs, cheese	Cream	Vegetables
Cereals	Cooking fats	Milk
Nuts (filberts, peanuts, walnuts)	Starches	Nuts (almonds, brazils, chestnuts, cocoanut)
Cranberries, plums, prunes	Sugars, syrups	

A diet confined to any of these lists is generally regarded as nutritionally unsatisfactory because it is deficient in recognized essential constituents to be found in the other groups. A well-rounded diet demands foods listed in all three.

CHAPTER XVI.

THE VITAMINS.

Introduction.—Full vigor and health demand for their maintenance substances other than carbohydrates, proteins, fats, minerals and water. The number of such substances discovered has been unexpectedly high and amazing progress has been made since Funk (1911) coined the word "vitamine".

Vitamins are assayed by chemical, bacteriological and biological methods, the latter involving determination of curative or prophylactic doses. Data obtained on experimental animals cannot always be applied in detail to humans who rarely exist under limitations such as can be imposed by the laboratory. Vitamin deficiency in man usually is a complex matter, making the clinical aspects difficult to evaluate. Vitamin deprivation ultimately produces widespread constitutional mal-effects. The availability of any one vitamin is not entirely a matter of its ingestion. The chemical environment in which the vitamin is elaborated and its vitamin and food associates in the alimentary canal determine in some measure the degree of its utilization. Excess in any one factor unbalances physiologic economy and may lead to a relative deficiency in some other factor. The inter-relationships among the vitamins are assuming increasing importance with advance in our knowledge of the chemical behavior of these small but vital dietary factors.

The use of letters to designate the vitamins dates back to the time when these unidentified factors could be described only as "fat-soluble A", "water-soluble B", and the like. This type of notation has been convenient but is being replaced by appropriate chemical terms, as carotene and thiamin. Since successive stages of separation and identification have left behind many terms no longer in use, a glossary is appended to this section (p. 285). This also provides a means of offering condensed information which has accumulated from vitamin investigations.

VITAMIN A.

Chemical Behavior.—Vitamin A is a primary alcohol derived from the carotinoid pigments of plants. It crystallizes in pale yellow needles which melt at approximately 8° C. and are soluble in oils and fats. It is unaffected by dilute acids and alkalies. Vitamin A is fairly stable to heat in the absence of oxygen, but is destroyed by oxidation, especially at high temperatures. Oxidation is slow at room temperature. Vitamin A, like vitamin E, is inactivated by

exposure to ultra-violet irradiation and by rancidity of its fatty vehicle.

The carotinoid pigments vary in their vitamin-A values, the most active being beta-carotene. This is a crystallizable orange-red pigment, soluble in oil which, like vitamin A, is oxidized and destroyed by air, especially at high temperatures. Carotene is insoluble in water, acids and alkalies; it is sparingly soluble in alcohol.

Provitamin A is readily converted into the active vitamin by the normal liver. Under ideal conditions, therefore, availability of carotene in the diet is equivalent to availability of vitamin A although experimentally there appears to be some variation in the utilization of carotene from different sources. More recently doubt has arisen as to the efficacy of carotene in preventing vitamin A deficiency.

Effect of Processing on Potency.—Ordinary cooking and canning have remarkably little effect upon the activity of vitamin A. Even in butter subjected to frying, roasting or pastry-making the vitamin suffers little diminution (Scheunert and Wagner, 1931). Prolonged heating leads to some vitamin destruction, although Munsell (1940) is of the opinion that the destruction is always appreciable in roasting. According to Fellers (1936) the loss of vitamin A in reheating canned foods for the table is small; sun-drying causes greater deterioration in vitamin activity than artificial dehydration; and storage is slowly destructive to vitamin A except in frozen and canned foods. Drying is particularly detrimental to carotene. Pasteurization causes no loss of vitamin A in milk.

Absorption and Storage.—Vitamin A occurs in natural oils and fats as an ester. Commercial preparations may contain the free alcohol which apparently is esterified before absorption by way of the lymphatics. The vitamin is also transported and stored as a fatty acid ester. The hydrocarbon carotene cannot enter into such combination and thus is less absorbable. Bile is essential for utilization of carotene, a bile acid derivative probably being formed. The presence of bile is advantageous for the absorption of vitamin A but not altogether necessary. Since they are fat-soluble, both carotene and vitamin A are poorly absorbed from the intestines whenever fat digestion and absorption are defective. Absorption of vitamin A reaches a maximum three to five hours after administration whereas carotene requires six to seven hours.

Investigators disagree as to the relative loss of vitamin A and carotene through excretion in mineral oil. Prolonged use of this laxative is probably unwise except in conjunction with a diet rich in vitamin A. In any event, the oil should not be given near meals. Excessive dietary fat which does not carry vitamins may lead to loss of vitamin A.

The liver is the chief storage depot of vitamin A and may contain

a large reserve of this factor except in infancy and early childhood. Ordinarily depletion is not rapid but fevers and infections hasten the loss from the tissues. Administration of thyroxin diminishes the reserves of this vitamin. In replenishing these stores, oral administration of the active vitamin is the method of choice. This route is less effective when derangement of intestinal absorption exists. Both the conversion of carotene to vitamin A and the utilization of the active vitamin are adversely affected by impaired liver function.

Vitamin A is not excreted by the kidneys unless the permeability of the renal filter bed is altered.

Physiologic Action and Deficiency Effects.—According to Sherman (1941) vitamin A significantly affects the general internal environment of the body. It is necessary for optimal health and vigor in both children and adults.

Deficiency of vitamin A retards growth and development in experimental animals. The retardation does not affect all tissues alike. Wolbach and Bessey (1940) have shown that expansion of the nervous system may continue after growth of bone ceases. Mechanical damage to brain, spinal cord and nerve roots occurs as a result of this unequal development.

Deficiency of vitamin A seems to exert its effects chiefly upon the epithelial tissues. The normal mucosa of the respiratory and urinary tracts and of the eyes is transformed into stratified, cornified epithelium, and with this change there is lowered resistance to infection. The increased susceptibility to respiratory, urinary and possibly other infections which occurs in vitamin-A deficiency seems to be due to impairment of the normal epithelial barrier to invading organisms. It can be overcome by an adequate supply of the vitamin and in this sense vitamin A is "anti-infective," but there is no evidence that the use of vitamin A supplements can increase protection against infections when the epithelial surfaces are unimpaired by vitamin-A deficiency.

According to Cameron (1939) lack of vitamin A is associated with storage of water in various tissues of the body, notably in the head region in the early stages of deficiency. This may have some bearing on the increased nasal secretions seen in the common cold. It has been suggested that vitamin A may be of value in treating patients with water retention of obscure origin. Caldwell (1941) has used vitamin A and unsaturated fatty acids with success in treating nephrosis in children.

In the eye marked deficiency of vitamin A affects the conjunctiva and cornea, producing the condition known as xerophthalmia. In the skin a condition of xerosis with diminished secretion may occur, and in adolescents and adults this may appear as a follicular or papular dermatosis (phrynoderma). Marked degrees of vitamin-A

deficiency may produce similar metaplastic changes in the epithelium of the urinary tract, including the bladder, renal pelvis and possibly the tubules. Whether or not these changes predispose to calculus formation is a question which is still undecided, but individuals susceptible to renal lithiasis should be assured a high intake of vitamin A. It has been reported that the tendency to form stones is increased when A deficiency is accompanied by defects of calcium and phosphorus metabolism. Vitamin A appears to protect the kidneys against damage due to injection of parathyroid hormone into rats (West and Morgan).

It is now well established that the photosensitive substance present in the retinal end-organs which enables them to react to light is a pigment formed by the combination of vitamin A with a protein. This substance, rhodopsin or visual purple, is the photo-active element in the rods. When this pigment is exposed to light it is bleached and chemically altered, apparently with the liberation of vitamin A. Even slight degrees of A deficiency affect retinal function which is manifest first, as diminished ability to see clearly in low intensities of illumination (elevated light threshold), and second, as slowness in recovering visual acuity after the retina has been bleached by exposure to a bright light. The first effect is responsible for the clinical condition known as hemeralopia or night blindness, but even persons unaware of inability to see well in relative darkness may be much slower than normal in recovering vision after exposure to a bright light, such as the glare of an automobile headlight.

Clinical Estimation of Deficiency.—Slow recovery from bleaching and defective adaptation to darkness are the most delicate indices of vitamin-A deficiency at present available. In recent years they have been made the basis of tests for clinical vitamin-A deficiency and a number of photometers have been developed for testing these functions. The principle employed is that of exposing the eyes to a definite bright light for a fixed period of time to bleach the retina and then measuring the amount of illumination required to distinguish a test object at intervals during the period of recovery or determining the time required for recovery of vision at an arbitrary degree of reduced illumination. In the presence of deficiency, recovery is both slow and incomplete. While the test is undoubtedly valuable, there has been a tendency to overestimate its reliability and specificity. To be reliable an exacting technic must be followed and all other possible causes of diminished visual function excluded. Vitamin A deficiency is demonstrated, not so much by the finding of poor adaptation, as by improvement under therapeutic administration of this factor. Normal response to the photometric test indicates very recent satisfactory intake of vitamin A and may be associated with a low blood level, thereby suggesting inadequacy of vitamin stores.

Investigations by Wise and Schettler (1938) suggest that persons whose occupation requires a high degree of visual acuity, of dark adaptation, or of exposure to brilliant light should be assured an abundant supply of vitamin A.

The concentration of vitamin A in blood plasma may be ascertained by the production of a fleeting blue color with antimony trichloride. Accuracy is possible only with a photoelectric instrument capable of indicating the point of maximum color development. Results are expressed in abstract values as "blue units" or mathematical expressions related to the galvanometer readings of the colorimeter.

The carotene content of plasma may be readily determined and varies around 0.1 mg. per cent. Ingestion of this pigment raises the blood level and may lead to its deposit in certain tissues, notably calloused areas on the hands and soles. There is no consistent relationship between the plasma carotene and vitamin A concentrations and single determinations are not a reliable index of vitamin A stores in the tissues.

Requirement.—The minimal requirement for the adult has been placed at 20 to 30 I.U. per kilo daily (Booher, 1939) but it is generally believed that 40 I.U. is a safer minimum. Refer to p. 14.

Sources.—In general, the carotinoids are the plant sources of vitamin A while both carotene and active vitamin occur in animal products, such as butter, egg-yolk, liver, and fish liver oils. The **International Unit**, identical with the U.S.P. unit, is equivalent to 0.6 μ g. of pure β -carotene.

Carotene and xanthophyll are responsible for much of the yellow color in plants. Green pigments may mask carotinoids; chlorophyll itself provides no vitamin A. In general, provitamin A is present in proportion to the depth of color in plant foods. Yellow vegetables, therefore, are superior to the corresponding white varieties but only insofar as vitamin A is concerned. Likewise, dried green peas are better than the yellow variety. Carrots, sweet potatoes and pumpkin rate highest among the yellow vegetables, but yellow turnips are a poor source of vitamin A. The green leafy vegetables are outstanding in their content of provitamin A; the greener and thinner the leaf, the better.

Among animal sources, fish-liver oils rank highest; they are rich in vitamin A and relatively low in carotene. Shark-liver oil is outstanding in its A content. Egg-yolk and butter fat (milk, cream, butter, cheese) are excellent sources; their color is of limited value in judging their vitamin-A potency since both the pigment carotene and the colorless vitamin occur in variable proportions. One quart of milk contains sufficient vitamin on the average to meet the daily minimum vitamin requirement of an adult (Moore, 1939). Cow's

milk contains only one-tenth to one-fourth the vitamin-A content of human milk (Yudkin, 1939).

For supplementing the diet, when this is indicated, fish-liver oils are preferable to purified carotene or purified vitamin-A preparations. The associated vitamin D, however, may be unwelcome especially in patients with tendency to urinary stones.

Overdosage.—No harm has been reported from liberal administration of vitamin A but massive doses, as 300,000 I.U. daily, may not be tolerated well.

Good Sources of Vitamin A.

Fish liver oils*	Celery, green	Peaches, yellow
Leafy, green vegetables*	Cheese, whole milk	Peas, green
Apricots	Egg-yolk	Peppers, green
Beans, green	Fish roe	Prunes
Beet tops	Liver	Pumpkin
Butter	Mango	Sweet potatoes
Carrots	Papayas	

Fair Sources of Vitamin A.

Asparagus, green	Cream	Oranges
Bananas	Currants, black	Oysters
Cantaloupe	Milk, whole	Pecans
Corn, yellow	Onions, green	Tomatoes

Poor Sources of Vitamin A.

Asparagus, bleached	Cranberries	Mushrooms
Bacon	Eggplant	Onions, mature
Beets	Egg-white	Pears
Bread	Grapes and raisins	Potatoes
Cabbage, white	Grapefruit	Radishes
Cauliflower	Lard	Rhubarb
Celery, blanched	Lean fish and meat	Starches, sugars
Cereals	Lemons	Strawberries
Cocoa butter	Milk, skim	Vegetable oils
Cucumbers	Molasses	Watermelon

VITAMIN B COMPLEX.

"Vitamin B" was the first of the food accessories to be recognized. Known as "water-soluble B", it was assumed to be a single substance. Investigations into its nature, however, have yielded a procession of compounds which probably is not yet complete. Eight members of this vitamin B complex have been identified: thiamin, riboflavin, nicotinic acid, pyridoxin, pantothenic acid, biotin, inositol, and p-aminobenzoic acid. Whether all of these are essential for human nutrition or not remains to be seen. However, members of this group have been demonstrated as necessary to

* Outstanding.

all forms of life from the lowest to the highest, emphasizing the universality and fundamental character of these factors (R. J. Williams, 1941).

THIAMIN.

Chemical Behavior.—Thiamin chloride is a colorless, crystalline substance, $C_{12}H_{17}ON_4SCl$, characterized by a pleasant odor, marked solubility in water, slight solubility in alcohol and insolubility in oils. Since it is readily adsorbed, clarification of liquid foods by filtration through fuller's earth, charcoal, and the like may result in appreciable loss of this vitamin. Charcoal, therefore, should not be prescribed under conditions where it will interfere with absorption of ingested thiamin.

The vitamin B_1 commercially available is thiamin hydrochloride with 1 molecule of water of hydration. In aqueous solution (1 to 20) a pH of approximately 3.5 is observed. Such solutions may be sterilized without loss by heating to $120^\circ C$. for thirty minutes or more, the stability depending upon the highly acid reaction (Molitor and Sampson, 1936).

Greengard (1940) has reported upon the numerous pharmaceutical incompatibilities of thiamin chloride. On standing at room temperature for several months, aqueous alcoholic solutions precipitate thiochrome which has no vitamin activity. Elixirs, therefore, should be used within sixty days. Since tannic acid precipitates thiamin chloride, only detannated wines should be used as a vehicle for this vitamin. Iron-and-ammonium citrate and ferrous sulfate should not be administered with thiamin chloride.

Effect of Processing on Potency.—Vitamin B_1 can be destroyed by high and prolonged moist heat (that is, temperatures over $100^\circ C$. for several hours). Milk powder, however, when subjected to dry heating in air at $100^\circ C$. for as much as forty-eight hours, has been reported to lose only a small portion of its activity (citation by Munsell, 1939). Milk suffers some loss of its thiamin potency during pasteurization, whereas it is not affected by boiling for ten minutes.

Thiamin is lost both by extraction in cooking water and by destruction under heat. In general, the greater the surface exposed, the greater the loss of vitamin into the surrounding water. These factors can be controlled with consequent conservation of the vitamin. "When foods are cooked by boiling, the proportion of vitamin B_1 destroyed is relatively small up to cooking periods as long as one hour, and generally does not exceed 10 to 15 per cent unless the food is distinctly alkaline or has been made so by the addition of soda" (Munsell, 1940). According to Aughey and Daniel the loss in boiling vegetables may amount to 20 to 25 per cent. Roscoe found that about half of the thiamin content of spinach passed into the cooking water during fifteen minutes' boiling. Munsell and

Kifer observed a 50 per cent loss on cooking broccoli. Losses of this order are to be expected with most green vegetables but the anticipated decrease in thiamin content is much less with root vegetables (Boas Fixsen).

Freezing *per se* does not affect the thiamin content of vegetables but the preparatory blanching and subsequent cooking lower the vitamin value, often appreciably. It should be recognized, furthermore, that thiamin is more readily extracted from vegetables after freezing than before.

The loss of activity in cooked foods, however, is sometimes remarkably small. Possibly the stability of the thiamin in foods is dependent upon its existence as the pyrophosphoric ester (Williams, 1939). Since whole cereals constitute an important natural source of thiamin, it is notable that the cooking of these cereals does not seriously lessen their B₁ potency. Neither is there much loss in the baking of breads or biscuits made with yeast, but the use of baking powder completely destroys the anti-neuritic vitamin (Copping and Roscoe, 1937). Double-boiler cooking of whole grain cereals does not destroy thiamin but during the baking of bread there is a loss of about 15 per cent of this vitamin (Aughey and Daniel, 1940). Spruyt and Donath (cited by Boas Fixsen) found that puffed rice which had been exposed to 15 atmospheres' pressure at 150° to 160° C. was devoid of thiamin.

According to DeCaro and Locatelli, half of the thiamin escapes into the boiling water during the cooking of Italian pastes.

Canning is more destructive of thiamin than is ordinary cooking because of the higher temperatures used. This includes both vegetable and meat products. Arnold and Elvehjem (1939) found pork to lose over 80 per cent of its thiamin content when given a heat treatment at 121° C. for one hundred and ten minutes. Roasting very considerably lessens the thiamin potency of meats.

Sulfites decompose thiamin with the result that sulfuring of fruits lowers the vitamin potency.

Absorption and Storage.—Thiamin is readily absorbed from food-stuffs by the normal gastro-intestinal tract. Since vitamin B₁ is not as effectively stored in the body as vitamin A, its reserves are much more quickly exhausted. (Rats on a thiamin-deficient ration suffer complete depletion of the body reserves in fourteen days.) According to Cowgill the main storage depots are the liver, heart, and kidneys. The proportionate distribution is given by Brodie and MacLeod (1935) as: liver 10, heart 9, kidney 5, voluntary muscle 1, brain 0.33; blood, spleen and lungs traces. It is necessary that the daily diet be adequate in its thiamin content since the reserves are not sufficient to compensate for dietary deficiency for more than a few days.

Physiologic Action and Deficiency Effects.—Thiamin is a necessary catalyst in the oxidation of the hydrogen atom in intracellular metabolism. In its absence carbohydrate oxidation and utilization do not proceed normally and there is accumulation of pyruvic acid. Deficiency primarily affects the nervous system. The resultant neuritis is observed in beri-beri, alcoholism, pellagra, pregnancy, and in surgery where patients must subsist on glucose infusions.

Chronic low-grade deficiency is more obscure in its manifestations, but is now generally recognized to be of considerable clinical importance. The picture of an individual suffering from such a deficiency may include a general depression of neuromuscular tone and vigor; digestive disturbances which may take the form of subnormal appetite or digestive capacity, gastric atony, constipation, or more serious conditions, such as ulcer and colitis; lowered resistance to infections; and, perhaps less frequently, anemia and neuritis. Williams, Mason and Wilder (1940) placed 4 physically healthy American young women on a diet practically free of thiamin for twenty-one weeks. They did not develop the severe neuritis nor swelling characteristic of beri-beri; their symptoms would probably have been diagnosed as neurasthenia or chronic nervous exhaustion had the diet (polished rice, tapioca, cornstarch, sugar, white bread, butter, cottage and American cream cheese, egg-white, cocoa, tea, and white raisins) been unknown.

It is noteworthy that these subclinical conditions found in temperate climates have not been observed (Meyers, 1941) in the Netherlands East Indies, which figured so prominently in the history of beri-beri, although the diet is often subminimal by accepted standards. Beri-beri develops if deficiency is marked, otherwise symptoms are absent. Apparently adaptation to a long-standing, low vitamin B intake is possible in the tropics.

Clinical Estimation of Deficiency.—Thiamin can be determined by oxidation to thiochrome and measured by the resultant blue fluorescence, but procedures suitable for routine use have yet to be devised. Attempts have been made to estimate adequacy of intake by means of the urinary output. When the diet contains about 1 mg. of thiamin, elimination of approximately one-tenth of this may be expected. With double the intake, 0.5 mg. may appear in the urine. Whenever 300–500 mg. of nicotinic acid are ingested, thiamin tests on subsequent urine become meaningless due to production of unknown fluorescent material (Mason and Williams, 1941).

Requirement.—The normal requirement of thiamin appears to be proportional to the total metabolism or total food intake rather than to body weight. Thus, the child requires more in proportion to its size than the adult. Vigorous physical activity or over-feeding increases the thiamin requirement. It is also affected by

the relationship between fat and non-fat calories in the diet, increase in the proportion of fat decreasing the need of thiamin. Alcohol intensifies the body's demand for vitamin B₁. In hot weather there should be extra provision for this vitamin in the diet. The greater the gastro-intestinal wastage, the greater must be the thiamin intake. Infections, fevers and other processes which stimulate oxidation correspondingly increase the vitamin requirement.

Cowgill (1935) has been the pioneer in expressing mathematically the relation between caloric intake, body weight and thiamin requirement. His revised formula is:

$$\text{Thiamin need in I.U.} = 0.00426 \times \text{body weight (Kg.)} \times \text{caloric intake}$$

This formula determines minimal intake only.

Williams and Spies (1938) calculate the thiamin requirement on the basis of the non-fat calories of the diet. When the quotient *thiamin (I.U.) : non-fat calories* is less than 0.3, the diet is likely to produce signs of thiamin deficiency.

Refer to page 15.

Thiamin Shortage on Ordinary Diets.—Previously it was believed that sufficient thiamin was provided by the average good American dietary but the tide of opinion has turned. It is now accepted that large numbers of people subsist on diets well below a desirable level of thiamin intake and not much above that required to prevent outspoken beri-beri. The lack of specific and recognizable signs of B₁ deficiency, apart from beri-beri, is probably responsible for failure to recognize the prevalence of this dietary defect, but the frequency with which evident improvement in health follows a change to a higher thiamin intake affords additional proof of sub-optimal levels in ordinary diets.

Jolliffe (testimony before Administrator of the Federal Security Agency, Wash., D. C., 1940) attributes this deficiency to the diminished use of flour products, the declining vitamin content of modern flours, and to the tremendous increase in dietary sugar. In colonial times the average consumption of sugar was probably around 5 pounds per year or about 25 calories per day. It is now close to 112 pounds per year, which amounts to 600 or 700 calories per day. Since this sugar is devoid of minerals and vitamins, it is necessary for these nutritive factors to be supplied otherwise. Jolliffe has also stated that the American diet is further significantly diminished by the average consumption of alcohol.

The problem is being met by urging the use of whole wheat products and by introducing "enriched" flour and bread. "Enriched" flour is white, or nearly so, and has been fortified with recommended amounts of thiamin, nicotinic acid and iron. In due time riboflavin, vitamin D and calcium may be included. Attempts are being made to secure bread which will satisfactorily compete with

the favored white bread and yet be equivalent to the genuine whole wheat product in vitamin and mineral content.

Sources.—Three micrograms of thiamin hydrochloride constitute an **International Unit**; 1 mg. of this vitamin is equivalent to 333 I.U. It is noteworthy that there are no outstanding sources of thiamin among common foods. Whole grain products, if used in sufficient quantities, would insure an adequate supply of this factor, but it is hardly possible to obtain enough from this source under modern conditions of food consumption. It should be repeatedly emphasized that natural plant sources contain both the carbohydrate fuel and the thiamin catalyst necessary for its complete oxidation. Processing of the food too often leaves the carbohydrate without the attendant means of utilizing it to the fullest extent.

It has been shown by Aughey and Daniel (1940) that on "a serving basis baked potatoes, including the skin, rank higher in thiamin than cooked whole wheat or oat cereals. Even boiled potatoes, spinach, and carrots may be classed as furnishing amounts of thiamin per serving comparable to those supplied by these cooked cereals. One slice of an all-whole-wheat bread also contains approximately the same quantity of thiamin as one serving of these vegetable and cereal foods." "The whole-grain cereals and dried legumes included in every list of thiamin-rich foods furnish less of this vitamin than is generally supposed" since they are not consumed in the dry state. "Navy beans, taking up less water during cooking, furnish proportionately more thiamin per serving than the cereals."

Although fruits and vegetables are hardly notable for their thiamin content, they contain sufficient to warrant consideration when these foods are prominent in the dietary.

The liberal use of potatoes, legumes, pork products, liver, nuts whole grain cereals, milk, and egg-yolk should provide an adequate thiamin intake. It is to be noted that such a diet necessarily furnishes a high-carbohydrate intake. When such is contraindicated, supplementary sources of thiamin are necessary, the best of which are yeast and wheat-germ. The ordinary amounts taken are $\frac{1}{2}$ to 1 ounce daily of brewer's yeast powder or wheat-germ. Tomato or prune juice has proved to be a satisfactory vehicle for the yeast.

When the body reserves are seriously depleted, as in beri-beri, doses as large as 20 to 50 mg. daily may be used by intramuscular or intravenous injection, but once the reserves are built up it is doubtful whether doses larger than 10 mg. daily have any advantage since the excess is excreted promptly. Tablets of 5 or 10 mg. may be added to the daily diet to ensure a high-vitamin intake in fevers and infections and when restricted therapeutic diets prevent the use of high-thiamin foods, but in general the crude concentrates of the vitamin-B complex are preferable for supplements in such conditions.

Good Sources of Thiamin.

Dried brewer's yeast*	Egg-yolk	Pork, lean
Wheat-germ*	Legumes	Rice, brown
Bread, whole wheat	Nuts	Wheat bran
Corn, cornmeal	Organ meats	Whole-grain cereals

Fair Sources of Thiamin.

Asparagus	Leeks	Pineapple
Avocados	Mango	Plums
Cabbage	Mushrooms	Potatoes, white
Cauliflower	Okra	Potatoes, sweet
Fish roe	Oranges	Tangerines
Grapefruit	Papaya	Tomatoes
Leafy vegetables	Parsnips	

Poor Sources of Thiamin.

Beef juice	Fish	Peaches
Butter	Lemons	Peppers
Celery	Limes	Rice, polished
Clams	Molasses	Sauerkraut
Egg-white	Olives	Starches, sugars
Fats and oils	Onions	Turnips

RIBOFLAVIN.

Chemical Behavior.—Riboflavin is an orange-yellow crystalline pigment, $C_{17}H_{20}N_4O_6$, somewhat soluble in water and dilute alcohol. It occurs both free and as a phosphate, in which form it enters into combination with a specific protein to constitute the yellow respiratory enzyme of Warburg. The separation of this ferment by dialysis into a protein and a flavin destroys its enzyme characteristics but does not inhibit vitamin activity. The flavins are widely distributed in the plant and animal kingdoms, but apparently they cannot be synthesized by the animal cell.

In solutions, riboflavin exhibits an intense yellow-green fluorescence (maximum at pH 6 to 7). It is not oxidized by exposure to air but is inactivated by light, particularly by ultra-violet irradiation.

Effect of Processing on Potency.—Riboflavin is the least stable of the known members of the B_2 complex, but exposure to 125° C. for several hours is needed for inactivation. Although ordinary cooking may not destroy this vitamin, loss is occasioned by the leaching effect of hot water. Riboflavin cannot withstand cooking in an alkaline medium. Even storage at room temperature under alkaline conditions leads to gradual loss of potency. Storage in general is associated with a diminished vitamin activity. Butter, in cold storage for nine to eleven months, loses part of its riboflavin content.

Both roasting and frying result in appreciable loss (30 to 60 per

* Outstanding.

cent) of riboflavin. "In contrast to vitamin B₁, riboflavin is less stable when heated in a dry mixture than in one that is watery or even only moist" (Munsell, 1940). Stewing has no perceptible influence on this vitamin. Drying of meats likewise is without deleterious effect (Michelsen, Waisman and Elvehjem, 1939).

According to Sherman, there is no serious diminution of the riboflavin value of milk on pasteurization or preservation by drying or canning. Rose and Phipard (1937) observed that neither freezing nor cooking had a deleterious effect upon the riboflavin in green peas or lima beans. It is believed that canning may be partially destructive of riboflavin in vegetables whereas freezing has only a slight effect (Fellers *et al.*, 1939).

Absorption and Storage.—Being water-soluble, riboflavin is readily absorbed from the gastro-intestinal tract unless abnormal function exists. Flavin phosphoric acid is formed in the intestinal wall. If phosphorylation fails at this site, it can be accomplished in other tissues. Increased liberality of intake results in measurably augmented concentrations of this vitamin in body tissues generally (Carlsson and Sherman, 1939) but capacity for storage is limited. The liver is the chief depot with the kidneys and heart muscle next in order. Emmerie (1937) cited by Hogan (1938) reports that excretion exceeds ingestion on low diets and lags behind on a high intake. Processes involving both storage and tissue depletion do not appear to be rapid. The stored vitamin may not be used for current needs when exogenous riboflavin fails nor may the tissues promptly absorb dietary riboflavin. Under stress, it would appear that the flavin is conserved more effectively by the body than is thiamin.

Physiologic Action and Deficiency Effects.—Riboflavin is a component of essential intracellular respiratory enzymes involved in the transfer of hydrogen and oxygen from one metabolite to another (refer to p. 270). Deficiency, therefore, may have widespread effects. According to Sherman and Campbell (1939) riboflavin shares with calcium and vitamin A the credit for the chemical improvement in an already normal condition of nutrition.

Because of its close association with other factors of the B complex, notably nicotinic acid, it has been difficult to determine the clinical picture of pure riboflavin deficiency in humans. Deficiency of the flavin is responsible for some of the manifestations of the pellagra syndrome. Ariboflavinosis is characterized by a specific type of glossitis in which the tongue is magenta colored and by cheilosis in which there is fissuring in the angles of the mouth. Scaly changes occur in the skin of the nose and forehead.

Lack of riboflavin also results in itching, burning and excessive dryness of the eyes, photophobia, granulation and extreme redness of the conjunctiva, particularly of the lower lids (Spies, Hightower,

and Hubbard, 1940). Vascularization of the cornea is common and also the formation of corneal opacities. Pock-Steen (1939) found that 1 mg. doses of the flavin cured the "twilight blindness" seen in patients with sprue. Larger amounts are needed to relieve the pain and lacrimation in keratitis and to reverse the corneal changes.

Experimentally produced riboflavin deficiency may demonstrate no change until the animal collapses and dies within a few minutes or after twenty-four to forty-eight hours of coma. Fatty infiltration of the liver is a common finding and, incidentally, has been observed also in cases of pellagra coming to autopsy.

Deficiency symptoms are seen clinically in the presence of markedly inadequate diets as in pellagra, chronic alcoholism, and poorly-balanced, long-continued therapeutic diets. Not infrequently persons of professional standing exhibit definite riboflavin deficiency. There is increasing evidence that ariboflavinosis is the most widely distributed of the vitamin deficiencies.

Clinical Estimation of Deficiency.—So far saturation tests have not proved clinically valuable since excretion is too variable. The daily output, however, is somewhat related to the intake and can be used as an aid in determining the presence of riboflavin deficiency. Sebrell (1941) noted an average excretion of 77 μ g. on a diet containing about 0.5 mg. of riboflavin per 2400 Calories. Strong (1941) found normal urine to average 625 μ g. per day. Hospital patients varied from 236 to 270 μ g. on the regular diet and cases of ariboflavinosis from 58 to 91 μ g.

Requirement.—According to Elvehjem (1941) there may be a certain degree of riboflavin synthesis in the intestinal tract under normal conditions. If there are sudden changes in the intestinal flora, the entire riboflavin requirement may have to be supplied in the diet. When the fat content of the diet is increased, there is a demand for more riboflavin in the food. The ingestion of 2-3 mg. per day is recommended. Refer also to p. 15.

Sources.—One milligram of riboflavin is equivalent to about 333 Sherman-Bourquin rat-growth units; 1 Sherman-Bourquin unit (S.B.U.) equals 3 μ g. of riboflavin according to the 1939 standards of the Council of Foods of the American Medical Association. The older value was placed at 0.0025 mg. or 2.5 μ g.

Yeast and liver are the outstanding sources of riboflavin. Liver has approximately ten times the riboflavin content of muscle. According to György (1935) fish muscle is poor in this vitamin. Meat and meat products are an important source of riboflavin, glandular organs being particularly rich. From the data of Michelsen, Waisman, and Elvehjem (1939) the minimum daily requirement of this vitamin can be met by 12 to 15 grams of dry liver or 50 to 60 grams of the fresh material, the food being fried before

ingestion. Approximately 450 grams of fresh fried pork loin would be needed to provide a similar amount of riboflavin.

The abundance of good sources of riboflavin makes it evident that deficiency is not likely to occur in normal well-varied diets. The use of green vegetables, meat, eggs, and milk products is sufficient to insure an adequate intake.

Conner and Straub (1941) present data ($\mu\text{g. per cent}$) on several foods not shown in Table 37:

Broccoli, fresh	176	Corn, yellow	83-202
Broccoli, frozen	200	Rice bran	241
Peas, frozen	190	Rice polishings	252
Spinach, fresh	117-147	Wheat	89-203
String beans, fresh	161	Wheat bran	317
Lima beans, fresh	135-156	Wheat germ	378-556
Corn, white	127-229		

These investigators found skim milk powder to vary from 1.9 to 2.9 mg. and whey powder to contain 5.9 milligrams per cent.

For the treatment of acute and severe deficiencies, purified preparations of riboflavin are available for oral or parenteral use. Six milligrams daily is ample for subsidence of symptoms in a few days (Sebrell). Lack of ready solubility hampers administration both orally and intravenously. If there is any doubt as to intestinal absorption, the dose needs to be tripled.

Good Sources of Riboflavin.

Liver*	Eggs, whole	Peanuts
Dried yeast*	Leafy vegetables	Pecans
Almonds	Meats, lean	Prunes
Bran	Meats, organ	Salmon
Buttermilk	Milk, skim	Wheat germ
Cheese, Cheddar	Oysters	Whey

Fair Sources of Riboflavin.

Apricots, dried	Cheese, cream	Papayas
Avocados	Corn	Peas
Bananas	Lentils	Sweet potatoes
Beans	Oatmeal	Whole wheat

Poor Sources of Riboflavin.

Apples	Cranberries	Oils
Barley	Cucumbers	Olives
Beets	Eggplant	Pineapple
Bread, white	Fats	Radishes
Celery	Grapes	Rice, polished
Citrus fruits	Guavas	Turnips

* Outstanding.

NICOTINIC ACID.

Chemical Behavior.—Nicotinic acid or 2-pyridine carboxylic acid, $C_5H_4N.COOH$, crystallizes as colorless needles which are soluble in alcohol and ether but only slightly so in water. The acid is readily soluble in alkali carbonate solutions. The amide is very much more soluble in water than the acid. It is fairly resistant to heat.

Nicotinamide is the reactive portion of Coenzymes I and II which function in cellular oxidation. Sydenstricker (1941) has outlined the probable changes which occur in the combustion of glucose: "After the phosphorylation of hexose to hexose diphosphate and subsequent cleavage to triose phosphate, the pyridine nucleotides oxidize the triose phosphate, losing oxygen, which is replaced by oxidation by flavoprotein. Flavoprotein is in turn reoxidized by molecular oxygen, possibly derived from cellular heme. In the later stages of the utilization of dextrose reduced coenzyme I acts as a hydrogen donor in the conversion of pyruvic acid to lactic acid".

The rôle played by nicotinamide in biologic oxidations is well established. Since the essential pyridine nucleus is not formed in the body, it must be supplied in the diet. The various coöperating enzymes in tissue oxidation include co-carboxylase (*thiamin* pyrophosphate), the yellow ferment (*riboflavin* phosphate + protein) and co-dehydrogenase I which consists of *nicotinamide*, adenylic acid (adenine-ribose phosphate), ribose and phosphoric acid. The pyridine nature of vitamin B₆ would suggest that it functions similarly.

Effect of Processing on Potency.—"The pellagra-preventive value of foods is not reduced easily. Foods have been heated in an autoclave or pressure cooker as long as six hours without showing a decrease in effectiveness. Canned foods seem to be equally as good as the corresponding fresh ones" (Munsell, 1940).

Physiologic Action and Deficiency Effects.—Many of the symptoms of pellagra can be attributed to lack of nicotinamide but others are undoubtedly due to deficiency of thiamin, riboflavin, and possibly pyridoxin. Nutritional failure of these three vitamins has been reported to cause disintegration of personality, including breakdown of morale (Frostig and Spies, 1940). The spectacular effects, which have been observed after thiamin, riboflavin and nicotinic acid therapy, may well be interpreted as representing enhanced ability to carry on oxidative processes in the tissues with a consequent sense of well-being and vitality.

Sydenstricker emphasizes the fact that "the significance of the composition of diets is still not appreciated . . . The idea is still prevalent that dietary inadequacy implies semistarvation; it

is extremely difficult to implant the fact that a diet may have excellent caloric value but produce severe nicotinic acid deficiency because it necessitates excessive derivation of energy from carbohydrate. The adequacy of the vitamin intake is directly related to the proportion of calories derived from carbohydrate and to the metabolic demands of the body".

Since it is required for intracellular respiration, lack of nicotinic acid leads to varied and startling manifestations depending on the tissue affected and the acuteness of the deficiency. These changes are too extensive for discussion here.

Clinical Estimation of Deficiency.—The blood concentration of nicotinic acid (normal about 0.3 mg. per cent) does not appear to be significantly lowered in deficiency. Methods for estimating the urinary excretion of nicotinic acid have been developed but not yet applied to any extent. With one such procedure (Vilter, Spies, and Mathews, 1938) the normal daily output ranges from 20 to 50 mg. of nicotinic acid conjugates.

In nicotinic acid deficiency the kidney excretes abnormal pigments over which much controversy has arisen. Indican, indirubin, uro-rosein and "porphyrins" have been reported. Whatever their nature, they disappear from the urine of pellagrins under adequate nicotinic-acid therapy.

Requirement.—"The amount of nicotinic acid required for maintenance is exceedingly variable and probably depends on the absorptive capacity of the gastric and intestinal mucosa and the functional integrity of the liver. Many patients with mild endemic pellagra are well maintained on 25 or 30 mg. a day. The average requirement of those with long-standing deficiency is 100 mg. For persons with irreversible achlorhydria and with diarrhea due to structural changes in the colon the minimum may be 600 mg. a day".—Sydenstricker, 1941. The requirement is increased by infection, hyperthyroidism, pregnancy, lactation, elevation of temperature, and physical exertion.

Sources.—Our knowledge of the pellagra-preventive value of foods is largely due to Sebrell (1938) and Elvehjem's laboratory (1940). Bacharach (1941) has assembled current data on the subject. The following lists are about as complete as they can be made at present.

Good Sources of Nicotinic Acid.

Liver*	Organ meats	Rice polishings
Yeast*	Peanuts	Salmon, canned
Beef, fresh, corned	Peas, green	Tomato juice, canned
Buttermilk	Pork, lean	Tongue
Collards	Poultry	Turnip greens
Kale	Rabbit	Veal

* Outstanding.

Fair Sources of Nicotinic Acid.

Cabbage, green	Haddock	Mustard greens
Cod	Herring	Peas, dried
Cowpeas	Kidney beans	Soy beans
Egg-yolk	Milk, skim	Spinach

Poor Sources of Nicotinic Acid.

Beans, navy	Gelatin	Prunes
Beans, string	Lard	Root vegetables
Butter	Oatmeal	Sugars
Cornmeal	Oils	Syrups
Fruits	Pork, salt	Wheat

OTHER MEMBERS OF THE VITAMIN B COMPLEX.

Pyridoxin.—Vitamin B₆ was isolated in pure form by Lepkovsky (1938) and its chemical constitution determined, C₈H₁₁O₃N. It is relatively heat-stable, even in alkaline solution, and is only partly soluble in water in its natural state. It is rendered very soluble in water by autolysis of the complex of which it is a part. Vitamin B₆ exhibits basic properties and has been named pyridoxin. This substance is destroyed by long exposure to light.

An aqueous solution of vitamin B₆ hydrochloride reaches 3.2 on the pH scale. The white platelets are soluble to the extent of 1 gram in about 4.5 cc. of water or 90 cc. of ethyl alcohol. The hydrochloride is stable to heat, strong acids, and alkali.

According to Spies, Bean and Ashe (1939) pyridoxin is essential in human nutrition as judged by its preventive and curative effect on certain parts of the pellagra syndrome. Four patients under nicotinic acid, thiamin chloride, and riboflavin therapy complained of residual symptoms which included extreme nervousness, insomnia, irritability, abdominal pains, weakness, and difficulty in walking. The administration of 50 mg. of pure synthetic vitamin B₆ in sterile salt solution brought immediate and spectacular relief; within twenty-four hours all symptoms had disappeared. It would thus appear that pyridoxin is involved in muscle metabolism.

Both Spies and Jolliffe (1940) have been successful in the treatment of paralysis agitans with pyridoxin. Jolliffe employed an intravenous dose of 100 mg. daily and obtained spectacular return of expression to the face, lessening of the rigidities and increased strength of movement. Whether or not the whole of the B complex is necessary for sustained results has not yet been established.

Although pyridoxin has been called the anti-acrodynia factor, it is not the sole agent in prevention of this particular dermatitis. Certain essential fatty acids are also required; possibly vitamin B₆ is concerned with their utilization.

Sources and Requirement.—Information regarding the quantity of pyridoxin present in foods has been derived from two sources:

(1) earlier work involving biologic tests for the anti-acrodynic potency, and (2) chemical determination. By the biologic method, which undoubtedly includes more than the effect of B₆, fruits and vegetables are poor in this factor; fish and meat fair; seeds, legumes, and cereals relatively rich; egg-yolk and many of the vegetable oils (linseed, peanut, rice, soy bean, cottonseed, corn, and wheat-germ) conspicuously high. By the chemical method, dried brewer's yeast is outstanding in its content of pyridoxin. By this same procedure corn does not rate as high as previously thought.

Crude cane molasses is a good source of B₆ and also contains some riboflavin; beet molasses is practically devoid of both these factors (György, 1937). Cow's milk is equally potent in riboflavin and vitamin B₆; human milk possesses the same potency for B₆ as cow's milk, but only one-third the amount of riboflavin (György, 1936). Butter, lard and beef fat contain this vitamin.

The pyridoxin content of meat has been investigated by Henderson, Waisman, and Elvehjem (1941). Muscle tissue is a better source than liver (the reverse is true for riboflavin, pantothenic acid and nicotinic acid). This same school found that pork muscle was superior to liver in thiamin content. Drying does not affect the pyridoxin content of meat, but "tenderizing" leads to as much as 60 per cent loss. Frying is the least detrimental form of cooking. Stewing and roasting may result in 50 per cent loss. The loss is attributed to leaching. Similarly, Lantz (1940) has reported considerable loss of pyridoxin in the soaking water used for pinto beans.

Elvehjem has estimated that the human requirement for pyridoxin is about 2 mg. per day. Since the average concentration in fresh muscle tissue is 5 to 6 μ g. per gram, about 400 grams of meat are necessary to supply the daily need, no allowance being made for cooking loss.

Pantothenic Acid.—The eighth vitamin to be synthesized was designated pantothenic acid (Gr. "from everywhere") by R. J. Williams (1933) since it appears to be of fundamental nutritional importance. It occurs in liver partly combined with colloids from which it must be freed by autolysis. Heat and alkali inactivate this vitamin. It is available as its calcium salt which is a white crystalline powder, $(C_8H_{14}O_5N)_2Ca$.

Pearson (1941) has reported whole human blood to contain about 20 μ g. per cent, with plasma and cells at 17 and 24 μ g. respectively. Decreased concentration has been observed in patients known to be deficient in other members of the B group (Stanbery, Snell, and Spies, 1940).

Intravenous injection of as much as 100 mg. of calcium or sodium pantothenate into human beings has been made without untoward reactions. Following injections of pantothenic acid there has been noted an associated rise in blood riboflavin. Likewise, injection of

riboflavin has induced an increase in the blood level of pantothenic acid. This is taken as evidence of the essential character of this acid in human nutrition. Presumably it is related to riboflavin in function. (Spies *et al.*, 1940.)

Sources.—Pantothenic acid is widely distributed in foods and is universally found in all animal tissues, including man. The highest concentration of pantothenic acid is found in the liver and kidneys, then in order the heart, spleen, brain, pancreas, tongue, lungs. Muscle tissue has the lowest concentration. Waisman, Michelsen, and Elvehjem (1939) discovered that stewing decreased the potency of kidneys, heart, and spleen by one-third. Frying did not destroy the pantothenic acid in liver, in fact, the cooking seemed to improve the growth stimulating factor in this organ.

Analytical data on the pantothenic acid content of some common foods has been provided by Jukes (*J. Nutrition*, **21**, 193, 1941).

Excellent Sources (more than 28 µg. per gram of dry material):

Brewer's dried yeast*	Broccoli	Molasses
Liver*	Buttermilk	Sweet potatoes
Egg-yolk*	Kale	Whey
Beef, lean	Milk, skim	Zucchini squash

Good Sources (14–28 µg. per gram of dry material):

Bran, wheat and rice	Pumpkin, canned	Split peas
Cowpeas	Salmon, canned	Taro
Milk, whole	Soy beans	Tomatoes
Potatoes, white		

Moderate Sources (10–14 µg. per gram of dry material):

Artichokes, Jerusalem	Onions	Spinach
Bananas	Oranges	Walnuts, English
Barley	Rice, polished	Wheat
Carrots	Rolled oats	Wheat-germ
Corn, yellow		

Poor Sources:

Almonds	Egg-white	Pineapple juice, canned
Apples	Green beans, canned	Prunes
Asparagus	Green peas, canned	Raisins
Beets	Peaches, canned	Turnips, white

Biotin.—The naturally occurring organic complex is insoluble both in fat and water. During autolysis of yeast, the water-soluble vitamin is set free. On proteolytic digestion it is released from some substance present in liver. The vitamin possesses acidic properties. It may be autoclaved at 200° C. for one to two hours without deleterious effect. It is also resistant to boiling and treatment with acid or alkali.

* Outstanding.

The erstwhile vitamin H has been obtained as crystalline biotin (Du Vigneaud, 1941), $C_{10}H_{16}O_3N_2S$, and is commercially available as its crystalline monomethyl ester which possesses the same potency. It probably is a cyclic urea derivative. The function of biotin is not clear but it is possible that it is concerned with intermediary carbohydrate metabolism.

Protein in raw egg-white combines with biotin and renders it unavailable. This "toxic" agent in egg-white is known as *avid-albumin* or *avidin*.

Sources.—The main sources of biotin are liver, kidney, yeast, and to a lesser extent cow's milk. Breast milk possesses only slight potency. Cane molasses is rich in this vitamin. Thymus and spleen are without vitamin-H activity. Beef muscle not only contains no biotin but actually tends to aggravate existing egg-white injury (György, 1939).

Choline.—The amine, trimethyl-ethanol-ammonium hydroxide, hitherto existed as an impurity in vitamin B complex concentrates but is now provisionally included among the water-soluble vitamins. In the absence of choline, "fatty livers" develop and hemorrhagic degeneration occurs in the kidneys. It is involved in the metabolism of the sulfur-containing amino acids. A high methionine intake tends to decrease the choline requirement whereas a high cystine intake increases the need for choline (Elvehjem, 1941). This vitamin is available for use as choline chloride.

Para-Aminobenzoic Acid.—It has already been established that this acid is essential for the lower forms of life. In higher animals it has achieved fame as the "anti-gray hair vitamin". It appears to be involved in tyrosine and melanin metabolism. Its clinical use has been reported (Sieve, 1941) to have produced favorable results. This vitamin is found in yeast, liver, and molasses (Ansbacher and Martin, 1941). It possesses the unique property of antagonizing the bacteriostatic action of sulfanilamide (Woods, 1940). Para-Aminobenzoic acid has been used without apparent ill effect in single 4-gram doses and in 100-mg. doses twice daily for two months.

ASCORBIC ACID (VITAMIN C).

The ability of **fresh** fruit and vegetables to protect against scurvy is due to the presence of a factor known as vitamin C, now identified as *ascorbic acid*, C_6H_8OH , a carbohydrate derivative. The term *cevitamic acid* has been suggested as a more suitable name, but has not achieved popularity.

Chemical Behavior.—Ascorbic acid is a white crystalline powder, soluble in water and insoluble in oils. When dried, it is stable on exposure to air and daylight at room temperature for years; development of a buff color is not attended by appreciable decomposition

(King, 1939). Aqueous solutions, however, are readily oxidized, especially in the presence of flavins or light. An alkaline medium is more destructive than an acid one. The vitamin is inactivated by heat only in the presence of oxygen.

The outstanding chemical characteristic of ascorbic acid is its powerful reducing action. Oxygen combines with it in two stages to form: (1) *dehydro-ascorbic* acid which is easily reduced in the body to the original state and thus is equivalent to active vitamin C; and (2) a more completely oxidized product which is irreversible and inactive. Vitamin C assays, therefore, must determine both the active unoxidized form (ascorbic acid) and the reversibly oxidized one (dehydro-ascorbic acid).

Not all of the various forms of ascorbic acid which have been synthesized (Zilva, 1935) possess antiscorbutic activity. Of the seven structural variants which have been already prepared, *l*-ascorbic acid shows the greatest potency and is the compound indicated when vitamin C or simply ascorbic acid is mentioned. Physiologic activity apparently is associated with the spatial arrangement of the oxygen bridge (refer to p. 286).

Effect of Processing on Potency.—The extreme sensitiveness of ascorbic acid to oxidation necessitates intelligent treatment of its sources for conservation of the vitamin. Heat hastens and cold retards deterioration in activity. The vitamin is more stable in an acid medium than an alkaline one. Loss occurs on storage or transportation after harvesting, on standing after kitchen preparation for cooking or the table, on blanching before freezing, on thawing after freezing, on cooking or canning, on drying, fermenting, pickling, on solution in discarded water, on breaking cell structures as by peeling, slicing, shredding or mashing foods.

Official suggestions for saving vitamins are intended to be general but they apply particularly to ascorbic acid and hence are stated here.

Esther P. Daniel in "Vitamin Content of Foods" in the Yearbook Separate No. 1681 of the U. S. Dept. of Agriculture, issued in 1940, recommends the following practical suggestions for the preservation of vitamin values in cooking and serving foods:

- "Don't stir air into foods while cooking.
- Don't put them through a sieve while still hot.
- Don't use soda in cooking green vegetables.
- In boiling foods, raise the temperature to the boiling point as rapidly as possible.
- Use as little water as possible.
- Don't use long cooking processes such as stewing when shorter methods are feasible.
- Don't throw away the water in which vegetables have been cooked.
- Use it in making gravies, sauces, and soups.
- Don't fry foods valuable for their content of vitamins A, B₁, or C.
- Prepare chopped fruit and vegetable salads just before serving.
- Start cooking frozen foods while they are still frozen.
- Serve raw frozen foods immediately after thawing."

Additional suggestions are given by Munsell (1940):

“Do not peel vegetables or fruits and cut them up and then let them stand before cooking. Cook them whole and with the outer covering on helps preserve vitamin content.

Serve foods as soon as possible after they are cooked.

Frying and roasting are very destructive of vitamins.

Store foods at low temperatures and in closed containers.”

Physiologic Action and Deficiency Effects.—Ascorbic acid is identified as one of the series of intracellular oxidation ferments necessary for the metabolism of foodstuffs by the cell. All actively growing parts of the higher plants are rich in vitamin C. Animal tissues of high metabolic activity have greater concentrations of ascorbic acid than those with a lower metabolism.

Many functional rôles have been assigned to vitamin C. These include maintenance of capillary resistance, coöperation with vitamin D in the formation of normal bone and tooth structures, and protection against bacterial invasion of the tissues. Vitamin C is concerned with the elaboration of certain intercellular colloids, notably the cementing substances which occur in the matrices of bone, in the capillary wall, in cartilage and dentin.

The classic picture of outstanding vitamin-C deficiency is scurvy, characterized by periosteal hemorrhages about the joints, swollen and bleeding gums, and often anemia. Lesser degrees of inadequacy, when long continued, have been shown to produce a variety of effects in different tissues. In the growing young, defects occur in the development of bone, cartilage and dentin.

Even slight degrees of vitamin-C deficiency tend to weaken the capillaries and predispose to the occurrence of capillary hemorrhages. This has been made the basis of the commonly used capillary resistance test for vitamin-C deficiency, in which the relative intracapillary pressure is increased by the application of a tourniquet to the arm or by applying a suction pump. The occurrence of petechial bleeding in response to this test suggests vitamin-C deficiency, but since other factors may also predispose to such bleeding, it cannot be regarded as specific unless the administration of vitamin C is shown to have a curative effect.

Clinical Estimation of Deficiency.—Capillary resistance tests are less common than formerly since the determination of blood and urine ascorbic acid concentrations has become routine. Levels as low as 0.2 mg. per cent in the blood plasma are usually required to produce abnormal capillary fragility and then only when such concentrations persist for a considerable period of time. The normal fasting plasma level is 0.7 to 1.4 mg. per cent. The upper limit probably represents the renal threshold. Absorption of ascorbic acid reaches a peak four to six hours after ingestion. The normal adult on an average satisfactory diet excretes 20 to 30 mg.

and the normal child 10 to 30 mg. The amount which appears in the urine reflects, as a rule, not only the current intake but also the degree of saturation within the body.

Numerous investigators have devised tests to measure vitamin-C saturation. These are performed by giving test doses ranging from 100 to 1000 mg. by oral, subcutaneous or intravenous routes and determining the amount excreted in fixed time. A saturation test may show depleted reserves if the vitamin-C intake has been below normal for only a few days preceding the test and it may show good storage after only a day or two of high intake; it gives no information as to the adequacy of the customary diet unless this happens to be the test diet. For maintenance of the blood level at or above 1 mg. per cent, it is necessary to ingest at least 100 mg. of the vitamin daily. Blood concentrations of 0.4 to 0.5 mg. represent borderline deficiency.

Requirement.—The **International Unit** of vitamin C is equivalent to 0.05 mg. of *l*-ascorbic acid. The Sherman unit is approximately ten times as great. It is customary, however, to express requirements in terms of milligrams rather than in units.

There is general agreement that bare adequacy is in the neighborhood of 20 mg. for infants, 40 mg. for children and 50 to 60 mg. for adults. Since there is every advantage in liberality, at least double these amounts are advisable to provide ample margin against increased individual need and against loss of the vitamin during storage or processing, which makes it difficult to estimate the intake accurately.

Hard labor, fevers, infections (particularly tuberculosis and diphtheria), leucemia, hyperthyroidism, malignancy, pregnancy, and lactation are known to make greater demands upon the vitamin-C stores. There is increased need for ascorbic acid during healing of wounds and fractures.

Sources.—Certain observations suggest the possibility of other factors being associated with vitamin C in the common fruit and vegetable sources, although these have not yet been definitely established. For this reason, as with the other vitamins, the natural foods are to be preferred to the purified or synthetic ascorbic acid whenever possible; the latter, however, is available for oral or parenteral use, doses of 50 to 500 mg. being common.

Although vitamin C is widely distributed in **fresh** fruits and vegetables, much of the potency is lost during storage, sun-drying, cooking in much water in open kettles, and by various methods of preserving. The diet should contain an abundance of **fresh** fruits and vegetables to insure an adequate intake of this vitamin.

The citrus fruits and tomato juice (fresh, canned or bottled), although not extraordinarily rich, furnish a convenient source of ascorbic acid. Canned citrus fruit juice is the cheapest source of

the daily ration. Tomato and pineapple juices cost two and four times as much respectively for the same quantity of vitamin (Holmes *et al.*, 1941). Oranges wrapped in paper and kept in air-tight containers at room temperature retain their vitamin-C content about as well as those refrigerated (Robinson, 1940).

Although raw meats (especially organs) may contain considerable vitamin C, practically all activity is lost during cooking. Milk fresh from the cow has a good supply of ascorbic acid, but by the time it is bottled and delivered to the consumer little of this remains.

Good Sources of Ascorbic Acid.

Black currants	Kale	Pimentos
Broccoli	Kohlrabi	Spinach
Brussels sprouts	Mustard greens	Sprouted grains
Cabbage, green, raw	Paprika	Strawberries
Cauliflower	Parsley	Turnip greens
Dandelion greens	Peppers	Watercress

Fair Sources of Ascorbic Acid.

Asparagus	Citrus fruits	Papaya
Cantaloupe	Green lima beans	Pineapple, fresh
Chard	Green peas, fresh	Red currants

Poor Sources of Ascorbic Acid.

Apples	Dried and stored fruits	Milk
Apricots	Dried vegetables	Nuts
Bread	Eggs	Olives
Butter	Fats and oils	Pears
Carrots	Fish	Plums
Cereals	Grapes	Squash
Cheese	Meats	

VITAMIN D.

Chemical Behavior.—According to Bills (1938) there are at least ten compounds possessing some antirachitic potency. All are secondary alcohols with a typical alicyclic structure (that is, ring compounds with straight chain characteristics). With the possible exception of cholesterol, the various forms require irradiation to produce an antirachitic effect. In this process the complex nucleus is ruptured and the products are no longer sterols, though often regarded as such. When ergosterol is irradiated, the result is calciferol or **vitamin D₂**. Cholesterol when so treated first becomes 7-dehydrocholesterol, then the ring is broken with the formation of **vitamin D₃**. Vitamin D₄ is obtained by irradiation of 22-dihydroergosterol and is 22-dihydrocalciferol. The fifth well-known member of the vitamin-D series is irradiated 7-dehydrositosterol. The

two forms most abundant in the preparations available for clinical use are D_2 and D_3 .

Calciferol or D_2 (irradiated ergosterol) is a colorless, crystalline substance soluble in oils but not in water. It is not regularly affected by oxygen, dilute alkali nor acid. Calciferol is destroyed by steam in the presence of mineral acids. It is stable to heat and light. Ultra-violet irradiation of ergosterol produces several isomers in addition to calciferol (lumisterol, tachysterol, toxisterol, etc.) which are not only without antirachitic activity but which may have undesirable or toxic effects. Overirradiation destroys the antirachitic vitamin. Although relatively stable to heat and oxidation, the provitamins give a better yield on irradiation if oxygen is withheld during exposure.

In general, ergosterol is the precursor of vitamin D in vegetable organisms, and calciferol or D_2 is the form of vitamin D produced by irradiation of substances of vegetable origin, while D_3 (irradiated cholesterol) is the form derived from animal sources. Since vitamin D_3 is found in fish-liver oils, it is sometimes referred to as **natural vitamin D**.

Effect of Processing on Potency.—Pasteurization, homogenization and canning do not significantly lower the vitamin-D potency in milk. Storage does not appreciably affect vitamin D. There is no evidence that cooking is harmful to this vitamin.

Physiologic Action and Deficiency Effects.—Vitamin D exerts a curative effect on rickets. Precursors (as cholesterol) in the skin are transformed into active vitamin by solar irradiation. Because pigmentation of the skin reduces its permeability to sunlight, negro babies and dark-skinned races require more ultra-violet for prevention or cure of rickets than do white children. The vitamin is absorbed when administered by massage with cod-liver oil or other fats containing it.

Vitamin D is necessary for normal bone formation but its exact rôle is not clear. It tends to protect tooth and bone structures against the effects of a low calcium intake by promoting better utilization of available calcium and phosphorus.

Clinical Estimation of Deficiency.—The diagnosis of vitamin D deficiency is based upon the clinical picture of rickets, upon Roentgen-ray evidence of defective bone formation at the epiphyses, and upon blood serum calcium, phosphorus and phosphatase levels. In rickets the inorganic phosphorus falls to half its normal level; the calcium usually is slightly low. The phosphorus varies with age: for infants 5 to 6 mg. are normal, for children 4 to 5 mg., and for adults 3.5 to 4 mg. P per 100 cc. Normal serum calcium varies from 9.5 to 11 mg. per cent. Therapeutic measures for rickets are generally held to be efficacious if the calcium remains above 9 mg. and the phosphorus above 5 mg. When the product of these two

values ($\text{Ca} \times \text{P}$) falls to 30 or lower, rickets usually is present. With the Bodansky method for phosphatase, normal adults vary from 1.5 to 4 units (av. 2.7) and children from 5 to 12 units (av. 8). The enzyme activity reaches 20 to 30 units in mild rickets and 60 or more in severe cases. If therapy is effective, a definite decrease is noted in three to four days; during active repair, high normal values are the rule.

Requirement.—The vitamin-D requirement varies with the amount of solar or artificial irradiation received and with the relative and absolute amounts of calcium and phosphorus in the diet. The ideal ratio of dietary $\text{Ca}:\text{P}$ is 1.2:1 (Elvehjem, 1941) although it is customary to allow 1:1.2 in computing the diet. This discrepancy is due to the fact that a portion of the phosphorus (that present as phytic acid) is unavailable. Diets rich in calcium and phosphorus in the right proportion diminish the need for vitamin D.

Both infants and children should receive 300 to 400 U.S.P. units of vitamin D daily. Although the requirement for adults is unknown, 400 units probably is more desirable than the generally-allowed 100 to 200 units.

Sources.—The **U.S.P.** and **International Unit** of vitamin D is equivalent to 0.025 micrograms of calciferol. Other units, now rarely used, include the Steenbock, American Drug Manufacturers' Association (A.D.M.A.) and Oslo units (refer to pp. 286, 290).

Irradiated yeast and milk from cows fed with such yeast (so-called metabolized milk) contain vitamin D_2 . On the other hand, vitamin D_3 predominates in fish liver oils, in eggs from hens fed cod-liver oil, and in irradiated milk and milk fortified with fish-oil concentrates.

As stated by Nelson (1938) fish which contain much body oil, such as salmon, sardines and herring, are the richest natural sources; eggs are next in importance; milk fat and meat products contain some vitamin D. Outstanding sources are the fish-liver oils. Lindsay and Mottram (1939) advocate using cod-liver oil as an ingredient in any dish which already contains fish. If this subterfuge is not revealed by the cook, the comestible usually is acceptable. For the low income groups, herring and canned salmon probably provide in an average serving adequate vitamin D for the adult's daily need.

Despite the fact that green vegetables are grown in sunlight, they are practically devoid of antirachitic potency. Mushrooms, yeasts, and molds contain appreciable amounts of ergosterol which responds to irradiation. Irradiated ergosterol is sometimes added to commercial cake and bread. It is stated that 6 slices of bread, so fortified, contain as much vitamin D as 1 teaspoonful of cod-liver oil. Cereals have been successfully fortified, but the amount of vitamin served is so small as to be negligible.

Since most foods contain little or no vitamin D, exposure of the body to ultra-violet light or use of fish-liver oils is the usual therapy. Cod-liver oil is required by the U. S. Pharmacopœia to contain at least 85 U.S.P. units per gram. As computed by Nelson (1939) a teaspoonful contains at least 312 units, calculated on the basis that this amounts to 4 cc. and the oil has a specific gravity of 0.92.

Overdosage of Vitamin D.—Excessive dosage has resulted in abnormal calcium deposition and tissue degeneration. Since these changes are associated with elevated serum calcium and phosphorus levels, their determination may serve as a warning. Except under close supervision, doses larger than 1000 to 3000 units should not be administered.

VITAMIN E.

Chemical Behavior.—Although α -tocopherol exhibits the greatest potency of those substances so far synthesized and is synonymous with vitamin E, over forty compounds are known to possess vitamin E activity (Evans *et al.*, 1939). The most prominent in this chemically divergent group are the tocopherols, α , β , and γ , listed in diminishing order of effect. The vitamin was originally obtained from wheat-germ oil as α -tocopherol allophanate and as such is commercially available.

Alpha-tocopherol is a yellow viscous oil readily soluble in all the lipid solvents and only slightly soluble in water. It can withstand temperatures to about 200° C. Activity is destroyed by ultraviolet irradiation. Esterification occurs without loss of potency. Most of the esters prepared have been oils; the crystalline allophanate is an exception. The esters are relatively stable to air even when considerable surface is exposed.

Vitamin-E concentrates resist attack by acids, alkalis and hydrogen but are extraordinarily sensitive to slight and obscure oxidative changes in associated fats. The vitamin usually is inactivated if included in a diet containing lard or some of the fish-liver oils. The tocopherols possess anti-oxidant properties but in reverse to their vitamin activity. Oxidation of the tocopherols is markedly retarded by inhibitors, as hydroquinone and ascorbic acid. Synthetic vitamin C is used to prevent rancidity in fatty emulsions like butter and mayonnaise.

The excellent keeping qualities of vegetable oils, such as cottonseed and wheat-germ oil, in comparison with lard and other animal fats which readily become rancid, is apparently due to their high content of vitamin E or anti-oxidants found with the vitamin. This protective behavior is shown particularly by the synthetic chromans and coumarans, substances with a ring structure identical with or similar to that found in α -tocopherol.

Vitamin E is chemically related to vitamin K. Naphthotoco-

pherol has been synthesized and found to possess fair vitamin E and K potency (Tishler, Fieser, Wendler, 1940). This is the first instance of any compound having the biological activity of two vitamins. Other vitamin-E compounds do not show vitamin-K properties nor do the naphthoquinones have any vitamin-E effect.

Effect of Processing on Potency.—Although extensive investigations have not been made, it is believed that cooking, canning, drying, steam distillation, and autoclaving have no harmful effect. A small amount of the vitamin can be extracted by water. Freezing and cold storage probably are not detrimental. The potency of milk powder which is stored in air for long periods diminishes, but this is not true of storage in deoxygenated air (Supplee and Dow, 1925).

Absorption and Storage.—Bile apparently is necessary for absorption of all the fat-soluble vitamins (Greaves, 1939). The liver has the highest concentration of α -tocopherol in the tissues so far studied; it has been demonstrated in muscle, heart, and kidney (Karrer *et al.*, 1940). Moore (1940) has noted that the vitamin-A reserves of the liver are much reduced in the presence of vitamin-E deficiency; this could not be attributed to lack of protein. The relationship between vitamins A and E remains to be clarified.

Physiologic Action and Deficiency Effects.—Although the mechanism whereby vitamin E exerts its effects in the body are unknown, it is recognized that this vitamin is necessary for embryonic development and growth of the young, for maintenance of testicular function, and for normal behavior of the neuromuscular system (Evans, 1940). In the female, E-deficiency causes "resorption sterility" which is not permanent if the vitamin is restored. In the male the damage to the seminiferous epithelium is irremedial. The term "antisterility" vitamin is unfortunate since the function of this vitamin, insofar as reproduction is concerned, involves merely aiding or allowing a normal action to occur (Smith, 1940).

Nutritional muscular dystrophy and encephalomalacia have been produced by vitamin-E deficiency (Pappenheimer and Goettsch, 1931—). Alimentary exudative diathesis is also a consequence of E-avitaminosis (Dam and Glavind, 1939); this edema, largely subcutaneous, is associated with a low-fat, protein-deficient diet.

Requirement.—Nothing is known about the human requirement and, aside from such reports as Vogt-Møller's, there is little or no evidence that vitamin-E deficiency is ever responsible for human sterility. The relationship to the dystrophies remains to be settled.

Sources.—There is no established unit for vitamin E, but it is customary to express the potency of its sources in terms of the Evans unit which is based upon the minimum requirement whereby normal rat litters are obtained when the test dose is administered during the first few days of gestation.

Definite data as to the extent to which the human dietary may supply vitamin E are still lacking. So far as is known, there is an abundance of this vitamin in natural foods.

The richest sources of vitamin E are green leaves and embryos of seeds or oils therefrom (barley, corn, cottonseed, flax, hempseed, red palm, peanut, rice, soy bean, and wheat). Smaller amounts occur in fat and muscle tissue, milk, butter, cheese and eggs. Oranges and bananas contain some vitamin E.

If it is desired to assure a high vitamin-E intake, the diet should be supplemented with wheat-germ. Capsules of wheat-germ oil are also available as a rich source of this factor. According to Shute (1938) wheat-germ oil even if refrigerated to prevent deterioration is not reliable after eight weeks. Stable preparations of whole wheat-germ are preferable; 1 ounce of wheat-germ furnishes about 3 grams of the oil. Defatted wheat-germ should, of course, be avoided when vitamin E is required.

VITAMIN K.

Chemical Behavior.—Dam's "Koagulations-vitamin" (1935) has been chemically identified (1939) by two different groups of investigators (Doisy, Fieser). Active agents are 1, 4-naphthoquinones or substances capable of yielding such quinones under biologic oxidation. Like the other fat-soluble vitamins, more than one substance shows activity.

Vitamin K occurs in the non-sterol fraction of the unsaponifiable fat and resembles vitamin E in solubility and resistance to heat (Osterberg, 1938). It is destroyed by alkalis and certain substances which bring about oxidation (Munsell, 1940). Although vitamin K is rapidly inactivated by light, whether natural or artificial, when dissolved in benzene, ethyl alcohol or acetone, crude alfalfa extracts are fairly stable toward light (MacQorquodale, 1939).

Absorption.—The fat-soluble forms require bile salts for absorption but the water-soluble vitamin K_3 is effective orally without the presence of bile (Butt *et al.*, 1941). Mineral oil leads to prothrombin deficiency presumably due to interference with absorption (Elliott *et al.*, 1940). Russell and Page (1941) have demonstrated that a single dose of 10 mg. of 2-methyl-1,4-naphthoquinone in an ointment base rubbed into the back protects infants one to two days old from hypoprothrombinemia.

Physiologic Action and Deficiency Effects.—Vitamin K is essential for the synthesis of plasma prothrombin but the manner of accomplishing this is not clear except that the action appears to be enzymatic. Inadequacy of prothrombin prevents normal clotting of blood and permits slow oozing from traumatized blood-vessels

particularly in the new-born and after surgery upon jaundiced patients. Vitamin K is of no value in hemorrhage unless it is caused by lack of prothrombin.

For the production and maintenance of vitamin-K levels in the body there are four requisites: a well-balanced diet, an adequate flow of bile, a functioning intestinal absorbing area, and a physiologically normal liver. Primary vitamin-K deficiency probably is not common. Under ordinary conditions a nutritional deficiency would be slow in developing and would be easily corrected.

Clinical Estimation of Deficiency.—Suitability of a patient for vitamin-K therapy is determined by the prothrombin clotting-time of the blood. Either thromboplastin from lung or brain tissue or Russell viper venom are used to produce the clotting. The results are reported in seconds required to form a clot or in percentage of normal time. A decrease to 80 per cent is significant and values below 50 per cent usually are associated with bleeding. Restoration to normal clotting activity is accomplished within hours by administration of vitamin K provided liver function is normal.

Requirement.—No data are at hand for estimating the requirement of vitamin K. Its present use is restricted to therapeutic prescriptions for abnormal conditions.

Sources.—The fat-soluble vitamin K occurs in hog-liver and soy bean oils, spinach, kale, carrot tops, cabbage, cauliflower, tomatoes and egg-yolk. The antihemorrhagic factor which occurs in green leaves in large quantities apparently is not affected by withering or yellowing of the leaves. Flowers, roots and seeds contain much less than green leaves (citation from Daniel, 1940). Dried alfalfa leaf meal and putrefied sardine meal are good sources of this vitamin. Evidently it can be synthesized under bacterial action and, therefore, is a normal constituent of human feces. Cod-liver oil, wheat-germ and wheat-germ oil do not exert any antihemorrhagic effect. It is noteworthy that although vitamin K can be derived from fish meal, it is not found in fish-liver oils.

GLOSSARY OF VITAMIN TERMS.

Achromotrichia. Depigmentation of fur in rats, apparently due to lack of some member of the B-complex.

Adaptometer. An instrument for detecting early evidence of night-blindness.

Adenylic Acid. Adenine ribose phosphate, $C_{10}H_{13}N_5O_4 \cdot HPO_3$, enters into composition of co-dehydrogenase I.

Adermin. Early name for vitamin B₆; unsuitable since dermatologic lesions are still seen in the presence of this vitamin; György suggests (1940) that B₆ be called *pyridoxin*.

Alpha. Terms with this prefix will be found under the name of the substance, as alpha-tocopherol under Tocopherol.

A. D. M. A. units. See following items.

American Drug Manufacturers' Association unit for vitamin A. Equivalent to Sherman-Munsell unit.

American Drug Manufacturers' Association unit for vitamin D. Equivalent to about one-third of the I.U. or U.S.P. unit.

Aneurin. European term for vitamin B₁; thiamin.

Anti-acrodynia factor. Vitamin B₆, essential for growth and prevention of rat pellagra and dermatitis (György).

Anti-beri-beri vitamin. Vitamin B₁; thiamin.

Anti-canitic vitamin. Anti-gray hair factor.

Anti-hemorrhagic factor. Vitamin K.

Anti-infective Principle. Used without justification for vitamin A.

Anti-keratinizing vitamin. Vitamin A.

Anti-neuritic vitamin. Vitamin B₁; thiamin.

Anti-oxidant. A substance capable of retarding chemical deterioration, as rancidity in fats.

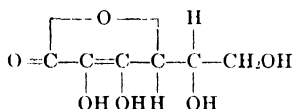
Anti-rachitic factor. Vitamin D.

Anti-scorbutic factor. Vitamin C.

Anti-sterility vitamin. Vitamin E, although reproductive potency is only a part of E function.

Anti-xerophthalmic vitamin. Vitamin A.

Ascorbic Acid. White crystalline substance soluble in water and alcohol, C₆H₈O₆, of the seven structural variants of this acid already synthesized, *l*-ascorbic acid is the most potent and is the compound indicated when vitamin C or simply ascorbic acid is mentioned:



A. T. 10. Trade name for dihydrotachysterol emphasizing its anti-tetany effect.

Avidin. Protein in raw egg-white which combines with biotin and renders the biotin unavailable to the organism.

Beta. Terms with this prefix will be found under the name of the substance, as beta-carotene under Carotene.

Biophotometer. An American instrument (Frober-Faybor Company, Cleveland, Ohio, 1937) which is more sensitive than the Birch-Hirschfeld photometer in detecting border-line cases of vitamin A deficiency.

Biotin. A yeast-growth factor; see vitamin H.

Birch-Hirschfeld photometer. An instrument devised in 1916 for the measurement of dark adaptation; manufactured by Carl Zeiss, Inc.

Bisulfite-binding substances (B.B.S.). Chiefly pyruvic acid in biologic fluids; increased in thiamin deficiency.

Blue units. Means of measuring the blue color obtained with SbCl₃ and vitamin A or carotene.

Calciferol. Crystalline vitamin D₂, pure activated ergosterol.

Calcifying vitamin. Vitamin D.

Capillary resistance. Resistance of capillary wall to rupture under pressure.

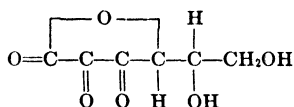
Carboxylase. An enzyme which converts the carboxyl group (—COOH) into CO₂.

Carotenase. An enzyme occurring in the liver which transforms carotene into active vitamin A.

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Dark adaptation test. A light sensitivity test for determining vitamin A deficiency.

Dehydro-ascorbic acid. A reversibly oxidized form of ascorbic acid,



7-Dehydrocholesterol. When activated becomes vitamin D₃.

Dehydrogenase. An enzyme which catalyzes a reaction resulting in oxidation of metabolites by removal of hydrogen (Best and Taylor, 1937).

7-Dehydrositosterol. One of the provitamin D group (Wunderlich, 1936).

22-Dihydroergosterol. When activated becomes 22-dihydrocalciferol or vitamin D₄.

Dihydrotachysterol. An irradiation product of ergosterol without anti-rachitic effect; it combats tetany by raising the serum calcium content.

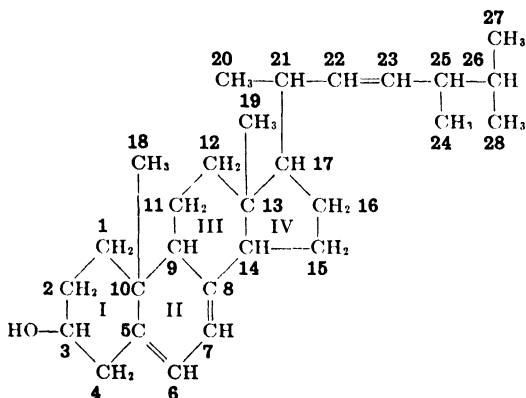
Diphosphopyridine nucleotide. Coenzyme I, consists of one nicotinamide group, one adenine, two pentose, and two phosphoric acid groups.

Durohydroquinone. A substance chemically related to vitamin E.

Dysaptation. Pathologic dark adaptation in which the time required for reaching the light threshold is prolonged beyond the normal period (Feldman).

Egg-white injury. Toxic effect of avidin in raw egg-white.

Ergosterol. Provitamin D₂; structural formula demonstrates numbering of positions in cholane nucleus and side chain:



Activation is thought to result in opening ring II between ninth and tenth carbon atoms, with the result that the eighteenth carbon atom drops a hydrogen and receives a double bond.

Evans unit. This unit for vitamin E is based on the minimum requirement whereby normal rat litters are obtained under fixed conditions.

Factor I. Antidermatitis factor of Lepkovsky, Jukes, and Krause (1936); vitamin B₆.

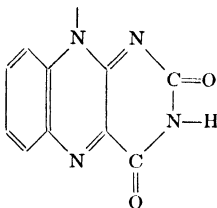
Factor U. A water-soluble growth factor required by chicks in addition to polished rice, washed fish meal, riboflavin and vitamin B₆ (Stokstad *et al.*, 1940).

Factor W. Frost and Elvehjem's (1937) rat growth factor apparently required if riboflavin is to be fully effective; is multiple in nature, containing in concentrates appreciable amounts of pantothenic acid.

Factor Y. Antidermatitis factor of Chick and Copping (1930), possibly vitamin B₆.

Filtrate Factor. Lepkovsky and Jukes' (1936) water-soluble, chick anti-dermatitis factor obtained from liver extract; identified as pantothenic acid but undoubtedly multiple in nature; also used for rat growth factor.

Flavins. Water-soluble, yellow-green fluorescent pigments which occur in foodstuffs, either free or bound to protein, chemically they are characterized by the iso-alloxazin nucleus:



Although often designated as to source as hepatoflavin, ovoflavin, lactoflavin, etc., the common name for all is riboflavin because of the presence of the sugar ribose as a side chain on the tricyclic chromophore nucleus. Addition of this sugar to the chloroform-soluble nucleus renders the compound water-soluble. The only side chains compatible with vitamin potency are d-ribose and l-arabinose (Booher, 1938).

Flavones. A group of pigments possibly including vitamin P which is said to prevent capillary permeability.

Flavoprotein. Protein combination with riboflavin (vitamin B₂) which functions as an oxidation catalyst; the yellow enzyme.

Funk's vitamin. Vitamin B₁; thiamin.

Gamma. Terms with this prefix will be found under the name of the substance, as gamma-carotene under Carotene.

Gamma. 0.001 mg. = 1 γ , used for convenience in designating concentrations of very low value; same as microgram, μ g.

Glare blindness. An abnormal sensitiveness to brilliant illumination which may be due to vitamin A deficiency; the term, nyctalopia, is sometimes applied to this condition.

Goldberger's vitamin. Vitamin G, vitamin P-P, pellagra-preventive vitamin.

György. This Hungarian name is borne by two noted investigators in the realm of water-soluble vitamins and respiratory enzymes: Albert Szent-Györgyi and Paul György.

"Haut Faktor". György's "skin vitamin"; vitamin H.

Hemeralopia. Literally, day sight, but by convention used for night blindness.

Hepatoflavin. Flavin isolated from liver; riboflavin, vitamin B₂.

Hexuronic acid. Early and erroneous chemical name for vitamin C.

7-Hydroxycholesterol. One of the provitamin D group (Bills, 1938).

Inositol. Cyclic hexahydric alcohol, C₆H₆(OH)₆; member of vitamin B complex; mouse alopecia factor (Woolley, 1940); growth factor for rats and curative of spectacled eye (Pavcek, Baum, 1941).

International Unit of Vitamin A. 0.0006 mg. beta-carotene.

International Unit of Vitamin B₁. 0.003 mg. thiamin hydrochloride (adopted by international committee on vitamin standardization, 1938; accepted by Council on Foods, A. M. A., 1939).

International Unit of Vitamin C. 0.05 mg. ascorbic acid.

International Unit of Vitamin D. 0.025 γ calciferol.

Keratitis. A sometimes blinding eye disease caused by riboflavin deficiency.

Keratomalacia. Softening of the cornea; last stage of eye manifestations of vitamin A deficiency.

"Koagulations-vitamin." Vitamin K.

Kryptoxanthin. A yellow pigment, $C_{40}H_{56}OH$, capable of conversion into active vitamin A; found in egg-yolk and yellow corn.

Lactoflavin. Flavin isolated from milk; riboflavin, vitamin B_2 .

Light threshold. Smallest amount of light visible to the dark-adapted eye.

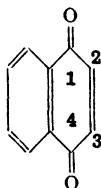
Lovibond blue units. Means of measuring the blue color obtained with $SbCl_3$ and vitamin A or carotene in which the Lovibond glasses serve as standards.

Lumisterol. Isomer of ergosterol obtained during activation, non-anti-rachitic.

Lycopene. A red carotenoid pigment found in tomato and watermelon.

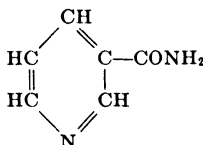
Microgram. $0.001 \text{ mg.} = 1 \mu\text{g.} = 1\gamma$.

1,4-Naphthoquinones. The nucleus in vitamin K:



"Nerve" vitamin. Vitamin B_1 ; thiamin.

Nicotinamide and nicotinic acid. The pellagra-preventive vitamin; Goldberger's vitamin; pyridine- β -carboxylic acid, $C_6H_4N.COOH$, or the amide:



Night-blindness. Subnormal acuity of vision in dim light or slowness of recovery of vision after exposure to a dazzling light.

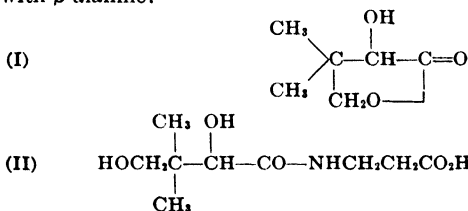
Nyctalopia. Used by some to designate night-blindness or glare blindness.

Nyctanopia. Literally, night sight, used by some for night-blindness.

Oslo unit. 1 I.U. or U.S.P. unit of vitamin D = 1.6 Oslo units.

Ovoflavin. Flavin isolated from eggs, riboflavin, vitamin B_2 .

Pantothenic acid. The 8th vitamin to be synthesized (Williams, Major, Stiller, Keresztesy and Finkelstein, 1940); the physiologically active pantothenic acid (II) is α -hydroxy- β , β -dimethyl- γ -butyrolactone (I) condensed with β -alanine:



Para-aminobenzoic acid. Hair color factor (rat) and growth factor (chick); member of B complex, $NH_2.C_6H_4.COOH$.

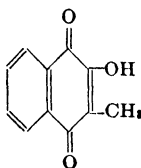
Pellagra-preventive vitamin. Nicotinic acid or its amide.

Permeability vitamin. Vitamin P, the existence of which is disputed.

Petechiæ. Small, subcutaneous clots caused by rupture of the capillary walls.

Phosphatase. An enzyme which releases inorganic P from organic combination.

Phthiacol. A yellow pigment isolated from human tubercular bacilli known to possess vitamin K activity; somewhat toxic; vitamin K can be converted into phthiacol (Fieser, 1940).



Porphyrins. Certain pigments which result from abnormal degradation of hemoglobin or from precursors of hemoglobin; associated with nicotinic acid deficiency.

Poulsson unit. Same as Oslo unit of vitamin D.

P-P body. Term used by Goldberger for factor preventive of human pellagra; formerly believed identical with vitamin B₂ or G, now thought to be nicotinic acid or its amide.

Protective factor X. Vitamin-like substance which protects against egg-white injury (Boas, 1927).

Prothrombin factor. Vitamin K.

Provitamin A. Carotene.

Provitamin D. Ergosterol and related sterols.

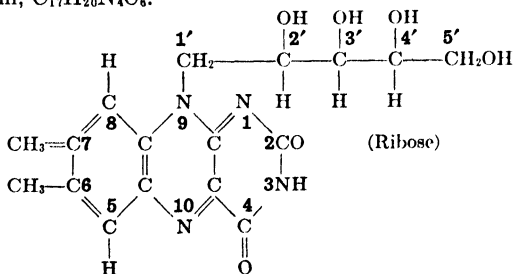
Pyridoxin. Name suggested by György (1940) for vitamin B₆.

Pyruvic acid. CH₃CO.COOH, a degradation product of carbohydrates, believed to accumulate in the absence of thiamin.

Retinene. Visual yellow, the pigment which results when rhodopsin is bleached by light.

Rhodopsin. Visual purple, the photosensitive pigment of the rods of the retina.

Riboflavin. Lacto-, ovo-, or hepatoflavin, vitamin B₂ or G, an orange-yellow crystalline pigment (12 mg. dissolves in 100 cc. of water at 27.5° C. to make a yellow-green fluorescent solution); 6,7-dimethyl-9-(1'-d-ribityl)-isoalloxazin, C₁₇H₂₀N₄O₆.



Sherman-Bourquin (1931) Unit of Vitamin B₂. Earlier taken as 0.0025 mg. riboflavin; accepted by Council on Foods, A. M. A., 1939, as about 0.003 mg. riboflavin; stated by Munsell (1940) to be equivalent to 3.0-3.5 micrograms.

Vitamin B₇. See vitamin I.

Vitamin B_c. The Hogan-Parrott factor (1940) which occurs in the B complex, lack of which is responsible for a typical anemia in chicks.

Vitamin B_p. Member of the B complex concerned with the development and shape of bones of chicks (Hogan *et al.*, 1940).

Vitamin C. Water-soluble *l*-ascorbic acid, which see.

Vitamin D. A group of activated sterols possessing anti-rachitic potency.

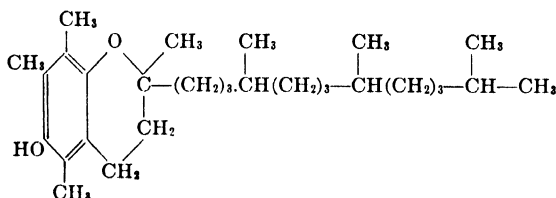
Vitamin D₁. Thought to be a pure vitamin but later found to be a mixture of calciferol and lumisterol.

Vitamin D₂. Calciferol, the result of irradiating ergosterol.

Vitamin D₃. The result of irradiating cholesterol or 7-dehydrocholesterol.

Vitamin D₄. The result of irradiating 22-dihydroergosterol.

Vitamin E. Like vitamin D may contain a number of different forms of a parent substance or several separate factors; α -tocopherol, $C_{29}H_{50}O_2$,



Vitamin F. Used by some to designate certain fatty acids, as linoleic, essential to nutrition; not endorsed by American Biochemical Association's Nomenclature Committee; no vitamin by this name exists at present (1940).

Vitamin G. Term adopted by the American Society of Biological Chemists in 1929 to describe the antidermatitis or antipellagra component of the vitamin B complex. The corresponding British term is B₂. Present tendency (1940) to consider vitamin G a complex with riboflavin known as B₂.

Vitamin H. Water-soluble vitamin which occurs in a complex insoluble both in fat and water; prevents egg-white injury; biotin, coenzyme R and vitamin H are identical.

Vitamin H. This letter assigned by Booher (1937) to a rat growth factor; by McCay, Bing and Dilley (1928) to a factor needed by trout; used by Paul György for a factor found in liver, kidney and yeast whose absence caused a typical dermatitis in rats, now known as B₆, the anti-acrodynia factor; applied by György (1939) to agent which counteracts toxicity of egg-white.

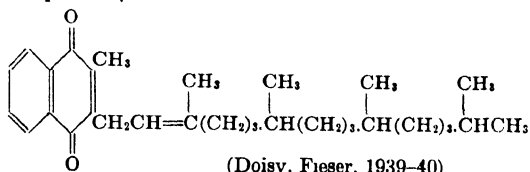
Vitamin H₂. György's factor which offsets egg-white injury.

Vitamin I. Centanni's alcohol extractable factor preventive of digestive disturbances in pigeons; not antineuritic; sometimes called B₇.

Vitamin J. Von Euler and Malmberg's fruit factor said to be corrective of pneumonia in guinea pigs.

Vitamin K. Fat-soluble, antihemorrhagic factor; several derivatives of 1,4-naphthoquinone have been shown to have vitamin potency; the water-soluble 1,4-dihydroxy-2-methylnaphthalene and 4-amino-2-methyl-1-naphthol are also active (Doisy).

Vitamin K₁. The alfalfa principle which is a yellow oil, 2-methyl-3-phytyl-1,4-naphthoquinone,



(Doisy, Fieser, 1939-40)

Vitamin K₂. A 2,3 substituted 1,4 naphthoquinone; both positions may be occupied by the same unsaturated hydrocarbon chain or there may be a double length chain on 3 and a methyl group on 2. Fieser, Doisy, 1940.

Vitamin K₃. 4-amino-2-methylnaphthol hydrochloride; water-soluble for use without bile salts.

Vitamin K (synthetic). 2-methyl-1,4-naphthoquinone.

Vitamin L. Nakahara's (1933, '34, '36) factor for lactation in rats; brewer's yeast contains both L₁ and L₂, baker's yeast only L₂ and liver filtrate only L₁.

Vitamin M. Day's (1938) factor preventing nutritional cytopenia in monkeys; found in yeast and liver extract.

Vitamin P. Rusznyák and Szent-Györgyi's flavone compound said to function in preventing capillary permeability when ascorbic acid fails to relieve deficiency state; citrin.

Vitamin P-P. Pellagra-preventive, Goldberger's vitamin; nicotinic acid or its amide.

Vitamin X. Former designation of vitamin E.

Warburg's coenzyme. Triphosphopyridine nucleotide.

Warburg's enzyme. The yellow respiratory enzyme, a flavo-protein, combined form of vitamin B₂.

Wheat-germ. Embryo of wheat removed in milling of flour; highly concentrated source of vitamin B₁ and E; also contains large amount of G and an appreciable amount of A.

Xanthophyll. Used as synonymous with lutein, C₄₀H₅₆O₂, a pigment in green leaves; or as the group name for certain carotenoids of alcohol or ketone structure; not a precursor of vitamin A.

Xanthosis cutis. Pigmentation of the skin attributable to yellow dietary pigments.

Xerophthalmia. A dry and thickened condition of the conjunctiva; occurs in marked vitamin A deficiency.

Xerosis conjunctivæ. Dryness of the conjunctiva, second stage in vitamin A deficiency.

Yellow enzyme. Warburg's enzyme, a flavo-protein which functions as a hydrogen acceptor in biologic oxidations; a combined form of vitamin B₂.

Zeaxanthin. A xanthophyll which is found in yellow corn and egg-yolk.

CHAPTER XVII.

NUMERICAL VALUES FOR THE VITAMIN CONTENT OF COMMON FOODS.

Table 37 is based on material presented by Hazel E. Munsell (*Milbank Memorial Fund Quarterly*, 18, 311, 1940), with some additional values as indicated. Quoting from this extensive review, "It is desirable to have a set of values showing the quantities of the various vitamins in different foods. In the general discussion of food sources of the vitamins it was made clear that no food has a fixed and invariable content of any vitamin. Values for different samples of any food may vary over wide ranges depending upon the factors that influence the content of the vitamins it contains." For practical dietetic purposes an intelligent selection of representative data becomes necessary. "Some values in the table may differ materially from corresponding ones in other summaries. Too much concern should not be felt over such discrepancies, perhaps, since all values of this kind are, as explained, arbitrarily selected and their approximation to actual fact is problematical in any case."

"The selections were made from a summary of all of the data that could be obtained in the literature or elsewhere up to July 1, 1940. Careful consideration was given to the methods of analysis used and the nature of the food material studied. The values given should be taken as applying to foods that are reasonably fresh and of good quality. This is especially important to keep in mind relative to vitamin-C values. 'Market fresh' vegetables are often far from 'fresh' as far as vitamin-C content is concerned. Adjustments should be made in the vitamin-C values for fruits and vegetables, especially leafy vegetables, when the products to which they are being applied are not strictly fresh."

Except among those responsible for the experimental work necessary for the accumulation of values for the vitamin content of foods, there is little recognition of the limitations of the methods used. Munsell, in addressing the National Convention of the American Dietetics Association in New York (October 21, 1940), outlined the extent of the reliability of the accepted procedures.

For *vitamin A*, concentrations below 50 I.U. per 100 grams are uncertain. The duplicability at other levels follows:

100 I.U.	± 10	10,000 I.U.	± 500 to 1000
1000 I.U.	± 100	20,000 I.U.	± 2000 to 5000

For *thiamin*, concentrations below 25 I.U. (75 micrograms) per 100 grams cannot be assayed accurately. The duplicability at other levels follows:

50 I.U.	± 3 or 4	200 I.U.	± 25
100 I.U.	± 10	400 I.U.	± 50

For *riboflavin*, concentrations below 75 micrograms (25. I.U.) per 100 grams are not determined with certainty. The duplicability at other levels is as follows:

150 γ	± 20
300 γ	± 35 to 40
600 γ	± 75

For *vitamin C*, chemical procedures are no more precise under the best conditions than 0.2 to 0.3 mg. per cent. At the stated levels, the following precision holds:

200 I.U. (10 mg.)	± 25 I.U.	800 I.U. (40 mg.)	± 75 I.U.
400 I.U. (20 mg.)	± 50 I.U.	1200 I.U. (60 mg.)	± 100 I.U.

Permissible Use of Tabulated Data.—There is no scientific justification for listing the day's menu, calculating the vitamin content from Table 37, and adding the figures together to obtain the total intake. The values shown in the table should be employed in judging whether or not a given food contributes a significant amount of specific vitamins to the diet. The table also permits intelligent selection of suitable sources of the desired vitamins. The variability between samples of the same food frequently is marked. Milk, for example, has been found to vary from 100 to 400 I.U. of vitamin A per 100 grams and butter from less than 1000 to more than 6000 I.U. It must be stressed that the figures shown in Table 75 are representative, not average values.

TABLE 37.—Representative Vitamin Values for Some Foods.

(Unless otherwise stated, the values given are for the edible portion of the fresh food)

Food items.	Vitamin A (I U)	Vitamin B ₁ (γ)	Vitamin C (mg.)	Vitamin D (I U)	Riboflavin Vitamin G (γ)
Value per 100 grams or 100 cc. ¹					
Alfalfa leaf meal, dried	8,000				1500
Almonds	75	225	0*		600
Apples	75	45	(1.5-20) Av. 5		30
Apricots, fresh	4,000	30	5		51
Apricots, dried	5,000	90	3		105
Arrowroot					60*
Artichokes, globe	200	180	9		Fair
Artichokes, Jerusalem		150	6		
Asparagus, green	700	210	35		120
Asparagus, bleached	0-50	150	32		Fair
Avocados	100	90	20		90
Banana powder	750*		2 5*		300*
Bananas	300	45	10		90
Barley	0	360	0		9
Beans, snap:					
Green	1,000	75	15		120
Cooked			2 5*		
Canned (as opened)			5*		
Wax	0	75	15		120

¹ Where there are no values, data were not available for making estimates. One hundred grams are approximately 3.5 ounces.

* Data not from Munsell.

For conversion of micrograms (γ) of vitamin B₁ into I.U. divide by 3; do likewise to convert Riboflavin into Sherman units. To obtain I.U. of vitamin C multiply by 20.

Food items.	Vitamin A (I.U.)	Vitamin B ₁ (γ)	Vitamin C (mg.)	Vitamin D (I.U.)	Riboflavin Vitamin G (γ)
	Value per 100 grams or 100 cc ¹				
Beans, shelled:					
Lima	500	345	30		300
Runner	1,000	300	25		
Soy	200	525	40		300
Beans, shelled, dried:					
Lima	100	525	0		900
Navy	0	510	0		
Red kidney Soy	100	450	0		900
Soy	100	1200			
Beef, lean	50	120	0		225
Beets	0	45	5		30
Beet tops	Excellent		50		450
Blackberries	150	45	7		
Black-eyed peas— <i>see</i> Cowpeas					
Blueberries	100	45			
High bush			6		
Low bush			4		
Brazil nuts	10	1050			
Bread:					
White	Trace	60	0		0
Whole wheat	Trace	300	0		90
Rye	Trace	210	0		
Broccoli, entire plant	9,000	111	70		225
Cooked			22*		
Flower	5,000	135	100		240
Leaf	16,000	135	125		450
Stem	1,000	75			
Brussels sprouts	200	180	75		
Buckwheat		450	0		
Butter, average	2,400		0	80	
From cows on dry feed	1,200		0	40	
From cows on green feed	4,000		0	150	
Cabbage, head:					
Young, partly green	100	75	60		90
Mature, bleached	0	75	60		45
Red			60		
Chinese or celery	2,000	75	40		45
Green, boiled 10 minutes			40*		
" 15 "			29*		
" 30 "			22*		
" 60 "			15*		
" 90 "			5*		
" 120 "			1 5*		
Cantaloupe	300	60	30		60
Carp					40*
Carrot juice			4*		
Carrots	2,100	60	5		60
Cooked			2.5*		
Cashew nuts					190*
Cauliflower	30	150	75		105
Cooked			30*		
Celery stalks:					
Green	1,000	30	5		30
Bleached	10	30	5		
Chard	9,000	Fair	37		90

¹ Where there are no values, data were not available for making estimates. One hundred grams are approximately 3.5 ounces.

* Data not from Munsell.

For conversion of micrograms (γ) of vitamin B₁ into I.U. divide by 3; do likewise to convert Riboflavin into Sherman units. To obtain I.U. of vitamin C multiply by 20.

REPRESENTATIVE VITAMIN VALUES FOR SOME FOODS 299

Food items	Vitamin A (I U.)	Vitamin B ₁ (γ)	Vitamin C (mg.)	Vitamin D (I.U.)	Riboflavin Vitamin G (γ)
	Value per 100 grams or 100 cc. ¹				
Cheese:					
Cheddar	2,000	45	0		750
Cottage, skim milk	60*		0		Good
Cream	2,100		0		180
Parmesan	900*				
Velveeta					120-190*
Cherries	15-550 Av. 200	45	10		
Chicken, muscle.					
Dark		150			Excellent
Light		90			Excellent
Clams	14	21			
Cocoanut					100*
Cod					150-310*
Codfish	5	90	0		Good
Cod-liver oil		0	0		0
Collards	7,000	150	40		300
Corn, sweet:					
White	0-50	135	10		
Yellow	500	135	10		60
Cooked			5*		
Canned (as opened)			6*		
Corn dried.					
White	0	300	0		Fair
Yellow	550	300	0		Fair
Corn Flakes		Trace*			
Corn oil, refined	0	0	0		0
Cottonseed oil, refined	0	0	0	0	0
Cowpeas, fresh			6		
Dried	50	900			300
Crabmeat, blue (Atlantic) canned		210*			
Crabs					300*
Cranberries	20		11	0	0
Cream, 20 per cent	600	30		Traces	
Cucumbers	20	45	10		24
Currants, black	400	30	150		
Red		45	45		
Dandelion greens	12,000		100		Good
Dates, cured	150	75	0		45
Dock, leaves	14,000				Good
Eel					60*
Egg, whole					
White	1,000	150	0		330
Yolk	0	0	0		300
Eggplant	2,800	420	0		345
Elderberries	35	45	10		30
Endive (escarole)			10*		
French	15,000	84	20		120
Figs, fresh	Good	75			60
Dried	50	75	1.5		45
Flour:	60	66	0		75
White, patent	0	90	0		
Whole wheat		480			Fair
Fowl					52*
Garden cress	Excellent	90			

¹ Where there are no values, data were not available for making estimates. One hundred grams are approximately 3.5 ounces.

* Data not from Munsell.

† For vitamins A and D use values given on the container.

For conversion of micrograms (γ) of vitamin B₁ into I.U. divide by 3; do likewise to convert Riboflavin into Sherman units. To obtain I.U. of vitamin C multiply by 20

300 REPRESENTATIVE VITAMIN VALUES FOR SOME FOODS

Food items.	Vitamin A (I U)	Vitamin B ₁ (γ)	Vitamin C (mg)	Vitamin D (I.U.)	Riboflavin Vitamin G (γ)
	Value per 100 grams or 100 cc. ¹				
Gooseberries			25		
Grapes	Trace	45	3		24
Grape juice			1 5		
Grapefruit	0	69	42		Trace
Juice	0	75	45		Trace
Canned	0	75	40		Trace
Guavas	200	42	75		9
Haddock	5	15	0		Good
Halibut		90			
Ham, smoked		1,428*			
Hazelnuts	100	660			
Heart:					
Beef	Trace	600			900
Lamb	Trace	600			
Pork		540			
Heinz Junior foods †					
Apple, fig and date dessert	22*	18*	2 5*		51*
Chicken farina vegetable por- ridge	138*	111*	2*		126*
Chopped carrots	4,000*	36*	3*		69*
Chopped mixed vegetables	1,700*	27*	2*		66*
Chopped spinach	4,500*	33*	8*		234*
Creamed diced potatoes	110*	33*	3*		111*
Creamed diced vegetables	1,150*	21*	3*		162*
Creamed green vegetables	845*	51*	3*		174*
Creamed tomato and rice	1,480*	60*	10*		117*
Lamb and liver stew	3,100*	27*	3*		219*
Pineapple rice pudding	38*	27*	<1*		84*
Prune pudding	300*	30*	3*		210*
Heinz strained foods †					
Apricots and apple sauce	3,100*	21*	6*		54*
Asparagus	1,650*	93*	20*		165*
Beef and liver soup	10,550*	39*	8*		261*
Beets	50*	15*	Trace*		33*
Carrots	6,160*	24*	5*		63*
Cereal	0*	48*	0*		75*
Green beans	1,300*	39*	12*		93*
Mixed greens	4,200*	39*	22*		127*
Pears and pineapple	165*	36*	3*		51*
Peas	1,680*	126*	14*		147*
Prunes	200*	42*	9*		171*
Spinach	5,530*	27*	18*		126*
Tomato juice	1,210*	75*	25*		48*
Tomato soup	2,320*	78*	27*		153*
Tomatoes (strained)	2,240*	165*	45*		108*
Vegetable soup	1,020*	42*	5*		126*
Honey	0	0	0	0	0
Honey ball melon			30*		
Honey dew melon			7*		
Horseradish			100		
Huckleberries			40		

¹ Where there are no values, data were not available for making estimates. One hundred grams are approximately 3.5 ounces.

* Data not from Munsell.

† As opened, unheated.

For conversion of micrograms (γ) of vitamin B₁ into I.U. divide by 3; do likewise to convert Riboflavin into Sherman units. To obtain I.U. of vitamin C multiply by 20.

Food items.	Vitamin A (I.U.)	Vitamin B ₁ (γ)	Vitamin C (mg.)	Vitamin D (I.U.)	Riboflavin Vitamin G (γ)
	Value per 100 grams or 100 cc. ¹				
Kale	20,000	150	125		600
Kidney, beef or veal	1,000	180			2100
Lamb	1,000	225			
Pork		450			
Kix, corn cereal		525*			264*
Kohlrabi		60	60		
Lamb, muscle, lean		240			210
Lard	4	0		0	0
Leeks	Fair	150	20		Fair
Lemon juice	0	30	45		Trace
Lentils, dried	Trace	510	0		315
Lettuce, green	4,000	75	12		225
Bleached	100	75	12		45
Romaine or cos	800				90
Lime juice			37		
Liver, beef	9,000	225	Fresh	45	1800
Calf	7,000	210	Fresh	15	1650
Chicken	Excellent	225	Fresh	50	Excellent
Lamb	Excellent	225	Fresh	20	1650
Pig	Excellent	300	Fresh	45	1800
			26		
Lobster					130*
Loquats			2*		
Mangos	1,500	90	30		60
Milk			Raw 2		
Whole fresh, average market	110	60	Past. 1	2	225
From cows on dry feed	55	60	Raw 1 5	1	180
From cows on pasture	175	60	Raw 2 5	3	240
Whole, May-June, raw†				3	
Oct.-Nov., raw†				2	
Pasteurized†				2	
Homogenized†				2	
Canned, condensed†		25			
Evaporated†		20		3	
Irradiated†				28+	
Fortified, pasteurized†				40+	
Irradiated, pasteurized †				14+	
Metabolized (yeast), certified†				40+	
Metabolized (yeast), pasteurized†				40+	
Dried, average	875	360	0	16	1500
From cows on dry feed	450		0	8	
From cows on pasture	1,400		0	24	
Skim	2	45	0		Excellent
Skim, dried	20	360			1800
Milk, breast			6*	3*	16-52*
After use of vitamin D milk				6*	
Milk, goat's	100*			3*	40*

¹ Where there are no values, data were not available for making estimates. One hundred grams are approximately 3.5 ounces

* Data not from Munsell.

† From C. R. Fellers, Am. J. Public Health, 25, 1340, 1935.

For conversion of micrograms (γ) of vitamin B₁ into I. U. divide by 3; do likewise to convert Riboflavin into Sherman units. To obtain I. U. of vitamin C multiply by 20.

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Food items.	Vitamin A (I U)	Vitamin B ₁ (γ)	Vitamin C (mg.)	Vitamin D (I.U.)	Riboflavin Vitamin G (γ)
Value per 100 grams or 100 cc. ¹					
Mint leaves, dried			0*		
Molasses	0	0	0		
Mushrooms	0	90	Trace		
Mustard greens	Excellent	135	125		Excellent
Oats (rolled or oatmeal)	Trace	540	0	0	105
Okra	400	120	20		Fair
Olives, canned:					
Green	190		0		
Ripe	125	6	0	0	0
Olive oil, refined	0			0	
Onions, green	Fair		14		
Mature	0	30	80		90
Orange juice	45-350	90	22-60		15
			Av. 45		
Oysters	140	Excellent	0 2	5*	460*
Papaya	2,500	75	45		180
Parsley	30,000		100		
Parsnips	Trace	120	22		
Peaches, white	5	30	10		
Yellow	1,000	30	10		60
Yellow, dried	3,000		0		
Peanuts, Jumbo	0	960			Good
Roasted		270			
Spanish		900			750
Spanish, roasted		180			
Pears	10	45	2 5		60
Peas, green, fresh	1,000	420	25		190
Green, fresh, cooked			6*		
Green fresh, canned (as opened)			5*		
Green, dried	1,200	525			300
Pecans	400	1,050			300
Peppers, green	5,000	30	125		120
Red	5,000	30	150		
Perch					42-59*
Persimmons			6*		
Pigeonpeas	190*				600*
Pimentos, ripe			182*		
Pineapple	90	75	25		36
Juice, fresh		90	30		
Juice, canned		75	15		
Plums		105	5		45
Pomegranate juice			7*		100*
Pork muscle, lean	Trace	1200			225
Potatoes, average	30	120	12		45
New			16		
Stored, old			5		
Prunes, fresh	1,500	60			
Dried	2,500	150	2 5		Good
Pumpkin	2,500	45	3		45
Quince			12		
Radishes	Trace	60	20		30
Raisins	50	90	0		
Raspberries	200*	30	30		

¹ Where there are no values, data were not available or making estimates. One hundred grams are approximately 3.5 ounces.

* Data not from Munsell.

For conversion of micrograms (γ) of vitamin B₁ into I.U. divide by 3; do likewise to convert Riboflavin into Sherman units. To obtain I.U. of vitamin C multiply by 20.

Food items.	Vitamin A (I.U.)	Vitamin B ₁ (γ)	Vitamin C (mg.)	Vitamin D (I.U.)	Riboflavin Vitamin G (γ)
Value per 100 grams or 100 cc. ¹					
Rhubarb	Trace		20		
Cooked			3*		
Canned			2*		
Rice, brown	Trace	225	0		150
Polished	0	30	0		Trace
Roe	2,000	90	5		Fair
Rutabagas, white	0	45	20		
Yellow	25	45	20		
Rye	0	420	0		Fair
Salmon, canned:					
Chum	30			225	
Chinook	750			275	
Pink	100			625	
Red	325	Trace	0	800	225
Sardines		30		Good	Good
Soy bean— <i>see under</i> Bean					
Spinach	25,000	120	75		375
Cooked			12*		
Canned (as opened)			5*		
New Zealand			45*		
Squash, summer	1,000	45			45
Winter	4,000	45	5		75
Strawberries	Trace	Trace	50		Trace
Sweet potatoes	3,500	90	20		90
Tangerine		90	35		30
Taro			Trace*		
Tomato, mature, green	700	69	13-30		45
Ripe	1,000	75	Av. 22		60
Juice, fresh	1,000	75	13-30		
Juice, canned commercial			Av. 22		
Juice, canned commercial			7-29		
Juice, canned commercial			Av. 19		
Turnips, white	0	36	30		36
Yellow	20	36	30		36
Cooked			18*		
Turnip greens	10,000	120	150		360
Walnuts, black	130	330			
English	100	450			
Water bamboo			2*		
Water chestnut			15*		
Watercress	4,000	120	75		270
Watermelon	Trace	60	8	0	30
Rind, preserved			0*		
Wheat	Trace	540	0		105

¹ Where there are no values, data were not available for making estimates. One hundred grams are approximately 3.5 ounces.

* Data not from Munsell.

For conversion of micrograms (γ) of vitamin B₁ into I.U. divide by 3; do likewise to convert Riboflavin into Sherman units. To obtain I.U. of vitamin C multiply by 20.

CHAPTER XVIII.

ALCOHOLIC BEVERAGES.*

Introduction.—Alcoholic beverages of various kinds may become valuable caloric articles of diet and will tend to play an important part in the lives of a great proportion of the population, particularly since the elimination of prohibition in America. For reasons of their fuel value, their appetizing and stomachic reactions, and as thirst quenchers, alcoholic beverages may find permanent places in the lives of many people. A comprehensive list of their composition and fuel values is found elsewhere.

Types of Alcoholic Beverages.

Malt Liquors.—As the name implies, the chief raw material used in the preparation of malt liquors is malt—usually barley malt. The water extraction of the ground malt is boiled with hops, then cooled and, after adding yeast, is fermented; subsequent storage of the fermented fluid for three months or more produces maturity and therewith a characteristic taste and aroma.

The various types of malt liquors, such as **lager beer, ale, porter, stout**, etc., are the result of variations in the process of manufacture, such as the use of different species of yeast, different amounts and kinds of malt and hops. Various methods of processing, such as the selection of specific temperature ranges during the period of mixing (mashing) the ground malt with water or during the main fermentation and storage, again alter the end-product.

Malt liquors have a low alcohol content compared with wines and distilled liquors, but usually have a considerably higher amount of carbohydrate and protein. In countries in which the per capita consumption of beer is high, beer furnishes a considerable part of the entire daily caloric requirement of the average person. Beer, itself, in moderate quantities is not fattening, if not taken with excessive amounts of food. The carbohydrates present in beers are mainly maltose and dextrin, both of which are changed by the human digestive processes into glucose. Most of the malt liquors, like lager beer (the most prevalent malt liquor sold in several countries) and cream ale, contain carbon dioxide gas which is refreshing and thirst quenching. Other malt liquors, like stock ale, etc., are lacking in carbon dioxide and are, in spite of their bitter and malty character, more of a vinous nature. Light beer usually contains somewhat less carbohydrate and somewhat more alcohol than dark beer.

Bottled beer, as sold in the United States, is being subjected in the brewery to a pasteurization process which destroys the last trace of yeast or other microorganisms present. Consequently,

* Data supplied by "Jacob Ruppert," New York.

bottled beer can be kept for weeks at room temperature without turning cloudy or sour.

Keg beer (*i. e.*, draught beer, sold in restaurants) is not subjected to any pasteurization, and, therefore, would spoil when exposed for only a very few days to room temperature, due to the rapid development of the small trace of yeast and microorganisms still present. Keg beer, consequently, has to be refrigerated from the time it leaves the brewery until it is consumed. Usually there is no difference in the composition of keg and bottled beer.

Bock beer is the name of a lager beer of dark color. It is usually sold at Easter time and represents a beer made with the use of more malt and hops per barrel, and, therefore, often contains more alcohol and more carbohydrates than regular lager beer.

Ale, porter and stout are malt liquors differing from lager beer mainly in the use of another type of yeast, higher fermentation and storage temperatures, thereby producing a particular flavor. Also, the hops are sometimes applied in such a way that a very pronounced hop aroma is produced. Ale, porter and stout are usually only slightly higher in alcohol and carbohydrate content than regular lager beers, but certain brands of stock ale, export stout, etc., exceed in this respect even the strongest luxury lager beers. Malt liquors in general produce a distinctly alkaline ash.

Wines.—Wines are produced in all parts of the world in which grapes grow and where temperate climate prevails. They vary considerably in taste, bouquet, color and composition, depending mainly upon the characteristics of the grape from which the juice is pressed and the exact processing methods connected with the fermentation and aging of the wine. There are many species of grapes: Muscatel, Zinfandel, Concord, Diamond, Delaware, Riesling, etc.; but depending on soil, fertilization, altitude, climate, control of insect pests and vintage year, great differences are observed in the quality and aroma of the grapes and of the resulting wine.

Wines contain usually two to four times the percentage of alcohol present in malt liquors, but are much lower in carbohydrates. As a matter of fact, many of the ordinary wines, such as Claret and Moselle wines, are practically free from carbohydrates. Sweet wines, of course, have a considerably higher carbohydrate content.

Yeast cannot produce more than about 14 per cent alcohol in any saccharine fluid—even if additional sugar is present. The term “dry,” in contrast to “sweet,” refers solely to the degree of sweetness presented to the taste, a “dry” wine being less sweet than a “sweet” wine.

For classification, wines may be subdivided as follows:

Acid Wines.—All wines contain tartaric, lactic and other acids. They vary greatly as to the quantity of their acid content, Moselle

wines being the most acid. Like most vegetable products, wines have, in spite of their acid taste, an alkaline ash. The following wines are arranged in the order of their increasing acidity: Sherry, port, claret, madeira, burgundy, sauternes, rhine and moselle wine. Often the most acid wines are also the ones lowest in carbohydrate.

Aromatic Wines.—Certain species of grapes, such as muscatel, traminer, etc., are exceedingly pronounced in flavor and transmit their aroma to the wine. Other wines, principally Italian vermouth, dubonnet, etc., are prepared from wines with the addition of various condiments, such as cinnamon, which lend their characteristic flavor to the wine.

"Perfect" Wines.—Wines from Bordeaux, Sauternes and the Rhine are of excellent flavor and quality. They are esteemed by connoisseurs all over the world as table wines because of their mild, agreeable taste and effect. It would fill volumes to enumerate all of the names found on the labels of these popular wines, each small village insisting on prominent display of its name on the labels of the bottles, often even stating in addition the name of the exact location of the vineyard from which the grapes have been harvested.

Rough or Astringent Wines.—These are usually red wines, which are characterized by the presence of tannin substances, derived mainly from the grape skins, and, therefore, are considered to be slightly constipating. Claret and Burgundy are typical red wines.

Sparkling Wines.—Sparkling wines (champagne, sparkling burgundy, etc.) were originated in France, but now are produced from the wines of many countries either by bottle fermentation (natural) or by the impregnation (artificial) of the wine with carbon dioxide. All degrees of sweetness can be obtained in champagnes, from the "driest" to the sweetest.

Strong Wines (Fortified Wines).—Port and sherry are wines which are produced by adding distilled liquor, usually either pure alcohol or young brandy, to the fully or partially fermented grape juice. Depending upon the amount of residual sugar present in the wine when the distillate is added, either dry or sweet sherry or port wines are obtained. Sometimes evaporated (sun-dried) grape juices are added to obtain sweetness. Exceedingly warm storage of the sherry or port wines is also responsible for the characteristic taste of these wines. Malaga and madeira wines are also frequently fortified.

Distilled Liquors.—Distilled liquors owe their stimulating action to the high percentage of the alcohol present. Other ingredients, like the sugar contained in cordials and the oil of peppermint contained in Crème de Menthe, sometimes are present and tend to make the combination of components more agreeable to the senses. Liquors are made in what seems to be an almost uncountable variety of tastes and flavors. Some of the distilled liquors are only used as flavoring agents, such as bitters (orange bitters), etc.

Distilled liquors usually have an alcohol content of 20 to 40 per cent by weight; in some cases though, they are not consumed at such strength. In highballs and cocktails distilled liquors are consumed, because of their mixture with water or other diluents, in such a diluted condition that their alcoholic concentration is often similar to that of wine.

For certain distilled liquors, principally whiskies, brandies and rums, several years of aging are required to develop the proper flavor and appeal. In the case of rye and bourbon whiskies, the type of wood used for the barrel in which the liquor is aged and the degree of charring applied to the barrel have an important effect on the flavor of the liquor produced. Tannin and coloring substances, wood caramel products and soluble wood components contribute a great proportion of the flavor finally present. For liquors made from pure 95 per cent alcohol, such as most of the cordials, no aging is required, the beverage being ready for consumption soon after adding the flavoring and compounding.

Distillates from Fermented Fruit Juices. -The distillate from grape wine is designated as brandy or cognac, the distillate from cider is applejack or apple brandy, the distillate from fermented plums is plum brandy, from fermented cherries is white cherry brandy, etc.

Distillates from Fermented Saccharine Solutions. -The distillate from fermented sugar cane juice or molasses is known as rum; the distillate from palm wine is called arrac, highly esteemed as an addition to hot tea. Scotch whiskey is distilled from the fermented infusion of a specially aromatized (smoky) barley malt; rye whiskey is distilled from the fermented infusion of barley malt, rye malt and rye; bourbon whiskey is distilled from the fermented infusion of malt and corn; Irish whiskey exists in two varieties, one of which is distilled from potatoes and is considered a cheap type of whiskey, the other is very similar to Scotch whiskey and likewise is made from barley malt.

Distillates from Alcoholic Infusions of Aromatic Seeds and Herbs. -When aromatic substances like caraway seeds, juniper berries, anise seeds, mint, orange peels, etc., are steeped in a mixture of rectified alcohol and water and are distilled, the distillates contain the respective flavor and represent such liquors as kummel, gin, aquavit, anise, etc. Sometimes sugar, coloring matter of additional flavoring substances, such as alcoholic fluid extracts of angelica, cocoa, vermouth, etc., are being added to the distillate, and either bitters or cordials, such as crème de menthe, crème de cacao, curaçao, anisette, benedictine, etc., are obtained. If fresh fruits are sweetened and macerated in the presence of pure alcohol, the filtrate represents such "fine cordials" as cherry brandy, apricot brandy, etc. Eggnog is the sweetened mixture of brandy with the yolk of egg. Sweet cordials are taken usually after dinner.

COMPOSITION AND FUEL VALUES OF ALCOHOLIC BEVERAGES.

Introduction.—In evaluating the caloric intake of the individual, his alcoholic habits should be taken into consideration. It is for the convenience of the nutritionist that this table has been elaborated. It provides in readily available form authentic data on the composition of various alcoholic preparations. This should enable a physician to discuss these matters competently or to prescribe intelligently those beverages which are desirable.

The following table contains the composition and fuel values of almost all internationally known alcoholic beverages. With few exceptions trade-marked products have been omitted. These analyses are of most recent date and are offered with an assurance of their accuracy.

Marked variations of composition are found in any one of the enumerated beverages, consequently only average values are presented.

The **boldface numerals** indicate the number of grams and Calories in an average portion. The *plain numerals* indicate the percentage composition thereof in weight per cent.

TABLE 38. — **Beverage Glass Equivalents.**

1 Cordial glass (fluid)	=	20 cc
1 Brandy glass (fluid)	=	30 cc
1 Sherry glass (fluid)	=	30 cc.
1 Wine glass (fluid)	=	100 cc
1 Cup* (fluid)	=	236 cc.

TABLE 39. — **Composition and Fuel Values of Alcoholic Beverages.†**

Items	Size of portion		Value of portion				
	Grams	Household measure	Alcohol	Carb	Prot	Fat	Cal
I. Malt Liquors:‡							
A. <i>American</i>							
Ale, cream ale, carbonated ale	230	1 cup	8.9	8.0	1.1	—	100
			3.8	3.5	0.5	—	
Bock beer	230	1 cup	10.3	13.8	1.6	—	135
			4.5	6.0	0.7	—	
Lager beer (draught or bottle)	230	1 cup	8.5	9.2	1.1	—	100
			3.7	4.0	0.5	—	
Porter, stout	230	1 cup	13.8	11.5	1.3	—	150
			6.0	5.0	0.6	—	
Stock ale, still ale, India ale	230	1 cup	13.8	11.5	1.3	—	150
			6.0	5.0	0.6	—	
"3.2" beer	230	1 cup	6.9	6.9	1.1	—	80
			3.0	3.0	0.5	—	

* The cup referred to is the "Standard Measuring Cup."

† Furnished by "Jacob Ruppert," New York.

‡ Malt liquors usually contain about 0.2 per cent lactic acid and acid phosphates, also 0.4 per cent by weight of carbon dioxide. There is also present about 0.2 per cent mineral salts. In general, the alcoholic percentage by weight of all malt liquors varies from 1.5 to 7 per cent.

— Indicates negligible or absent.

TABLE 39.—Composition and Fuel Values of Alcoholic Beverages.
(Continued.)

Items.	Size of portion.		Value of portion.				
	Grams	Household measure	Alcohol	Carb	Prot	Fat	Cal.
I. Malt Liquors:—(Continued.)							
<i>B. European</i>							
Ale, porter, stout, English for export . .	230	1 cup	13.8 6.0	11.5 5.0	1.3 0.6	—	150
Bock beer and related special beers . .	230	1 cup	10.3 4.5	13.8 6.0	1.8 0.8	—	135
Lager beers, Central European, average quality . . .	230	1 cup	8.5 3.7	9.2 4.0	1.1 0.5	—	100
Munich beer (usually dark) .	230	1 cup	8.0 3.5	10.3 4.5	1.3 0.6	—	105
Pilsener beer (always light) .	230	1 cup	8.9 3.8	8.0 3.5	1.1 0.5	—	100
Salvator, Maerzen beers . .	230	1 cup	10.3 4.5	13.8 6.0	1.8 0.8	—	135
Weiss beer . . .	230	1 cup	4.6 2.0	4.6 2.0	1.1 0.5	—	55
II. Wines:†							
<i>A. American</i>							
California red wines, claret, Zinfandel, Chianti, Burgundy, etc.	100	Wine glass	10.0 10.0	0.5 0.5	0.2 0.2	—	75
California white wines, Chablis, Riesling, Rhine	100	Wine glass	10.5 10.5	0.5 0.5	0.2 0.2	—	75
California white wine, sauterne	100	Wine glass	10.5 10.5	4.0 4.0	0.2 0.2	—	90
Champagne from California and New York State	100	Wine glass	11.0 11.0	3.0 3.0	0.2 0.2	—	90
<i>Sweet and dessert wines</i>							
Catawba (white)	100	Wine glass	13.0 13.0	12.0 12.0	0.2 0.2	—	140
Muscetelle . .	100	Wine glass	15.0 15.0	14.0 14.0	0.2 0.2	—	165
Port	100	Wine glass	15.0 15.0	14.0 14.0	0.3 0.3	—	165
Sherry	100	Wine glass	15.0 15.0	8.0 8.0	0.3 0.3	—	140

† Wines contain from 6 to 20 per cent of alcohol by weight, depending upon the variety. They usually contain 0.5 to 1 per cent acidity from tartaric, lactic and phosphoric acids; also 0.1 to 0.3 per cent mineral salts. Additionally, they contain 0.5 to 1 per cent of glycerine. Red wines contain 0.1 to 0.3 per cent tannin.

— indicates negligible or absent.

TABLE 39.—Composition and Fuel Values of Alcoholic Beverages.
(Continued.)

Items.	Size of portion.		Value of portion				
	Grams	Household measure	Alcohol	Carb	Prot.	Fat	Cal.
II. Wines:—(Continued.)							
B. European:							
Bordeaux wine (French) . . .	100	Wine glass	10.5	2.0	0.2	—	80
			10.5	2.0	0.2	—	
Champagne, white, dry	100	Wine glass	11.5	1.0	0.2	—	85
			11.5	1.0	0.0	—	
Champagne, white, sweet	100	Wine glass	11.0	10.0	0.2	—	120
			11.0	10.0	0.2	—	
Claret (red), French, Italian or Spanish	100	Wine glass	8.0	0.5	0.2	—	60
			8.0	0.5	0.2	—	
Madeira wine . . .	100	Wine glass	14.0	3.0	0.2	—	110
			14.0	3.0	0.2	—	
Moselle wine (German)	100	Wine glass	8.5	0.5	0.2	—	60
			8.5	0.5	0.2	—	
Rhine wine (German, like Hockheimer "hock") . .	100	Wine glass	9.5	1.0	0.2	—	70
			9.5	1.0	0.2	—	
Sauterne wine (French)	100	Wine glass	10.5	2.0	0.2	—	80
			10.5	2.0	0.2	—	
<i>Sweet and Dessert Wines</i>							
Malaga (Spanish)	100	Wine glass	10.5	20.0	0.3	—	155
			10.5	20.0	0.3	—	
Marsala, Malvasia, Lacrimæ Christi Italian) . .	100	Wine glass	12.0	5.0	0.3	—	110
			12.0	5.0	0.3	—	
Port wine (Portuguese), Douro	100	Wine glass	15.0	6.0	0.3	—	130
			15.0	6.0	0.3	—	
Sherry, Amontillado, Tarragona, etc.	100	Wine glass	15.0	3.0	0.3	—	120
			15.0	3.0	0.3	—	
Tokay (Hungarian)	100	Wine glass	10.0	12.0	0.3	—	120
			10.0	12.0	0.3	—	
Vermouth (French) ¹	100	Wine glass	15.0	1.0	—	—	110
			15.0	1.0	—	—	
Vermouth (Italian), Dubonnet, etc. ¹	100	Wine glass	18.0	12.0	—	—	175
			18.0	12.0	—	—	
III. Distilled Liquors:†							
Absinthe (Swiss)	20	Cordial glass	7.0	—	—	—	50
			35.0	—	—	—	
Akvavit (Norwegian)	20	Cordial glass	7.0	0.2	—	—	50
			35.0	1.0	—	—	

¹ Vermouth and Dubonnet contain extracts of herbs, giving them distinctive properties.

† Liquors contain from 18 to 50 per cent alcohol, depending upon the variety. They usually contain less than 0.1 per cent fusel oils. Liquors made from high rectified alcohol are free of fusel oils. Esters and essential oils amount to less than 0.3 per cent and acids less than 0.1 per cent.

— indicates negligible or absent.

TABLE 39.—Composition and Fuel Values of Alcoholic Beverages.
(Continued.)

Items.	Size of portion.		Value of portion.				
	Grams	Household measure.	Alcohol.	Carb.	Prot.	Fat.	Cal.
III. Distilled Liquors: (Continued.)							
Applejack	30	Brandy glass	10.5 35.0	— —	— —	— —	75
Arrac (Palm wine district)	20	Cordial glass	7.0 35.0	— —	— —	— —	50
Bacardi rum	30	Brandy glass	10.5 35.0	— —	— —	— —	75
Bitters: Angostura, orange, Boonkamp, etc.	4	1 teaspoon	1.4 35.0	— —	— —	— —	10
Brandy, apple	30	Brandy glass	10.5 35.0	— —	— —	— —	75
Brandy, apricot	30	Brandy glass	9.0 30.0	— —	— —	— —	65
Brandy, California	30	Brandy glass	10.5 35.0	— —	— —	— —	75
Brandy, cherry	30	Brandy glass	13.2 44.0	— —	— —	— —	90
Brandy, cognac (French)	30	Brandy glass	10.5 35.0	— —	— —	— —	75
Gin, dry	30	Brandy glass	10.5 35.0	— —	— —	— —	75
Kirschwasser	20	Cordial glass	7.0 35.0	— —	— —	— —	50
<i>Liqueurs, Cordials:</i>							
Anisette	20	Cordial glass	7.0 35.0	7.0 35.0	— —	— —	80
Apricot brandy	20	Cordial glass	6.0 30.0	6.0 30.0	— —	— —	65
Benedictine	20	Cordial glass	6.6 33.0	6.6 33.0	— —	— —	75
Chartreuse	20	Cordial glass	6.6 33.0	6.6 33.0	— —	— —	75
Cherry brandy	20	Cordial glass	4.6 23.0	6.0 30.0	— —	— —	55
Crème apricot	20	Cordial glass	6.0 30.0	6.0 30.0	— —	— —	65
Crème de cacao	20	Cordial glass	4.0 20.0	6.0 30.0	— —	— —	50
Crème de menthe	20	Cordial glass	6.0 30.0	7.0 35.0	— —	— —	70
Crème de Violette	20	Cordial glass	6.0 30.0	6.0 30.0	— —	— —	65
Crème Yvette	20	Cordial glass	6.0 30.0	6.0 30.0	— —	— —	65
Curaçao (orange peel)	20	Cordial glass	6.0 30.0	4.0 20.0	— —	— —	60
Kümmel (caraway seed)	20	Cordial glass	6.0 30.0	2.0 10.0	— —	— —	50
Maraschino (cherry)	20	Cordial glass	6.0 30.0	8.0 40.0	— —	— —	75

— indicates negligible or absent.

TABLE 39.—Composition and Fuel Values of Alcoholic Beverages.
(Continued.)

Items	Size of portion.		Value of portion				
	Grams	Household measure	Alcohol	Carb	Prot	Fat	Cal
III. Distilled Liquors: (Continued.)							
Swedish punch . . .	20	Cordial glass	6.0 30 0	5.0 25 0	—	—	60
Rum, Jamaica, Martinique	30	Brandy glass	10.5 35.0	—	—	—	75
Sloe gin	30	Brandy glass	8.4 28 0	4.5 15.0	—	—	75
Vodka	20	Cordial glass	9.0 45.0	—	—	—	65
Whiskies Bourbon .	30	Brandy glass	12.0 40 0	—	—	—	85
Irish	30	Brandy glass	12.0 40 0	—	—	—	85
Rye .	30	Brandy glass	12.0 40.0	—	—	—	85
Scotch	30	Brandy glass	10.5 35 0	—	—	—	75
IV. Miscellaneous:							
Cider, American:							
Sweet . . .	230	1 cup	0.2 0.1	24.1 10 5	—	—	100
Fermented (hard)	100	Wine glass	5.2 5 2	1.0 1 0	—	—	40
Grenadine syrup .	20	Cordial glass	— —	12.0 60 0	—	—	50
Maraschino cherry juice	5	1 teaspoon	— —	1.8 35.0	—	—	7
Raspberry syrup .	20	Cordial glass	— —	12.0 60 0	—	—	50

At times, it is essential for the physician to be conversant with the constituents of mixed alcoholic beverages. This is particularly necessary for the practitioner in a large city or for one practising among a foreign element. Table 40 presents qualitative ingredients of the various common, mixed alcoholic beverages. Efforts have been made to delete purely local or fanciful mixtures or those of temporary vogue.

TABLE 40.—Qualitative Ingredients of Mixed Alcoholic Beverages.*

Cocktails: These are iced and diluted mixtures of distilled liquors with fruit juices or certain wines (Vermouth, etc.).

Absinthe Absinthe, water, syrup, Angostura bitters.

Alexander Gin, crème de cacao, cream.

Applejack Applejack, grenadine, lemon juice.

Astoria Gin, French vermouth, orange bitters.

Bacardi Bacardi rum, grenadine, lime juice

Brandy Brandy, gin, Angostura bitters.

— indicates negligible or absent.

* The compositions and fuel values of mixed alcoholic beverages necessarily vary greatly and are not capable of reliable analytical presentation.

TABLE 40.—Qualitative Ingredients of Mixed Alcoholic Beverages.
(Continued.)

Cocktails:—(Continued.)

Bronx:	Gin, French or Italian vermouth, orange juice.
Champagne:	Champagne, sugar, Angostura bitters, slice of orange, lemon peel.
Clover Club:	Gin, raspberry syrup, lemon juice, egg-white.
Daiquiri:	Bacardi rum, sugar, lemon or lime juice.
Dubonnet:	Gin, Dubonnet, orange bitters.
El Presidente:	Bacardi rum, French vermouth, grenadine, Curaçao.
Gin:	Gin, orange bitters.
Grapefruit	Gin, grapefruit juice, lemon juice.
Havana:	Bacardi rum, pineapple juice.
Ideal.	Gin, Italian vermouth, maraschino, grapefruit juice.
Jack Rose:	Applejack, grenadine, lime juice.
Jockey Club:	Gin, crème de noyau, Angostura bitters, orange bitters, lemon juice.
Manhattan.	Rye whiskey, Italian vermouth, Angostura bitters.
Martell:	Martell brandy, honey, lime juice.
Martini, Dry	Gin, French vermouth.
Martini, Sweet	Gin, Italian vermouth, orange bitters.
Merry Widow.	Gin, French vermouth, absinthe, benedictine, Angostura bitters.
Old-fashioned	Rye whiskey, Angostura bitters, sugar, seltzer.
Orange Blossom:	Gin, orange juice.
Paradise	Gin, apricot brandy, orange juice
Perfect.	Gin, French and Italian vermouth.
Pink Lady.	Applejack, gin, grenadine, lime juice, egg-white.
Princess.	Apricot brandy, sweet cream.
Salome	Gin, French vermouth, Dubonnet
Sidecar	Brandy, cointreau, lime juice.
Sloe Gin:	Sloe gin, French and Italian vermouth.
Soul Kiss	French and Italian vermouth, Dubonnet, orange juice.
Tom and Jerry:	Brandy, rum, egg, sugar.
Whiskey Sour:	Rye whiskey, sugar, lemon juice.

Cobblers: Mixtures of wines or whiskey with fruit juices, sugar and non-alcoholic diluents.

Brandy:	Brandy, fruit, sugar, seltzer.
Claret.	Claret, fruit, sugar, seltzer.
Port.	Port wine, fruit, sugar, seltzer.
Rhine:	Rhine wine, fruit, sugar, seltzer.
Sherry.	Sherry wine, fruit, sugar, seltzer.
Whiskey:	Whiskey, fruit, sugar, seltzer.

Collins: Mixtures of gin, fruit juices, sugar and non-alcoholic diluents.

Tom Collins	Gin, lemon juice, sugar, seltzer.
John Collins.	Hollands gin, lemon juice, sugar, seltzer.

Eggnogs: Mixtures of distilled liquors, eggs, milk and sugar.

Brandy:	Brandy, rum, whole egg, milk, sugar.
Rye:	Rye whiskey, whole egg, milk, sugar.
Scotch:	Scotch whiskey, whole egg, milk, sugar.
Sherry:	Sherry wine, rum, whole egg, milk, sugar.

TABLE 40.—Qualitative Ingredients of Mixed Alcoholic Beverages.

(Continued.)

Fizzes: Mixtures of gin or brandy, fruit juices, eggs, sugar and non-alcoholic diluents.

Brandy: Brandy, lemon juice, sugar, seltzer.

Gin: Gin, lemon juice, sugar, seltzer.

Golden: Gin, egg-yolk, lemon juice, sugar, seltzer.

Grenadine: Gin, grenadine, lemon juice, sugar, milk, seltzer.

New Orleans: Gin, egg-white, orange flower water, sugar, cream, seltzer.

Royal: Gin, whole egg, lemon juice, sugar, seltzer.

Silver: Gin, egg-white, lemon juice, sugar, seltzer.

Sloe Gin: Sloe gin, lemon juice, sugar, seltzer.

Flips: Mixtures of distilled liquors, eggs, sugar and nutmeg.

Brandy: Brandy, whole egg, sugar, nutmeg.

Port: Port wine, whole egg, sugar, nutmeg.

Sherry: Sherry wine, whole egg, sugar, nutmeg.

Whiskey: Scotch or rye whiskey, whole egg, sugar, nutmeg.

Highballs: Mixtures of distilled liquors and non-alcoholic diluents.

Bourbon: Bourbon whiskey, seltzer or ginger ale.

Gin: Gin, seltzer or ginger ale.

Rye: Rye whiskey, seltzer or ginger ale.

Scotch: Scotch whiskey, seltzer or ginger ale.

Rickeys: Mixtures of gin, lime juice and non-alcoholic diluents.

Gin: Gin, lime juice, seltzer.

Puerto Rico: Gin, grenadine, lime juice, seltzer.

Sloe Gin: Sloe gin, lime juice, seltzer.

Sours: Mixtures of distilled liquors, lemon juice, sugar and non-alcoholic diluents

Applejack: Applejack, lemon juice, sugar, seltzer.

Bourbon: Bourbon whiskey, lemon juice, sugar, seltzer.

Brandy: Brandy, lemon juice, sugar, seltzer.

Gin: Gin, lemon juice, sugar, seltzer.

Rye: Rye whiskey, lemon juice, sugar, seltzer.

Scotch: Scotch whiskey, lemon juice, sugar, seltzer.

Fancy Drinks:

Horses Neck: Ginger ale, lemon peel.

Mamie Taylor: Scotch whiskey, lime juice, ginger ale.

Mint Julep: Bourbon whiskey, water, sugar, mint sprigs.

Planters Punch: Jamaica rum, grenadine, Curaçao, lemon juice.

Whiskey Punch: Whiskey, water, sugar, lemon juice.

Whiskey Smash: Whiskey, water, sugar, mint sprigs.

White Plush: Rye whiskey, maraschino, whole egg, milk.

Widow's Dream: Benedictine, whole egg, cream.

Pousse Cafés:

Cream: Maraschino, crème de menthe, yellow chartreuse, brandy.

Cream: Raspberry syrup, anisette, crème Yvette, yellow chartreuse, green chartreuse, brandy.

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