DIET AND HEALTH

By DR. J. T. ALLEN
Food Specialist

Author of "Eating for a Purpose," "The New Gospel of Health," Etc.

WHAT MAKES GOOD BREAD

Bread is the oldest of prepared foods. Long before fire was discovered it was quite natural to pulverize the hard grains between stones, to moisten the meal thus made, press it into cakes and dry it in the sun. This was the original unleavened bread. Only the application of fire to cakes accidentally fermented by moisture and temperature was necessary to produce the modern staff of life.

Good bread will, alone, support life indefinitely. Thousands of our sturdy foreign laborers maintain good health and strength chiefly on coarse bread. I had an opportunity lately to examine a Dutch laborer, about 70 years old, who said he had lived all his life on rye bread and coffee, and he was in perfect health—in spite of the coffee. Thomas Parr, an English farmer, lived more than 150 year on "coarse bread, cheese, small beer and whey." The bread was probably rye, wheat being then used only by the wealthy.

Bread has one advantage over nuts as the chief staple food—bulk. The stomach is not absolutely necessary to the digestive process; it is merely a receptacle for the mass of food taken at a meal, but has added the capacity for reducing the mass to a fine liquid before passing it on to the intestine or second stomach, where the work of digestion is completed. A German experimenter some years ago removed the stomach of a dog, after which it lived for several years, regaining most of its lost weight.

The stomach has also developed the capacity for converting proteid, of which flesh, nuts and grains largely consist, into soluble peptone, the substance from which all the tissues are built. The same process is continued in the intestine, if all the proteid is not broken up and made soluble in the stomach. The conversion of starch into sugar by the action of the saliva, begun in the mouth, continues in the stomach till the mass becomes saturated with the hydrochloric acid of the gastric fluid, secreted by the stomach, after which any starch remaining must run the risk of fermentation before its digestion is completed in the intestine.

Experimenters who have lived on a nut and fruit diet for short times report a "craving" for other foods; and this is the invariable experience, for a time, of those who adopt the "scientific" diet. Now a man of mature years and on whose word I can rely, who has been living on the simple diet for seven months, working as a merchant, full hours, informs me that this "craving" has entirely disappeared. Another, a manufacturer, says that he now, after about three months, enjoys a meal of whole wheat bread and peanuts or of prunes as well as he formerly enjoyed, while eating, a mixed meal, and of course never regrets it afterwards, as he formerly regretted overeating. The Italian laborer, working hard physically on rye bread, macaroni, garlic and beer, has no craving for oysters or pie or pork.

The merchant above referred to commonly had a craving, formerly, on coming home from church or opera late, and would eat a second supper—and suffer.

If all the elements necessary for the body's nutrition are supplied, there will be no desire for some unnatural food. We know that one who is eating a few slices of whole wheat, rye or corn bread and fruit at a separate meal, can not suffer for lack of any nutritive element, even if he eats no nuts or does not drink the glass of buttermilk before retiring.

Oats is the richest of the cereals. It contains more fat and more mineral salts than wheat, but its starch cells are encased in coarse cellulose fibers, so that it must be very thoroughly cooked to make its starch digestible. The rolled oats are preferable to the steel cut.

Rye contains less mineral matter than wheat, but its starch is equal to that of rice. Artificial digestive tests showed it to be 12 times more digestible than wheat starch. It follows that the objections urged against fine wheat starch bread do not apply to rye bread. The starch of rye bread is practically digested beyond the danger of fermentation. No doubt this explains the superior health of those who live on rye bread. The Roman gladiators were fed on rye, wheat and corn.

Now, considering the peculiar features of corn, rye and wheat, it is evident that a much better bread could be made from a combination of these than from either separately.

Bread should be cut into slices and allowed to dry to some extent at least before being eaten. The less soft cereal food is eaten the better, especially for children. The tendency is to swallow soft food with little mastication. The teeth, however, can be properly developed and maintained only by eating hard food.

The objections urged against fresh white bread do not apply equally to toast. The starch of which toast, zwieback, or rusk, chiefly consists has been largely converted into sugar by dry heat. This is easily digested, being open to the action of the digestive fluids. Hence for persons of weak digestion it is much superior to fresh bread—so far as the supply of heat and muscular force is concerned only. Crackers are inferior to toast, especially if soaked in soup or other liquid.

Entire wheat bread is not adapted to toasting, its albumen being already too much coagulated for the best nutrition. Evidently cheese should not be toasted. Boiled potatoes are the better for toasting so far as the starch element is concerned, providing no fat be used. Fried potatoes are a prolific source of dietetic troubles.

One may be eating sufficient albumen, starch, fat and sugar, which constitute 95 per cent. or more of all solid nutriment the body needs, and yet may become weak, sickly, inefficient and finally die for lack of proper nourishment. For perfect nutrition we must have in the blood, in addition: Potash, sodium, phosphorus, calcium, magnesium, iron, sulphur, chlorine and fluorine.

Potash is essential in every part of the body, but especially in the brain and nerve centers. In all nerve disorders it is found to be deficient in the blood. Perhaps the quick wit of the Irish is due, partly, to the abundant supply of potash and phosphorus they have got for centuries from potatoes and wheat, which form so large a part of their diet. The best sources of potash are: Beans, potatoes, peanuts, wheat, lettuce, prunes, cucumbers, meat, walnuts.

Sodium is found in every tissue of the body. Without it the processes of nutrition could not be carried on. Sodium is one of the elements of common salt, but it is not necessary to eat salt to get chlorine. Many careful investigators, including a physician of my acquaintance who has studied the subject assiduously for many years, say that common salt is injurious. Certainly the average person eats far too much of it, weakening the kidneys and exciting the delicate organism. I have demonstrated that there is enough sodium and chlorine in peanuts and wheat.

The best sources of sodium are: Milk, spinach, wheat, lentils, barley, carrots, potatoes, cabbage, figs, apples, eggs, nuts.

Sulphur seems to be very important in nutrition, for the average body contains about three ounces of it. Mrs. Squeers discovered that when given in crude mineral form it has an effect opposite to that which it is probably designed to serve. Its best sources of natural supply are: Potatoes, beans, horseradish, peanuts, figs, lettuce, olives, barley, milk, meat, eggs, oats, wheat. White flour contains none.

Iron is a very necessary element in the blood. White bread contains none of it, milk a small percentage. The foods richest in iron are: Lentils, lettuce, peas, figs, nuts, rye, wheat, apples, grapes, prunes, oats, onions.

Calcium is very necessary for the formation of bone, especially in children. Its best sources are: Milk, figs, eggs, cocoanut, beechnuts, onions, wheat, rye, meat, potatoes, corn.

Chlorine is necessary for the formation of gastric fluid, used in digestion. It also has an important influence in the oxygenation of the blood. Its best sources are: Milk, cocoanut, lettuce, nuts, cabbage, potatoes, eggs, corn, beans, meat, fish, wheat. Fine white flour contains no chlorine.

Silicon gives hardness to the bones, hair, nails, etc. Its best sources of supply are: Lettuce, cabbage, figs, oats, barley, wheat, nuts.

Fluorine seems to give elasticity to the veins and muscles. It is best supplied by lettuce, potatoes, figs, onions, nuts, milk, wheat, rye, olives, apples, grapes.

Magnesium is always found in the blood, though there is some doubt as to its office. Its best sources are: Nuts, beans, wheat, milk, oats, corn, lettuce, rye, potatoes.

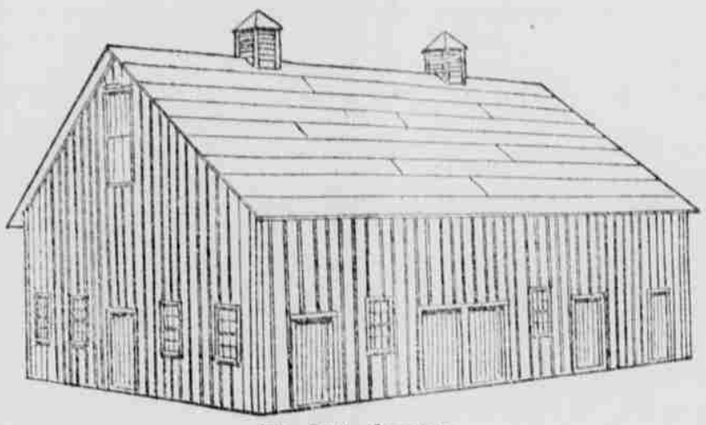
Phosphorus is essential to the growth of the cells. Brain and nerve energy seem to depend largely upon the supply of phosphorus. It is very important to supply ample phosphorus in the food of growing children and brain workers. One-twelfth of the solid matter of the brain is phosphorus. The old theory that fish supply an extraordinary amount of phosphorus seems not to be well founded. The foods that best supply phosphorus are: Beans, peas, milk, wheat, rye, corn, eggs, nuts, potatoes, meats, fish, figs, carrots, cabbage.

It is now clear that all the elements of nutrition are supplied by bread, nuts, fruits, milk and meat. If one is satisfied that meat is injurious he can gradually eliminate that from his dietary. I have shown in a previous article why buttermilk is better for the adult than sweet milk, and I advise it in every case.

It is the various compounds of the mineral elements that are so important in the processes of nutrition. So important are they that a school of medicine, biochemistry, has been based upon their administration. Iron, sulphur or phosphorus may be found deficient in the blood as indicated by symptoms, but you cannot furnish sulphur to the blood by drinking a solution of sulphur water. Mineral food must go through the vegetable or animal. If we want iron or sulphur we must eat lettuce, eggs, meat, peanuts, wheat or other nuts or cereals. The vegetables, especially beans, lettuce, potatoes and nuts, are richest in the mineral salts. Nuts contain, everything considered, the best supply. I shall deal more fully with this phase of nutrition in the chapters on "The Diet Cure" and that on "Cooking."

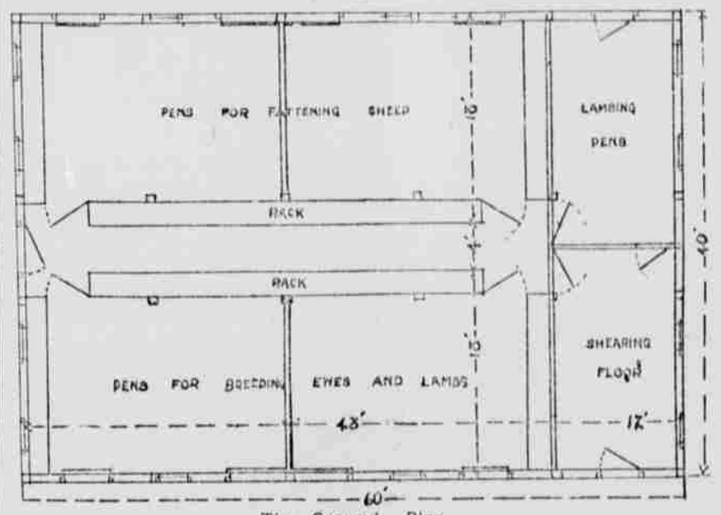
A GOOD SHEEP BARN—WHERE AND HOW TO BUILD IT

Select High, Dry Location—Mistake of Keeping Sheep Too Warm Must Be Avoided.



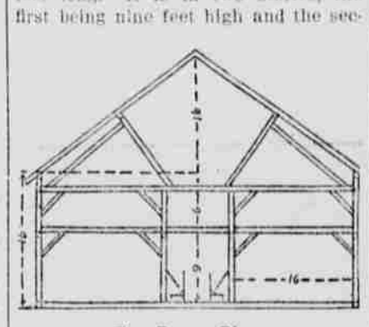
The Barn Complete.

When in pasture sheep will always sleep on the highest and driest parts of the field. This should be kept in mind in selecting the site for a sheep shed. Warm close sheds are likely to be injurious to the health of the sheep as the temperature of their blood is high and the fleece keeps in the body heat. Crowding is to be avoided, especially at the feeding rack. The accompanying plan, which is from the booklet "Practical Farm Buildings," by E. W. Bird & Son, Hamilton, Ont., shows a building 40 feet wide and 60 feet long. It is in two stories, the first being nine feet high and the second six feet from the floor to the eaves. The sills are 6 inches by 8 inches, resting preferably on stone foundation, and, if set on posts, they should be heavier. Doors are all four feet wide and those that are used by the sheep should be sliding. Windows are



The Ground Plan.

The "Grand Young Men" of the sen 3 feet wide and 4½ feet high. In the center of the sheep apartment there are double doors 10 feet wide. When both are opened and the center post removed a wagon can be driven through to remove manure. The feed racks are all permanent, as there is no necessity for their removal and they form a wall for the passage-way which runs through the center. The loft will give storage space sufficient for fodder for the sheep.



The Frame Plan.

Light for Hogs.—Darkness and health in the hog business are never found in the same place. The mortal enemy of all disease germs is the bright sunlight and this at some time or other should have access to every corner of the feed lot and breeding pens. Darkness brings dampness, dampness brings on bad health and the losses sustained from this source are hard to estimate.

Second Crop Clover.—Second crop clover hay fed alone to western sheep has given better results at lambing time than any of the other feeds tried, even clover hay and grain included.

FATTENING AND MARKETING HOGS

By Prof. W. J. Kennedy, Iowa Experiment Station.

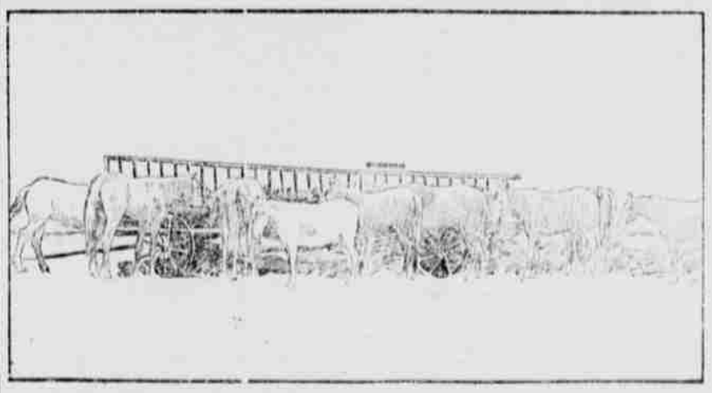
The age at which hogs should be fattened will depend more or less upon the market demands and the locality. In some countries and in different sections of the same country we find that there are differences in the market demands. As a general rule in this country the fat or lard hog has been the most popular. When such is the case it is better to market hogs at the weight of from 300 to 400 pounds. These seem to meet with the most popular favor of the buyers.

In other sections of the country and in other markets where the bacon type of hog is preferred over the fat or lard hog, they must be marketed at an earlier age. The best weight for the bacon hog is between 160 and 200 pounds. They do not require to be nearly as fat as the fat or lard hog; still, on the other hand, a bacon hog is by no means a thin animal. They should have a covering of about one inch of fat over the back. They should be deep sided and long sided, and must be firm in quality. Where the bacon hog is desired, as a general rule it will be found most profitable to have the hogs fattened and finished for market at about five and one-half or six months of age.

Where the fat or lard hog is desired the most profitable age to market in order to meet the requirements of the market would be about eight to ten months. Hogs of this age should weigh in the neighborhood of 300 to 350 pounds. As a general rule, however, it may be stated that the greatest and especially the most economical gains are made on the younger animals. This is one point in favor of the bacon hog.

The season of the year at which the fattening should be done will depend upon various conditions. In a great many instances, hogs are fattened during the fall and early winter. In other instances they are fattened during the spring and early summer. Generally speaking the most economical gains can be made during the early fall or spring months. The weather is then not too cold nor too warm—in fact, about right for the best gains. In real cold weather a considerable amount of the feed is used for the production of heat to supply the heat required for the maintenance of the animal body.

A Good Portable Feed Rack



Observe That This Long Feed Rack Is Constructed on Wheels, Thus Making It Easy to Place Anywhere in the Feed Lot. It Also Avoids the Necessity of Unloading the Hay, as the Rack Can Be Hauled to the Hay Stack, Filled and Then Left in the Feed Lot Wherever Desired.

Walking Costumes

Reddish plum colored cloth is used for the first costume illustrated. The skirt is a nine-gored pattern with wrapped seams. The coat is semi-fitting and is elaborately trimmed with black silk braid of two widths, and braid covered buttons. Large hat of stretched satin trimmed with the same.

Materials required: 7½ yards 46 inches wide, about 10 yards wide braid, and 2 dozen fine braid, 1½ dozen buttons, 4½ yards skirt lining, 6 yards silk for lining jacket.

For the second, cedar green cloth is employed. The long, slightly trained skirt is quite plain. The coat has a rather short-waisted, tight-fitting bodice, the back of which is continued the whole length through the basque. Incisions are made in the collar, through which wide satin ribbon is threaded, the ends being drawn up and finished by tassels; the cuffs are also threaded with ribbon; satin-covered buttons are sewn on the back and are also used for fastening. Hat of velvet of the same color as the costume, trimmed with rosettes and wings.

Materials required: 9 yards 46 inches wide, 6 yards skirt lining, 4 yards silk for lining jacket, 2½ yards ribbon.

IN WILLOW-GREEN CASHMERE.

Pretty Dress for Girl of from Eight to Ten Years.

Here is a pretty little dress in willow-green cashmere. The skirt is slightly full, and has a wide box-plait in the center front. The blouse is smocked each side front, and has a box-plait in center, which, with the

turn-over collar, is trimmed with cord loops and silk buttons.

The sleeves are smocked at the wrists, the hemmed edge of material being left to form a frill. Sash of soft ribbon of a darker shade than the cashmere.

Materials required: 4 yards 46 inches wide.

Shading in Embroidery.

When shading in embroidery one cannot be too careful in doing the work.

The colors should be run into each other gradually, so the changes will hardly be noticed. As the shades of silk are numbered, you should not find the work difficult.

Do not use the very deep tones except where the flower or leaf is entirely in the shadow.

Trimming for Cashmere.

A charming trimming for cashmere or henrietta dinner frocks is messaline satin in self-tone, with matching sash, and a tucker and half-sleeves of gold lace or fine net. Ecru nets embroidered in colors harmonious with the cashmere and a novelty trimming or passementerie to outline the tucker will give a smart touch to the costume.

Bead Flowers.

A novelty in millinery is flowers made of beads. These, however, are not likely to become either popular or common because of their expense, their weight, and usually their lack of grace. Roses are made of fine steel beads with silver stamens, and on black or gray velvet toques are effective.

BETTER THAN REAL FLOWERS.

Artificial Bouquets Are Worn with the Evening Costume.

As every woman knows, it is rather injurious to fine fabrics to pin heavy bunches of real flowers on them. They also fade before the evening is over and are apt to be discarded.

The present fashion is to wear a large bunch of French blossoms, wonderfully colored and fashioned. There is no attempt to avoid daring and vivid combinations. This is a feature of this season's dressing.

Scarlet poppies as well as American Beauty roses are favored. Gardenias, with their glossy green leaves, are worn on black, purple and crimson frocks. Combinations of flowers are not in as good taste as they were some seasons ago. The bunch is of one kind. It is pinned a little below the bust at the left side. This seems to be the exact spot accepted as the fashionable one.

Among the rare flowers which are put on extra handsome gowns are lilies of yellow satin with green leaves.

BAD EFFECTS OF ANGER.

Complexion Suffers Where There Is Lack of Self-Control.

The girl who has a very quick temper must expect to have trouble with her complexion. Sometimes red spots come out prominently and refuse to be hidden even by powder. Sometimes there is a flush, and when it disappears the skin is quite dry and feels almost painful.

The cause of all this is the excitement of getting angry. Very little can be done for the skin while the temper remains unchecked. Perhaps it would be a good idea for the girl who is worried about her poor complexion to examine herself to find out if a hasty temper is the cause of the mischief. Should this be so, let her set about gaining self-control before she attempts to improve her looks by the application of creams and lotions.

Checks for Trimming.

Many of the newest fall dresses are showing a touch of trimming or piping of checked material. For instance, a black suit is beautiful trimmed with a tiny piping of black and white checked serge. A dress of plain material—serge or panama—is very modish trimmed with bands of checked taffeta. What a difference a new touch like this makes! Even in an old-fashioned dress quite a new effect may be obtained by just a little modern trimming, which lightens up the whole and at once shows the wearer is up-to-date.

Newest Aprons.

Among the newest fancy aprons are those made of cross-barred muslin or linen.

The edge may be finished with insertion and lace and a dainty design embroidered across the bottom and up the sides.

The embroidery can be done with colored silk or with white mercerized cotton.

The work to be well padded and worked solid. Lace beading is used across the top, run with a delicate shade of ribbon to match the embroidery.