# BREAD

# The *Broken* Staff of Life

***As the "have" nations grow richer, their national state of health grows poorer. Persons in less developed areas with a simpler life often experience comparatively better health — even with inferior medical facilities. The difference is often diet. Read in this article the disastrous result of one of modern man's attempts to "upgrade" his food supply — his tampering with bread, the traditional staff of life.***

by Charles F. Vinson

"EVER feel just plain *lousy?*" inquires the television commercial, sympathetically offering its product for temporary pain relief.

That question strikes a familiar chord in most people. Feeling "just plain lousy" seems to be a way of life. For many people, "good health" includes no more than a touch of sinus, bursitis, neuritis, indigestion, heartburn, gas, constipation, poor eyesight, dandruff, brittle fingernails, fatigue, frequent colds, corns, assorted allergies, decayed teeth, blotchy skin, obesity and/or occasional insomnia.

In America, the incidence of diabetes is increasing. More than seven million Americans have arthritis. One of ten supposedly "healthy" American males has a stomach ulcer. One of six is sterile.

And just about every American knows of someone who has recently died prematurely of cancer or heart failure.

In Britain, one in four suffers from chronic bronchitis. One in five develops cancer. Britons suffer in general from obesity and wretched dental conditions. Shockingly early tooth decay is even forcing some British children under *six* years of age to be fitted with dentures!

Medical scientists have begun to piece together a new pattern of disease in Western Europe and America — in fact, in all the "have" nations from Canada to South Africa to Australia. Infectious diseases such as tuberculosis, plague, etc., *used* to be the main cause of lowered average life expectancies. Today's life-expectancy statistics are barely improved. Modern man is now being tortured by the *degenerative diseases,* which strike mainly in the second half of life.

Doctors refer now to the "twenty years' abuse," meaning man can abuse his natural good health for that period of time before the effects begin to catch up with him.

Paradoxically, the Western nations have the most advanced medical science in the world — and the most disease. Yet in Africa — even with lower medical standards — persons who continue to eat their traditional foods do not develop the "new" diseases. If they switch over to refined modern foods, they become ill from Western diseases. They begin to experience tooth decay, stomach ulcers, high blood pressure and all the other *civilized* diseases.

One primary culprit is *diet.*

## The Offenders

Ten years ago anyone who questioned the nutritional worth of our "civilized" diet was flatly labelled a food fanatic. Yet even then, travellers and traders in remote areas reported that certain peoples with simple diets were comparatively free of "civilized" diseases until they started eating "white man's food," at which time they started getting "white man's diseases." The situation has changed drastically of late. It has become painfully obvious that our declining state of nutrition is directly linked to our declining state of health.

So-called foodless foods have borne the brunt of the strong attack on the failing state of nutrition during the past year. Foodless foods of the obvious types — like candy bars and the much maligned diet soft drink — are, however, not wholly to be blamed.

The prime offender is the basic food we eat EACH and EVERY DAY — the food we consider to be healthy and nutritious! The food we consider *staple.*

Today, in the "overkill' discussion on pollution, everyone seems concerned with the foreign material we are putting *into* the air we breathe, the water we drink. Even when food is considered, the emphasis seems to be on the chemicals *inserted into foods.* But what about the "unfoods" — the natural foods which have had precious vitamins, minerals, and other essential nutrients taken OUT of them?

## The Wobbly Staff of Life

Take bread, for instance. Bread, we have been led to believe, is capable of fantastic feats, from building strong bodies umpteen ways to effecting miraculous special-diet weight losses. Bread

is good for making sandwiches and for spreading butter on.

But is it good to *eat?*

Bread used to be called the staff of life.

Historically, bread was highly esteemed in Egypt, classical Greece and Rome, and in ancient Israel. The wheat was ground between millstones which crushed the grain, but did not remove any part of it. This rather "primitive" milling process produced flour of a very high extraction rate. (The extraction rate is the percentage of the whole grain actually used for flour after milling. For example, 85% extraction rate flour contains 85% of the whole grain — 15% having been discarded.)

Most people at that time ate wholemeal bread. A relatively low extraction-rate white flour was available — but only for the wealthy. It was produced by sieving the coarse flours through papyrus, rushes, horsehair, or flax.

Wholemeal bread was symbolic of the "simple life and the good countryside." Tragically, it was also equated with downright poverty. Through the Middle Ages brown flour was relegated to the lower class. It was the only kind they could afford.

Things changed with the coming of the Industrial Revolution. White flour became much more common, produced easily by machines which could mechanically separate the different components of the grain. The cost of white flour was drastically reduced. By the beginning of the 19th century, relatively high-extraction WHITE flour products were the acceptable food of the poor, although some "old-fashioned" families continued to produce their own whole-grain flour for another century.

### Is Refined Flour Improved?

As the Western standard of living rose, so did a demand for more of what people considered to be "purity" in their food products. The idea of "purity" was being foisted off on a gullible public by mass advertising. This "purity" invariably consisted of separating, or isolating, one part of a natural product from the rest of it. One part was called "fit for human consumption," the other discarded. As the standards of "purity" went up, the separation process became more involved, and the proportion of discarded parts became greater.

The first portion of the wheat grain to go was the *bran.* Some white bread proponents insist that bran is an irritant to the digestive system. (A few self-styled authorities have even proclaimed ALL wheat products to be irritants to the digestive system, and therefore, unfit for human consumption!)

Ironically, bran is often ADDED to breakfast cereals to enhance what is delicately referred to as "regularity." In other words, it will prevent constipation — an affliction caused, to a surprising degree, by eating white flour products.

Hippocrates knew that white flour passed through the digestive system more slowly than whole. He even recommended it in cases of diarrhea.

Bran contains the first three layers of the grain. Directly beneath the bran is the *testa.* Then there is the *aleurone,* rich with protein matter, minerals and certain useful fatty substances. Another component of the grain is the *germ,* containing a high percentage of protein, natural sugars, a considerable quantity of wheat oil, and a large amount of vitamins and minerals.

These components of the wheat grain constitute only about 12% of its weight. But remove them and you also remove nearly ALL the valuable nutrients of the grain. We feed them to the animals and reserve the germ for health food stores.

No wonder Dr. Emanuel Cheraskin of Birmingham, Alabama, remarked that the American horse and other farm animals have a better general diet than the American people! The people are stuck with the remaining endosperm — mostly plain starch and poor quality protein.

### The Chemical Bath

Because of its depleted food value, white flour has a tremendous resistance to spoilage. Modern production methods demand that flour be kept on shelves over very long periods of time, so *someone* had to figure out a way to keep those tons and tons of flour from ruining between the mill and the consumer. Modern chemical technology has provided the answer.

The unmilled grains are treated with methyl bromide to keep the wheat from spoiling in the bins. According to a study by W. C. Shuey, V. L. Youngs, and M. E. Getzendaner published in *Cereal Chemistry,* January 1971, p. 34, methyl bromide is apparently retained within the grain to some degree. This chemical is in addition to any residue left from applications of insecticides. Hopefully they do not contaminate the flour after it has been milled. But is that hope just a blind assumption?

Then, once the flour has been ground, it is aged.

Several chemicals will induce artificial aging. Nitrogen trichloride, commonly called agene, was used widely until 1956, when its use was discontinued because it seemed to cause fits in dogs and had been traced to certain eye problems. Chlorine dioxide is used most commonly today. Chlorine dioxide bleaches, ages and preserves the flour in one operation.

Once the flour is bleached, aged and sterilized, it is still not ready for the bread batter. It has to be conditioned for easier machine production. Calcium stearyl-2-lactylate and sodium stearyl fumarate are widely used. The recipe also calls for a pinch of softeners and emulsifiers to maintain it even when the bread goes stale. Bakers can use lecithin, polyoxyethylene monostearate, stearyl tartrate, or partial glycerol esters.

However fresh the loaf may *seem,* it can still go stale. Bread often sits on the grocery store shelf for much longer periods of time than most shoppers would care to know. Production bakeries therefore must add chemical stale-inhibitors. These inhibitors — including mono- and diglycerides, di-acetytartaric acid, esters of mono- and diglycerides, and succinylated mono- and diglycerides — don't really keep the bread from spoiling. They just make it LOOK fresh. Paradoxically, it may well be due to the lack of protein in the bread — or a *poor* quality of protein — which helps speed staleness.

According to a paper published by Dr. Stig R. Erlander and Leatrice G. Erlander in the scientific journal *Die Starke,* vol. 21, pp. 305-315 (1969), the staling of bread occurs when there is a decrease in the amount of protein. By using good whole wheat flour of

high protein content, the staling of bread can be essentially eliminated.

### Some Other Additions

But we have not yet baked our bread. The recipe calls for still more chemicals. Even though microorganisms would have a hard time surviving in the stuff, commercial bread dough must have mold and "rope" inhibitors and preservatives to ward off that tell-tale black carpet which means the bread is not exactly oven-fresh. Calcium propionate and sodium propionate are the main ingredients. Other substances have also been used — mainly sodium diacetate, bromates, persulphates, acid calcium phosphate, ammonium chloride, fungal amylases, bacterial proteases, and a few others.

Once all the chemicals have been added, a modern bakery can produce multiple thousands of loaves which will look the same, taste the same, and stay the same!

No one really knows how harmful the chemicals may be. You eat them with the bread. When Dr. Robert S. Harris of the Nutritional Biochemical Laboratory at Massachusetts Institute of Technology once fed a certain anti-staling agent (sorbitan mono laurate) to a group of rats, most of them died within ten days. But as yet, the chemicals used in commercial bread have not enjoyed the same infamy as cyclamates or saccharin.

Perhaps more important than the addition of chemicals, however, is the *removal* of certain NATURAL nutrients in wheat.

### Eccentrics?

The shortcomings of bleached white flour have been warned against repeatedly by students of nutrition since the days when Sylvester Graham (originator of Graham flour) denounced the bread sold by certain Boston bakers.

At the time, those outraged merchants made an unsuccessful attempt to keep him quiet. For years persons such as Graham were considered eccentrics who had gotten much too excited over something they couldn't prove. There was "no real scientific basis" for claiming that white flour was nutritionally inferior to whole meal.

But the discovery of vitamins and trace minerals changed things. Two prominent nutritionists had this to say: "The superiority of wholemeal over white flour could be demonstrated in a variety of experiments on animals. Morover it was shown that in man the nutritional disorder beriberi could arise as a direct consequence of a diet in which bread made from white flour predominated.

". . . This demonstrable deficiency of thiamine and other vitamins in low-extraction flour, and the practical knowledge of the diseases that could arise therefrom . . . convinced most nutritionists between the two world wars of the advantage of high-extraction flour *(Human Nutrition and Dietetics,* by S. Davidson and R. Passmore, p. 254).

### What About "Enrichment"?

In both Britain and the United States, bakers began to "enrich" bread. In the U. S., enrichment of white low-extraction flour began on a voluntary basis in 1941. It was made mandatory for all bakery white breads and rolls from 1943 to 1946. When this war measure was rescinded in October of 1946, more than half the states continued to require enrichment, and some processors and bakers continued to enrich their products on a voluntary basis. It is economically feasible to replace only what are called vitamins $B_1$, $B_2$, $B_3$, and iron. The iron is generally in ferric form, which the body cannot absorb as well as ferrous iron. Recent tests have shown that the body absorbs greater amounts of iron from whole wheat flour than from enriched flour containing a like amount of iron.

The term enrichment is unfortunate.

In fact, it is almost *humorous* to call such bread enriched, when milling removes 40% of the chromium, 50% of the pantothenic acid, 30% of the choline, 86% of the manganese, 16% of the selenium, 78% of the zinc, 76% of the iron, 89% of the cobalt, 60% of the calcium, 78% of the sodium, 77% of the potassium, 85% of the magnesium, 71% of the phosphorus, 77% of the vitamin $B_1$, 67% of the folic acid, most of the vitamin A, 80% of the vitamin $B_2$, 81% of the vitamin $B_3$, 72% of the vitamin $B_6$, most of the vitamin D and 86% of the vitamin E.

How important are these elements? Read the following and judge for yourself.

### What Deficient Flour Means to You

Heart attack and diabetes victims are generally deficient in the chemical element *chromium.* When experimental animals are deprived of this element the inner walls of their blood vessels become thick with fatty deposits much like those which clog the arteries and cause heart attacks in humans.

Chickens and other experimental animals deprived of *manganese* grow improperly and become sterile.

Rats and chickens deprived of *selenium* undergo liver deterioration.

*Zinc* speeds the healing of wounds. And a severe deficiency of zinc has been known to produce dwarfs.

*Cobalt* is vital to the maturing of the red blood cells which carry the iron, which in turn carries the life-bearing oxygen in every warm-blooded animal and man.

*Calcium* is essential in bone and tooth formation. Without sufficient *sodium* the body cells will either dry up or swell to the bursting point.

*Magnesium* activates exchanges of energy within cells.

*Phosphorus* mediates all the energy exchanges throughout the body, enabling us to move and think.

Normal manufacture of DNA and RNA, the chemicals which pass along the genetic code from one generation to the next, depends a great deal on an adequate supply of vitamin $B_1$, vitamin $B_{12}$, and folic acid. Steroid hormones cannot be produced in the human body without pantothenic acid, nor can sound cell walls be built without choline. Vitamin A is essential in the maintenance of good vision and unblemished skin.

Vitamin $B_2$ is important in the maintenance of mucous membranes of the eyes, mouth, and tongue. Vitamin $B_3$ is an important safeguard against pellagra. Vitamin $B_6$ is an important element in the metabolism of the amino acids, from which are built the proteins that make

up most of the body. Vitamin D is an important mediary in utilizing calcium to strengthen the bones. Vitamin E is important in retaining the structural integrity of cell membranes.

All these are vital elements found in wheat; all these vital elements are *missing* to one degree or another in white flour. All these vital elements are found in the correct ratios and balance in whole wheat.

With this in mind, it is a little disgusting to hear the disciples of enrichment refer to white bread as a "modest miracle." Doesn't it seem a little odd to take most of the original organic food value away, put a few chemical substitutes back in, and joyfully call the result miraculous?

Dr. W. H. Sebrell of the U. S. Public Health Service was strong in his remark during the forties when the original controversy was on. "To me it does seem a little ridiculous," he said, "to take a natural foodstuff in which the vitamins and minerals have been placed by nature, submit this foodstuff to a refining process which removes them and then add them back to the refined product at an increased cost. If this is the object, why not follow the cheaper, more sensible, and nutritionally more desirable procedure of simply using the unrefined, or at most, slightly refined natural food?"

### The Finished Product

White bread may look nice. It smells all right. It is very handily sliced into convenient uniform sections. It also bounces if you wad it up into a little ball.

Nutritionally, it is more or less worthless.

So far, it has not been controversially linked to cancer, although some of the nutrients removed from it help the body fight this disease. It won't kill you instantly — your death may be long and lingering.

President Nixon's French-born nutrition advisor, Dr. Jean Mayer, says America's white bleached dough products would not even be called bread in his native land. Its food value is negative. White flour is preferred by food industry executives because it keeps on the shelf longer than the more nutritious whole wheat bread and because insects often avoid it — it doesn't have enough food value to keep them alive for long.

### Our Way of Devitalization

Wheat is not the only devitalized food on the market.

Rice is polished, refined and de-nutrienented. So are nearly all the major grains — and then they're "enriched" with a few chemicals.

And not only the grains. Sugar is refined and is so "pure" that it will not support life.

According to the *Journal of the American Medical Association,* most Americans eat upwards of 100 pounds of the "white death" per year! Sugar is everywhere: soft drinks, ice cream, baby food, canned fruit. Brown and raw sugars contain a few trace elements, but still have been refined. Most experts, realizing the dangers of normal sugar consumption, advise the use of *unrefined* honey or unrefined molasses as a sweetener whenever possible.

Nearly all convenience foods — such as the popular instant frozen dinners — are preserved in a great deal of potentially harmful chemicals. Read the labels and find out! Highly processed foods, when compared to natural products, have far less nutritional value.

### Needed: A Change of System

The industrial societies have built for themselves an environment that will not ALLOW them to live a healthy life. To add to the gargantuan problems of overcrowding and overpopulation, overurbanization, pollution, drugs, crime, etc., etc. — men have knowingly added the further problem of "food pollution."

Because the basic tenets of this society involve profit making at a large volume, food production has been made to conform to industry — rather than industry conforming to the *quality* of food people should be eating.

Yet, eating nutritious food in the right amounts and of the right kind and of the best quality, is one of the basic laws of radiant health. Once we break that law on a national and international basis, we will have to pay the penalty.

In a world busy leaping on the ecology bandwagon, it is easy to forget that environmental pollutions are no more dangerous than the changes in the composition of the food we eat — changes which, like environmental pollution, have come as a result of advancing technology coupled with an economic philosophy encouraging growth at all costs.

If we are to maintain the technology and the economy which allow the sought-after "good life" — and maintain it without increasingly sick and debilitated bodies — something will have to change. We must upgrade the quality of food, rejecting today's chemical-laden, foodless, "empty-caloried" foods, or we will continue inexorably on the same path of degeneration.

Individually, it is a relatively simple matter to avoid refined sugar. And by taking a little time and expending a little effort, people can substitute whole grain products for devitalized ones. They are available — but not popular. It takes a while to establish a pattern of avoiding over-preserved and processed instant meals, but the results are well worth it. □

# HOW TO BAKE WHOLE WHEAT BREAD

by Dr. Stig R. Erlander and Leatrice G. Erlander

WHOLE GRAIN WHEAT can be purchased in bulk form from local mills, stores which sell grains in bulk, or even by mail from the mill. Most reputable health food stores could give information about the best places to purchase whole grains.

The best bread is made from "hard" wheat grown in such areas of the northern United States as Montana or North Dakota. This wheat has a 14% or higher protein content, which is not only nutritionally valuable, but aids in the prevention of bread staling.

### Using an Electric Grinder

It is best to grind your own flour. Electric grinders are fairly expensive, costing around $175 for one grinder or less than this for more than one grinder. But consider the following: An average family may eat one or more loaves of bread per day. If sweet rolls, cakes and other bakery products are considered, this amount is even greater. For a one-pound loaf of good whole wheat bread (such bread is almost impossible to find in many areas) you will pay about 55¢.

Although they do not grind wheat as quickly and efficiently, hand operated grinders can be purchased for about ten to fifteen dollars. An electric grinder, even though expensive, is well worth the price. The best grinder on the U. S. market at the present time is the All-Grain two-stone electric grinder (All-Grain Company, P. O. Box 115, Tremonton, Utah 84327). For the less expensive hand grinder write to Smithfield Implement Co., 99 North Main, Smithfield, Utah 84335. However, this hand grinder is really designed for cracking grains and not for making fine flour. Therefore the above electric grinder is recommended for making bread.

For homemade bread, using even *more* expensive ingredients than bakeries do, the cost of a one-pound loaf is about 24¢. (The following recipe yields 2.7 pounds of bread or about one and one-third pounds per loaf). By making your own bread, you may save about 31¢ per pound or 41¢ per loaf. This yields a savings of $113 per year if one pound (¾ of a loaf) is consumed per day.

Once you start, your family's consumption of bread will increase, perhaps twofold. In addition to better health, the added savings may then jump to even more than the calculated $226 per year for a twofold increase, because the consumption of bread now replaces that of other more expensive (and most likely less nourishing) foods. Consequently, even though an electric grinder may cost around $175, it is well worth the price. In addition to the whole wheat bread recipe, other recipes, such as those for rye-wheat bread, buns, sweet rolls, and batter (no kneading) bread are included.

### Whole Wheat Bread Recipe

There are many recipes for baking whole wheat bread, some less involved or quicker than others. The recipe given here has been selected because of its reliability and time-tested overall quality.

**WHOLE WHEAT BREAD**
**(2 loaves)**

- 1¾ cups milk
- 2 tsp. salt
- ⅓ cup olive oil
- ½ cup water
- ⅓ cup honey
- 2 eggs
- 2 cakes of yeast
- 6 cups whole wheat flour (approx.)

### Details of Procedure

First, scald the milk in a small saucepan on the stove. The milk will have krinkly scum on it when it has reached the scalding point (140° F.). Do NOT stir the milk while it is heating. Stirring introduces oxygen, which destroys some of the food value of the milk.

After heating, pour the milk into a bowl, add salt, oil, honey, and cold water. After adding these ingredients to the hot milk, the mixture will be almost lukewarm. Next, add the eggs and yeast. Mix well. It is not necessary to completely break up and homogenize the egg yolks — this will occur as the mixture is worked. Sift flour — add 3-4 cups of the flour to this mixture. Mix well. Sifting the flour prevents lumping to some degree after mixing, but it is not essential and can be eliminated if desired. Let stand 15 minutes. This rest period is necessary in order to hydrate the protein and starch in the wheat.

Add more sifted (or unsifted) flour until the mixture is too thick to stir. Work it with your hands and then turn it out on a heavily floured pastry cloth.

At this point the mixture should be kneaded. The dough is first made into a circular-looking thick "pie." The kneading procedure consists of folding this circular mixture in half towards yourself by grabbing the far side and folding it upwards. After folding, the heel of the hand is used to push the dough away from you in a sliding manner. If the pushing is too horizontal, the whole dough will slide, since there will not be enough friction to hold the dough mixture in place on the bench. If the pushing is almost directly straight down, the protein fibers of the wheat will not be stretched and the dough will not develop its spongy texture.

The purpose of kneading is to allow the protein fibers to become attached to each other by chemical bonds. After the dough has been pushed once in this semi-horizontal fashion, turn it so that one of the sides is now the farthest point from you (i.e., a quarter turn). The turning process should always be done in one direction in order not to be

confusing (counter-clockwise is the best for right-handed persons).

After turning, the dough is again folded in half and pushed. This folding, pushing, and turning process is repeated over and over again in a rhythmic style. As the dough becomes sticky, add more flour to the pastry cloth so that the new flour is worked in from the bottom. Never add the flour to the top because this will prevent the dough from adhering to itself when it is folded. More than the prescribed total of six cups of flour (possibly seven) may be needed. The volume of flour depends on its fluffiness. This kneading process should continue until the dough mixture is not sticky and is spongy.

That is, if the dough at this stage is quickly pushed down, it will spring up to about half or more of its original position. The kneading process takes anywhere from 10 to 20 minutes, depending on how effectively you stretch the protein fibers. Some persons can knead incorrectly for 30 minutes and the dough appears to have been kneaded for only 5 minutes. A finer textured bread will develop if the kneading is done sufficiently. Larger holes develop when the kneading process is stopped too soon or is done improperly.

After kneading, place the dough back in the same unwashed bowl from which it was taken. This saves dishwashing and allows the dough to pick up any remaining material in the bowl. Cover the dough with a cloth, place it in a warm spot, and let the dough rise until it is about double in size — about 45 minutes. Then push the dough down with your fist in the middle of the bowl. Pull the deflated dough up from the sides with your finger tips. Divide the dough into two parts. The dough at this point should be worked as little as possible.

After dividing it in half, work each half in the following manner: push the dough with your fingers until it has the appearance of a circular pie (about 2 inches thick). Fold this pie towards you in a rolling fashion. The top should be smooth. Tuck in the ends and place in a buttered bread loaf pan. Cover it with a cloth and let the dough rise until it is double in size. Then place these pans in a cold oven and set the temperature for 350 F. By not preheating the oven, the bread becomes warmer more slowly, and allows the yeast to grow more effectively before it is killed by the heat.

Bake for one hour. When the bread is done, the outside will be a light brown, and you will begin to smell the familiar odors of baked bread. Because the baking time varies with the size and shape of the loaf, it is best to judge when the loaf is finished by your nose and eyes.

Bread can be stored at room temperature for 2 or more months if it is not wet or enclosed in plastic, waxed paper, etc., so that it could become wet through condensation. Such bread does not stale if the protein content is sufficiently high (about 13 or 14%). However, it does continue to dry out. It can be remoistened by placing it on a rack in a covered pan (roaster), adding a half inch of water to the pan, and heating it at 350° F. for one hour as in the original baking.

### Whole Wheat Batter Bread (2 loaves; no kneading)

The same ingredients as listed above are used.

The milk is scalded. Add salt, oil, honey, water, eggs and yeast as above. Mix well. Add about 3 level cups of flour (sift after measuring if desired). Now beat the mixture with an electric beater (no rest period is needed). Make certain that the entire mixture is beaten by continually scraping the sides of the bowl with the beater. This scraping is done automatically with large mixers. When the initially rather thick "soup" becomes stringy and it begins to climb up the beater, then the electric mixer can be stopped. At this point the entire dough seems to be strung together. The climbing action can not be stopped. This mixing takes about 2 or 3 or possibly more minutes. The length of time depends on the speed used in mixing. Any desirable speed can be used. Large mixers work best at slow to medium speeds, whereas the hand mixers work best at a higher speed. If done too fast, the dough will fly off of the beater. Add the remaining part of the 6 or 7 cups of flour. Mix in well this added flour with a large spoon. Cover the bowl with a cloth and let it stand in a warm place until it has doubled in size (about one hour if the 15 minute rest period is not used or 45 minutes if it is used). Divide the dough into two parts and *without* working it or shaping it, place each part into a buttered loaf pan. Now shape the loaf slightly in the loaf pan by pushing the loaf down with the fingers and then flipping the loaf over so that its smooth surface is on top. Cover and let rise until double in size (about 20 to 25 minutes, depending on temperature). Place pans in a cold oven and set at 350° F. Bake for about 45 minutes. Because of the loose texture, the baking of the batter bread takes less time than that for the kneaded bread.

### Whole Wheat Cloverleaf Buns and Hamburger Buns

Cloverleaf buns are made by taking small pieces of the above kneaded dough (the first recipe), or even the batter dough which is ready for the loaf pans, and shaping them into small balls. The dough is rolled between the hands by flattening both hands and moving them in a circular manner. The small balls of dough should be about one inch in diameter. Three of these are placed side-by-side in a single, buttered muffin pan. Let rise until double in size (35-45 minutes). Bake at 350° F. for about 20 or 30 minutes.

Hamburger buns are prepared by pinching off a small portion of dough (about 2 inches in diameter). This should be shaped into a round bun by your hands by tucking under the sides until the roll is round shaped. Flatten the top if you desire a thinner roll. Place these buns on a flat buttered pan, and let rise until double in size (about 35-45 minutes). Place the pan in the oven (350° F.) for about 20 minutes.

#### 60-MINUTE ROLLS

½ cup milk
1 tsp. salt
1 tbs. honey
1 cake yeast
1 egg
2 tbs. olive oil
2¼ cups whole wheat flour

This dough is mixed in a saucepan. It is a moderately stiff dough that can be rolled out. Knead only a few turns (about one minute) and shape imme-

diately. Set to rise. Bake. Ready to eat in about 60 minutes.

Heat milk as in above recipe to lukewarm in medium-sized saucepan. Remove from heat and stir in salt and honey. Crumble yeast into mixture and stir until dissolved. Stir in egg and oil. Mix in only enough flour so dough will be easy to handle. Mix dough with your hands until moderately stiff (or use wooden spoon). Up to this point the dough is mixed in a saucepan. Now that it is moderately stiff, turn dough out onto a floured board or pastry cloth. Knead, for only a few turns (about one minute) until the dough is smooth. Shape immediately into rolls, and let rise at 85°. Bake at 400° for 20-25 minutes. Serve immediately. The entire process takes about 60 minutes.

### SWEDISH RYE BREAD

- 1½ cups lukewarm water
- ⅓ cup honey
- 1 tbs. salt
- 2 cakes yeast
- 2 tbs. olive oil
- 2¼ cups rye flour
- 2½ cups whole wheat flour

Mix water, honey and salt together. Crumble in yeast cakes. Stir in oil. Mix rye flour into above mixture with a spoon. Add whole wheat flour until too thick to stir with a spoon. Then work with hands until dough is ready to be removed from bowl for kneading. Knead for 10 to 15 minutes. Add the remaining whole wheat flour during the working and kneading processes. More (or possibly less) whole wheat flour may be required, since the exact amount depends on the flour texture. Place in a bowl and let rise until double in size. The dough is then shaped into the desired form and placed on a buttered cookie sheet or similar flat surface. If buns are desired, then small loaves are made. The shape can be round (pie-like in appearance) or long. Let rise until double in size (45 to 60 minutes). Bake in 350° oven 30 to 40 minutes.

### OATMEAL BREAD

- 3½ cups of water. (If you use dry yeast add ½ cup of this water — lukewarm — to the yeast. Otherwise add all 3½ cups at once to the batter.)
- 1 tbs. salt
- 2 cups finely ground oats
- ⅓ cup honey
- ⅓ cup oil
- 2 cakes yeast
- 2 eggs
- 8 cups whole wheat flour

Bring the water plus salt to boil in saucepan. Stir in the oats, immediately remove from heat and pour in large bowl — add honey and oil. When lukewarm add yeast and eggs. Sift flour in, stirring with a spoon; add about 4 cups — stir until well mixed — let rest 15 minutes. Sift in more flour until thick, then work with hands. Turn out on floured board or pastry cloth. Knead 15 minutes. Let rise. Shape loaves and put in buttered pan. Let rise until double in size — about 1 hour. Bake at 350° from 45 minutes to an hour. Makes 3 medium loaves. (Don't preheat oven.)

### PIZZA

Pizza can be made from the recipe given for the whole wheat bread. The bread is made in the usual manner, but instead of placing it in a loaf pan, it can be flattened out to about an eighth of an inch or thinner with a rolling pin. Wax paper can be used to cover both the top and bottom, if desired, in order to prevent the dough from sticking to the rolling pin and table. If hamburger meat is used for the pizza, it is first prepared by lightly oiling a frying pan, and sautéing the meat over low heat. Place the flattened dough on a pizza pan. Then add tomato sauce, the sautéed beef, chopped onions, chopped green peppers, thinly sliced cheese, and oregano. Bake at 500° for about 20-30 minutes.

### CINNAMON ROLLS

Use the same dough as for the bread and pizza. (The dough should be ready for the bread loaf pans.) Roll the dough out in an oblong shape until it is about one half inch thick. Then add a thin layer of a mixture of two parts honey and one part butter. For example, 1 cup of honey is mixed (using a spoon) with ½ cup of soft butter until the mixture is smooth and creamy. Place cinnamon and raisins onto this covered dough. Roll the flattened dough into the shape of a cylinder. In order to prevent the honey mixture from flowing out before cutting, seal the edges by pinching the roll together and tuck the ends under. Cover a pan with the honey-butter mixture. Then add chopped walnuts to this pan. Cut the rolled dough in one-inch slices and place the one-inch-thick cuts into the pan with the cut surface resting on the pan. The cylinder-shaped dough can best be cut into rolls by completely circling the cylinder with a piece of string, criss-crossing the string on top and pulling the string so that it cuts through the roll. Let the rolls rise in the pan until double in size (about 35 to 45 minutes). Place the pan in the oven and bake for about one-half hour at 375° F.

### SWEDISH WHOLE WHEAT PANCAKES

- 4 eggs
- 3 cups milk
- 1 tsp. salt
- 2 cups whole wheat flour
- 4 tbs. olive oil

Beat eggs; add milk. Then add the remaining ingredients and mix again with a beater. Add about two or three teaspoons of olive oil to the frying pan and heat this uncovered pan. The amount of oil required will depend on the size of the pan, but enough should be added to lightly cover its surface. After the pan has become hot (use a high heat), add about ⅓ to ½ of a cup of mixture (about ½ of the pan area). Tilt the pan back and forth in order to obtain a thin pancake. When the edges become brown and the pancake puffs and is bubbly, then turn the pancake over so that the other side may be browned. The first pancake will absorb any excess oil and hence will not be of the same texture as the other ones. It is not necessary to oil pan again. A leavened pancake can be made by adding an additional ½ cup or so of whole wheat flour plus a yeast cake. Let the mixture stand overnight in order to allow for the growth of the yeast.

### FRENCH TOAST

Dry whole wheat bread can be obtained by letting the loaf stand for a few days at room temperature. Cover the loaf with a light cotton cloth if desired. Dip slices of dry whole wheat bread into mixture of 2 beaten eggs, ¼ tsp. salt and ½ cup of milk. Brown on both sides in butter on griddle. Before each dipping, stir the mixture in

order to insure that the eggs have not settled to the bottom of the bowl.

### How to Keep Wheat and Other Grains

Many people dislike grinding their own grain, because this involves the storage of some of the grain and sometimes weevils and moth larvae grow and multiply in the wheat.

This can be prevented if the grain is kept dry. If weevils appear, dry the grain in the sun (not more than about a two-inch thickness of grain) for about three or four days. If it is winter, then bring the grain inside the house. The dry winter heat in the house will sufficiently dry the grain so that weevils and worms cannot penetrate the grain and they will be eliminated. □





Printed in U.S.A.