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T H E S I S

ON

The Supplying of Carbohydrates for the Home Table.

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THE S I S O U T L I N E .

The Supplying of Carbohydrates for the Home Table.

Introduction,

Various definitions of food.

Function of food in the body,

Five food principles.

Characteristics and functions of each.

Food in relation to health.

Common ignorance of food stuffs.

Marketing - Two methods,

French.

American.

Factors of successful marketing,

Familiarity with local markets.

Knowledge of seasons of food.

Inquiry from market men.

Constantly demanding the best of materials.

Survey of food products of the world.

Definition of digestibility.

Vegetables,

Definition.

Source of supply for Willamette Valley markets.

Nutritive value of.

Composition,

Table

Illustrations by drawings.

Classification of vegetables according to

Function in the body.

Form.

Manner of preparation.

Season.

Study of

Legumes.

Roots and tubers.

Fresh vegetables.

Table of information, including

Variety.

Source.

Selection

Mode of Selling

Price as purchased

Care after purchasing

Seasons

Remarks.

Fruits.

History of fruit cultivation in relation to civilization.

Cultivation - A great modifying factor in fruit quality.

Fruit market.

Preservation of fruit.

Nutritive and food value.

Classification,-

Fleshy, or pulpy.

Drupaceous.

Nuts or hard dry fruits.

How different from other fruits.

Growing recognition of food value.

Composition of

Fruits.

Nuts.

Table of information on fruits.

Name

Source

Selection

Mode of selling

Price as purchased

Care of.

Season

Remarks.

Cereals.

Derivation of the word.

As a world crop.

Composition of grains compared.

Study of

Wheat

Maize

Millet

Oats

Rye

Rice

Barley

Chief use of cereals

Bread stuffs.

Breakfast preparations.

Methods of preparing cereals.

Their composition - Table prices.

Digestibility of cereals.

Adulteration.

Cost considered.

Selection.

Care of food stuffs in the home.

Facilitated by good house plans and conveniences.

Factors to be considered.

Keep food from

Insects

Dust

Animals.

Improved methods of storage.

Cold storage.

Good home cellar.

Methods of preservation during summer.

Ice machine.

Refrigerator.

Care of.

Evaporating devices.

Conclusion,

Cleanliness in markets.-

Great importance to health and comfort.

Public sentiment the best regulator.

The necessity of stringent inspection laws.

The Supplying of Carbohydrates for the Home Table..

There are two well known methods of marketing. The first practiced largely by French and Mexican women, follows the system of buying each day's supplies as the occasion demands so that the store room is practically empty by night time; the second or American method is to buy all provisions possible, by the wholesale and small quantities only of the perishable articles. Either method has its advantages and disadvantages, hence every housewife who doubtless finds marketing for a large or small family no simple matter, may follow her preference with adequate results, remembering however, that the surest and most satisfactory purchases are made in person, rather than by phone. One factor which insures success in marketing is a thorough familiarity with the markets. This involves a knowledge of the lines of goods carried, its source, quality and prices. It entails also a study of foods, that one may judge independently whether a food is pure or adulterated, in or out of season, fresh or stale. While it is a point of economy to buy in season, for then are prices lowest and products usually most abundant and best, still with the vast improvements in shipping and methods of storage and preservation, almost any article may be gotten at any time of the year, regardless of season. The timidity common among shopping women in reference to asking questions of the grocer or butcher, sustained on the ground of being troublesome or

lack of time on the part of the salesman to give his attention to careful answers is unwarranted and inexcusable, for as a rule business men are helpful, painstaking and reliable, resenting not at all any practical inquiry from a faithful, interested and considerate customer.

Seldom also, do buyers, especially those of the smaller cities appreciate their opportunities for commanding the best which any market can furnish, if they are patient and persistent in their requests. As a nation is no better than its citizens, neither is a grocery establishment superior to the demands of its customers. Thus the responsibility of a well kept department, sanitary, and conducted in accordance with modern advancement rests, in large measure with the people who daily purchase their supplies from its counters. The progressive, fair minded dealer is keen to observe the justice of such demands, and the advantage in their heeding, so will gracefully meet the situation with benefit to all.

In Considering the supplying of Carbohydrates for the home table, our immediate thought is, what part do carbohydrates play as a food in the daily diet? To answer this inquiry we must first determine what is meant by the term food. According to Mr. Hutchison, food may be defined as "Anything which when taken into the body is capable either of repairing its waste or of furnishing it with material from which to produce heat or nervous

and muscular work"; by Fannie Merritt Farmer; as "Anything which nourishes the body"; by Janet McKinzie Hill as "One of the three essentials to life, which by its oxidation in the body liberates force and produces energy". Mr. Hoy says "Food is that (liquid or solid) which satisfies the hunger and replaces the solid waste of the body, while water is that which slakes the thirst and replaces the fluid waste of the body". Another authority states; "Food is that which goes to support life by being received within and assimilated by the organisms of an animal or plant; what is eaten for nourishment"; and Webster says "Food is that substance which is capable of sustaining an organism in a state of health, and is that which makes possible the continuing existence of all forms of life both animal and vegetable. It is to the human body the means by which the waste of the system is restored, its energies made effective and a healthy condition maintained".

Although variously expressed these definitions of food are based upon the same fundamental principles. All convey the essential truth, that food, in supplying those materials necessary for the nourishment, growth, repair and fuel requirements of the body is the chief factor upon which life itself depends: The one demand upon nature common to every person, from the savage to the philosopher since the beginning of time.

The whole complex process by which food is changed from the state of lifeless substance, as it enters the

body, to a vital, active portion of a living intelligent being, is not and may never be exactly and completely understood. Beyond certain definite facts established by years of careful research and scientific experiment, we see only the outward results of this wonderful inwardly wrought change.

That the food we eat is able to nourish our bodies and become a part of our very tissues is alone due to the fact that from it the body derives materials which are required for the formation, growth and repair of its organs and tissues, whose composition embraces the same elements as those of the body, namely, carbon, hydrogen, oxygen, nitrogen, calcium, chlorine, fluorine, iron, magnesium, phosphorus, potassium, silicate, sodium, and sulphur. These elements are found chemically compounded in the foods of the animal and vegetable kingdoms. While no one food contains all these elements, the great variety of food stuffs is due to the different proportions of elements present.

The whole realm of food stuffs consists of either organic or inorganic substances. The organic foods may be divided into the nitrogenous, or those containing a perceptible amount of nitrogen and the non-nitrogenous, containing little nitrogen. The first include the proteins, further subdivided into proteids, gelatinoids and extractives while the second includes the carbohydrates, or sugars, starches and celluloses, and the fats.

Inorganic compounds are water and mineral matter. Each of these five food principles which is found in every conceivable food, has its specific purpose and performs its special function in relation to the body nourishment.

The first mentioned, protein, characterized by its nitrogen content occupies a most important place in life processes. Although being the main constituent in the protoplasm of both the plant and animal cell, it is found most extensively in the animal kingdom. On account of its complexity in composition protein may be utilized to various ends in the body. While its chief office is to repair the waste and build body tissue a portion is appropriated to the production of heat and work.

The second class, carbohydrates, or compounds of carbon, hydrogen, and oxygen, predominate among plant foods and are found only as traces in the animal kingdom. Their chief function is to liberate heat and muscular energy, thus saving the tissues from consumption.

Fats, the third class, differ in composition from the carbohydrates only in proportion of the elements, the carbon exceeding by far that present with the same amount of oxygen in carbohydrates. For this reason they produce heat and energy which surpasses that produced by a like portion of carbohydrates both in amount and intensity. As a constituent of both animal and vegetable foods, fat is the most concentrated of all non-nitrogenous nutrients.

Mineral matters, comprising a number of salts of which soda, potash, lime, and phosphoric acid are the most

important to the needs of the body, are found in various quantities in all natural products, though particularly in milk, meat and vegetables. Salts aid in the formation of bone, muscle and gastric juice, preserve the alkalinity of the blood and prevent certain diseases.

Water, the fifth food principle, of which about two thirds of the body, weight is composed, is a compound of hydrogen and oxygen. It is present in all foods, but chiefly in fruits and vegetables, the amounts differing according to the structure of the article and the conditions under which it is grown. Water helps to regulate the temperature of the body and acts as a tissue former and solvent.

While both water and mineral matter have each their important functions in the body, and are therefore absolutely essential to a healthy condition, neither is capable of oxidation and hence have no fuel value.

Obviously the amount of nutriment obtainable from any variety of food stuff, for the nourishment of our bodies, depends upon its fuel value. This may be ascertained by reference to the chemical composition of the article. Since no food is capable of furnishing all the required elements in the proper proportions in order to maintain a perfect condition of health and efficiency, the daily diet must be composed of foods, whose quality and quantity balance with the actual requirements of the body.

The ability to plan and execute such combinations

is an art acquired by a thorough knowledge of household science as a whole, of normal food requirements, of food principles, of the various foods, and of their selection and care. A well supplied table, taken in the truest sense, is the result of profitably spent time and effort.

It is an established fact that a majority of the ills prevalent among humanity may be eliminated through a proper diet, wisely administered, and therefore not only the health and happiness but also the very prosperity of a nation depends upon the food eaten as surely as it does upon the home life of its citizens. Nature's important laws which govern nutrition mean far more than far more now, than formerly, since we have come to look upon health as the natural and disease the unnatural state of man, and the dawning sense that diet is largely responsible for good or ill health has its affect in directing the thought of the public mind to the real dunction of food.

The barbarous ignorance so common among the majority of persons regarding even the foods of most pequent use can be overcome through education. As the household management falls largely to the women in the homes, they and their daughters should be deeply concerned in attaining that actual knowledge which so markedly simplifies and adds interest to the commonest needs and tasks. Aside from the text books of information there are various sources from which we may draw with assured results. Artivles of real worth are published in the scientific and other periodicals, from which we may glean the most recent conclusions of the foremost thought. Also a sur-

prising amount of useful and definite knowledge may be unclosed by a careful study of food and food requirements in ones own home.

As a rule far too little attention is given to this phase of home life, consequently America, by her lack of understanding of practical economy in purchasing the necessary table foods is called an extravagant nation, lavish yet poorly fed, but the house wife who is wise in her management will regard this branch of her many duties as one demanding her keenest interest and will gladly avail herself of every opportunity to extend and broaden her knowledge. Constant and diligent investigation, resulting in positive intelligence regarding home requirements and market possibilities, brings skill and satisfaction to the purchaser, economy in time and money and comfort to the home.

The opportunities of the present for a complete and perfect study of the food products of the world and every phase of the subject between these products and life of man, exceed by far any of the past . For recognized as the broad foundation basis of our national, social, and intellectual superstructure, and as fundamental in the quality of the arts and higher industries, agriculture and food production, preparation and serving, are fast climbing to a vantage ground.

A brief survey of the more important or choice foods from the different nations, taken from "Food Products

of the World" by Mary E. Green as displayed at the
 Worlds Columbian Exposition, may be of interest;

Country	Products	Country	Products
Spain.....	Choice olive oil	Prussia.....	Grains
	Sardines.		Sugars
France.....	Mushrooms		Liquors
	Truffles	Italy.....	Cereals
England.....	Canned meats		Sugars
	Canned fishes		Macaroni
	Condiments		Pastes
	Preserves	Eastern Countries.....	Fine Coffee
Switzerland....	Dairy products	Japan.....	Tea
Netherlands....	Dairy products	Ceylon.....	Tea
Scandinavia....	Dairy products	Brazil.....	Chocolate
Trinidad.....	Liquors	Paraguay.....	Chocolate
Siam.....	Bamboo	Tunis.....	Limes
	Rice		Dates
	Bananas		Olives
	Preserved fruits		
America.....	Varied and profuse		
Canada.....	Cereals	California....	Fruits
Western States.	Cereals	Texas.....	Meats
Middle States..	Fruits	Montana.....	Mutton
Southern States	Fruits	Michigan.....	Sugar
Eastern States.	Fruits	Ohio	Syrup
New England....	Vegetables		Vegetables
Kansas.....	Sugars		

While a detailed study of all foods would doubtless be of interest and instruction, such study is here limited to the Carbohydrates, common only known as plant foods , or all vegetables, fruits and cereals. Plant foods are composed of the same food principles as animal foods, but differ from them as a class in that they are rich in carbohydrates and salts and poor in protein and fat. Plant foods are considered less easily digested than animal foods also, which fact is due to their abundance of cellulose or woody fiber.

As commonly used the terms digestion and digestibility refer to quickness of digestion or to the agreement of a given food with an individual, but in physiological usages, digestibility refers to the thoroughness with which a food is absorbed; the percentage of nutrients retained by the body from a certain amount of food consumed. In this treatise the meaning inferred by the latter definition is to be connected with the occurrence of either expression.

Vegetables, usually, though not botanically speaking include all plants used for food except grains and fruits. The variety and abundance or scarcity of vegetables grown in any locality, as well as that of fruits and cereals depends upon and corresponds to the climatic conditions, the agricultural resourcefulness of the locality and the temperment and civilization of its inhabitants. Many markets are supplied by local gardens with all the more

popular vegetables, the others being brought from neighboring states or countries. The Willamette valley markets depend upon home production to a great extent, there being small demand for such articles as cannot be grown in the rich valley soil.

With the vast variety of vegetables, different portions form the edible parts, some being eaten raw, others only when cooked. Their digestibility differs with the mechanical condition and the content of cellulose. The nutritive value of vegetables lies chiefly in their large percentage of water, variety of mineral salts, and varying amounts of carbohydrate substances in composition. They can boast of little protein or fat.

By a careful study of the following table of composition and the accompanying illustrations one may gain a very correct idea as to the relative nutritive value of the different vegetables.

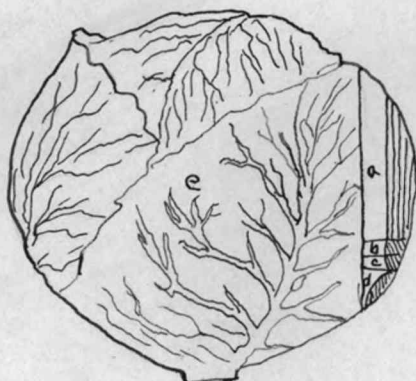
Average Chemical Composition of Vegetables as Purchased (Atwater)

	Percentage Composition.					
	Refuse	Water	Protein	Fat	Carbo.	Mineral.
Asparagus		94.0	1.8	.2	3.3	.7
Artichokes		79.5	2.6	.2	16.7	1.
Beans Butter Green	50.0	29.4	4.7	.3	14.6	1.0
Beans Lima fresh	55.0	30.0	3.2	.3	9.9	.8
Beans string fresh	7.0	83.0	2.1	.3	6.9	.7

Beans dried		12.6	22.5	1.8	59.6	3.5
Beets fresh	20.0	70.0	1.3	.1	7.7	.9
Brussels sprouts		88.2	4.7	1.1	9.4	1.7
Cabbage fresh	15.0	77.7	1.4	.2	4.8	.9
Cauliflower		92.3	1.8	.5	4.7	.7
Carrots fresh	20.0	70.6	.9	.2	7.4	.9
Celery	20.0	75.0	.9	.1	2.6	.8
Corn green	61.0	29.4	1.2	.4	7.7	.3
Cucumbers	15.0	81.1	.7	.2	2.6	.4
Egg plant		92.9	1.2	.3	5.1	.5
Kohl-rabi		91.1	2.	.1	5.5	1.
Lentils dried		8.4	25.7	1.0	59.2	5.7
Lettuce	15.0	80.5	1.0	.2	2.5	.8
Mushrooms		88.1	3.5	.4	6.8	1.2
Okra	12.5	78.9	1.4	.2	6.5	.5
Onions fresh	10.0	78.9	1.4	.3	8.9	.5
Parsnips	20.0	66.4	1.3	.4	10.8	1.1
Peas green	45.0	40.8	3.6	.2	9.8	.6
Potatoes fresh	20.0	62.0	1.8	.1	14.7	.8
Potatoes sweet	20.0	55.2	1.4	.6	21.9	.9
Spinash		92.3	2.1	.3	3.2	2.1
Squash	50.0	44.2	.7	.2	4.5	.4
Tomatoes fresh		94.3	.9	.4	3.9	.5
Turnips	30.0	62.7	.9	.1	5.7	.6
Jams		79.6	2.2	.5	15.5	1.5
Greens		82.9	3.8	.9	8.9	3.5
Watercress		93.1	.7	.5	4.4	1.3
Salsify		87.2	1.2	.08	11.2	.3
Endives		94.0	1.0		3.6	.8

COMPOSITION OF VEGETABLES.

Graphic Composition of Cabbage.

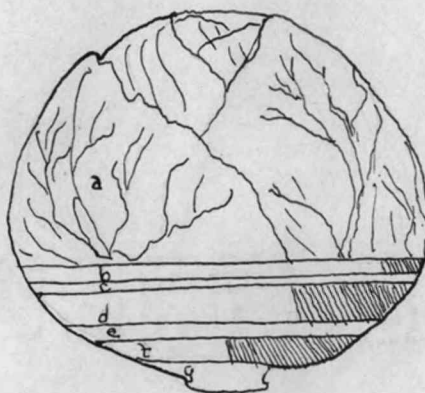


- a.- Carbohydrate.
- b.- Protein.
- c.- Fat
- d.- Mineral matter.
- e.- Water

Percentage Composition of Cabbage.

Loss on boiling.

a.- Water	39.6%
b.- Protein	1.1%
c.- Fat	.4%
d.- Carbohydrate	5.8%
e.- Cellulose	1.1%
f.- Mineral M.	1.3%
g.- Extract	.7%



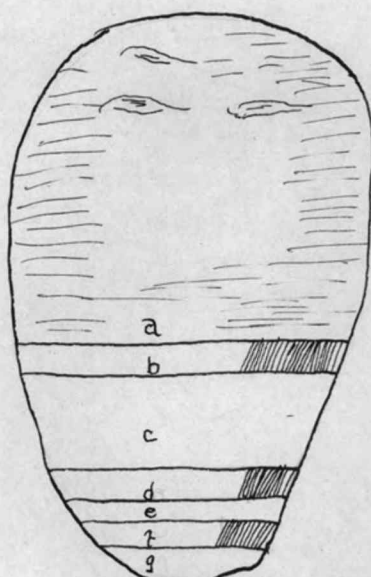
b.- Protein	10%
c.-	
d.- Carbohydrate	33%
f.- Mineral M.	50%
g.- Extract	100%

Percentage Composition.

a.- Water	76.7%
b.- Protein	1.2%
c.- Starch	19.1%
d.- Extract	1.4%
e.- Fibre	.6%
f.- Mineral M.	.9%
g.- Fat	.6%

Loss on boiling

b.- Protein	25%
d.- Extract	26.8%
f.- Mineral M.	38%



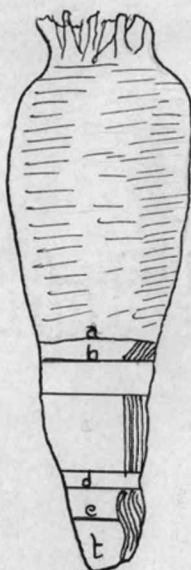
Potato

Percentage Composition

a.- Water	86. %
b.- Protein	1.5%
c.- Carbohydrate	10.1%
d.- Fat	.3%
e.- Mineral M.	9.1%
f.- Extract	19. %

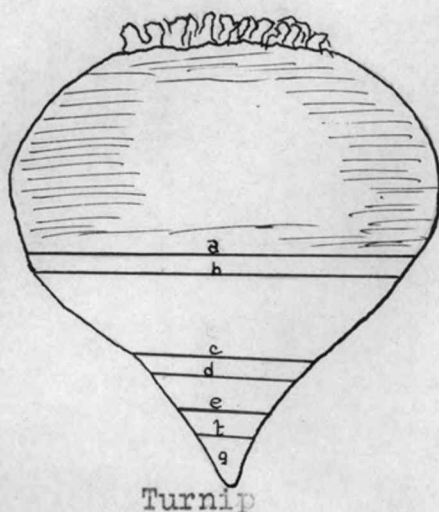
Loss on boiling.

b.- Protein	6.4%
c.- Carbohydrate	25 %
e.- Mineral M.	37 %
f.- Extract	21 %

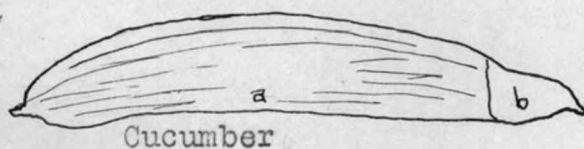


Carrot

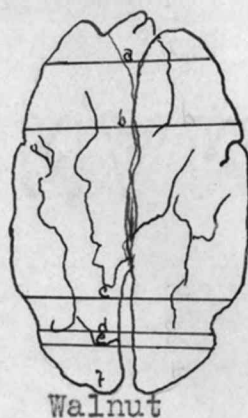
Percentage Composition.



a.-	Water	90.3%
b.-	Protein	5.1%
c.-	Carbohydrate	5.1%
d.-	Extract	15.1%
e.-	Fibre	1.8%
f.-	Minneral M.	.8%
g.-	Fat	15.1%

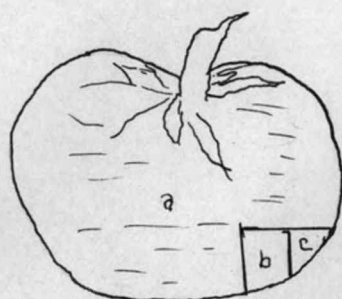


a.-	Water
b.-	Solids



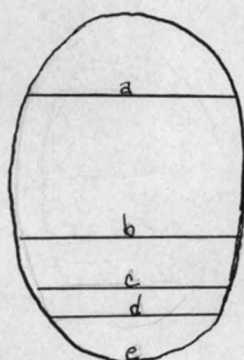
a.-	Water	4.6%
b.-	Protein	15.6%
c.-	Fat	62.1%
d.-	Carbohydrate	7.4%
e.-	Minneral M.	2.1%
f.-	Cellulose	7.8%

Graphic Composition.



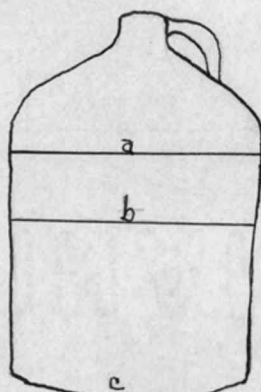
Tomato

a.- Water	93.76%
b.- Sugar	25. %
c.- Non sugar solids	13.3 %



Egg.

a.- Refuse	.2%
b.- Water	75 %
c.- Protein	13 %
d.- Fat	12 %
e.- Mineral M.	.8%



Syrup.

a.- Ash	15%
b.- Water	30%
c.- Sugar	55%

There are various classifications of vegetables, some of which are the following:-

I According to their function in the body,

Class	Examples.
Nitrogenous -----	Peas
(Muscle making)	Beans
	Nuts
	Lentils.
Carbohydrate-----	Rice
(Heat and energy producing)	Potatoes
	Macaroni
	Parsnips
Fatty group-----	Nuts
(Heat and fat producing)	Olives
	Peas
Succulent group----	Important as cleansers.
- Artichokes	Cauliflower
Asparagus	Brussels sprouts
Green Beans	Kale
Beets	Carrots
Cabbage	Celery
Egg plant	Corn.

II According to form.

Tubers-----	White potatoes	Leaves
	Jerusalem artichokes	Brussels sprouts
Roots-----	Beets Radishes	Beet greens
	Carrots Salsify	Cabbage
	Parsnips Turnips	Lettuce

Bulbs-----	Garlic	Sorrel
	Onions	Spinach
	Shallots	Watercress
Stems-----	Asparagus	Flowers
	Celery	Cauliflower
	Chives	Nasturtium.

Fruit

Beans	Tomatoes
Corn	Okra
Cucumber	Egg plant
Lentils	Peas
Squash	Pumpkins

III According to manner of preparation.

Cooking

Strong juiced		Sweet juiced	
Turnips		Corn	Peas
Cabbage		Potatoes	Tomatoes
Onions		Squash	Spinach
Brussels Sprouts		Parsnips	Celery
Kohli Rabi		Carrots	Beets

IV According to Seasons

Spring

Lettuce
Radish
Peas
Asparagus
Cress
Spinach

Autumn

Corn
Melons
Tomatoes
Parsnips
Cucumber
Pumpkins

Summer

Potatoes
Beans
Turnips
Carrots
Artichokes
Beets
Cauliflower
Kohli Rabi
Tomatoes

Winter

Turnips
Parsnips
Cabbage
Broccoli
Celery
Brussels sprouts
Kale
Sweet potatoes
Pumpkins

For the purpose of classified study, vegetables may be termed according to their chemical compositions, Legumes, Roots and Tubers and Fresh vegetables.

The edible fungi and the legumes or pod bearing plants represented by mushrooms, peas, beans and lentels, head the vegetable kingdom in respect to richness in nitrogenous substance. They also contain much starch, are rich in salts but deficient in fat. As a class they are rather indigestible, but on account of their abundance of protein are much used as flesh substitutes and may be purchased dried or green.

The roots and tubers represent a large class of starchy vegetables of which, potatoes, carrots, parsnips and radishes are fair examples. Their average composition is 75% water, 25% carbohydrate and 2% protein. Their use is quite universal, and they are properly winter vegetables, remaining in tact if properly cared for. The

majority of such plants will remain plump and fresh if packed in earth or sand filled boxes and kept in a modern cellar.

Fresh vegetables do not possiss high food qualities but are valuable at all seasons of the year on account of the saline elements they contain, and especially so in summer when the heat of the body needs to be regulated they provide the system with a direct source of pure water. Therefore each in its season should fill its place on the table. They are also appreciated for their variety of flavors, antiscorbutic properties, and value as laxatives.

A large number of green vegetables are known as acetarious or salad plants, and are becoming more extensively used in this agreeable fashion, some having no other function.

Fresh vegetables must be selected carefully and in their season. Those from a distance are liable to be wilted and quite expensive. Sometimes they will freshen up if soaked in or sprinkled with water for a few hours. The quantity purchased depends upon the home requirements, but seldom are more gotten than can conveniently be used in a short time.

Table of Information

Name	Source	Season	Points in selection
Peas			
American wonder.	For Corvallis markets	May 15	Pods crisp and plump
Marrow fat.	Oregon Valley	Nov. 1	Small quantities at a time. Use green, dried and canned.
McLean Champion	gardners.		Peas good quality if fresh and green.
Chick Pea			
Lentils			
3 varieties			
1. Small round white		All year round.	In dried state usually.
2. Larger yellow	California		
3. Small flat tablet shape			
Beans			
Lady Washington	Oregon		Whole free from chunks of dirt and husks or shells.
Lima or Butter	California	June 1st to Sept. 1st	
Bayon or Brown			
Spanish or Pink			
String			
Golden Wax	Oregon		Crisp tender, free from strings. Green, small veined, pods juicy & brittle.
Kentucky wonder	summer		
Navy Bean	California		
Kidney.	winter		
Fungi			
Mushrooms	Nebraska		Morels: Head conical
Morels	Oregon	Sept. to Nov.	Color light brown.
Truffles	France		Truffles: Highly colored, spotted, scaly, red or brown and brittle.
	Aried ones	Feb. to Mar.	
	Europe Profuse		
Kohli Rabi			
	Oregon	July 15 to Jan.	Same as turnip.

on Vegetables.

Mode of selling	Price	Care after purchasing	Remarks
Per lb.	.06	Keep in cool place. Shell only when ready to use.	Cultivated since days of Greeks. Easily digested when young. McLean best quality. Small flat pods. Champion large well filled pods. Lack sweetness.
Per lb.	.081/3	Cover in jars or crocks in dry place.	Use- vegetable soup. Not of frequent use in America yet. 3rd variety of delicate flavor. Much used.
Per lb.	L.W. .06 $\frac{1}{2}$ N. .07 L. .08 B. .06 P. .07 .10 .03	Same as lentils. Keep cool and damp Restore freshness by soaking 5 to 8 hrs. in salt water.	Native of Egypt. Dried purchased all year at any grocery. 5 qts. in pod of shells beans equals 1 qt. shelled. Green beans cheapest. Early vegetables.
			Favor animal foods in flavor and nour- ishment. Plentiful after Sept. frosts Use in U.S. for season- ing, vegetables and soups. Nocturnal in growth. Delicate in flavor. Nutritious food.
Per head	.05	Stored in cellar for winter use.	Resembles turnips. Use the same.

Continued.

Name	Source	Season	Points in selection
Potatoes	Oregon		Size medium. Eyes long
Varieties	Idaho	Apr. 1st	and shallow. Surface
Burbank	California	to	smooth. Weight heavy
Early Rose.	Washington	Dec. 1st	to size of potato. Not
" Wonder.			soft or wilted. Skins
			smooth
Potato Sweet.	California	June to	Size medium. Firm and
Kechu dried	Southern Ore.	July.	brittle. Wiltness
best quality			sure sign of decompos-
Yams.			ition.
Artichokes			
French	Oregon	Jan 15	
Jerusalem		to	Fresh and firm.
		Oct. 1	
Salsify or	Oregon		
Oyster plant.	Local gardeners	June 15 to	Fresh and green and
		March 1.	brittle. Stalks not
			pithy.
Radishes			Fresh and crisp/
French break-	World wide	May 1	Firm. Not woody or
fast.	product.	to	hollow. Grown Quick-
Scarlet turnip	Local Ore.	Sept.	ly.
Long scarlet			
Icycle			
Early Rocket			
Turnip	Universal	June 1	Firm texture.
Rhutabega	Oregon	to	Color rich.
French	Valley	Mar. 1	Brittle and tender.
Purple Top	Farmers.		Flavor sweet.
Flat Dutch			Long and yellow.
Ruta Baga			
Cauliflowers			Choose white heads with
Early Snowball	Oregon	Sept. to	fresh green leaves.
Broccoli	Local	March	Avoid dark spots in
another variety	Farmers		heads which is sign of
			unfreshness. Flowers
			closely packed, brittle
			and firm.

Continued.

Mode of selling	Price	Care after Purchasing	Remarks
Per lb.	.01 $\frac{1}{4}$	Placed in modern cellar.	New Potatoes contain immature starch. Are not good for infants or invalids. Are most liable to sprout if taken from ground before they are mature. Are best in fall.
" bu.	.75	Add 1 lb. lime to each sack. of potatoes to get rid of earthy odor. Do not expose to light. Remove sprouts. May pack bucket of water by to prevent freezing.	
	.50		
Per lb.	.03	Do not keep well. Keep in temperature little above freezing. 34 F. Pack in chaff. Do not let them touch.	Contain much sugar. Used most extensively in the Southern States. Yams-large variety.
Per head	.10	Keep cool. Before using pare and place in vinegar water to prevent discoloring.	French-expensive Jerusalem-common. Use-pickeling and salads. Resemble thistle.
Per bunch	.05	Freshened by placing in cold aciduated water. Stored in boxes or packed in a cool dry place.	Belongs to Goats' beard family. Resemble parsnip. Used as a flavor vegetable and soup basis.
Per bunch		Keep standing in cold water. Leave tops and roots on until ready to use.	Use uncooked as a relish, garnish in salads. Cultivated in India since remotest period. In Eng. since 13th century.
8 - 12 in a bunch	.05		
	.10		
Per lb.	.02 $\frac{1}{2}$	Store for winter use as other roots in the cellar. Best in fall when quickly grown after a good shower. Store as turnip	Become corky if kept till spring. Young tender leaves are excellent greens. Not a nutritious food. 1% nitrogenous. Use as turnip.
" bunch	.05		
Per head	.05 to	Stand head down in salt water immediately. May be pickled in vinegar and spices, with cucumbers.	Stalk and flowers of a plant similar to Brussels sprouts and cabbage. The most delicate and digestible of all species of cabbage. Broccoli, Italian origin.
" lb.	.10		
	.02 $\frac{1}{2}$		

Continued.

Name	Source	Season	Points in selection
Kale or German Greens Sea Kale	Oregon	Feb. to June	Best quality have curley leaves. Fresh green and crisp.
Onions Yellow Denver Texas Bermuda Spanish Welsh Tree or Top Abol variety	Oregon Behton Co. Texas.	Apr. 1 to Dec. 1	Small white preferable to greenish of dried quality. Large sizes are milder of flavor. Green onions- Stems Fresh cut and juicy.
Garlic Chives Shallot Leek.	United States Southern " Oregon some.	Spring	Used green and dried, flavoring. Leaves flat and hollow. Green, fresh crisp, juicy, young and white.
Lettuce Cabbage heads. Coss L. Lambs L.	Oregon All states	Mar. 1 to May 1	Curley leaves. Straight leaves. Lettuce hearts. Fresh, green, crisp, tender and young. Heart firm. Bleached.
Nettles Dandelion Sorrel.	Oregon valley gard- ners. Oregon Oregon.	June to August	Tender and fresh. Select young tops. Young tender leaves.
Asparagus White Green	Grown in France Germany Oregon Corvallis markets.	April 1 to June 15.	Tender and young. Test- can be pierced with fin- gers nail is not old, 5 in. below top. Leaves crisp.

Continued.

Mode of selling	Price	Care after Purchasing	Remarks
Per bunch	.05	Sprinkle with cold water. Keep in cool place till used. Sea Kale-kept in dark. Develop strong unpleasant flavor in light.	Most delicate flavor. Sea Kale-young sprouts of Sea Cabbage. Easily digested. Nutritive Easily obtained.
Per bunch	Y.D..05	Dried onions kept in cool	Spanish high price
" lb.	T.B..02	dark place. Remove bad	Wholesome served
	B. .06	ones quickly. Fresh onion kept in ice water till ready for use. Handle little.	raw or cooked. Nutritive. Green in spring. Dried rest of year. Good seasoning, for salads, meat loaves, and dressing.
Per lb.	.25	Green keep in cool damp	Related to onion
" bunch	.05	place. Dried, closely covered and dry. Air occasionally-recover. Stored in cool damp receptacle or in ice water till used.	Bulb is more complex. It is exceedingly healthful. Characteristics are due to presence of garlic oil. Chives, Welsh onion Shallot, delicately flavored.
Per bunch	.05	Keep fresh by removing	Appetizer. Little
" to 10		leaves and placing in	Nutritive value.
" head two for 05		cold water or strapped in cloth or in wire basket on ice.	Hothouse plant in winter. Universal salad plant. Beautiful garnish. Milky juice is a sedative
Per bunch	.05	Keep cool in water.	Use- Greens
" "	.05	" " " "	" "
" "	.05	" " " "	" salads.
Per bunch		Place on ice. Keep cool	Used as early as
Extra.		Place heads down for	425 B.C. Remedy
Primes		some hours before using	for palpitation
Second		Require much cleaning	Slight nutritive
Culls		before using.	value. Green-finer flavored.

Continued.

Name	Source	Season	Points in selection
Celery	Universal	All year	Crisp and tender stalks. Leaves fresh. Color green, or white. Not woody fibered nor tough.
Red			
White	Oregon		
Green			
Celerica			Celerica- Large root- ed celery. Used for cooking only
Spinach or Spinage	Oregon	June 1 to Mar. 1	Leaves only before stem is mature. Not old or seedy. Not dark leaves or thick with thready stalk. Scat- tered blossoms. Leaves dirty. Best.
	Canned in		
	Eastern & Western states		
Cress			
Watercress		May 1	Fresh and tender leaves, flowers or stems.
Indian cress	America	to	
Pepper grass.	Europe	July	
Tomato			Smooth, red. Thin skins. Regular in shape. Not too lar- ge nor small. Firm
Acme	California	July	
Yellow	Oregon	Nov. 15	
Cucumber			Juicy, sweet, fresh, Quickly grown. Long, slender.
Table variety	Portland	June 1	
Gherkins.	Hothouses	to	
	Oregon-all	Nov. 1	
Pumpkins			Color-dark yellow. Weight heavy. Shells hard. Ripe-mature.
Sugar	Oregon	Sept. 1	
Yankee		to	
Sweet		Mar. 1	
Squash	Oregon	Sept. 1	Color deep green. Shell hard. Weight heavy. Young, tender Skins thin.
Winter		to	
Marrow			
Turban			
Hubbard			
Summer.			

Continued.

Mode of selling	Price	Care after Purchasing	Remarks.
Per stalk.	.10	Keep crisp by strapping in cloth and placing in ice. Standing in cold water. Kept white by adding lemon juice to water. For winter use by covering with earth and keeping cool.	Use-stem, roots, leaves. Leaves green & yellow are beautiful for garnishing. Much used in soups as a vegetable boiled and in salads. Good for nervousness and rheumatism.
Per bunch	.05	Spinach required much cleaning also. Is easily kept if put in cool damp place.	Valuable winter vegetable. From beet family. Native of Japan and New Zealand. Popular. Not nutritious.
Per bunch	.05	Keep in cold water or on ice. Adding little salt to water helps to freshen.	From Mustard family. Grows luxuriantly. Use-flavor and garnish.
Per lb.	.02	If green spread on paper	A fruit used widely as a vegetable.
" bu.	.065	on roof to ripen. If ripe can. Keep cool. Remove all that spoil. Air but dry. Gather before frost	Origin from tropical portion of America. Capable of variety of ways in serving. Yellow-good preserves.
Per bu.		For pickeling, gather when young. Pickle immediately. Do not keep	Table variety short large. Served raw generally. Pickled in large quantities
" piece (large)	\$1.25	6 for 5¢ fresh long in salt water	Not much nourishment.
Each	.05	Keep in cellar on shelf	Use-for pies and as a sauce or vegetable
	.25	Not touching each other May be canned.	Large percentage water.
Apiece according	5¢-10¢ 15¢	Keep for winter use the same as pumpkins.	Summer varieties white, round, yellow crooked. Squashes used as vegetables sauces and pies.

Continued.

Name	Source	Season	Points in selection
Parsley Champion	Oregon Local Gardners	Jan. Jan.	Curley leaves, fresh and tender.
Chicory or Endive Wiltloof	Oregon	May to June	Fit for salads. Wiltloof-Same as Spinach
Beets Blood Tur- nip White.	For market in all the Western States to Oregon for Corvallis markets.	Jan. 15 Mar. 1	See that the leaves are not wilted. Beets not cracked. Color rich, good weight. Size medium.
Parsnips Long White Hollow Crown	Oregon All Western States. Local-valley gardners.	Aug. 1 to May 15.	Best having been dug in the fall just after frost or snow. If rusty, have been left in the ground too long. Not good.
Carrots French Breakfast. Oxheart Shorthorn	Oregon	June 15 to Mar. 1	Firm to touch. Leaves not wilted. Size med- ium. Brittle, tender and young.
Cabbage Early varieties: Early Ox- heart. Jersey Wake- field. Late: Drunhead large Flat Dutch. Others: Savory Purple.	Oregon California	All year	Select heavy solid head Savory is best for boil- ing. Purple for coleslaw Leaves crisp, white. Stalk cut close to the head.

Continued.

Mode of selling	Price	Care after Purchasing	Remarks
Per bunch	.05	Place in cool place in dish of cold water.	Used as a garnish, seasoning for meals and salads.
Per bunch	.05	Keep cool, crisp	
" head	.05-10		Use for salads. Wiltloof-Solid head of leaves. Roots used as an adulterant for coffee.
Per bunch	.05	Do not bruise, cut the	Use as a vegetable
" lb.	.13	leaves off or prick the skin, or the best will bleed. Keep in cellar.	or pickled. Leaves sometimes used for greens. Resembles carrot in nutrition.
Per bunch	.04	Store in cellar as any	Excellent winter
" lb.	.02½	other root for winter keeping. Easily preserved.	vegetable. More nutritious than carrots. Characteristic-sweetness. Good occasional substitute for potatoes.
Per bunch	.05	Dug in autumn and stor	Use-flavoring soups
" lb.	.02-.10	ed the same as turnips or parsnips. Pack in earth or sand filled boxes, place in cellar.	Garnish vegetables Wholesome when ground Difficult of digestion French B-small, red or yellow. Oxheart-long, red.
Per head	.05-.10	Kept in cool place.	Native of Germany &
" lb.	.03-.05	Freshen by sprinkling with salt water. For winter use make in to Sauer Kraut or place in barrels roots up, in a cellar. Will keep some time. Keep near, but not to freezing point.	Saxony. Cabbage-most representative of green vegetables. Use-raw, boiled, sauer kraut. Contain no poisonous substance are antiscorbutic in nature.

Continued.

Name	Source	Season	Points in selection
Brussels Sprouts	Oregon Corvallis market. Local gard- ners.	Sept. 1 to Jan. 1	Small green heads. Fresh crisp leaves. Flavor good.
Greens	Oregon valley gardeners	All year	Green, fresh and ten- der. Clean and whole Not worm eaten. Not stringy.

Continued.

Mode of selling	Price	Care after Purchasing	Remarks
Per lb.	.05	Similar to cabbage.	Native of Oregon,
" qt.	.10	More hardy plant.	also imported.
			Species of cabbage.
			Use-same as cabbage.
Per bunch	.05	Use soon. Keep wrapped in cloth on ice or in cold water.	From Beet Dandelion. Turnip Cabbage Mustard Kale & others.

Fruits.

Some one has said that the history of the cultivation of fruits is contemporaneous with the history of civilization, and that only with the introduction of the industries and luxuries of civilization comes the highest development, by cultivation, of at first few then many varieties. Man was once known as a frugivorous being. From a botanist's point of view fruits, the seed bearing portion of any plant, exceeds in human value all other parts of the plant. In a restricted sense all fruits are to a small degree tissue formers. While the great variety of fruits from any locality present an almost unlimited range in color, form and appearance, they are as a whole valuable additions to our diet and may be made to furnish quite an appreciable portion of the required nutrients of daily life.

Because of their large proportion of pure water, which is of the utmost value to the body, fresh fruits are dilute foods, resembling in nutritive value the green vegetables. But the more concentrated, dried, or canned fruits are similar to the cereals and other dry food materials. Foods are further characterized by their content of carbohydrates and mineral salts, hence the propriety in serving them with a protein rich meal.

Fruits are used in both the raw or fresh and the cooked or prepared state. When of an easily digestible nature the raw or natural state is preferable.

The size, yield, color, flavor, texture and chemical

composition of fruits is largely influenced and modified by cultivation. All these qualities affect the market of fruits and are points for consideration to the buyer who should be satisfied with only the highest standards. Supplied as the world is today with all kinds, the fruit market fluctuates according to many circumstances, still here as with other food products, as a rule it is the part of wisdom to buy and use fruits during their season, purchasing and storing large quantities of those which can be kept and canning the winter supply when the article is abundant and the price low.

Fruits may be preserved in many ways, the most common are by drying, canning, pickeling, jellying and storing. The last mentioned may be simply in boxes or barrels in a storeroom, or by packing in sand or sawdust from which the moisture has been excluded. The most satisfactory results are obtained by selecting fresh, sound, firm, home grown and carefully handled fruits for any manner of preservation.

The agreeable aroma of fruits due to the presence of essential oils and ethers, along with the delicious tart flavor peculiar to certain qualities places all fruits in the foreground as appetizers. The especially tart fruits are known as the acid group and oil used particularly for jellies and preserves.

Aside from water, fruits are largely carbohydrate foods, those containing above eighty percent water are known as flavor fruits represented by the berries; those

Fruits contain very little fat or protein and not an appreciable amount of mineral salts.

The food value of fruits like other foods is determined by the proportions of food principles which they contain after the inedible portions such as skins and seeds, known as waste or refuse is deducted. The following table will serve to make clear the composition and refuse content of many varieties, while the drawings simply illustrate the same facts. We must not estimate the food value purely from the chemical composition, for fruits really contain very little nutriment, their chief value lying in their ability to give flavor and palatability to other foods and to influence most favorably the digestive processes.

Fruits may be classified as "Fleshy or Pulpy", "Drupaceous" and "Hard dry or Nuts". Under the first class are the greatest variety, while the second is comprised of fruits containing a single celled stony nucleus inside of which is a seed, the whole surrounded by a succulent fleshy coat.

The first class is divided into

Pomes.

Citrus family.

Ex. Apple

Ex. Oranges

Pear

Lemons

Quince

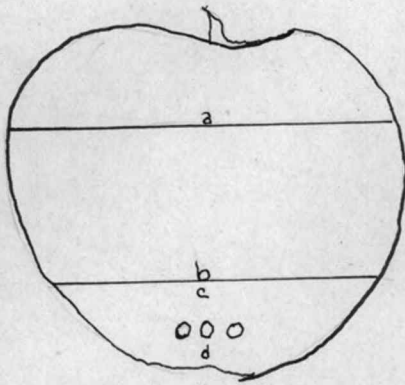
Grape fruit

Limes.

Composition of Some Cereal Preparations
(From Farmers Bulletin No. 289. by Woods and Snyder.)

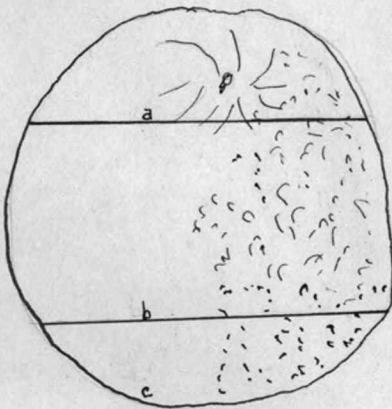
Kind of food	Water	Protein	Fat	Carbo.	Min. M.	Price as Pur.
Oat preparations						
Oats whole grain	11.0	11.8	5.0	69.2	3.0	35 - 40¢ per lb.
Oat meal raw	7.3	16.1	7.2	67.5	1.9	6¢ " "
Rolled oats, steamed	8.2	16.1	7.4	66.5	1.8	35¢ " pkg.
Flaked and malted oats	7.9	16.2	5.2	68.3	2.4	30¢ " "
Flaked oats eaten raw	8.6	13.1	7.8	68.8	1.7	15¢ " "
Wheat						
Whole grain	11.9	11.9	2.1	73.7	1.8	50 - 60¢ " bu.
Cracked wheat	11.1	11.1	1.7	75.9	1.6	40¢ per 9 lb. sk.
Rolled wheat steamed	10.2	10.2	1.8	76.9	1.5	30¢ per pkg.
Flaked and crisped, raw	9.4	12.2	1.4	74.8	8.9	10¢ " "
Shredded wheat	8.1	10.6	1.4	78.1	1.8	15¢ " "
Crumbed and malted	5.6	12.2	1.0	79.3	1.9	10¢ " "
Flaked, eaten raw	10.0	9.9	2.1	76.3	.4	10¢ " "
Farina	10.9	11.0	1.4	76.3	.4	25¢ " "
Entire wheat flour	11.4	13.8	1.9	71.9	1.0	\$1.50 per sk. 100 lb.
Graham	11.3	13.3	2.2	71.4	1.8	40¢ " 9 lb sk.
Rye						
Whole grain	11.6	10.6	1.7	74.2	1.9	10¢ per pkg.
Flaked	11.1	10.0	1.4	75.8	1.7	30¢ per pkg.
Barley						
Whole grain	10.9	12.4	1.8	72.5	2.4	
Pearled barley	11.5	8.5	1.1	77.8	1.1	30¢ per pkg.
Flaked, steamed	8.8	8.9	1.1	77.9	1.3	25¢ " "
Flaked, eaten raw	10.8	8.9	.8	77.9	.9	10¢ " "
Buckwheat						
Whole flour	13.6	6.4	1.2	77.9	.9	
Corn						
Corn meal	12.5	9.2	1.9	75.4	1.0	40¢ per 9 lb sk.
Hominy	10.9	8.6	.6	79.6	.3	40¢ " " " "
Flaked	7.3	10.1	1.8	78.4	2.4	15¢ " pkg.
Popcorn	4.3	10.7	1.0	78.7	1.3	15¢ " lb.
Rice - puffed						
Crackers	7.1	6.2	.6	85.7	5.1	10¢ " pkg.
Macaroni	6.8	10.7	8.8	71.9	1.8	10¢ " "
Bread	10.3	13.4	8.8	74.1	1.3	12¢ " lb.
	38.4	9.7	.5	70.1	2.2	.05¢ " " 1 loaf

Graphic Composition.



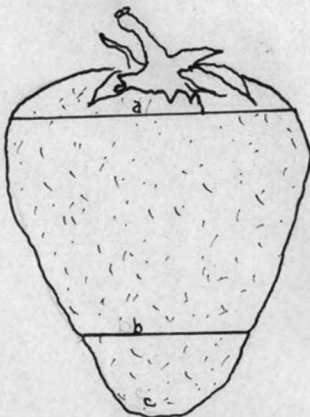
Apple

- a.- Refuse
- b.- Water
- c.- Carbohydrate
- d.- Acids



Orange

- a.- Refuse
- b.- Water
- c.- Sugar



Strawberry.

- a.- Refuse
- b.- Water
- c.- Sugar

Acid fruits

Ex. Grapes

Currants

Cranberries

Barbary

Berry family

Ex. Huckleberry

Strawberry

Gooseberry

Blackberry

Elderberry

Mulberry

Cranberry

Melon family

Ex. Watermelon

Muskmelon

Cantaloupe.

Meat fruits

Ex. Bananas

Figs

Prunes

Dates

Tropical fruits.

Ex. Banana

Pomegranate

Pawpaw

Gueva

Walnut

Chestnut

Hazelnut

Filbert

Beechnut

Acorn.

Drupaceous fruits

Ex. Cherry

Plum

Peach

Nectarine

Apricot

Date

Mango

Nuts or hard dry fruits

Ex. Almond

Brazil nut

Cocoanut

Peanut

Tamberine

Hickorynut.

Nuts which are succulent fruits differ from other fruits in both flavor and nutritive value. They must be regarded as nutritive foods and are excellent meat substitutes. Being rich in fat they supply much heat and energy.

Until recent years nuts were not recognized as being worthy a place among foods, but at present their use as deserts, in salads and cakes, as vegetable or meat substitutes is becoming daily more popular. Their low content of water makes them easily kept. The few varieties not produced in the United States are imported from other countries and may be purchased at all times of the year. They are most expensive during the winter months. But since they contain approximately twice the food value of cereals, their actual cost should be compared with meats instead of other food stuffs.

A study of the following tables will show the part fruits and nuts occupy in the food world as sources of nutrition for the animal kingdom, while the table of information may give some definite knowledge and a few useful hints as to the care and purchase of fruits.

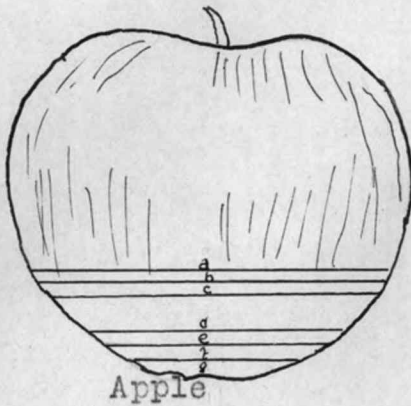
Average Composition of Nuts
(From Food Materials and their Adulteration.
by E. H. Richards.)

	Refuse	Edible Portion	Water	Edible Prot.	Portion Fat	Carbo	Ash
	%	%	%	%	%	%	%
Acorns	35.6	64.4	2.6	5.2	24.1	30.9	1.6
Almonds	64.8	35.2	1.7	7.3	19.3	6.2	1.7
Almond kernels		100.0	4.8	21.0	54.9	17.3	2.0
Beechnuts	40.8	59.2	2.3	12.0	34.0	7.8	2.1
Butternuts	86.4	13.6	0.6	3.8	8.3	0.5	0.4
Brazil nuts	49.6	50.4	2.7	8.6	33.6	3.5	2.0
Chestnuts	16.1	83.9	31.0	5.7	6.7	39.0	1.5
Cocoanuts	48.8	51.2	7.2	2.9	25.9	14.3	0.9
Cocoanuts shredded			3.5	6.3	57.3	31.6	1.3
Cocoanut milk			92.7	0.4	1.5	4.6	0.8
Filberts	52.1	47.9	1.8	7.5	31.3	6.2	1.1
Filbert kernels		100.0	2.9	10.3	70.8	14.3	1.7
Hickory nuts	62.2	37.8	1.4	5.8	25.5	4.3	0.8
Litchi nuts	41.6	58.4	10.5	1.7	0.1	45.0	0.9
Pecans	49.7	50.3	1.4	5.2	35.6	7.2	0.8
Pecan kernels		100.0	2.9	10.3	70.8	14.3	1.7
Pican, P. Edulis	40.6	59.4	2.0	8.7	36.8	10.2	1.7
Pican, P. Mon.	41.7	58.3	2.2	3.8	35.4	15.3	1.6
Pican, P. Sabin.	77.0	23.0	1.2	6.5	12.3	1.9	1.1
Pistachis kernels		100.0	4.2	22.6	54.5	15.6	3.1
Peanuts raw	26.4	73.6	6.9	20.6	30.7	13.8	1.6
Peanut kernels		100.0	9.3	27.9	42.0	18.7	2.1
Peanut Butter			2.0	29.3	46.6	17.1	5.0
Roasted Peanuts	32.6	67.4	1.1	27.9	33.0	10.9	1.7
Walnuts	58.0	42.0	1.2	7.0	27.0	6.1	0.7
Walnut kernels		100.0	2.8	16.7	64.4	14.8	1.3

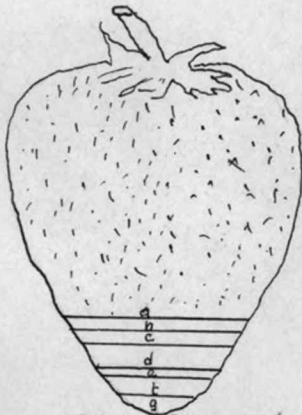
The Average Chemical Composition of Fresh Fruit.
As Purchased (Atwater)

Article - Fruit	Percentage Composition.					
	Refuse	Water	Protein	Fat	Carbo.	Min. M.
Apples	25.0	63.0	.3	.3	10.8	.3
Apricots	6.0	79.0	1.0		12.6	.5
Bananas	35.0	48.0	.83	1.0	10.9	.5
Blackberries		86.3	1.3	1.0	10.9	.5
Cherries	5.0	76.8	.9	.8	15.9	.6
Cranberries		88.9	.4	.6	9.9	.2
Currants		85.0	1.5		12.8	.7
Currants dried		17.2	2.4	1.7	74.2	4.5
Dates	10.0	13.8	1.9	2.5	70.6	1.2
Figs		79.0	1.5		18.8	.6
Grapes	25.0	58.0	1.0	1.8	14.4	.4
Huckleberries		81.9	.6	.6	14.6	.3
Lemons	30.0	62.5	.7	.5	5.9	.4
Muskmelons	50.0	44.8	.3		4.6	.3
Oranges	27.0	63.4	.6	.1	8.5	.4
Pears	10.0	76.0	.5	.4	12.7	.4
Pineapples		89.3	.4	.3	9.7	.3
Plums	5.0	74.5	.9		19.1	.5
Prunes	5.8	75.6	.7		17.5	.5
Prunes dried	15.0	19.0	1.8		62.2	2.0
Raspberries		85.8	1.0		12.6	.6
Raisins	10.0	13.1	2.3	3.0	62.5	3.1
Strawberries	5	89.9	.9	.6	7.	.6
Watermelons	59.4	37.5	.2	.1	2.7	.3

Percentage Composition.



a.- Water	82.5%
b.- Protein	.4%
c.- Fat	.3%
d.- Carbohydrate	12.5%
e.- Mineral M.	.4%
f.- Acids	1.6%
g.- Cellulose	2.7%



a.- Water	89.1%
b.- Protein	1. %
c.- Extract	.5%
d.- Carbohydrate	3.5%
e.- Mineral M.	.7%
f.- Cellulose	2.2%
g.- Acids	12. %

Strawberry/



a.- Water	74. %
b.- Protein	1.5%
c.- Extract	.7%
d.- Carbohydrate	22.7%
e.- Mineral M.	.9%
f.- Cellulose	.5%

Banana

Table of Information

Fruit	Source	Season	Selection
Apples	Oregon, Hood River Section of Country.	July to June	Smooth skinned Solid, not bruised or decayed. Desert apples--juicy, tender. Cider apples--juicy and sweet.
Apricots			
Marrowport	California	Aug. 1 to	Fresh--clean
Brecla		Oct. 1	Dried closely. Packed solid.
Bananas			
Cavendish	California	January	Size medium,
Dacca	Mexico		Flavor delicate,
Teorts choice	Hawaii Island		Touch firm,
	Florida		Color rich yellow, No dark spots.
Berries			
Wild blackberries	Oregon berry farms	June 15 to	Fresh, firm, dry.
Gooseberries		Sept. 30	Avoid all soft.
Cranberries			Avoid those with visible dirt on
Many others			Do not purchase Strawberries after a rain. Buy in height of season.
Cherries			
Many varieties	Oregon	May 15 to	Juicy. Flavor good
Royal Anns	Most Western States.	Aug. 1	Firm, delicate ripe
Kentish			Skins smooth, stems in them. Middles of Season.
Black Republican			
Others.			
Dates			
Fresh	California		Clean, plump, fresh
Dried	Africa	All year	Packed closely.
	Gulf states		Black best quality.
Figs			
	Turkey		White best quality.
	California	All year	
	America		
Grapes	Oregon	Sept. 1 to	Well filled skins.
Concord	Willamette Valley	Jan. 1st	Fresh, firm.
Muscat			Stems stiff not wilted.
Cornichon	California		
Raisins			
Currant	Western States	All year	Well packed in good boxes.
	Oregon		Black.
	California		

About Fruits.

Mode			
of selling	Price	Care	Remarks
Bushel	\$1.50	Keep almost the year	Best American crop
Barrel	.03	around if kept in a low temperature and suitable storage. Barrels or boxes on cellar floor. Free from decaying particles. Dry.	In olden times thought to be capable of curing any infirmity of mind or body. Now over 2000 varieties. Contains much cellulose. Fruit and jelly.
Basket 6 lbs.	.35	Preserved fresh with difficulty. Keep cool Use quickly after purchasing.	Of the plum tribe. Over 20 varieties.
Dozen	.25 to 40	Keep cool and dry	Native of Old World Contains much nourishment. Used as a fruit, in salads as vegetable Cereal of tropical natives.
B. lb., box gal.	5¢, 15¢ \$1.00	Cleaning difficult Handle carefully.	Fleshy fruits. Some varieties come early in spring,
Logans, box.	5¢	Wash in several waters, rinsing gently. Can with or without sugar. Cook in jars.	Booseberry and strawberry. Lucious fruit.
G. lb.	5¢		
R. Box	7¢		
Due box	5¢		
By lb. and bu.	3¢ \$1.50	Leave stems on. Do not bruise Wash just before using. Keep cool.	Used as a food in Germany and France. Used here as a fruit.
lb.	25¢	Ferment rapidly until dried. Keep cool	Fruit of date palm. Very nutritious.
lb.	25¢	dry. preserved in sugar. Keep covered tightly.	Principle food of Arabians. Dried in sun.
lb.	25¢	Cover and place in cool room.	Highly nutritious.
box. bu.	35¢ \$1.00	Spread on papers Ventilate well. Keep in dark room. Cool. Cook and seal in glass jars.	Most important of all berry fruits. Very ancient of use. Contains much sugar.
box	15¢	Keep covered in box	Dried grapes. Dried
box	15¢	or in stone or glass in the sun. Currant, jars on cellar shelf	small seedless grape.

Continued.

Fruit	Source	Season	Selection
Melons			Size medium. Ripe.
Watermelons	California	July	Crack when pressed on
Mushmelons	Oregon	to	Rind thin. Meat juicy,
Cantaloupes.		October	sweet. Seeds black.
Oranges			Skins smooth, thin and
Navel	California	Jan. to	shine when you rub with
Mediterranean	principally.	Jan.	finger. Navel orange
			considered best. Weight
			heavy.
Prunes			
Many varieties	Oregon		Firm yet not hard.
Burbank Fresh	(an abundance)	Aug. 15	Skins perfect, not
Petite dried		to	bruised nor shriveled
		November	
Plums			
Dawson		Sept. 1	Same as prunes
Silver	Oregon	to	
Egg plum		November	
Green Gage			
Pears			
Barklet		October	Firm and regular in
Fall Butter	Oregon	to	shape. Not wilted, not
Winter Nellie		February	spotted. Should be
Russett			picked before ripe.
Peaches	Oregon		
Crawford	Idaho	Sept. 1	Firm and fuzzy.
Lemon cling	California	to	Size medium.
Nectarines	Michigan	Dec 1st	Flavor delicate.
			Skin slip easily.
Lemons	California		Thin skins.
Lime	Southern	Jan.	Weight heavy.
Wild Lemon	States.	Jan.	Not shriveled.
Rhubarb	Oregon	April 1	Stalks crisp.
		to	Heavy. Skin thin and
		September	tender. Easily cut.
			not tough.
Pineapple			
Red Spanish	Brazil	Sept.	Large and firm.
Smooth Cayenne	Florida	to	Flavor excellent
Porta Rico.		Feb.	
Quinces	Oregon	Sept.	Size medium
		Feb.	

Mode of selling	Price	Care	Remarks.
Apiece Muskmelons Cantaloupes	10¢ to 75¢ 3 for 25¢	Immerse in tub of cold water. Change water often or keep ice in it. Kepp in shade.	Summer fruit. Rind sometimes pre- served. Mostly water.
PER dozen according to grade,	25¢ to 40¢	pack rolled in paper. Keep cool & dry. Do not allow to freeze.	Belongs to citron family. Little Nut- ritive value. App- etizer. Used for marmalades.
Per lb. " bu.	.04 1.00	Are preserved with- out canning only for a short time.	Healthful fruit, Vary much in size, color and flavor.
Per lb. " bu.	.03 1.00	Same as prune. Keep a little better.	Many varieties. Fall & winter fruit. Very nutritious.
Per lb. " bu. "	.02½ 1.00 .75	Store in boxes in cellars. Or spread a few inches apart on shelves.	Less hardy than apple Best eaten raw. Are used raw, cooked and preserved.
Per lb. " bu. " lb.	.03 1.20 .12½	Store same as plums Do not keep long. Better if canned fresh.	Used as stored in jars and raw. A most delicious fruit.
Per doz.	.25 .35	Preserved best in cool, dry place. molds easily. dark.	More acid than the orange. Used as a flavor largely. Whole or some.
per lb.	.03 .05	In ice box or wrapped in damp cloth.	Used as fruit and in pies. Has a very cold flavor. Appetizer.
			Porta Rico is the largest variety some- times weighing from 13 to 15 pounds.
Per bu.	1.00	Store as apples. Use in flavoring other fruits and preserves.	Rarely eaten raw. Used much in mar- malade. Season in fall.

Cereals.

Another most important group of Carbohydrates known as the Cereals, a term derived from the Greek noun Ceres, the Goddess of grains and the harvest, pertains to all cultivated grains or grasses, and represents perhaps the greatest of the world's crops. Including wheat, rice, corn, oats, barley, rye, millet and buckwheat, all of which belong to the gramineae or grass family, they are grains of hardy growth, easy cultivation, wider distribution than any other of the flowering plants, rank first among vegetable foods, and furnish one means of subsistence to both man and the lower animals.

In comparing the composition of these grains we find they resemble each other closely, all being rich in carbohydrates, but each possessing very characteristic differences. For instance corn contains a relatively high proportion of fat; oats are rich in both protein and fat; rice has little fiber or fat; wheat and rye are high in protein and moderate in fat; while barley is average in all the nutrients. Oats ranks first in supplying all these nutrients in the proper proportions, followed by wheat, then corn.

The percentage composition of each is seen from the table.

Composition of Cereals (Atwater)

	Water	Protein	Fat	Carbo.	Min. M.
Oats	10.0	10.9	4.5	61.6	3.5
Wheat	12.0	11.0	1.7	73.4	1.9
Corn	12.5	9.7	5.4	69.9	1.5
Millet	12.3	10.4	3.9	71.2	2.2
Barley	12.3	10.1	1.9	73.3	2.4
Rye	11.0	10.2	2.3	74.4	2.1
Rice	12.4	6.9	.4	79.8	.5
Buckwheat	13.0	10.2	2.2	72.4	2.2

Wheat which takes first rank among the cereals as a breadmaking source is richest in protein. This grain was cultivated in Egypt over two hundred years before the Christian era and at present is most extensively raised in Western and North-western United States, Russia, France and India. There are numerous varieties, due to the difference in the soil, climate and cultivation which are classified as hard, soft, red, white, spring and summer dependent upon quality, stage at harvesting, place of growth and season of planting. The ripened grain is hard and nutritious and is also the source of many breakfast foods and flours.

Oats, the most nutritious of grains, contains much cellulose, is difficult of digestion unless thoroughly cooked, but is highly valuable as a laxative. Owing to its lack of gluten it cannot be made into doughs without being combined with some other flour. The origin of oats is unknown, but it is thought to have been first culti-

vated by the Swiss and Ancient Germans, and grows best in northern regions. One of its derivatives oatmeal is the national porridge dish of Scotland.

Rice, whose native lands are India and China was first introduced in America in 1761. It resembles barley, contains much digestible starch, but has little nutritive value in comparison to the other grains, it is therefore usually served with some nitrogenous food and is considered best after having been harvested about three years. It is an interesting fact to note that it forms the staple food of about one third the human race.

Maize or Indian corn is native to America and is raised principally in Mexico and Central America. It is inferior to wheat in nutritive value, though it contains more fat and less gluten. There are many species, some being white others, red or yellow in color. It is used in meals and hominies.

Rye is grown in Germany, Russia, and Scandinavia. As a grain it has a peculiar brownish color, is rather indigestible, sourish in taste, less nutritious than wheat and is very subject to attacks of fungi causing swelling and discoloration. This grain is principally used in America for malting and Boston Brown bread making.

Barley resembling wheat closely is the basis of all alcoholic drinks. It has no gluten forming constituent.

Buckwheat, not a true cereal, belongs to the order including dock sorrel, and knot grass. Its chief use is in bread and cakes.

Millet, a native grain of East India, is said to be the first cereal used in breadmaking. Its flour is white and nutritious. It has excellent keeping qualities, and its use is displacing that of other grains in many countries.

The chief use to which cereals have been put is as bread stuffs and breakfast foods, thus obviously forming an important part of the daily diet. Formerly they were prepared for use by husking and then crushing in a crude manner. But such preparations were inconvenient as they required such long cooking. These early products were replaced by the rolled oats and wheat, which were partially cooked in the factories. Later these were followed by the malted and otherwise prepared foods, which are sold in packages under proprietary names that may or may not indicate their true nature.

The real methods of preparing these various foods are unknown except by the manufacturer, but in every process the grains are first carefully cleaned and the foreign seeds, dirt and most of the indigestible portions being removed, they are slightly crushed. They are now called groats or grits. The process from here on varies according to the product desired. If the grouts are finely crushed the result is meal, if ground to a fine powder, flour. However the vast number of breakfast foods now on the market fall readily under one of the three groups. First those prepared by simply grinding the grain, second those steamed and otherwise partially cooked and

then ground or rolled; third those acted upon by malt, where by a chemical change occurs in the starch. The difference in appearance of these food stuffs is due to the varying technical processes. Some are simply cooked and dried, then crushed; to others are added either salt, malt, sugar, molassas, celery, or other materials, for varieties sake. Some are made into a dough and baked, some shredded, toasted or puffed.

In general the prepared breakfast foods resemble very closely in composition the grains from which they were made, for while the milling process takes little from them it adds nothing to them although it may modify the appearance texture and flavor.

Oat preparations contain the most digestible protein and fat, wheat ranking next, while those from barley, corn and rice are very similar. The different preparations from the same grain vary little in the quantities of nutrients they supply, and the partially digested or ready to eat cereals seem to supply no greater amounts of digestible material than do the plain grains if well cooked.

At present there is some question as to the comparative values of preparations with and without bran. Does the gain of the valuable mineral salts and protein in the bran compensate for the increased supply of cellulose? Ordinarily the choice of either is simply a matter of taste, and here the desire for variety may be exercised. The predigested and malted foods which also give great variety are seldom all they are claimed to be, the digestion having proceeded to no great extent, but as they are free from harmful ingredients there is no discredit to their use aside from the fact, that they are more expensive than others.

The digestibility of cereals depends largely upon the thoroughness of their cooking, which softens the crude fiber and ruptures the cell walls. While a lack of definite knowledge forbids any exact statement as to the length of time, required, we may safely say it varies in proportion to the coarseness of the fiber, the finer ones requiring the least time. As over cooking cereals is unusual and harmless and undercooking is common and

undesirable it is always advisable to cook each for the full time allotted by the directions on the package.

The freedom from adulteration which is the rule among cereals may be credited to the pure food laws of the state. It is indeed a source of satisfaction to know that the modern mills where in these preparations occur, are models of neatness and cleanliness in comparison to the old methods, where freedom from dust, insects and verments was not to be expected. The neat almost air tight packages containing the cereals as they are re-tailed are filled with the fresh, clean product as nearly as it left the mill as is possible. Some are even packed in tin cans which is the surest protection from moisture and contamination.

In considering the cost of cereals we are lead to believe that this class of foods supply digestible nutrients to the body more cheaply than any other except the dried legumes. The extreme difference in prices represented by from three to fifteen cents per pound of the varying kinds does not indicate closely their nutritive value, and is doubtless due in part to the cost of preparation. The partly cooked brands may be the most economical, if we calculate the time, labor and fuel as factors of expense in the household.

In selecting cereals from the bewildering variety now upon the market, appearance, palpability, relative cost, and individual preferences, with due regard to the chemical composition and digestibility are important

factors for consideration. They are usually purchased in small quantities for family use and should be kept either tightly closed in the packages as purchased or placed in glass or pottery or metal or stone jars, covered and returned to a cool, dry, well ventilated place of storage, remembering the enemies to successful keeping are heat, moisture, lack of ventilation and invasion of insects.

One might easily offset the knowledge in his possession which enables him to purchase any food stuff wisely by a corresponding ignorance of its care subsequent to the buying. In view of this fact a few points pertaining to this line of thought will be discussed in the concluding paragraphs.

The care of food in the home as well as all other forms of home work is facilitated by right planning and the use of suitable materials for the construction and furnishing of the home. Such not only add comfort and saving of labor, but are in many instances essential from a hygienic stand point. Nevertheless few realize the economy of adequate storage arrangements. Taking for granted that the food before reaching the home has been well cared for and properly handled, is clean and perfectly sound, the length of time it may retain such a condition depends wholly upon the treatment it then receives.

Possibly our first care is to see that all articles are carefully and thoroughly screened or covered in such a manner as to insure protection from the harmful insects,

such as mosquitoes and flies, bees or yellow jackets. Such small creatures are responsible in large measure for the diseases of man, hence must be guarded against with all diligence. Food must also be kept free from the ordinary dust particles continually present in the air. We are never sure with just what germs the air is invested, hence every precaution should be taken to prevent contact and settling of dust particles on the purchased materials.

Pet animals, as dogs and cats are another source of harmful contamination and should not be tolerated in the kitchen, pantry or storeroom, any more than rats and mice, which are known to spread several diseases.

In uncivilized times before improvements of transportation and preservation came about, much more food was stored in the home than now. At present commercial storage is applied to all lines of perishable food stuffs to a marvelous extent, resulting in many out of season articles. While such goods is thought by some to be inferior to the fresh still if they are handled under the most favorable cold storage conditions they are uninjured, but must be used shortly after removal from storage.

A good cellar for fruits and vegetables, whether large or small, in the city or country, must be cool, dry, clean, regularly aired and dug in well drained ground. A cellar is not a rubbish room, where may be deposited the debris of the household, but is rather an essential portion

of a well planned house, especially necessary in the northern states to regulate the temperature. The windows must insure good light and draft. The walls and floor should be of cement to prevent entrance of moisture, and a fresh coat of white wash applied as often as twice a year to the walls and ceiling. A small dark storage room may be partitioned from the lighter one, neither need be spacious, but the wall space of each should be so utilized with shelves and drawers as to furnish ample facilities for the greatest needs.

As the cold temperature of the winter is unfavorable to the bacterial growth, during the winter months we have simply to guard against freezing, but the summer preservation is a more complex problem.

The most superior method of cooling food (though usually impractical in the ordinary home) is by the Ice Machine. The ice chest or refrigerator is the common resort. According to one plan the ice is placed in a top compartment, below which are cupboards for the food; in the other both ice and food are kept in the same compartment. The former is preferable, being more economical in the ice utilization, and gives no possibility of food and ice contact. A most convenient ice box is one constructed on the shady outside wall of a kitchen. It may be refilled with ice from the outside through a small opening. Drainage by pipes is saving in time and labor but such should never be connected with the house sewer, even though a good trap is provided. We must not forget

that no matter how cold the refrigerator may be, it is never free from dampness, which is one requisite to the growth of bacteria. In the proper care of an ice box there are three essentials, namely, keeping the drain pipes clean, instant removal of anything spilled, and a full supply of ice. Further care than the daily wiping out of the food compartments with a dry cloth, so that no food crumbs or drops of liquid are allowed to accumulate, and a weekly scalding of the entire apparatus is necessary. The use of a strong solution of salsoda in cleansing is effective, especially in connection with the pipe and its fixtures. The ice may be protected from the heat of the walls, and the dirt collected as the ice melts by wrapping the chunk in a cloth before placing it in the receptacle. Every food of pronounced odor should be covered if placed in the refrigerator and under no conditions should canned goods be allowed to remain in the cans after opening.

,The utilization of the fact that evaporating water draws the heat from surrounding objects may suggest many methods of lowering the temperature during hot summer months. Thus food may be kept for some time by wrapping the utensil or by covering its top with a thick cloth kept moist by some dripping device; only lowering the food in a pail into a well, or placing in a larger utensil filled with water. Another means is by surrounding the receptacle containing the food, which has been reduced to a low temperature by some nonconductable substance,

thus retaining the first temperature.

A box fastened just outside the window, lined with asbestos to equalize extreme temperature and oilcloth to make easy of cleaning, with as many shelves as desirable will be of great convenience during both winter and summer.

The subject of cleanliness in markets as well as other public places of marketing and eating, while disturbing to dwell upon, should not be neglected for indeed it has a most direct bearing upon comfort and health and may be best regulated by public sentiment.

We are slow to realize the fact that people have a right to the information which will enable them to patronize the clean sanitary shops and avoid those otherwise conditioned.

Pure food laws and special health board inspection are doing much to improve the state of affairs, but there is yet vast room for advancement, and until there are more stringent inspection laws food as it reaches our homes will be an object of suspicion. Better laws than are now enforced are impossible until sanctioned and made by public sentiment. The desire for such regulations comes first from a knowledge of existing conditions, and an appreciation of the actual need of improvement. Hence the necessary steps for the advancement and progress of the country upon this phase of economic welfare, rests largely with the people. Their action depends upon the enlightenment gained from reading, study, practical application of their knowledge and careful consideration of the

problem as it really is, in a broad fair minded attitude,
until the correct and wholly adequate solution is reached
both in theory and practice.