Life & Health

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Chamberlain, S. Dak.

Life & Health

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MOTHERHOOD

Life & Health

HOW TO LIVE

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Give the Children Milk

G. H. Heald, M. D.

IF a child is "delicate," underweight, or off color, or if it gives other evidence of undernourishment, the trouble is doubtless with the quantity or quality of food. Sometimes a child may be receiving an abundance of food, but the menu may lack some ingredients which are essential to proper growth. If it is given a complete and ample dietary, a child will invariably make good growth, unless it is subject to some wasting disease like tuberculosis; and even in such a case, if it is amply fed, the chances are that it will throw off the incubus of the disease and develop normally. It is known that a much larger proportion of children are infected with the germs of tuberculosis than come down with the disease. The reason why some succumb and others escape, is probably the difference in the nourishment they receive.

Recent investigations seem to show that a child can get along without almost any other food better than without milk. Some say that a quart a day for each growing child is none too much. It may seem extravagant to feed milk to children at that rate, especially if there are several in the family; but it should be remembered that milk, even at 12 cents a quart, is one of the cheapest forms of protein food. Milk at 10 cents a quart is as cheap as sirloin steak at 23.3 cents a pound, or eggs at 25.1 cents a dozen; at 12 cents a quart, it is as cheap as sirloin at 27.9 cents a pound, or eggs at 30.2 cents a dozen. In most places these would be very low prices for steak or eggs.

Not only is milk a cheaper food than meat or eggs; it is the best all-round food for growing children. The developing child should have bread, potatoes, greens, and other foods, but whatever else it has, it should have a fairly liberal supply of milk. We admit that some children are reared in sound health without milk. The parents of such children have been fortunate enough to have a combination that contains everything essential to the child's growth. But very often some essential is omitted, and the child suffers in

consequence. If milk is a prominent part of the dietary, there is very little likelihood that the growth essentials will not be present in ample quantity. Whatever else the children have, let them have a liberal supply of milk, and let it be good milk.

If you are not absolutely certain that your milk is produced and delivered under sanitary conditions or is Pasteurized, it is safer to bring it to a boil before using it. Get only bottled milk, keep it in the refrigerator or cooler until it is to be used, and if it is not certified or Pasteurized, scald it just before using. Do not leave milk standing in an open vessel, and do not pour it into a vessel that has been wiped with the ordinary dish towel — unless you want it to swarm with germs. Better to keep it in the orginal bottle until it is to be heated for use.

❦ ❦ ❦

Keep Milk Clean, Covered, and Cold

1. Buy only the best milk obtainable. It is cheapest in the long run.
2. Consult the health department before selecting your milk dealer.
3. Buy only bottled milk if possible. Dipped milk is often dirty and deficient in cream.
4. Take milk into the house as soon as it is delivered, and place it in the refrigerator immediately. Bacteria increase rapidly in milk which stands in the sun or warms up, and such milk will sour quickly.
5. Keep milk in the original bottle in the refrigerator until the moment of serving. Milk which has been poured from the bottle should not be returned to it.
6. Keep the bottle covered with a paper cap or an inverted tumbler, to prevent the entrance of flies and dust, which may carry dangerous bacteria into the milk.
7. Keep the refrigerator clean and sweet by means of proper drainage and frequent washing with scalding water and sal soda, since milk quickly absorbs unpleasant odors and becomes less palatable.
8. Wash milk bottles as soon as emptied, by rinsing first with lukewarm water and then with hot water. If there is an infectious disease in your house, do not return any bottles except with the knowledge of the health department and under conditions which it may prescribe.
9. Return empty bottles promptly, and do not use them for anything except milk.
10. Remember that clean milk, properly cared for, is one of the best foods obtainable. It is nourishing, digestible, and usually economical. — *U. S. Dept. of Agriculture.*

Dollars and Sense

WHILE the question of food values means more than merely one of how much food can be bought for so many dollars and cents, the present abnormally high cost of food is leading to a careful study of the various values in order to help solve the problem of getting the most for a given amount of money. Food facts were probably never so highly valued as now. It is a fact that a study of the science of food values and an application of the same will do much to reduce the cost of living.

It has become necessary to study the food problem from the standpoint of what is the best and cheapest and how to make use of available foods to obtain the highest returns for the outlay. Palatability is highly desirable, but that must now, with most people, be subject in a measure to the size of the purse. Appetite must now wait somewhat on ability to buy. Preference for indulgences must give way to the getting of necessities. It is not now a question of feasting, but of feeding.

Some things in our eating habits we may forego. But there are certain con-

n Foods

L. A. Hansen

siderations that are indispensable, would we maintain our normal health and efficiency. The demands of the human system have not been modified. There is no revision of the body's nutrition requirements to suit the changes in market prices. The same scale of necessary food elements holds good. We must still supply these the best we can from what we can get.

Intelligent study of the food question will take into consideration the amount of food necessary for the family or individual; the nutritive values of available foods, the use of the nutrients to the body; the relative value of food and cost; market conditions and seasons; the combination of food materials in order to secure proper variety, and the preparation of food so as to make it wholesome and palatable and its nutrients available to the human system.

WHAT IS FOOD?

The big question, with that of how to get food, is, What is food? Speaking in simple terms, it is that which, when taken into the body, will yield heat and energy, supply the necessary materials for building and repairing tissues, or regulate the body processes. Hunger is the call of nature for material to repair bodily wastes and to furnish fuel to create energy to run the human machine.

Foods are composed of different elements in varying proportions. Some foods supply material for warmth and energy, but do not contain the elements of which the body is composed, and therefore cannot assist in building or repairing the body. Other foods are rich in materials that go to make up body tissues. Some foods contain minerals essential to the body, and some are largely composed of water. These foods, while not offering nourishment as such, are needed in the processes of digestion, the distribution of food materials to all parts of the body, and to maintain the body at a normal temperature. Another content of food is the fibrous material, a certain amount of which is desirable.

The usual classification of food constituents is protein, carbohydrates, fat, ash, and water. Protein builds tissue and yields energy; carbohydrates yield energy; fat yields energy; ash, or mineral salts, and water regulate the body processes.

Protein is the name commonly applied to a class of substances which furnish the materials for the formation of bone, flesh, blood, etc. It is essential in the food of animals, for without it no animal can grow, or continue in health. The animal appropriates the protein of plants, and transforms it into the particular protein of the body. Protein, when oxidized or burned in the body, produces heat. If used in excess, it may form fat. Its use for heat and energy is expensive as compared with fat and carbohydrates. Protein is found in lean meats, the white of eggs, the casein of milk, and the gluten of flour and other cereals.

The carbohydrates, so named because they consist of carbon, hydrogen, and oxygen, consist mainly of starches, sugars, and allied compounds. In the cereal foods they form about two thirds

of the whole material. They also compose the starch of vegetables like the potato. Their particular use is to produce heat and energy. They may be changed in the body into fat and stored up for future use. They do not form muscular tissue.

Fat may be looked upon as a concentrated heat producer. It is of value for formation of fat in the body, and for the production of heat and energy has more than twice the value of protein or carbohydrate. It does not produce muscular tissue. Fat is supplied by animal products, such as meat, butter, cheese, and milk, and by the oils of the olive, cottonseed, and various nuts and seeds. It is formed in considerable quantities in oats and corn.

Ash is the inorganic or mineral part of foods, the part that is left after the food is burned. It furnishes the mineral matter of the body, the phosphates of lime for the bones, and compounds of sodium, magnesium, potassium, and iron for the blood and muscular tissues. Mineral matter is found more or less in all foods in sufficient quantities for the body needs.

THE CALORIE

The various nutrients given above, except the ash, may be oxidized or burned in the body. Thus they are sources of energy, giving out heat just as any burning fuel does. As the value of a fuel is determined by the amount of heat it gives off when burned, so is the total energy value of a food determined by the amount of heat given off when a given amount of the food is burned. This energy value is expressed in terms of heat, the calorie, or heat unit, being used for this purpose. A calorie is the amount of heat necessary to raise the temperature of one liter of water one degree centigrade.

A method now being used in estimating the daily ration is based on the needs of the individual and the calorific or heat value of foods for supplying these needs. The more a man works the more does he need, as he is using up that much more energy. Atwater gives the following estimate as the number of calories needed for one day:[1]

Man at hard muscular work.....4,500 calories
Man at moderate muscular work....3,500 calories
Man at light muscular work.....3,000 calories

Men doing hard work out of doors in very cold weather may require as much as 6,000 to 8,000 calories per day. Very concentrated food materials would be necessary to supply the needed diet.

The calorific value of the three principal food elements may be estimated on the following basis: one ounce of protein yields, when burned, approximately 116 calories; one ounce of carbohydrate the same; and one ounce of fat yields approximately 263 calories.

Portions of Common Foods Having the Same Calorific or Fuel Value as One Pint of Milk (346 Calories)*

Food Material	Weight Lbs.	Weight Grams	Domestic Measure
Milk	1.1	500	1 pint
Cabbage	2.8	1,300.7	2 medium
Eggs	.55	252	4 eggs
Potatoes	1.1	516.4	2 large
Apples	1.6	736	4 medium
Bread	.29	133.07	5½ slices
Cheese	.17	78.08	3 sq. in.
Figs	.24	109.1	4 figs
Beef (round)	3.9	108.9	2½ servings
Rolled oats	.19	87.1	1¼ cups
Sugar	.19	86.5	½ cup
Beans (dried)	.22	100.5	½ cup
Rice	.21	98.5	½ cup
Peanuts	.18	83.5	1½ cups
Almonds	.21	99.2	24 nuts
Lentils	.21	99.2	½ cup
Butter	.09	44.9	3⅓ tablesp.
English Walnuts	.44	200.9	26 nuts

* From "Study of Foods."—Wardall and White.

We give herewith a table showing the number of calories of heat as well as the pounds of protein, fat, and carbohydrates that will be furnished in one dollar's worth of a number of our common foods. The foods are arranged in the order of their heat-producing power. The table is taken from Bulletin 245 of the Ontario Department of Agriculture, on "Food Values," by R. Harcourt.

[1] There is good reason for believing that the estimate by Atwater is too liberal, especially as regards protein. This will be discussed more at length in a later issue. G. H. H.

Protein, Fat, Carbohydrates, and Fuel Value of One Dollar's Worth of Each Food

	Price	Protein lbs.	Fat lbs.	Carbohydrates lbs.	Fuel Value calories	Comparative Values
Rolled oats	$ .05 per lb.	2.5	1.36	14.3	36,950	100.
Fall wheat flour	4.75 " cwt.	2.0	.20	16.0	34,307	92.8
Spring wheat flour	5.00 " "	3.0	.20	14.3	33,780	91.4
Cornmeal	.05 " lb.	1.31	.25	16.26	33,735	91.3
Farinas	.05 " "	1.9	.20	15.6	33,394	90.4
Rolled oats (package)	.25 for 4 lb.	2.00	1.09	11.5	29,560	80.0
Sugar	8.00 per cwt.	.....	.....	12.5	23,250	62.9
Rice	.07 " lb.	1.06	.05	11.3	23,210	62.8
Peas	.07 " "	3.00	.19	9.0	23,121	62.6
Farinas (package)	.15 for 2 lb.	1.26	.14	10.3	22,207	60.1
White bread	.16 " 3 "	1.58	.38	9.1	21,650	58.6
Buttermilk	.10 per gallon	3.0	.50	4.8	17,362	47.0
Skim milk	.10 " "	3.4	.30	5.1	17,070	46.2
Barley, pearl	.10 " lb.	.84	.10	7.8	16,492	44.6
Beans	.10 " "	1.95	.27	6.0	15,500	42.0
Potatoes	2.25 " bag.	.87	.04	6.24	13,397	36.2
Malta Vita	.10 " 12 oz.	.74	.10	5.87	12,716	34.4
Toasted corn flakes	.10 " 12 "	.42	.11	6.06	12,517	34.0
Grape nuts	.15 " 17 "	81	.07	5.56	12,143	33.0
Milk	.08 " qt.	1.04	1.27	1.66	10,402	28.2
Shredded wheat	.13 " 12 oz.	.66	.05	4.42	9,659	26.1
Beef, flank	.14 " lb.	1.21	1.36	.....	7,970	21.0
Butter	.45 " "	.....	1.88	.....	7,933	21.5
Cheese	.30 " "	.93	1.22	1.4	7,138	19.3
Mutton chops	.24 " "	.56	1.20	.....	6,106	16.5
Ham, smoked	.28 " "	.51	1.19	.....	5,963	16.1
Beef, sirloin	.25 " "	.66	.65	.....	4,000	10.8
Beef, round steak	.24 " "	.79	.53	.....	3,718	10.6
Lamb, hind quarter	.27 " "	.61	.60	.....	3,672	10.0
Ham, smoked and cooked	.45 " "	.44	.50	.....	2,930	8.0
Salmon, canned	.25 " "	.78	.30	.....	2,716	7.3
Salmon trout (fresh)	.15 " "	.61	.34	.....	2,569	7.0
Cod (salted)	.18 " "	1.05	.02	.....	2,307	6.2
Eggs	.48 " doz.	.37	.29	.....	1,912	5.2
Halibut (fresh)	.25 " lb.	.61	.18	.....	1,894	5.1

From the accompanying table[2] it will be seen that the foods derived from the cereal grains stand at the top of the list. They contain a large amount of carbohydrates, which are the cheapest fuel materials among foods. It will be noticed that they also furnish comparatively large amounts of protein and fat, and at a considerable saving in cost over that which is secured from meat or eggs. In other words, one dollar's worth of oatmeal at the prices given will contain two and a half pounds of protein; good spring wheat flour, three pounds of protein; bread, a little more than one and a half pounds; milk, more than one pound; while sirloin steak will supply only two thirds of a pound, and eggs about one third of a pound.

This makes the cereals not only the cheapest food materials for supplying the carbohydrates, of which so much is needed, but also the economical food for protein. Buttermilk and skim milk rank comparatively high as the cheapest source of protein. Legumes contain a large percentage of protein, but with present prices a dollar's worth of peas or beans does not give the protein value of wheat and oat products.

This table is based on the purchasing power of a dollar in the various food elements and calories or heat units. It takes no account of other advantages or considerations. Being guided altogether

[2] These prices are of course only approximate, but they serve for comparison. It would be impossible to give a set of prices that would hold good over the entire country, or that would be in force for any considerable time. G. H. H.

by the figures of the table, one might think that from an economical standpoint one would better subsist on cereals. But there are other features to be taken into account, and an important item is that the diet should show suitable variation and balance, even though the cost basis be more or less disturbed. Certain foods used as appetizers may well be afforded. However, the outlay for the foods for sustenance should receive the larger attention, and careful buying should rule throughout.

The table also calls attention to the difference in the cost of cereal foods in bulk and in packages. According to the table, we pay twenty per cent for the package alone when buying rolled oats in that form. That is, one fifth of the cost is for the container, which is thrown away. With other of the breakfast foods the difference in the cost of the food substances when bought in package form and when bought in the raw and bulk state runs much heavier, certainly much more than it would cost the housewife to prepare the food herself. If grocers were encouraged to put the bulk cereals in paper bags at one time, ready to be handed out, the question of cleanliness would be fully met and considerable economy effected.

The meats, fish, and eggs are shown by the table to be the most expensive foods. It is evident that if economy is the object, the use of meat will be reduced to a minimum. In fact, it comes more and more to be known that it may be dispensed with altogether by most people without ill effects if care is taken to provide proper substitutes. While eggs run high in the cost scale, they may be said to be more economical in use than meats, as they go farther in serving a number of people than the same money value of meat. They also have the big advantage of being free from broken-down animal tissue poisons, as found in meat.

Aërated Breads

George E. Cornforth
Dietitian, New England Sanitarium

IN view of the fact that it is incumbent on every American to conserve the wheat supply, we take pleasure in giving a number of recipes that will enable our readers to prepare breads with the use of little or no wheat flour.

There are four ways in which we can conserve the wheat supply. One is by having some meals in which no bread is used; another is by using other grains more largely; another by using flour made from the whole of the wheat instead of using white flour. In the making of white flour about one fourth of the wheat is rejected; that is, wasted as far as human food is concerned, because it might be used, and it would be to the advantage of the health of the people to do so, for the rejected parts contain food substances that are needed by the body.

We suggest the following recipes for aërated bread made without baking powder or soda. Aërated breads are breads made light by incorporating air into the batter or dough before baking. Unleavened bread is bread in which yeast is not used to make it light. Soda biscuit or baking powder biscuit are unleavened bread, as well as Maryland beaten biscuit and the unleavened bread used by the Jews at the time of the celebration of the Passover.

We do not recommend the use of soda and baking powder in cooking because they leave chemical residues in the foods

they are used to leaven. Eating foods in the making of which baking powder or soda has been used will not do one the harm that whisky will, nor perhaps even tea and coffee. It is only one of the little things that, indulged in for years, has its effect in wearing out the vital organs of the body. While these foods may not do *much* harm, apparently none at the time of eating, we feel it is better, especially inasmuch as it is possible to make nice light bread without the use of these chemicals, to use them as little as possible. In fact, we have the testimony of the best doctors and chemists to this effect; and the best cooks make little use of baking powder and soda, and do not recommend them very enthusiastically. Mr. Soyer, for instance, of paper-bag cookery fame, never uses baking powder in making cake. Have less cake, but when you do have it, let it be choice, is his idea. The conservation of the health is of first importance in this campaign for conservation.

The use of soda and cream of tartar, soda and sour milk, soda and molasses, soda and vinegar, is even more objectionable than the use of baking powder, because breads made by the use of these combinations are very liable to contain an excess of soda. This is worse in its effects upon the system than the chemicals left by baking powder.

In using other flours and meals than wheat, which do not contain gluten to hold the air or gas, the egg, being viscous, or sticky, is more effective than baking powder in making the bread light. Another advantage in using egg in gems is that in this way an egg or two can be made to do for the whole family, the egg adding materially to the nutritive value of the gems.

It is very easy to learn to make bread without the use of chemicals, and the bread is very palatable, so that by one who is interested in the care of his health (one with whom the care of the health is a hobby, perhaps; and would it not be well if it were a hobby with all of us?) aërated breads are much preferred.

By following the directions given I am sure no one will have any difficulty in making most delicious breads without chemicals. The breads will be lighter if all the ingredients are used as cold as possible. All measurements in these recipes are level.

If there is in your vicinity an old-fashioned gristmill where you can obtain old-fashioned Graham flour made by simply grinding wheat and removing nothing from it, or if you can obtain such flour from a grocer, you will find it much to be preferred to ordinary Graham, in recipes where white flour is not used. There are a few companies that are putting a flour of this kind on the market.

WHOLE-WHEAT POP-OVERS

1 cup milk.
1 egg.
½ teaspoon salt.
1 cup sifted whole-wheat flour.

Break the egg into a mixing bowl. Add the milk and salt. Beat with a batter whip enough to mix the egg and milk. Stir in the flour and beat till the batter is smooth, which will require beating with a batter whip about one

minute. Pour the batter into a quart measure and from the quart measure pour it into the oiled pop-over tins, filling the tins about two thirds full, and bake in a well-heated oven. These may be baked in hissing-hot gem irons, filling the irons level full.

If the pop-overs fail to "pop," it will be because the batter is too stiff, due to inaccurate measurements. The cup of milk should be all the milk the cup will hold. The flour should be sifted before measuring, should be dipped into the cup with a spoon, and with a knife, scraped off level with the rim of the cup.

The oven should be well heated, but not too hot. If the oven is too hot, the pop-overs will be browned on the outside before they are baked through, and will fall after they are taken from the oven.

GRAHAM PUFFS

1 egg.
1 cup milk, or part cream, or 2 tablespoons oil and ⅞ cup milk.
½ teaspoon salt.
1¾ cup unsifted, unbolted wheat meal.

Beat together the egg, milk, and salt. Add the flour and beat about one minute, till the batter is free from lumps. Pour the batter into a quart measure and turn it into hot, slightly oiled gem irons. Bake in a hot oven till nicely browned, about thirty or forty minutes.

RYE PUFFS

Substitute rye meal for the wheat meal in the preceding recipe.

BUCKWHEAT PUFFS

1 cup milk, or 2 tablespoons oil and ⅞ cup milk.
1 egg.
½ teaspoon salt.
1 cup whole-wheat flour.
½ to ¾ cup buckwheat flour.

Follow directions for making Graham puffs.

To tell how stiff to make the batter for puffs, raise the batter whip, and if the batter piles up slightly as it falls from the whip, the batter is stiff enough. If it makes a hole in the batter, it should be made stiffer by adding more flour. For pop-overs the batter must be much stiffer than this.

CRUMB PUFFS
(A use for stale bread.)

1 cup milk, or 2 tablespoons oil and ⅞ cup milk.
1 egg.
½ teaspoon salt.
½ cup zwieback crumbs.
¾ cup whole-wheat flour.

Beat together the milk, egg, and salt. Stir in the flour and crumbs, and beat about a minute. Bake in hot, oiled gem irons.

CORN GEMS

1½ cups cornmeal.
About 1½ cups boiling water, perhaps a little more.
2 tablespoons oil.
2 tablespoons sugar.
½ teaspoon salt.
1 egg.

Scald the milk with boiling water. Add the oil, sugar, and salt. Separate the white from the yolk of the egg. Beat the yolk into the batter, then fold in the

MAKING GEMS

The picture on this page represents the process of beating the batter: on the next page, pouring the batter into the iron.

stiffly beaten white. Bake in hot, oiled gem irons.

If old-fashioned, unbolted cornmeal can be obtained, it will be nicest for these.

Some may prefer corn puffs that are not quite so coarse. To make them use the following recipe:

CORN PUFFS

1¼ cups white flour.
½ cup cornmeal.
2 tablespoons oil.
⅞ cup milk.
½ teaspoon salt.
1 egg.

Follow directions for making Graham puffs.

RICE PUFFS

These can be made by substituting rice flour for the cornmeal in the preceding recipe.

OATMEAL PUFFS

2 tablespoons oil.
⅞ cup milk.
½ teaspoon salt.
1 egg.
1¼ cups whole-wheat flour.
½ cup raw rolled oats.

Follow directions for making Graham puffs.

NO-EGG GEMS

1 cup cold water
1 cup cold milk, or 2 cups either water or milk
2 cups unbolted wheat meal, Graham flour, or whole-wheat flour.
½ teaspoon salt.

With a batter whip beat the flour into the liquid, sprinkling the flour in with the fingers as the liquid is beaten. Beat briskly. Pour into hot, oiled gem irons. Have the oven hot at first, then reduce the heat so that the gems will bake through. The gems will be lighter if the batter, after beating, is allowed to stand in a cold place several hours, or overnight. Do not stir the batter in the morning.

In spite of the reader's doubts, this recipe will be found to make light gems.

GRAHAM BREAKFAST ROLLS

2 cups unbolted wheat meal, or ¾ cup unsifted Graham flour and 1¼ cups sifted pastry flour.
¾ teaspoon salt.
3 tablespoons of some vegetable shortening that is solid at ordinary temperature.
Scant ½ cup milk.

Rub the shortening into the flour with the hands, add the milk, stir to a dough, knead well, till the dough is smooth. The dough should be stiff. With the palms of the hands roll the dough over and over on the bread board until a long roll about three fourths of an inch in diameter is formed. Cut the roll into pieces two inches long. Prick the pieces with a fork, and place them on a baking pan far enough apart so that they will not touch each other while baking. Bake in a moderate oven till nicely browned. Do not pile them on top of each other while cooling.

These rolls are somewhat hard, but crisp. They are very wholesome because they encourage mastication, and when well chewed they develop a delicious nutty flavor.

MAKING GEMS

The white of the egg is sometimes beaten separately as here illustrated. This makes the gems a little finer grained.

The Banana

R. S. Ingersoll, M. D.

Superintendent Florida Sanitarium, Orlando, Fla.

IN view of the shortage in wheat flour, it is important to make use of every possible substitute for wheat. The banana is an excellent source of carbohydrate, and also furnishes a small amount of protein.

Under the caption "The Nutritional Value of the Banana," in the April 7 number of the *Journal A. M. A.*, Drs. Myers and Rose have reported some very important facts relative to what has often been called the poor man's fruit.

In these days when eatables are being shipped long distances, it is of vital importance to know the chemical facts as brought out in Table 1, next page.

From the standpoint of hygiene, so long as the skin is unbroken, this fruit is well protected against bacteria. The skin can be conveniently removed more satisfactorily than is the case with peaches, apples, and other fruits, all of which are more or less exposed to dust in market places.

Table 2 (next page) shows the banana to stand at the head of the whole list of fruits for caloric values. It is also higher than the Irish potato, but not quite so high as the sweet potato. It might therefore not only be called the poor man's fruit, but can be used as his food to advantage in these days of H. C. of L.

Unfortunately we cannot all have banana plants in our back yards where we can allow the fruit to remain until approximately ripe. The majority must accept it after it has been picked green and shipped a long distance to market.

There is an aphorism commonly used

Table 1 — Changes in the Composition of the Banana During Ripening [1]

Days off Boat	Relation of Peel to Pulp	Appearance of Peel	Reducing Sugar in Terms of Glucoes	Sucrose in Terms of Glucose	Total Sugar in Terms of Glucose	Starch in Terms of Glucose
2	40	Very green	0.55	1.20	1.75	
4	38.5	Greenish yellow with pea-green tip and edges, bitter flavor	1.17	4.60	5.77	15.62
6	35.5	Yellow except extreme edges and tip, beginning of golden yellow, bitter flavor almost gone	2.88	12.52	15.40	7.53
8	31.5	All yellow except extreme of tip, greenish cast to edges	4.09	11.91	16.00	5.02
12	26.1	Golden yellow, greenish cast on edges, occasional brown specks, no herbaceous flavor	5.35	11.72	17.07	
14	25.7	Full golden yellow with brown specks, strong amylacetate flavor	6.88	11.72	18.60	3.02
15	25.5	Patches of light-brown shades	7.08	11.10	18.78	0.71
16	20.6	Largely light brown (incubated 24 hours)	9.09	7.91	17.00	0.60

among fruit dealers to the effect that people "eat with their eyes." Unfortunately this is too true. As a result of this fact the larger portion of the banana crop is eaten green. As is made clear by referring to Table 1, the truly ripe fruit is too often discarded as having begun to decay. The spreading of brown coloration does not condemn the fruit as overripe so long as the pulp inside shows no signs of fermentative decomposition.

It is readily seen by Table 1 that there is a relative increase of sugar in the fruit the older it is, and that the external appearance is more or less brown at the time when the maximum amount of sugar is present. It is also noticeable that the sugar is increased as the starch is decreased in amount.

Then if we remember that starch requires a large amount of chemical change before it is ready for body use, and that if this change is not complete, it readily undergoes fermentation; and again the fact that fruit sugars can be used by the body with almost no digestive change, we can get a ready explanation of the prevalent idea that bananas are very difficult of digestion. In this connection, it is well to call attention to one other fact, that is: This fruit being so highly nutritious, it is an easy matter to eat too much of it, which again would be another cause of trouble.

Table 2 — Comparative Composition of Some Common Fruits [2]

Fruit	Protein, per Cent	Fat, per Cent	Carbohydrate, per Cent	Calories per Pound	100 Calorie Portion, Gm.
Bananas	1.3	0.6	22.0	447	101
Grapes	1.3	1.6	19.2	437	104
Plums	1.0	....	20.1	383	118
Cherries	1.0	0.8	16.7	354	128
Pears	0.6	0.5	14.1	288	158
Apples	0.4	0.5	14.2	285	159
Oranges	0.8	0.2	11.6	233	195
Peaches	0.7	0.1	10.8	213	213
Lemons	1.0	0.7	8.5	201	226
Muskmelons	0.6	....	9.3	180	252
Strawberries	1.0	0.6	7.4	169	269
Watermelons	0.4	0.2	6.7	136	332
Potatoes	2.2	0.1	18.4	378	120
Sweet potatoes	1.8	0.7	27.4	558	81

[1] The rate of the several ripening processes appears to differ somewhat with the season. The present analyses were made during the winter months. Other analyses show that ripening proceeds more rapidly and more completely during the summer.

[2] Taken from data compiled by H. C. Sherman, "Chemistry of Foods and Nutrition," New York, 1912, p. 319; from Bulletin 28, Office of Experiment Stations United States Department of Agriculture.

Last, but by no means least, in favor of this fruit, is the fact that it supplies this large amount of nutrition with a low percentage of protein. This makes it a valuable food in kidney disease (nephritis) where the condition is such that too much nitrogen is retained in the system.

A brief summary of the findings of Drs. Myers and Rose is as follows:

1. The banana is the most nutritive of common fruits.

2. When fully ripe, the sugar contained in the fruit is easily absorbed, and gastrointestinal disturbances are very unlikely to occur, even with the consumption of large quantities.

3. Similar quantities of ordinary sugar are much more likely to produce disturbances of digestion.

4. Bananas have about the same caloric value as potatoes.

5. Bananas may be eaten uncooked, and thus the vitamines are not destroyed.

6. Banana is of value in mild cases of nephritis with nitrogen retention.

Overeating

J. W. Hopkins, M. D.
Washington (D. C.) Sanitarium

OVEREATING is defined as the taking of an amount of food which exceeds the needs of the body. These needs are indicated by one writer in the following manner: "Foods should be ingested in just the proper amount to repair the waste of the body; to furnish it with the energy it needs for work and warmth; to maintain it in vigor; and, in the case of immature animals, to provide the proper excess for normal growth, in order to be of the most advantage to the body."—*Benedict, quoted by Chittenden, "Nutrition of Man," p. 158.*

It will thus be seen that too often the mouth is made simply a port of entry, and that we partake of too much food of all kinds, or that we eat too much of any one of the different classes of food. To repair the waste and promote normal growth, we use proteins, found in the gluten of wheat, in the legumes, the curd of milk, and the white of egg. For the energy needed to do necessary work, and to keep the temperature of the body up to normal, fats, as oils, cream, butter, etc., and carbohydrates, as the starch of wheat or rice, and the sugars of fruits, are called for. The required amounts of the different classes of foods for business and professional men with light exercise have been estimated by various observers as follows: Protein, 93 grams; fat, 46.7 grams; carbohydrates, 500 grams; giving a total fuel value of 2,540 calories. Another worker gives: Protien, 104 grams; fat, 125 grams; carbohydrates, 423 grams; with a total fuel value of 3,325 calories. Amounts for men at moderate labor are given as follows: protein, 160 grams; fat, 170 grams; carbohydrates, 448 grams; total calories, 4,074. These estimates are of water-free materials, and if given in cooked food, would weigh much more.[1]

[1] There is good reason for believing these estimates are altogether too high, at least as regards the protein, as will be explained in a future number of Life and Health. G. H. H.

Overeating, then, may be of proteins, — milk, legumes, eggs, etc.,— or one may use too much fats, as butter or nuts; still another may confine his diet too closely to carbohydrates in the way of cooked cereals or mushes, or may use too much cane sugar in his diet. Still another example of overeating is found in the man who eats food which is difficult of digestion, at a time when it is necessary that he use all of his nervous energy in mental labor. Professional men, or men engaged in business, should avoid heavy foods and articles difficult of digestion, during this time of the day, and should take their heavy meal after their day's work is completed. They should then be careful to have rest, relaxation, and light exercise before retiring for the night.

Another kind of overeating is the taking of too large a variety of foods at a meal. For every different article of diet eaten, nature does a certain digestive work in the preparation and action of the digestive fluids. A large variety taxes the digestive glands, and overloads the stomach and intestines. The heart is also overworked by this extra burden. Eating between meals or late at night in addition to the necessary two or three meals a day, adds to the amount of food taken into the alimentary tract, causing a surfeit which often amounts to drunkenness. If food is taken into the stomach just before retiring, in many cases the heart is fatigued by the effort of furnishing blood to the digestive organs to help digest a meal at night, after having done its required work during the day.

The season of the year has much to do with overeating. In the winter, it has become a habit to take large quantities of flesh food, especially fat meat. This leads to an accumulation of waste matter in the body and to the storing up of fat, and with the advent of spring the body is in an unhealthy condition, and the patient turns to spring tonics and blood purifiers. That the body is in this condition, is shown by the great increase of pneumonia which we see at this time of the year. This is caused by the overtaxing of the eliminative organs, and the lowering of vitality, which follows the taking of excessive amounts of food. At other periods of the year, when gluttony occurs, as at Thanksgiving and Christmas, the increase in this disease is more than a coincidence.

The causes of overeating are as follows: First, habit and education. We have been taught that the man at sedentary office work needs as much food as the man doing hard, manual labor. Second, the use of condiments and stimulants with meals increases the appetite both for amount and for variety. Third, the customary use of too great a variety of food at the same meal. Fourth, the belief that we must force ourselves to eat until we feel satisfied. Education and training will gradually remove these causes.

Among the penalties which are visited upon the glutton, may be mentioned obesity. This is an accumulation of lifeless fat in the various tissues of the body. This interferes with the action of the muscular structures, as the heart and stomach, and oftentimes the tissues, especially of the heart, are partially replaced by fat, and these organs are thus greatly weakened. The fact that a person is not obese is not always a sign that he does not overeat. Because of some idiosyncrasy the individual may burn great quantities of food which the obese

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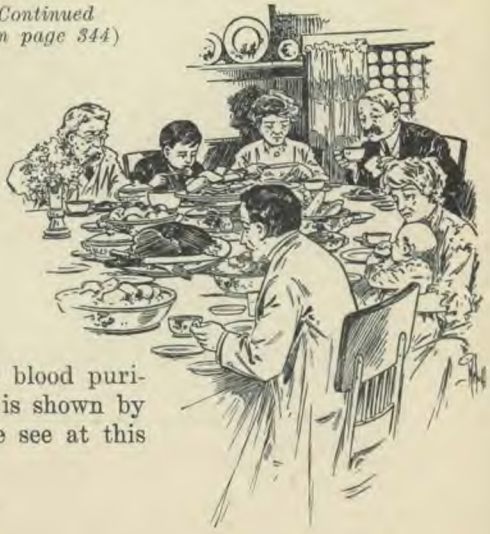


EDITORIAL

Prospective Results of Food Conservation

THE truth of the old adage about the ill wind blowing good, may be realized in the present food crisis and the conservation movement now under way. The shiploads of foodstuffs for the hungry nations across the seas will not be the only result of the highly commendable task this country has set for itself. Many realize the possibilities of a reaction from this effort that will bring a great blessing to the people of the United States.

The readjustments of our national household economy will involve more than a mere shifting of the kitchen program. It may call for modifications in our manner of living that will be felt outside the sphere of the cook. It is barely possible that before we are through with the work we have begun, we shall have entered upon an order of things that will be quite new to many of us. Looking at the matter in the light of all that may be involved, there are certain gains possible that will be worth all they may cost us.

ECONOMY NOT A CURSE

While the larger part of the population of the United States may already be living carefully, it is probably true that as a nation we are more or less prodigal and wasteful. People who seem to know say that some countries could live on our food waste, amounting annually, it is stated, to $700,000,000. If we learn the value of economy and thrift, the tuition we are now having to pay in the high cost of living will be well spent.

The statistics that are given us, showing what can be accomplished by each individual's saving a slice of bread, a few ounces of meat, an ounce of fat, and an ounce of sugar per day, aggregate a sum total for the year that is astounding. When we learn that it is a fact that these savings will actually relieve the wants of nations, we begin to realize the real value of the bits. The working of facts like this into our national life and practice will pay big dividends in the end.

DEVELOPING PRACTICAL SYMPATHY

The object of our saving presents itself to us in the strongest appeal. The relief of starving men and women and children overtops every consideration. Human lives are in the balance with ounces of food. It goes without saying that we will give the food to save the lives. Having our heartstrings touched by the appeal of suffering, and responding thereto, will bring a blessing to us that cannot be measured by the little that it costs us.

Again, as we think of the sacrifice shown by those of our young men who offer their lives, and of their friends who share the suffering, the part that is required of those who remain at home sinks into insignificance. We thus are given the opportunity of a true perspective of relative values. This is worth something to us.

SHARING THE SACRIFICE

War time brings its trials. As yet we have not felt severely the effect of war. Should the world-struggle be prolonged, and we as a nation feel our share

of the results, we have some experiences ahead of us that will test us. For the present we are told that our part in the world's food problem is merely one of substituting certain good foods for certain others, and that no deprivation is demanded. We are assured that we can eat plenty, just so we eat wisely and waste nothing. We would that no other change might come; but who knows?

With no pessimistic inclination, and no desire for baleful predictions, and sincerely hoping that the evil day may be stayed, we may say, *If* the time comes that, as a nation, we really feel the pinch of famine hunger, it will be well for us if we have already learned to make the most of that which we have. That we shall always be as fortunately situated as we now are, with full storehouses and a land of plenty, is not assured us. Sacrifice and self-denial now will enable us far better to stand the strain that may be on us later.*

LEARNING NEW VALUES

One gain in this experience is that of learning new things about nutrition. Food facts are being revealed that are invaluable. Foods that should hold a high place in our dietary are coming into their own. We can now learn to appreciate the value of corn and other cereals. We are finding out that we are not so dependent upon flesh foods as we once thought. New and better ways of living are being discovered.

The realization of hitherto unknown wealth in wholesome food products will prove a boon to us. The intensive application of real economy in agriculture will add to our national resources. Learning the possibilities of soil production, will bring material advantage.

BETTER COOKING

The widespread agitation of the food question brings up the important matter of the proper preparation of food. The economical use of food materials calls for skill in cooking. Eliminating extravagance makes necessary more thought in the use of left-overs and simpler foods. The introduction of a modified dietary and the preparation of new dishes call for a study of cooking.

Patriotism will not stand for sour bread, soggy potatoes, tasteless foods, unappetizing dishes, especially when the patriot knows that the cook can find out how to prepare foods properly if she will make an effort. Cooking will be regarded more as an art than a menial occupation, and scarcely a greater blessing could be bestowed upon a land than to give it good cooks.

WANT NOT NECESSARILY A CURSE

Having too much food may be a worse thing for a people than not having quite enough. "Pride, fulness of bread, and abundance of idleness" were associated conditions that led to the destruction of ancient Sodom and the cities round about. Intemperate living created a state of lawlessness that had to be punished by fire.

Eating and drinking to excess helped to bring the flood upon the antediluvian world. The unrestrained indulgence of appetite and passion was the foundation of a complete moral breakdown. Gluttony and drunkenness stole away the glory of Babylon.

Biblical forecast points out that once again will the cup of iniquity of the world run full through the high living of its inhabitants, and warns against the

(*Continued on page 343*)

WE are living in the momentous period of earth's history. It is a time such as men scarcely believed could occur. Science, art, and culture have given place to the stern reality of world war.

This is a time which requires the very best that is in us. The world is looking for strong men, for men of judgment, of vigor, and of character. It is looking for men of self-control to take positions of trust. The present crisis is one which calls for self-denial on every hand. It requires conservation of all our resources. If we are to learn from the experiences of other nations, we must devise ways to prevent the tremendous waste in this country.

If ever in the world's history, the admonition of Paul to the Philippians (Phil. 4:5) is pertinent now: "Let your moderation be known unto all men." Now moderation means freedom from excess, and excess always spells waste. Not only does excess bring about the wasting of our resources and of our physical health, but it is responsible to a large degree for the wasting of those finer and nobler qualities within us.

A great deal is heard of late in regard to temperance, and it is a wonderful inspiration to see the movement against alcoholic drinks spreading with such rapidity. Like a snowball rolling downhill, it has gained such a momentum and grown with such rapidity that it seems soon about to embrace the whole earth. Thus moderation in drink will prevent the waste of millions of dollars and the wreckage of thousands of homes and thousands of human lives every year.

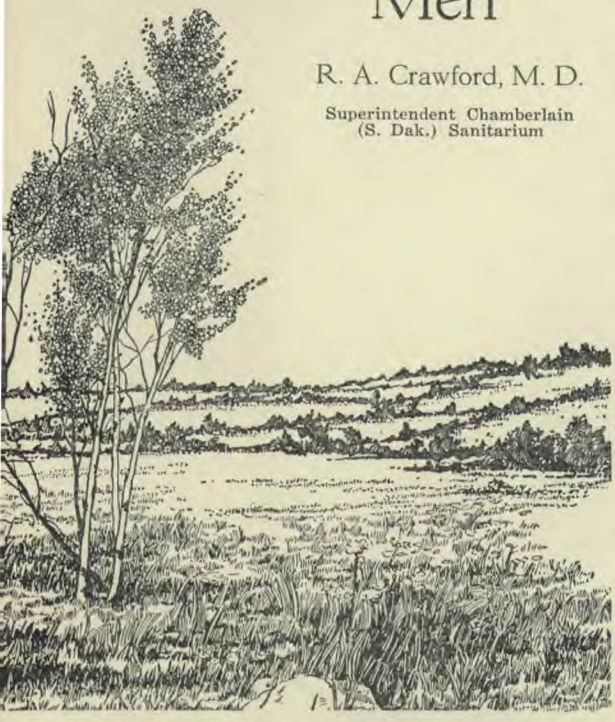
But Paul, in his letter to the Corinthians, said that "every man that striveth for the mastery is temperate in *all* things." We should not be temperate merely in our drinking if we care to develop the best that is in us, or to raise our national efficiency to the highest point. Like the "man that striveth for the mastery," we must be temperate in all things. That means in what we eat, in the way we live, in our work, in our sleep, and in our recreation. We must show moderation in our entire lives. If we are to become most efficient,—and efficiency is the greatest demand today, —it is of vital importance that we conserve all our energy and all our resources, individual and national, by avoiding excess and waste. Here is where we can all help. There is probably no other way in which the rank and file who stay at home can do so much for their country. Here is where we can show our patriotism for America in a real practical way.

It has been said that America's greatest sin is the sin of overeating. Not only from the homes of the rich, but even those of moderate circumstances, is there food thrown away every day that might

Let Your Moderation Be Known unto All Men"

R. A. Crawford, M. D.

Superintendent Chamberlain (S. Dak.) Sanitarium



save many who are starving, Americans are also putting into their stomachs food which, instead of being absorbed and utilized, is doing them a positive injury. Foods when taken in excess, and especially the rich protein foods, are only imperfectly digested. Poisonous substances are thus produced in the alimentary tract which are absorbed into the circulation and taken to all parts of the body.

We should learn to control our appetites, and especially at the time of our present national crisis. Never was competition so strong as at the present time. Never was there such a demand for strong, clear-headed men. Health is demanded of those who are seeking positions of trust. Young men should realize that excess in living is as detrimental to their progress and success in life as it is to the career of the college athlete.

We cannot expect to clog our systems with the products of imperfectly digested food, and then fill our place in life efficiently. Not only that, but the toxins from the intestinal canal which are absorbed into the body irritate the blood vessels and inflame every organ in the body. Little by little permanent effects are produced — the arteries are hardened, the nerves become irritable, the liver may be enlarged, and the kidneys may show changes which make them permanently disabled. The general health is undermined.

Especially is this true of those who do little physical labor. Such people often eat a larger amount of rich foods than those who do hard manual work. Not only does their diet abound in the rich, concentrated protein foods instead of a good supply of fresh vegetables and fruits, but their food is so highly seasoned that it is actually harmful to them. Then, too, too large a variety of foods is taken at one time, and the foods are combined in ways that are not beneficial. If we would eat simpler foods, our appetites would not be so stimulated as to partake of an excess, and the mind would be clear and the physical condition better.

Eventually it seems likely that the settlement of this war will be influenced largely by economic considerations, first among which will be the ability of the different nations to maintain an adequate food supply. Is it then too much to expect of every American citizen that he do all in his power to prevent waste, and to conserve the resources of the country? Should he not conserve his own vitality and increase his own efficiency in the field of labor allotted to him at this time of national crisis?

We should be temperate in all things. If it is important to use moderation in respect to the supplying of our tables, it is equally important to control with

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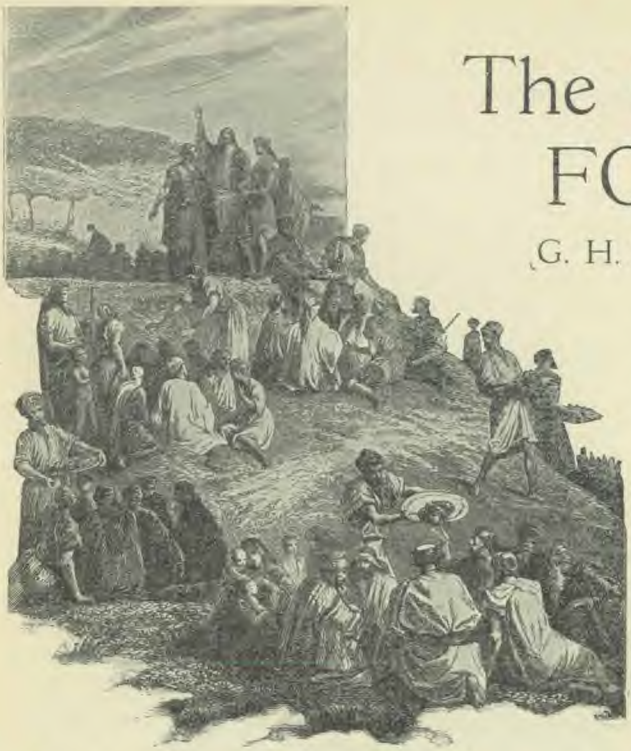


The Care of FOODS

G. H. Heald, M. D.

AS foods become more scarce and advance in price, the necessity for more careful food conservation becomes insistent. We Americans have the reputation of being the most careless people on the face of the earth as regards food wastage. It is asserted that the wastes of an American family would feed a French family. We are beginning to awaken to the importance of this leak, and there are signs of improvement; but there is still too much food sent from the table to the garbage barrel. In some families, even families which have no more than is needed to give them a comfortable living, it is customary to let some bread go to the garbage barrel from every meal. Uneaten portions of slices, and even whole slices, and particularly the ends, go out with the waste. If the people who do this could visualize the hungry little Belgians and other unfortunates who would be eager to get such portions, and who are starving because there is not enough to go around, would they not be more careful not to permit such wastage?

The fact is, we Americans have been brought up to believe that any attempt to save the remnants of food is a sign of niggardliness, and we find it hard to overcome this inborn prejudice. Could we but realize that carefulness in the matter of food waste betokens, not stinginess but thoughtfulness for the unfortunate, we might with more enthusiasm enter into a campaign of saving. If every person in the United States should save *one ounce* of bread a day, it would amount to more than three thousand tons a year. What we waste seems little to us, but in the aggregate it makes an enormous amount. If the bread is served so that not an ounce is wasted, if every slice cut and not eaten is made up into zwieback, or rusks, or bread pudding, it will not be necessary to purchase so much bread, and more will be spared for Europe. Every time we send an ounce of bread to the garbage barrel, we deprive some hungry person in Europe of just that much.

The same holds good with other foods. The "clean-plate meal" is a sign, not of parsimoniousness, but of the fact that we recognize that we are our brothers' keepers, and that we must save that others need not starve. Food should be served in smaller portions, so that there will not be the need to leave any on the plate. Especially in the matter of butter, no more should be served than will be used. Butter may be scarce and very expensive before long. In Germany, fats of any kind are hardly to be had at any price. Many people in Europe are suffering from the want of edible fat. Shall we continue to waste it because we have not yet come to the time of absolute

want?[1] Left-over dishes have been practically taboo in many families. Such foods were supposed not to be respectable; and whatever food was left from a meal went to the garbage. The fact is, most palatable and wholesome dishes are made from left-overs.

Some families which waste little or no food at the table suffer loss in the cellar or elsewhere on account of deterioration. Sometimes this seems unavoidable; but the exercise of care and forethought will materially lessen the quantity of food lost in this way. A few suggestions for the prevention of food loss follow. The tendency of many of the food products is to deteriorate on standing for a length of time. The method of storage has much to do with the rapidity of deterioration.

Owing to the enzymes present on the foods, which continue the process of maturing, many of the fresh fruits and fresh vegetables deteriorate very rapidly, at least lose their freshness, soon after being gathered. In order to prevent this as much as possible, one should have such foods as soon as possible after they are removed from the plant. One who has had to depend on the huckster for his green peas and corn and string beans knows nothing of the delicacy and the deliciousness of these vegetables as obtained from one's own garden.

After such vegetables stand for some time, they undergo further deterioration from the loss of a portion of their moisture. They dry up and wither, becoming tough, tasteless, and undesirable. Some green vegetables, such as celery and lettuce, can be materially improved and crisped by allowing them to stand in water for a while. The last step in the deterioration of vegetables is decay, when they become offensive.

[1] The Food Administration has issued the following statement regarding dairy conditions: "Milk and butter supplies are decreasing in the United States while our population is increasing. The dairy herds of Europe are diminishing rapidly because of the conditions created by the war, and there is no probability of improvement in these conditions. The dairy problem in this country, therefore, is not only a war emergency problem, but one that will continue after the war. . . . Our own dairy supplies are not keeping pace with our growth of population, for our per-capita milk supply has fallen from ninety to seventy-five gallons annually in the past fifteen years." And yet we are called to ship dairy products to Europe.

Decay is a process caused by minute living organisms, commonly called germs (bacteria), yeasts, and molds. These microörganisms are present everywhere, ready to develop and multiply whenever there are favorable conditions, these being moisture, a certain degree of warmth, the presence of nourishment, and preferably darkness. The more nearly these conditions prevail, the more rapid will be the growth of germs and consequent deterioration of what they are feeding upon.

There are almost countless varieties of germs, some of which are exceedingly particular regarding the kind of food they grow upon; but there are enough varieties of germs of decay always present to insure that some germ will begin working on any exposed food provided it has the other conditions present. Germs do not attack dried fruits and other dried foods, for the reason that there is not enough moisture present for their development.

For a protective against germs and other organisms, most plants have an outer tough covering which, while it is intact, prevents the entrance of germ life. A sound apple has a smooth, tough skin with an oily surface. Not until the skin is bruised, or the oily protection has disappeared, do the minute organisms (molds in this case) gain a foothold. In order that fruits and vegetables may be kept for comparatively long periods without deterioration, they should be clean and dry, and should be stored in a cool, airy place, not too dark. Dampness, darkness, and dirt favor the growth of germs.

Especially favorable to germ growth is the presence of foods that have begun to decay. For this reason, it is especially important to avoid storing any foods that are not perfectly sound. One partly decayed apple in a barrel will spread decay all around it. Partly decayed vegetables will spread the decay to others. We should realize that decay is an infectious disease of the plant, and that it needs to be quarantined. And

the best way to quarantine it is to destroy it. The effort to save by keeping partly decayed foods can result only in loss. It is no economy to buy partly decayed foods because they appear to be cheaper. A barrel of apples with a good many rots, even if bought at half price, is dearly bought, for after the apples are worked over, there will not be so much good apple left as there would have been from half a barrel of good apples, and moreover the sound part of the bad apples is not so good as sound apple. The time spent in saving the sound part is worth more than the fruit saved.

Fruits which touch each other are more likely to decay at the point of contact; so that where it is intended to keep fruit for some time, it is advantageous to polish the fruit in order to dry it and to remove as far as possible the mold germs, and then wrap the fruit in soft tissue paper and keep in a cool place. Fruits and vegetables in storage should be inspected from time to time, and if there is a focus of decay, it should be removed at once. Once let your fruit or vegetable room become thoroughly infested with germs of decay, and you will have trouble enough on your hands.

The following suggestions will aid in the preservation of perishable foods:

Keep potatoes in a dark, dry place, and do not allow sprouts to grow in spring. Sprouting potatoes develop a poison.

Keep root vegetables, such as turnips, carrots, and parsnips, in boxes of earth or sand in the cellar. Thus surrounded with earth, they will remain plump and fresh for a longer time.

To keep sweet potatoes till January, clean, dry, and pack in chaff so that they will not touch one another.

Be sure that pumpkins and squash are thoroughly mature before storing. They should be stored on a shelf, not on the floor, and should be wiped from time to time with a cloth to absorb the moisture.

Place cabbages in barrels, roots uppermost.

Pack celery, untrimmed and unwashed, heads up, in long deep boxes, which should then be filled with dry earth.

Gather, just before frost, firm, well-grown tomatoes which have not begun to turn, wipe dry, and place on straw-covered racks in the cellar. As they ripen, use them for the table, and remove any that show signs of decay, and probably you will have tomatoes until January.

To keep apples for autumn and early winter, pack them carefully in barrels, and look them over occasionally to remove the decayed ones. To keep apples till late winter or spring, have a good-keeping variety, hand-picked, and store them without bruise on shelves in the cellar. It is better to wrap them separately in tissue paper.

If pears are packed in sawdust or chaff to absorb the moisture, they will keep better than if laid unprotected on the shelf.

Oranges and lemons keep much better if wrapped in tissue paper.

PROSPECTIVE RESULTS OF FOOD CONSERVATION

(*Concluded from page 337*)

inevitable result. The destruction of war preluding the closing days of earth's history, is not so full and complete as that brought on by giving way to unbounded self-indulgence.

STRENGTHENING MORAL FIBER

The moral fiber of society is not strengthened by the unlimited indulgence in rich foods, highly seasoned meats, and delicacies of all kinds. Crowding the stomach robs the brain. Reason gives way to desire. Bodies that become weakened and sickly because of physical violations cannot possess minds that are strong. Wasting physical energies means a dwarfing of the mental powers, and a consequent impairment of the morals.

The unrestrained indulgence of appetite has a backward pull, a tug that is always downward. It takes effort to even resist the strong inclination. It requires still more to face about and head the other way.

Man's Creator made him something more than a mere animal to be fed and tended. A mind was given him that was meant for high attainments. A symmetrical development of his God-given faculties will not be found in a course that runs largely to mere feeding.

So we say that out of the situation that at first glance may appear to be one of doing a bit in the way of saving food particles, there may come a spiritual reaction and a permanent good far beyond our present expectation.

Harry W. Miller

"LET YOUR MODERATION BE KNOWN UNTO ALL MEN"

(*Continued from page 339*)

moderation our mode of living. This is a strenuous age. There is excess in both work and play. Men and women who rob themselves of health and strength by unceasing labor and mental strain seem more commendable than those who devitalize their systems by excess of amusement and unhealthy recreation, but both accomplish the same end — that of diminishing or ending their sphere of usefulness. Recreation and amusement of the right sort are healthful, and are necessary at times for all of us. Especially do those whose labor is chiefly mental and whose work confines them in an office, require recreation. A complete change, providing enjoyable exercise, is best suited to their needs. If they will systematically adopt recreation of this nature, they will find themselves conserving and replenishing their supply of force and energy.

But when recreation goes to the point where it is one's business in life, where amusement is the chief end of one's existence, it is an excess and a waste of time and energy, and it unfits the individual to be of any real use in life. Truly we should use moderation in our play as well as in our work.

Recently the government has urged Americans to refrain from the excessive use of automobiles for pleasure riding. Millions of barrels of gasoline are used

in this way, of which we may be sorely in need before the end of the present struggle. And so it is with many other things. Waste must be discouraged. Conservation and a policy of constructiveness must become a guiding principle in the life of every American. Moderation in all things is more to be desired now than ever before.

Paul wrote his admonition to the church at Philippi almost nineteen hundred years ago, and it has been applicable all through the ages, but it seems especially so just now. Moderation — the avoiding of excess — in the life of every individual, will mean the conservation of our national resources and the preservation and development of all that is noblest and best in the lives of each of us. It will mean a stronger, better-prepared America, and more healthy, more efficient Americans.

OVEREATING

(*Continued from page 335*)

individual stores as fat, or the excess foods may decompose in the digestive tract, producing toxic instead of nutritive substances.

The ingestion of too much protein, especially the intake of any amount whatever of flesh foods, often causes arthritis, rheumatism, heartburn, and appendicitis. Various nervous disturbances also follow this kind of overeating. In neurasthenia, the power to think and to do mental work is diminished; the individual cannot concentrate his mind properly and becomes irritable and nervous. Hyperacidity, ulcers of the stomach or of the duodenum, and cancer are essentially meat eaters' diseases, and are found particularly in individuals who partake of too much meat. Another disease which follows the overeating of flesh foods, is arteriosclerosis, or hardening of the arteries. This condition, and hypertension of the circulation, are produced, and leads to fatigue of the heart with secondary heart failure. These diseases have increased alarmingly in very recent years, and more especially among flesh eaters.

Overeating, even of pure food, also causes stomach and intestinal indigestion. The walls and glands of the stomach become diseased, and often atrophy. Other organs are also affected by this trouble. Gout, gravel, and kidney diseases are frequently a result.

Thus, it is a matter of stern necessity that we preserve our faculties in the highest and best condition in order to render the most effectual service day by day. Any action or habit which prevents the free, full flow of our thoughts and words, or which beclouds the mind and enfeebles the mental power, as does overeating, is to be deprecated, and the individual should train himself to avoid it.

It is unnecessary to say that much might be gained from the standpoint of economy if we were to eat less. This should be the least reason; but the use of simple foods and less of them will lessen our expenses and add to our efficiency. Strict temperance in eating and in drinking will in time clear the mind and remove a great deal of the bad results of overeating. This is especially true if carefully regulated exercise of the muscles is combined with temperate habits. The mind must daily be exercised and trained, and this with muscular work and the restriction of appetite, will give power of endurance. The man who lives to a green old age is the man who does not overeat. The man who is able to master every situation in which he finds himself, who can control outward circumstances and surmount obstacles, is the man who has conquered his appetite. These are eternal and universal facts; present conditions only emphasize them.

AS WE SEE IT

WAR LOGIC IS COMPELLING LOGIC

IN connection with the Food Conservation Campaign, a three days' school in nutrition was held in Washington, D. C., August 28-30, to which were invited those intending to lecture or deliver sermons on food conservation. The instructors in this school included men of more than national reputation, and of acknowledged authority in their respective branches. Altogether the school was a great success, and evidently will set the pace for similar schools to be held in all parts of the country.

To the writer, the most surprising feature in the whole course was the last lecture, delivered by Prof. Graham Lusk, acknowledged to be the peer of any one in this country, perhaps in any country, on diet and nutrition. The surprise was due to the fact that while in the past Professor Lusk has rather contended for the presence of flesh food in the dietary, in his address August 30, he made it emphatic that so long as the food is properly selected otherwise, meat is not necessary in the dietary. Its principal advantage over a nonmeat dietary of proper composition was in its flavor. Elsewhere, he admitted that while people in Europe are suffering from the want of fat, the Japanese get along very well with scarcely any fat and feel no deprivation; the difference being that the Europeans are accustomed to fat, and dishes prepared without fat do not seem like food to them.

That is the whole thing in a nutshell. People believe that they cannot get along without meat, for the reason that a meal does not *seem* like a meal unless a liberal amount of meat is present. Meat eating is thus largely a *habit*. The Italians coming over to this country are at a loss as to how to prepare meals that are acceptable when they cannot get their Italian cheeses. And they would be at an utter loss if they could not get garlic. We can all acknowledge that garlic is not necessary for nutrition; yet an Italian might feel after a few meals without garlic, that he was missing some essential food. To use a common expression, when he had his first garlic meal, he would say, "Ah! that goes to the right spot; I feel satisfied, now." This is only one illustration, and many might be given, showing how a person's eating habits give him a distorted view as to what is nourishing and what is not. Unquestionably meats have a flavor particularly appetizing to man. That this is not necessarily inborn is shown by the fact that many children have to be encouraged and urged by anxious parents to eat meat. As is the case with tobacco, the first taste is not always the pleasantest of experiences, but the taste soon grows. The well-to-do eat meat abundantly, and as fast as economic conditions have permitted, the poorer classes of the population have adopted the fare of the more comfortably situated, and the ability to buy meat has almost come to be a measure of one's advance in "standard of living," none but the wretchedly poor and those who avoid meat from principle being nonflesh eaters.

And as if to indicate the inefficiency of a nonmeat dietary, many of those who so lived, have been undernourished, and lacking in stamina. It is now known that we cannot judge of the effects of a nonmeat dietary from the condition of the Hindus and the Chinese, owing to the fact that these races live under other insanitary conditions sufficient to explain their inferiority. And the poor in this country, who have lived without meat, have nearly always lived on a restricted vegetarian dietary, wholly inadequate to their needs. Owing to want of knowledge of food values, they have failed to provide the vegetable substitutes for the necessary constituents of meat.

The war situation may have influenced Professor Lusk to take the emphatic position he did regarding meats, but more likely the main influence was the results of the brilliant investigations of McCollum and his coworkers, who have shown exactly why certain restricted vegetarian dietaries are inefficient, and by what combinations they may be made efficient.

We shall dwell more at length on this topic in later issues. Suffice it now to say that when seed foods (cereals) are supplemented with roots and especially with leaves (cabbage, spinach, etc.), it is possible to furnish from the vegetable kingdom a dietary thoroughly efficient for adults, even without any animal food whatever. For growing children, a liberal supply of whole milk is advised.

G. H. H.

SHALL WE EAT CORNMEAL?

In view of the threatened shortage of wheat this is a serious question. We shall be short on wheat, but shall have corn to spare. Can we with impunity substitute corn for a part of our wheat? In the South, corn is much more commonly used than in the North. In fact many Southern families use corn bread almost entirely. But is there not a connection between this fact and the prevalence of pellagra in the South? — Probably not. The etiology, or causation, of pellagra is yet an unsolved problem, but it is not probable that the use of corn in the diet is directly responsible for this disease.

M. Helen Keith, assistant in Animal Nutrition, University of Illinois, has so well stated the problem in the *Scientific American Supplement*, Aug. 4, 1917, that we quote at length:

"From the point of view of the world economics we are urged to substitute corn, rye, barley, buckwheat, etc., for much of our wheat this year. Mr. Hoover, in his appeal to the housewives, calls for one wheatless meal a day. The wheat crop of last year in the United States was smaller than usual, and the winter crop this year was a failure in large sections. In spite of an increase in the planting of spring wheat there is no prospect of a total wheat crop which shall much more than cover our usual home consumption. But it is said that our Allies will need at least 200,000,000 bushels of wheat from us this year. Where is it to come from? Evidently only from self-restraining economy on the part of every one. As a matter of common humanity, therefore, we should take our part by willingly giving up some of our wheat for the other cereals. Probably for most of us cornmeal and hominy will be a natural substitute.

"As a matter of fact, with flour costing sixteen dollars a barrel and the ten-cent loaf of bread or box of crackers selling at fifteen cents, the family pocketbook makes the same demand. Cornmeal is cheaper than flour.

"From the point of view of the supply of corn also, such a substitution will be an advantage to the country. Ordinarily the quantity of corn produced in the United States is from three to four times the quantity of wheat, but only from five to ten per cent of it has been used for human food. Owing to the agitation made this spring, about 15,000,000 acres more have been planted to corn this year than last. An effort is being made also to spare a larger proportion for human food by the whisky prohibition and by the employment of other feeds for stock. Most of the increased use should be by consumption in our country rather than by exportation, because wheat keeps better for exportation than corn does; and, further than that, the peoples of most other countries have not become accustomed to eating corn as our people have, and they are wheat eaters.

"The economist, the producer, and the family pocketbook, therefore, are all urging a rather general substitution of corn for wheat in the diet. But what about the nutritive value of cornmeal? Is it perfectly safe from that point of view to make the substitution? It will not be economy to use it if the family health is to suffer."

After giving briefly the objections to corn as a food,— the incomplete protein, the lack of mineral salts, especially calcium, and of the vitamines,— Miss Keith continues:

"With that we come back to the summation of the whole situation. It is true of each of the three points found against corn, as well as of any other possible point which comes out in pellagra, that it is very readily counteracted by other articles in the diet. In fact, the single item of milk alone might make up for them all: the lack in the corn protein (zein) is well supplied by the milk proteins (casein and lactalbumin); the mineral lack is met by the minerals of milk; and the fat-soluble accessory is found with butter-fat. Cornmeal has its defects, and they are somewhat greater than those of wheat; but they are abundantly overcome in a dietary which includes milk and eggs, fresh fruits and vegetables, and some meat. They are not of such a nature as to constitute any argument against corn bread with the dinner and cornmeal mush or hominy with the breakfast."

We heartily agree with the above, except that she might have omitted the words "and some meat," for with the dietary as suggested by her, the meat is not necessary. G. H. H.

A BLESSING IN DISGUISE

THE message from Mr. Hoover to the American people, urging them to adopt a simpler menu, is one of the best things that ever happened to this country. No amount of proof that overeating on certain kinds of foods is increasing the degenerative diseases which hasten middle-aged men to their graves would ever have sufficed to effect a change in American dietetic habits.

But patriotism and the food crisis are doing the impossible by causing us to look the question of a simpler ration squarely in the face, and very largely to adopt it.

Periodicals and newspapers generally, including the medical journals, comment approvingly on Mr. Hoover's work, and some of them admit more than has been customary regarding the harmfulness of a high-protein dietary. For instance, the *Southern Medical Journal*, in an editorial in the August issue, commenting on Mr. Hoover's propaganda, says:

"The education of the public regarding food values and the teaching of every person to eat less of meats, sweets, and wheat products, and more of fresh vegetables, will result in a considerable reduction in sickness among adults, as well as in a material reduction in the number of deaths from diseases due to overeating.

"Statistics show that the death rate from diseases of the heart, kidneys, and arteries is increasing at an alarming rate, i. e., about twenty per cent in thirty years. The frequency of, and the death rates from, digestive and nutritional diseases have also increased. It is likewise well known that the general death rate of those over fifty years of age has increased considerably in the last few decades.

"Metchnikoff, Bouchard, and others have proved beyond question that the putrefaction of an excess of meats in the intestinal tract is a cause of arteriosclerosis, which is the most important part of the pathology in the chronic diseases of the heart and kidneys. The writer believes that one third of the 600,000 deaths that occur in the United States every year from diseases of the heart, kidneys, and arteries can be prevented, or postponed, by proper eating."

The article continues regarding the effect of an excess of carbohydrates, and says:

"The appeal of Mr. Hoover and Dr. Wilbur to eat less of everything except fresh vegetables to help win the war; and his plan to educate every man, woman, and child in the United States in the simple principles of diet and nutrition, is one of the greatest measures for good that has ever been undertaken. It may win the war for us and our Allies; it is an economic necessity; and it is a far-reaching public health measure that has hardly been paralleled in history."

Mr. Hoover is not urging a radical or a starvation diet. His recommendations if followed will result in a general improvement in health, though what he is advocating is not so simple as many have lived in good health. G. H. H.

PRESENT SYSTEM BLAMED FOR UNNECESSARY OPERATIONS

DR. WILLIAM F. WAUGH, in the August *Medical World*, makes some remarks regarding unnecessary surgery that are well worth repetition. Nearly every one knows that too often unnecessary operations are performed. To quote:

"Let us begin by acknowledging that doctors are simply men, and very human; and that they are exposed to temptations not known to the vast majority. On the one hand, we have a chance to treat a case in the old way, tedious, uncertain, and very poorly paid. On the other, operate, quick and decisive, prestige ensuing, and a richer reward than the clinician gets for taking a typhoid through weeks of peril. We need the cash; we feel that the lack of appreciation and the ingratitude of the general run of patients absolve us from much moral obligations to them. Why blame the doctor if he gets to prefer the surgical end? With the backing of the whole profession to sustain him, what wonder if he be somewhat easily persuaded that his duty lies in the direction of quick work and big fees?

"The whole system is wrong, alike to doctor and patient. Put the practitioner on a salary, where he shall receive not a penny more for one sort of work than for another, make him the director of domestic and personal safety instead of the restorer of health, and the operative fever will die out. Surgery will be done only when actually needed, when we cease to pay a surgeon richly for finding operations necessary."

Naturally the surgeons will resent these remarks, but who honestly can deny their truthfulness? G. H. H.

QUESTIONS AND ANSWERS

Conducted by J. W. Hopkins, M. D., Washington (D. C.) Sanitarium

This is a service for subscribers to LIFE AND HEALTH.

If a personal reply is desired, inclose a two-cent stamp.

If you are not already a subscriber, send also the subscription price with your question.

Replies not considered of general interest are not published; so if your query is not accompanied by return postage for a personal answer, it may receive no attention whatever.

Remember that it is not the purpose of this service to attempt to treat serious diseases by mail. Those who are sick need the personal examination and attention of a physician.

State your questions as briefly as possible, consistent with clearness, and on a sheet separate from all business matters. Otherwise they may be overlooked.

For prompt attention, questions should be addressed to J. W. Hopkins, M. D., Takoma Park, D. C.

Yellow Cheese

"What do you think of the use of the yellow cheese we get in stores?"

The best kind of cheese is ordinary cream cheese, or cottage cheese. The ripening by germs of the commercial cheese of which you speak produces certain toxins, or poisons. The best cheese is that made by the use of lemon juice or the lactic acid bacillus.

Food for Children

"What do you advise concerning the use of carrots, string beans, potatoes, and nuts for little children?"

The use of these vegetables and of nuts is to be encouraged. Before the young child is able to chew its food, vegetable broth may be used between the feedings of milk. Vegetables are an important source of mineral salts which are very necessary to the growth of the child. After the child begins to eat solid food, the carrots and string beans may be cooked thoroughly and then mashed with a fork. This is important, as the child is likely to swallow the food in large particles. Tomatoes are an excellent source of iron and mineral salts, and their use by children and adults should be encouraged. There has been a belief that tomatoes are harmful in the case of rheumatism. This is not true unless the person has an idiosyncrasy, when they should be discontinued. Tomatoes, as well as oranges, lemons, and limes, contain citric acid. This is converted into alkaline carbonates, and neutralizes many of the waste products in the tissues.

Malted Milk — Diet for the Aged

"Is malted milk a healthful and reliable food? What diet is suitable for a person eighty-three years old, who is losing flesh rapidly?"

There are several kinds of malted milk, and as far as I know they are all very reliable. You should have no fears regarding them, as they are composed of pure, whole milk from tuberculin-tested cows. This is evaporated under a vacuum, and is then combined with the correct proportions of malted wheat and barley.

If you are losing in weight, you should get good results from taking malted milk, particularly if you make it up with milk or cream. You should also gain in weight by using dextrinized cereals, as toasted corn flakes, puffed wheat, puffed rice, with milk or cream. You should eat baked potatoes, boiled rice, fresh vegetables, eggs (either soft boiled or soft poached, jellied or coddled), cream and milk, either plain or in the form of whey, junket, or yogurt. This latter is made by the use of lactic-acid bacillus.

Onions; Sage Tea

"What is the food value of onions? Is there any harm in drinking sage tea?"

Books on diet tell us that onions have a high nutritive value. Some observers think that the use of the essential oil of onion is conducive to health, but I cannot see it that way. It is possible that the onion has an advantage as a flavoring. It is often used by our cooks for that purpose. By parboiling onions the essential oil may be very largely removed. The Spanish onion has very little of this oil, and proves an excellent article of diet.

Sage has a place as a medicine and for flavoring foods, but to use the tea regularly as a beverage would be, I think, a mistake. The best drinks are water, fruit juices, milk, and buttermilk made by the lactic-acid bacillus. Too much water should not be drunk at meals, but its use between meals should be favored in larger amounts than are ordinarily taken.

Camphor in Pneumonia

"Give your opinion of the use of camphor in pneumonia."

The use of camphor in pneumonia requires the supervision of a physician. If the patient is not in serious danger, but is getting along fairly well, the camphor is given by mouth every two or three hours for several days in proper doses for the adult. If the patient needs more heroic treatment with a prompter action, the camphor is dissolved in sterile olive oil and injected hypodermically beneath the skin or into the muscles. Pneumonia is a serious disease, and no one should undertake to care for a case without the advice and counsel of a physician. The patient should have a great deal of rest, with plenty of water and good nourishing food. The fever should be controlled by sponge baths. We get good results from the use of thin cold compresses to the chest, changing them as often as they become warm, and giving a hot fomentation to the chest for about five minutes every two hours. The bowels should be moved daily by enema. This will also help to lower the fever.

Chronic Appendicitis

"Do you recommend mineral oil in the treatment of chronic appendicitis?"

The treatment for chronic appendicitis is a surgical operation as soon as the diagnosis is made. A person suffering from this trouble is living over a dynamite factory. A laxative diet with the use of bran and mineral oil, and tepid or cool enemas, will relieve the constipation, and thus indirectly relieve the condition of the appendix, but this relief is not sufficient; the appendix is apt to flare up and become dangerous at any time. The best solution of the problem is to have the offending organ removed by a surgical operation.

Treatment for Tobacco Habit

"Give the treatment for tobacco smoking."

The prescription for the treatment of tobacco smoking is as follows:

Get six ounces of ¼-of-1-per-cent solution of silver nitrate. Keep this in a colored bottle, and use as a mouth wash after each meal, if necessary, for one week. Get some gentian root (not the powder) — about ten cents' worth. This should be chewed between meals. This aids digestion, and helps remove craving for tobacco. The diet should be limited wholly to fruits, milk, well-baked cereals, as shredded-wheat biscuit, corn flakes, puffed rice, etc., with whole-wheat bread, for the first two weeks. Nuts, eggs, cottage cheese, and vegetables may be added at the end of the two weeks. At the close of each meal, eat subacid fruits, such as oranges, grapefruit, pears. Sweet milk and buttermilk should be used in place of tea or coffee. Mustard, pepper, spices, flesh foods, and tea and coffee increase the craving for tobacco, while the milk-and-fruit diet lessens it. Eliminative baths should be taken to get rid of the stored-up nicotine, and the bowels should be regulated by mild laxatives and enemas.

Acne, or Pimples

"Please outline a treatment for pimples."

The treatment for acne is local, general, and dietetic. The dietetic treatment includes abstinence from all kinds of flesh foods, and from tea and coffee. The bowels must be kept regular by a laxative diet, by mild laxatives, as mineral oils and salines, and if necessary, by an occasional enema. The condition of the intestines must be brought up to normal by the use of lactic-acid tablets and by drinking lactic-acid buttermilk.

The general treatments include mild sweating procedures, followed by salt rubs and alternate hot and cold sprays. The liver should also be treated by using alternate hot and cold applications. A warm tub bath should be used once or twice a week.

The local treatments consist of the use of a disinfectant soap — either resorcin or bichloride of mercury. This is followed by an ointment. In many cases it is necessary to puncture the pustules and draw the pus and some blood by means of a special apparatus for that purpose. The pustules are then touched with iodine and alcohol.

Vaccine treatment is to be recommended under supervision of a physician.

Catarrh of Gall Bladder

"A friend is troubled with catarrh of the gall bladder, with chilly sensations and dizzy spells. Should she undergo an operation, or will medicines cure her?"

A person with catarrh of the gall bladder, and the complications which usually accompany this condition, will most likely benefit by a surgical operation. Although this should be preceded by a short course of diet and treatment, it is not likely that she would be entirely relieved without the operation. A laxative diet, with abstinence from tea and coffee and flesh foods, will aid in lessening the catarrh. Greasy and complex foods, with excess of sweets, should also be avoided. The use of olive oil in doses of one or two teaspoonfuls after each meal will often help, or paraffin oil should be used in tablespoon doses one hour before meals. A teaspoonful of effervescent sodium phosphate in a glass of water an hour before breakfast every day will also help to clean out the liver. The chilly sensations and dizzy spells will probably cease after the disappearance of the toxemia which accompanies the gall bladder trouble. Fomentations to the liver and abdomen, with tepid baths every day, and the use of an oil enema every day, or every other day, will also do her a great deal of good. The decision as to the operation should be made by an efficient physician in consultation with a competent surgeon.

Complexion, Bad Taste, Watery Eyes

"1. How can a greasy or oily complexion be remedied?

"2. How can large whiskerlike hairs be removed from a woman's chin?

"3. What is the cause of and remedy for a bad taste in the mouth, and coated tongue in the morning after rising.

"4. How can watering eyes be remedied?"

1. A greasy or oily complexion can be remedied by the use of a good Castile soap or a mild germicidal soap. The general health should also have attention. Besides the local baths with salt glows and soap washes, a good sweat bath once or twice a week is valuable. Greasy and fried foods, puddings, and pastries must be avoided, and the liver, stomach, and bowels should receive attention, and be kept in regular action.

2. Hair can be removed from the face by electrical treatments, and also by a depilatory powder.

3. A bad taste in the mouth is due to disturbances of the stomach and bowels, constipation, catarrh of the nose or throat, or bad teeth. Late suppers are often the cause. The treatment is to give attention to these different conditions.

4. Watering eyes are often due to the obstruction of the tear duct. Sometimes it is necessary to have these dilated by inserting a probe. If the condition is worse in windy weather, a mild wash of boric acid (20 grains to 4 ounces of water) once a day will be of service. This should be applied at night. The eyes should be protected by rubber goggles or glasses when out in the wind. If defective vision is the cause, proper glasses should be fitted and worn.

SOME BOOKS

Food for the Sick

A Manual for Physician and Patient. By Solomon Strouse, M. D., Associate Attending Physician, The Michael Reese Hospital, and Professor of Medicine at the Post-Graduate Medical School, Chicago; and Maude A. Perry, A. B., Dietitian at the Michael Reese Hospital, Chicago. 12mo of 270 pages. W. B. Saunders Company Philadelphia.

This manual gives the result of the experience of the authors in Michael Reese Hospital, supplemented by the experience of other dietitians gleaned from textbooks and magazines.

The main principles of dietetics, tables of food values, and directions for estimating the food value of a menu are given; so that one with a little study may be able to check up the nutritive value of any desired dietary.

Specific directions are given for the administration of food in diabetes, diseases of the kidneys, diseases of the heart, the various diseases of the stomach and intestines, also of the liver, the respiratory system, and the skin. Chapters are devoted to fever, obesity, and anemia, scurvy, and goiter.

Although the menus differ radically from those of a well-appointed sanitarium in the use of tea, coffee, flesh meats, etc., the attentive student will obtain much valuable information from this volume.

The Modern Milk Problem

by J. Scott MacNutt, Lecturer on Public Health Service in the Massachusetts Institute of Technology; author of "A Manual for Health Officers." Well illustrated. 258 pages; $2. The Macmillan Company, New York.

"What is pure milk?"

"Is pure milk — or clean milk — or safe milk — or wholesome milk — practically possible — and how can it be got?"

"Will the public pay for it?"

These are some of the questions that insistently demand an answer. Health officers are constantly demanding (and rightly so) a higher, purer grade of milk, less contaminated with barnyard filth, human emanations, and disease germs. To meet these demands increases the expense of producing milk; moreover, the cost of feed and other supplies for the dairy has advanced beyond all precedent.

The milkman is being ground between two millstones. On the one hand he finds all his supplies increased enormously in price, and he is being required to go to whatever expense may be necessary to produce a better milk; on the other, every proposal to raise the price of milk to a point where he will make a fair profit is met with a vigorous fight on the part of the consumers. In this process he is being ground pretty fine, and some dairymen have, as a result, found it necessary to get out of business. Dairy cows have been sold for beef, for the reason that it no longer pays to produce milk. Soon we shall have, if this condition continues, a veritable milk famine, with milk at impossible prices for the poor. Is there a milk problem?

This volume goes into the various aspects of the problem — the production and marketing of milk, and the situation as it affects dairymen today, and gives suggestions how to solve the problem. The book is well worth the careful study of any one interested in the solution of this great problem.

Health Survey of New Haven

A Report Presented to the Civic Federation of New Haven by Charles-Edward Amory Winslow, James Cowan Greenway, and David Greenberg, of Yale University. Cloth, 75 cents. Yale University Press, New Haven, Conn.

At the invitation of the Section on Sanitation of the New Haven Civic Federation, the authors, who are specialists in sanitation and hygiene, undertook a survey of the city, which occupied something like a year and a half for its completion.

In their report the problem is studied under three general heads: The Sanitary Condition of the City, Health Organization of the City, and Vital Statistics of New Haven. Under the first head are considered such topics as The Homes of New Haven, Problems of Industrial Hygiene, The Public Water Supply, Sewerage and Sewage Disposal, Collection and Disposal of Garbage, The Fly Problem, Mosquitoes and Malaria.

As a result of their work, the authors make forty-five recommendations of changes which they believe will increase the efficiency of the health administration of the city.

Those interested in civic betterment will find much of value in the book.

Four Epochs in a Woman's Life

By Anna M. Galbraith, M. D. Third edition, revised and enlarged. Cloth, $1.50 net. W. B. Saunders Company, Philadelphia and London.

Dr. Galbraith has treated this important subject under the following heads:

Eugenics and Sex Education.

Maidenhood: physiology, hygiene, important precautions.

Marriage: the ethics and hygiene of the marriage relation.

Maternity: conception, confinement, the newborn.

The Menopause: giving the hygiene of this period.

The purpose of the book is healthier parents, better families, more vigorous and better children.

The exercises are well illustrated by means of numerous half-tone engravings.

NEWS NOTES

Caffeine as Uric Acid

When coffee or tea is used as a beverage, practically the entire amount of caffeine is transformed into uric acid and excreted in that form, according to an article by Prof. Lafayette B. Mendel and Emma L. Wardell in the *Journal A. M. A.* of June 16, 1917. This article is based on work recently performed in the Sheffield Laboratory of Physiological Chemistry of Yale University. In the summary, the statement is made, "The increase in excretion of uric acid, after adding coffee, tea, or caffeine to a purin-free diet, seems to be proportional to the quantity of caffeine ingested."

Quarter System

Beginning October 1, this year, the Stanford University Medical School, San Francisco, Cal., adopts the quarter system. The school has a continuous session, four quarters in a year, any three constituting a year's work. One can thus begin studies when most convenient, and if it is necessary on account of illness or lack of funds to drop out of school for a few months it is not necessary to lose the entire year. The Rush Medical School of Chicago began this system in 1899.

Ropy Bread

There is more or less complaint in England of "ropy bread" since the general use of the eighty-one-per-cent milled flour. When the bread is broken open, it is stringy. This condition is found to be due to a certain common germ which is present on the wheat hull. The germ itself is harmless, but the changes set up in the bread render it more or less unwholesome. It is thought that the warm damp weather favors the production of ropiness.

Diet in Pellagra

According to Jobling and Peterson (*Journal of Infectious Diseases*, August, 1917), studies of pellagra in Nashville show that a definite number of cases develop in persons who are partaking of a diet as varied and wholesome as could be desired, and cases of pellagra have developed in breast-fed infants of nonpellagrous mothers. On the other hand, it must be admitted that at least half of the cases of pellagra develop in persons who live on a monotonous diet, low in proteins, with proportionate excess of carbohydrates. It is also admitted that the pellagrous condition is favorably influenced by a liberal diet.

Goat's Milk for Cheese

Goat's milk is being used for cheese making on a larger scale in this country.

Salad Oil from Alligator Pears

A New Jersey manufacturer is making a fine salad oil from the alligator pear, or avocado.

Alfalfa Butter

The State Dairy and Food Department of Michigan finds by experiment that alfalfa contains a fat resembling fresh butter, which may be important as food.

The Buckwheat Crop

According to the latest forecast of the Bureau of Crop Estimates of the United States Department of Agriculture, there will be 20,000,000 bushels of buckwheat this year, an increase of 8,000,000 bushels over 1916, and slightly above the five-year average crop up to 1916.

Pork from Garbage

The garbage from an Omaha chain of restaurants is being fed to 400 hogs, of which 100 are ready for slaughter every three months. Pork is made so profitable that the Omaha Hotel Men's Association is forming a hog-raising organization. Omaha's city garbage is sold for $5,000 a year for hog feeding. Hull, Mass., has a herd of 325 hogs, which turn garbage into pork.

Record Sugar Crop in Cuba

Despite the poor quality of cane and loss by revolution, the production of sugar in Cuba will be 3,000,000 tons, which is equal to the crop of last year, and 400,000 tons greater than any previous crop.

England to Grow More Grain

For 1918 it is planned in England and Wales to plant 2,000,000 less acres grass and 2,600,000 more of grain. This evidently means that they are expecting to raise fewer cattle, and perhaps depend more largely on imports for their supplies.

War Bread

The only bread permitted in England is made of wheat flour milled to 80 per cent, to which at least 20 per cent of maize, oatmeal, rye, rice, and beans must be added. This bread is more nutritious than white bread. It is relished by many, but a few find it unpalatable.

An Ounce a Day

If every person in the United States were to save *one ounce* of wheat flour a day, the aggregate would be 31,250 barrels (3,125 tons) daily, 937,500 barrels (93,750 tons) a month, or more than ten million barrels (1,000,000 tons) a year — a stupendous amount. At $10 a barrel this would represent $100,000,000 in value. Can we honestly say that we do not daily waste an ounce of wheat flour or its equivalent?

"The atmosphere breathes rest and comfort, and the many chambers seem full of welcomes." LONGFELLOW.

Come!

COME out to California—out where the skies are a trifle bluer—out where the sun is a little brighter—out where a fresher breeze is blowing—out where you can rub elbows with Nature and revel in the great outdoors.

Come!—break up the monotony—get away from the toil and moil of city life—cut loose from the daily grind—leave workaday responsibilities far behind—and dedicate a few weeks to health-building. *It pays!*

Once a year, at least, the body should be given a chance to catch up—to recuperate. Tired muscles and fagged-out nerves should be relaxed. Pleasant recreation should take the place of nervous tension.

And this rest period should be more than an aimless absence from daily routine. It should be a period of actual body-building.

The value of several weeks of healthful living under such ideal conditions can hardly be overestimated. The natural results are sound, refreshing sleep—good digestion—a clear head—increased energy—and a sense of zest and buoyancy that makes life worth while.

It is a treat to see the outdoor life work its charm. Men and women with the pallor that comes with fatigue and indoor air, become ruddy, clear-skinned and healthy.

Come to one of these places, then, for your "rest-vacation". For here a quiet, restful atmosphere prevails. Here you get all the pleasant diversion of a resort, with none of the health-defeating distractions.

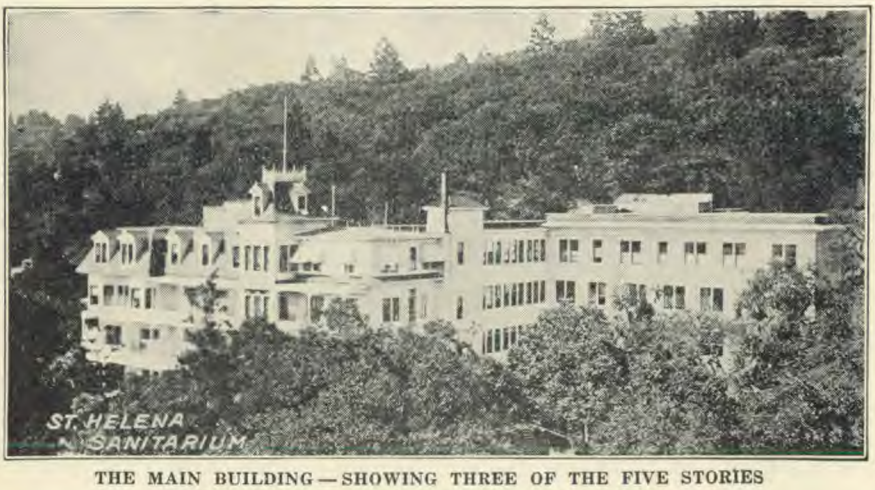
WHY spend your "rest-vacation" in California? A natural question and an ample answer—if you'll send for our illustrated literature. Today is the day to do it.

The Loma Linda Sanitarium
311 Pepper Drive, Loma Linda, Cal.

The Glendale Sanitarium
211 Broadway, Glendale, Cal.

The Paradise Valley Sanitarium
111 Sanitarium Ave., National City, Cal.

St. Helena Sanitarium



THE MAIN BUILDING — SHOWING THREE OF THE FIVE STORIES
New Concrete Hydrotherapy Building at the Right

AWAY from the noise, excitement, and contamination of the city, and nestled close to the heart of nature, on a beautifully wooded slope of Howell Mt., is situated the St. Helena Sanitarium.

ITS natural setting, in a forest of live-oaks, firs, manzanitas, and madronas, together with an almost unending variety of flowers and foliage, gives a beauty and fragrance to the place that beggars description. It must be seen and enjoyed to be appreciated.

EVERY modern facility favorably known to medical science in the treatment of curable conditions, has been incorporated into the institutional régime. Thus nature and science have combined to make the St. Helena Sanitarium all that can be desired by the diseased body or the weary mind.

Health is Contagious at St. Helena

Sixty-five miles from San Francisco, easily accessible by either steam or electric line; three and one-half miles from St. Helena; 750 feet above the sea level; splendid climatic conditions at all seasons of the year; pure mountain water; beautiful view of valley, mountain, and plain; seven physicians, seventy nurses; excellent service, liberal cuisine,— these and many other advantages are to be enjoyed at this beauty spot of California.

The St. Helena Sanitarium

Sanitarium, Napa County - - - California