
AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS

EXTENSION SERVICE

T. O. WALTON, Director

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS

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FOOD FOR THE FAMILY

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FOREWORD.

The lessons in this bulletin are designed to take up in a very simple way the principles underlying the cooking of the different types of food and the more important question of diet. They are prepared with a definite sequence, and it is believed that a club will derive greater benefit if the lessons are systematically followed as planned, each member faithfully making the suggested demonstrations in cookery.

The literature listed with each lesson is for free distribution except in cases where price is given. See Home Demonstration Agents for useful reference books and it will be wise for the club members to secure one or more of the suggested books if it is possible.

Every club member should carefully study all of the reference bulletins and papers and be prepared to ask questions and to enter into all general discussions.

It is urged that a definite amount of work be undertaken by a club, this work to include, in addition to the improvement of the home diet, some community activity such as installing the hot school lunch, if the club is in a rural school district. It is urged further that the club shall not be dependent on the county home demonstration agent but shall aim to develop leadership and initiative among its own members.

T. O. WALTON,
Director.

WHY STUDY FOOD?

In undertaking the study of a series of lessons or programs on "Food for the Family," a group of women will naturally ask themselves the question, "Why study food?" Should not a tired housekeeper who must prepare three meals a day 365 days in the year, go to a meeting with her neighbors for the purpose of getting away from that subject and thus try to relieve the tedium of her daily life by discussing other things than food? Yes and no.

Perhaps it is hardly desirable to devote an entire afternoon or evening to the consideration of food subjects alone. It is wise to vary the program by discussions of current topics and by songs and readings.

But without doubt there are excellent reasons why the very woman who must spend much of her time cooking should study food regularly and systematically. In the first place, the housekeeper who knows how best to manage her home, who understands how to plan and prepare her meals methodically, will spend much less time in the kitchen than one who is not systematic and will therefore have a maximum of time to devote to outside interests. In other words, by study, she may learn to reduce to a minimum the drudgery of housework. Furthermore, the discussion of the problems with other women who have similar problems and a study of the scientific principles underlying the art of cooking will add interest to work which otherwise may be simply a monotonous task. It is perhaps easier for the woman in the home to get into a rut than anyone else. She does the same thing over and over in the same old way. She soon forms a habit of preparing the same kinds of meals day after day, and cooking becomes mechanical and tiresome. But when the housekeeper discusses with her friends the best way of doing things and the why of doing them so, when she understands the different kinds of foods, their relationship to each other and their effect upon the wonderfully delicate and complex human machine, the body, when she finds that each meal is a worthwhile scientific problem for her to solve and that it may be a work of art as well, then she realizes that no duty may be more really delightful than feeding the family the right way. Not only will she find the daily routine more pleasant for herself, but she will see also that the family will gather around the table with increased pleasure in the meals and in the home as a whole.

But there are yet bigger reasons why the average homemaker should devote some time to a real study of food. Home making is her business, her vocation, her profession, if you please. No business can be a complete success if it is carried on in a slipshod, hap-hazard way. It is the duty of the woman at the head of a household to conduct it in such a manner as to make for efficiency and for the happiness of all its members. No home in which poor meals are served can be wholly happy. Therefore, the woman who would succeed in her supreme duty ought to study food with the thoughtful attention which its importance deserves.

As a business woman she should study food because a large part of the family income is spent at the grocery store. She will learn what proportion of this income to spend for the family table. She will come to realize that if she plans thoughtfully and buys wisely, she will often be able to serve better meals with a smaller outlay of money. Furthermore, she will learn to utilize all that is bought so that there will be a minimum waste.

Then home-making is a science as well as a business and every woman should at least know something of the general truths about food from the scientific standpoint. "Food is any substance which, taken into the body, repairs the worn out tissues, gives heat and energy to the body or regulates the body processes." Then as a scientist, the home-maker must know how to meet these needs. She must know the composition of the different types of foods and the combinations which will best serve the physical demands of her family. She must understand that food which is

suitable for the man who ploughs hard all day will not do for the small child. She must also know the effects which the application of heat will have upon the various kinds of food in relationship to digestion. In fact, to understand what she is doing when she prepares a meal, the house-keeper must know much of the body and its needs at different ages, the composition of food, and the effects of heat upon it, and the care and preservation of foods before and after cooking.

Finally, the home-maker should study food from the artistic viewpoint. As an artist, she should find pleasure in serving attractive meals. It is not necessary that they be either elaborate or expensive in order to please the eye and to satisfy the aesthetic sense which exists in every human soul, even though it may be crude and undeveloped. No matter how wholesome the food in itself may be, it cannot be very appetizing if served in an unattractive way. There is no family that will not appreciate to some extent the difference between a table covered with an oil cloth and loaded with bad food, badly served, and a well laid table with attractively served food. Perhaps there is no time in the home life of the family that can be made happier than the hours spent together around a pleasing family board. And certainly the arrangement of the table and the serving of the food, material things in themselves, contribute in no trifling degree to the atmosphere of the occasion.

"Why should we study food?" If the average home-maker, in company with her neighbors, by a systematic consideration of the subject can learn how, in some degree, to lighten her own tasks and relieve the monotony of the daily routine, if she can learn to plan and buy more wisely, if she can come to an understanding of how to keep the physical well-being of her family at a certain maximum of efficiency, to make the home more attractive, and to contribute to the general happiness of herself and her family, are not the business, the science, the art of home-making with food study as a beginning, worthy of the greatest amount of time and the best effort which every woman can give to it?

CHOOSE YOUR FOOD WISELY.

Perhaps as easy a way as any to select the right foods is to group the different kinds according to their uses in the body and then to make sure that all the groups are represented regularly in the meals. There are five food groups which should be considered.

Group I: Foods Depended on for Efficient Protein: Under this heading are grouped those foods which furnish a kind of protein that is capable of replacing the protein found in the tissues of the body.

Animal Protein.

Milk.
Skim Milk.
Cheese.
Eggs.
Meat.
Fish.
Poultry.

Vegetable Protein.

Dried Peas.
Dried Cow Peas.
Dried Beans.
Nuts.
Peanuts.

Group II: Starchy Foods: These foods furnish heat and energy to the body. The cereal grains which make up a large part of this group furnish also in the case of the whole grain, mineral substance and vitamins. Vitamine B is found very near the germ and is likely to be lost if the germ is removed. The mineral substances are found chiefly in the germ and in the outer coatings of the grain.

Starches.

Meals.
Flours.
Cereal Grains.
Cereal Breakfast Foods.
Bread.

Crackers.
Bananas.
Irish Potatoes.
Rice.
Sweet Potatoes.

Group III: Sugar, Honey, Molasses, Syrup and other Sweets: This group, as in the case of Group II, furnishes heat and energy to the body. It does not, however, furnish protein, vitamins or mineral substances and is not therefore as essential as the other groups. If sugars are used in proper proportion to other food materials and are not served in such a way as to destroy the appetite for other foods, they have an important place in the diet.

Sugars.

Molasses.
Syrups.
Honey.
Candies.

Jellies.
Jams.
Conserves.
Preserved Fruits.
Sweet Fruits, both dried and fresh, such as figs, dates, prunes, sweet apples.

Group IV: Foods Very Rich in Fat: These foods also supply heat and energy. Since the fats and oils furnish more than twice as much heat as sugars and starches, they should be eaten more sparingly in summer than in winter. Certain fat foods, especially butter and cream, furnish Vitamine A for this reason have a great advantage over the other foods of the group.

Fats and Oils.

Nuts.
Salt Pork.
Bacon.
Peanut Oil.
Cotton Seed Oil.

Other Salad Oils.
Butter and Cream.
Oleomargarine.
Lard.
Suet.
Other Cooking Fats.

Group V: Vegetables and Fruits: These are depended on for flavor, bulk, mineral substances, particularly iron, and for vitamins of which three kinds called A., B., and C., are now considered necessary.

Fruits.

Apples.
Pears.
Peaches.
Berries.

Melons.
Oranges.
Lemons.
Prunes.

Vegetables.

Lettuce.
Celery.
Spinach.
Cabbage or other "greens."
Green Peas.

Snap Beans.
Tomatoes.
Squash.
Okra.

PROGRAM 1—WHAT FOOD IS.

Literature:

- Farmers' Bulletin 808, "What the Body Needs."
Farmers' Bulletin 817, "Cereal Foods."
Farmers' Bulletin 824, "Foods Rich in Proteins."
Farmers' Bulletin 1228, "A Week's Food for the Average Family."
Farmers' Bulletin 1313, "Good Proportions in the Diet."

1. Roll Call.
2. Routine Business.
3. Paper, "Why Study Foods?" Bul. page 3.
4. Paper, "What is Food?" Bul. page 4.
5. Discussion, "How We Use the Food Groups."
References: F. B. 808, "What the Body Needs"; F. B. 817, "Cereal Foods"; F. B. 1228, "A Week's Food for the Average Family"; F. B. 1313, "Good Proportions in the Diet."
6. Assignments for next lesson, including definite assignment of recipes to be tried before the next meeting.

Note: Plan meals for your family for one day using the food chart as a guide. Bring this plan to the next meeting to be discussed.

The Function of Foods.

In the human body, nature has given us the machine of perfection. Nothing created by man can equal it. Unlike other machines, the body has the power of growth and self-repair. It is constantly at work and better off for this constant running, if it receives the right kind of care. No form of machinery will give the form of return that it should unless fuel of the proper quality and quantity is supplied. The human machine is no exception. It must have a variety of the right kinds of well prepared food if it is to function efficiently.

The body, which has been found to be composed of certain chemical elements, has four great needs. First, it needs building material as well as material for repair. The child's body is particularly in need of building material. Second, it requires fuel foods for supplying heat and energy. Third, the body must have all its processes regulated such as digestion and circulation. Fourth, there is need for a group of substances, the exact chemical nature of which is not known, which are called vitamins. Any substance taken into the body which will help to meet these four needs is rightly designated as food.

Foods are made up of the same chemical elements as the body, but no one food substance contains all these elements; hence the great necessity for variety in our eating. The foods which give this variety and meet the different needs of the body are divided into different groups, though materials belonging to the same group do not necessarily have the same effect.

The first group, proteins, perform a function for the body in which no other foods have a share. They are absolutely essential for growth and repair. Too much emphasis can not be laid upon the fact that the body needs a variety of protein, both animal and vegetable. On account of their rapid growth, children need a larger amount of protein in proportion to their weight than adults. Every child should have a glass of milk at each meal. The one quart of milk per day is a safe rule to follow. As the body makes no provision for the storage of excess protein foods, an over-abundance will cause the kidneys and other organs of elimination to be greatly overtaxed. Protein is also more expensive than other types of food. Hence, the wise housekeeper will study her menus carefully so that she may plan to have a minimum of protein, at the same time supplying enough for her family's needs.

The second and third groups, the starches and sugars, together with cellulose or plant fiber, are classed together as carbohydrates. They serve as fuel, giving heat and energy to the body. The sugars are the most quickly digested of any foods. That is why sugar or candy will restore a person's flagging energy in so short a time. That is also the reason that children should eat very little candy, because when they do so, they are not likely to get a sufficiency of other foods. To be quickly and completely digested, all cereals, potatoes, and breads, because of their starch content, require a high temperature in preparation. Cellulose, the fiber of fruits and vegetables, forms the bulk of our diet. This bulk is not digested, but is necessary to assist in moving the food along the alimentary canal.

Fats form a fourth food group. They, as well as carbohydrates, furnish heat and energy for the body. A pound of fat yields two and one-fourth times the heat that a pound of pure sugar or starch will yield. For this reason, fewer pounds of fat are required than pounds of sugar, and less fat should be used in summer than in winter. One mistake a housekeeper frequently makes is in using too much fat pork and fried foods in the summer because it is heat-producing and because fats are also slow of digestion. For growing children there should be an abundance of milk fat, because the growing child needs energy, and also because the fat of cream contains some of the special growth promoting elements.

The fifth group of foods include those foods which have to do with the regulation of the body processes. A person may consume enough fuel and tissue building foods and yet become ill because his food has not kept his body in good working condition. The foods which perform this function are fruits and green, leafy vegetables, particularly fresh ones. By all means they should have a much larger place in our daily meals than is often given them. The person who by eating the proper combination of foods keeps in the best health deserves much more credit than the one who knows only how to get well when illness comes.

Included in this group are those substances known as Vitamines. The fat soluble vitamine A, is necessary for the promotion of growth of the new tissue and absolutely essential to the young and rapidly developing body, and to a perhaps lesser extent to the adult. The effect of a lack of fat soluble A in the diet is first a retarded growth and finally complete cessation of growth. It is found in appreciable quantities in the animal fats, milk, cream, butter, cheese, in eggs, and in the fatty tissues of some of the glandular organs such as kidney or liver, also in green leaves and certain tubers and roots such as cabbage, spinach, chard, lettuce, and carrots. Codliver oil is a particularly rich source of this vitamine.

Water soluble vitamine B is necessary for complete metabolism or utilization of the food and for transforming it into tissues. A lack of this vitamine in the diet results in a lowered plane of metabolism followed by a decreased appetite and food intake and by retarded growth. The chief sources of vitamine B are oranges, lemons, grapefruit, prunes, tomatoes, spinach, turnips, carrots, cabbage, peas, navy beans, whole grains, milk and eggs.

The anti-scorbutic vitamine C is now known to be more important than was first supposed. A lack of this in the diet is apparent in a general lassitude and lack of body tone. This condition causes easy susceptibility and quick succumbing to disease. Wounds also heal slowly under this condition. Tomatoes and oranges are the richest sources of this substance among the foods yet investigated. Milk, cabbage, lettuce, spinach, turnips, potatoes, lemons and grapefruit also show a relative high content of this substance.

Safety in providing sufficient vitamins in the diet lies in the use of a generous amount of dairy products, fruits and vegetables and the whole grains.

The mineral substances which are so essential to a proper diet are included in this 5th group. Two of the most important are iron and calcium. Iron is the necessary constituent of the blood stream. It carries oxygen in the blood, and is essential for all processes of growth, reproduction development and the utilization of the food eaten. It should not be taken in tonics, but should be taken in such natural foods as eggs, green vegetables, whole cereals, spinach, string beans, and lean beef. Calcium, from which bone and teeth are constructed and which regulates many of the important body functions necessary for the coagulation of blood is found in milk, buttermilk and cheese.

After careful consideration of this very brief discussion of foods, it should be evident to the home-maker that she cannot afford to be careless or indifferent about the meals she serves to her family.

Abbreviations for Measuring—Tsp, teaspoon; tbsp, tablespoon; c, cup; pt, pint; fg, few grains; qt, quart. A 1-2 pt measuring cup divided into fourths, thirds and halves is the standard cup.

Table of Measure—3 tsp equals 1 tbsp; 16 tbsp equals 1 c; 2 c equals 1 pt; 2 pt equals 1 qt.

Directions for Measuring—All measures are level. Heap all dry materials lightly into the measuring cup or spoon without packing and level with the edge of a knife. Divide a spoon lengthwise to measure half a spoonful. Divide a half spoonful crosswise to measure a quarter spoonful. A measure of liquid means all that the cup or spoon will hold.

PROGRAM 2—FOODS DEPENDED UPON FOR EFFICIENT PROTEIN.

Milk and Milk Products.

Literature:

- Farmers' Bulletin 824, "Food Rich in Proteins."
Farmers' Bulletin 717, "Food for Young Children."
Farmers' Bulletin 712, "School Lunches," (Supt. of Doc. 5c).
Farmes' Bulletin 487, "Cheese and Its Economical Use in the Diet."
Farmers' Bulletin 850, "How to Make Cottage Cheese."
Farmers' Bulletin 1359, "Milk and Its Uses in the Home."
1. Rall Call: My best recipe containing a considerable quantity of milk.
 2. Routine Business.
 3. Song, reading, or report of current events.
 4. Protein Foods.
Note—Assign different topics from F. B. 824.
 5. The Use of Milk as Food, F. B. 1359.
 6. Cheese and Cottage Cheese in the Menu, F. B. 487.
Note—Have each club member select a recipe from among the following suggested ones to be tried at home before next meeting.
Cream Soups—Bul. 712.
Boiled Custard—Bul. 712.
Macaroni and Cheese—Bul. 487.
Cheese Souffle—Bul. 487.
 7. Discuss meals planned by or from food charts.
 8. Discussion: How can we use milk in the supplementary hot dish in our school?
Two minute response by each member.
 9. Assignment of next lesson.

PROGRAM 3—FOODS DEPENDED ON FOR EFFICIENT PROTEIN.

Meat, Fish, Poultry and Poultry Products.

Literature:

Farmers' Bulletin 824, "Foods Rich in Proteins."
Farmers' Bulletin 391, "Economical Use of Meats in the Home."
Farmers' Bulletin 1324 "Lamb and Mutton and their Use in the Diet."
Department Bulletin 471, "Eggs and Their Value as Food," (Sup. of Documents 5c).

1. Roll Call: (Members will respond by naming a hot dish which can be served in the rural school lunch).
2. Routine Business.
3. Brief review of some current topic.
4. Reports on Recipes Tried at Home.
5. Value of Meat as a Food, F. B. 391.

Note—Have a general discussion, making comparisons of meat, fish and poultry, as to relative value in the diet. Base discussion on Bul. 391 and Bul. 824.

6. The Cooking of Meat, Bul. 391. Use of steam pressure cooker for meat cookery; use of left-over meat.
7. The Cooking of Eggs.

Note—Assign recipes to be tried at home, selecting some from each bulletin.

8. Assignment for next meeting.

Note—It is suggested that a steam pressure cooker be brought to the meeting and placed on exhibit so that anyone not familiar with it may examine it.

USE OF LEFT-OVER MEATS.

It is poor economy not to save and serve attractively the smallest piece of cold meat. Small quantities of meat can be combined with left-over cereals, potatoes, or vegetables, and made into dishes appreciated by the whole family. The secret of making up meat left-overs is to season them well. Peppers, celery, onions, carrots, turnips, garlic, tomatoes, sage, pickles, cloves, and pepper corns are some suggested seasonings.

Browned Hash—Mix together equal parts of chopped meat and chopped boiled potatoes, place in heated frying pan containing a little fat. Heat slowly until brown. Turn on hot platter and serve with tomato sauce.

Cold meat cubbed and mixed with a well seasoned gravy or tomato sauce may be made into the following dishes:

Cottage Meat Pie—Made by placing cold chopped and seasoned meat, mixed with gravy or a sauce, into a baking dish and covering with a layer of mashed potatoes. For crust, moisten top with milk and brown in oven.

Meat Pie With Crust—Use one-third as much cold cooked potatoes as meat, cut both meat and potatoes into cubes, season with bacon or sausage fat or with meat stock, cover with a crust of rich biscuit dough, pricked to allow steam to escape, and bake until brown. Other vegetables such as green peas and carrots may be added to meat pie if desired.

Creamed Meat on Toast—Chop or grind the meat, heat with some of the gravy or a milk sauce, season with onion juice. Serve on buttered toast.

Surprise Biscuit—Cut thin rounds of baking powder biscuit dough, cover half of them with a seasoned meat mixture, put on the covers, press together and brown in the oven. They are better served with sauce.

USE OF STEAM PRESSURE COOKER FOR MEAT COOKERY.

Far from being useful only at canning time, the pressure cooker has many everyday uses, and is particularly practical for cooking meat.

The pressure cooker makes use of the principle that boiling water or steam under pressure is hotter than boiling at atmospheric pressure in an open vessel. Water at sea level at atmospheric pressure boils at 212 degrees F. while at 15 pounds pressure it boils at 250 degrees. The lid of the cooker has all of the equipment which makes it anything beyond an ordinary cooking vessel. The lid is made tight by strong screws. The dial is the steam gauge which registers the steam pressure in pounds inside the cooker and indicates the temperature (based on pounds pressure). The petcock is the escape valve for the outlet of steam or inlet of air. This is always left open until the cooker and contents are hot, then closed. No pressure is indicated until the petcock is closed. The safety valve is fitted with a ball and a set of springs for the purpose of automatically preventing the pressure inside the cooker from exceeding the limit of the figures on the steam gauge.

There are several distinct advantages in the use of the pressure cooker. First, it saves time and labor, for there is no need of stirring and basting during the cooking process. Second, all nutrients are retained in the cooked food or in a concentrated stock. Third, there is noticeably less shrinkage than in the ordinary cooking process, even with higher temperature. Furthermore, those cheaper, but more nutritious foods, such as the tougher cuts of meat and dried vegetables, will be used because they can be more quickly prepared with steam pressure. And last there is a saving of fuel, for a low fire is all that is needed, after pressure has reached the desired number of pounds.

Meats—If it is desired to have meats look like oven cooked products, they can be seared in flour before being put in the cooker and cooked in little water. If the meat is cooked on the rack only 1-2 c water is needed with a 4 or 5 pound roast; but if the meat is put in a separate vessel the cooker can have water up to the rack. It is difficult to give any time for the cooking of meats because of the varying degrees of toughness, the shape and size of the piece to be cooked, and the amount of bone it contains. In general, however, a large thick piece of meat which is rather tough should be given about 15 minutes to the pound at a pressure of 15 to 20 pounds. One of the more tender cuts, however, such as leg of lamb, would require only 10 minutes to the pound at a pressure of 15 to 20 pounds. Meat cut into small pieces as for a stew require 30 to 50 minutes depending upon the toughness of the meat, at 15 to 20 pounds pressure, regardless of the amount to be cooked.

Old Chicken—Cut like a frying chicken. Roll in flour and seasonings. Fry a light brown in hot fat. Put large pieces in bottom of cooker. Use 1-2 c water in bottom of cooker. When it reaches boiling temperature close petcock and let pressure stand at about 15-20 pounds for 30 to 50 minutes, depending upon the age of the fowl. When done add milk to stock in cooker and make gravy.

Ham—A 7 lb ham can be cooked in the smallest cooker. Wash ham; put on rack big end down. Cover partly with water, seeing that the lean part is under water. When it boils, close the petcock. Let pressure stand around 15 pounds for 40 minutes.

Pot Roast—Select a rump roast of about 4 pounds. Sear in a hot pan, add salt. Roast may be rolled in flour if desired. Put 1-2 c water in bottom of cooker, place meat on rack. When cooker is hot, close petcock and let pressure stand around 15 pounds for 40 to 60 minutes.

Tongue—Clean as many tongues as needed; put on rack with only enough water to keep up steam. Cook 20 minutes at 15 lbs pressure or 30 minutes at 10 lbs pressure. Let off steam, drop tongue into cold water peel. Serve cold. Slice or cube tongue, mix with peppers or celery and mayonnaise for salad.

PROGRAM 4—PROTEINS—VEGETABLES WHICH SUPPLY PROTEINS.

Beans, Peas, and Peanuts.

Literature:

Farmers' Bulletin 256, "Preparation of Vegetables for the Table."
Farmers' Bulletin 824, "Foods Rich in Protein."

1. Roll Call.
2. Routine Business.
3. Song, reading or report of current events.
4. Report on Recipes Tried at Home. General Discussion.
5. General principles underlying the cooking of dried vegetables, F. B. 256.
6. Use of the peanut for human food.
7. Assignment for next lesson.

Note—Assign recipes from bulletins and recipe sheets to be tried at home. Try recipe for peanut butter especially.

8. Exhibit: Portions of Protein Food which contain an equal fuel value.

Beef, lean round.....	2.5 oz.
Cheese, dairy	1 inch cube.
Cheese, cottage	1-3 c.
Eggs in shell.....	1 very large or 1 1-3 average.
Ham, smoked	1.5 oz.
Milk, whole	2-3 c.
Milk, skimmed	1 1-8 c.
Peanuts	13 double.
Beans, dried	2 tbsp.
Peas, dried	2 tbsp.

DRIED BEANS AND PEAS.

During the winter months dried beans and peas are to be found on most of our tables several times during the week. Indeed, they constitute a most valuable all-the-year around food supply, for they are very wholesome when properly prepared. However, as the family may easily grow tired of them; the housewife should learn to prepare them in as many different ways as possible. For instance, if boiled beans were served for dinner today, tomorrow the left-over beans may be used for making a bean loaf or cream of bean soup. These dishes are palatable and may be even more nourishing than the original because of the combination with egg and milk and cheese.

By referring to your food chart you will see that peas, beans, and peanuts are classified as protein foods. This means that their function is to build up and repair worn out tissue, but vegetable proteins alone cannot build up nor repair as completely as animal proteins, and therefore it is better to use the former in combination with milk, eggs, or cheese. Of all the common vegetables supplying protein food, only soy beans and peanuts supply what we know as "efficient protein."

Use of Left-Over Peas and Beans.

Left-Over Dried Beans—Use dried beans and peas to make bean loaf, a good meat substitute. Or beans and peas can be used in cream soup foundation.

Bean Loaf.

2 c dried beans or peas 1 c bread crumbs
1 tbsp chopped onions 1 egg
2 c grated cheese (may be omitted) Salt and liquid

Making—Drain the beans, run through food chopper with crumbs and cheese. Season with salt to taste. Add enough of the water in which beans were cooked to make ingredients hold together. Bake in loaf form 40 minutes. Serve with tomato sauce. (See School Lunch, Farmers' Bul. 712, p. 25). If cheese is omitted from recipe, place strips of bacon over loaf in the baking.

Left-over peas and beans may be made into soups which will serve well as meat substitutes. One way to make these soups is to add the strained vegetable pulp to a well seasoned white sauce. Season the milk with slices of onions or celery tops. Allow 1-3 c vegetable pulp to each cup of milk. Add the vegetable pulp after the sauce foundation is done.

For the Sauce Foundation:

1 c milk 1 tbsp flour
1 tbsp fat ½ tsp salt

Making—Melt fat, blend in flour and salt, add milk, keeping the mixture smooth; cook, stirring until it boils and is thick. This amount of sauce with 1-3 c vegetable pulp will make a most generous serving of soup.

These soups may be made without milk. If the peas or beans are not soft enough to run through a sieve, cook for a short time in four times as much water as there are beans and peas. If beans or peas are soft run through a sieve. To each cup of pulp add 1 qt water. Use this in making the foundation. Melt 1½ tbsp fat and add 1½ tbsp flour. Then add the vegetable mixture and cook as a white sauce.

Seasoning the vegetables is the secret of a good soup. Slices of hard cooked eggs and lemon may be placed in the bottom of the soup bowl.

Suggested Seasonings—With black-eyed peas and lima beans use onions and salt pork. With white beans use a ham bone or quarter of acid apple. With chili beans use chili pepper and onions.

Peanuts and Rice—¾ c uncooked rice; 1 c chopped roasted peanuts; 2 c white sauce No. 2.

Making—See previous page for making sauce, double amount of fat and flour to make sauce No. 2. Boil rice in salted boiling water until thoroughly tender, and drain. Put bits of butter or bacon fat in the bottom of a baking dish, add about half the rice, sprinkle with half the nuts and pour over this half the white sauce. Repeat this for the second layer. Cover with buttered crumbs and brown in a hot oven. Serve at once. This dish may be served more quickly by mixing the nuts with the sauce and pouring over the rice.

Scalloped Onions With Peanuts—1 qt quartered onions; ½ c chopped roasted peanuts, 1 c white sauce.

Making—Cook onions, uncovered, in plenty of boiling salted water, drain. Put into a greased baking dish, sprinkle with chopped nuts, pour on white sauce. Cover with buttered crumbs and bake in oven.

PROGRAM 5—STARCHY FOODS.

Cereals and Potatoes.

Literature:

Farmers' Bulletin 565, "Corn Meal as a Food and Ways of Using It."
Farmers' Bulletin 817, "Cereal Foods."

American Grown Rice, the Ideal Food, (Southern Rice Growers' Assn.)

Farmers' Bulletin 1195 "Rice As a Food."

Farmers' Bulletin 1228, "A Week's Food for an Average Family."

Farmers' Bulletin 1136, "Baking in the Home."

Farmers' Bulletin 1313, "Good Proportions in the Diet."

1. Roll Call—Respond by naming a starchy food.
2. Routine Business.
3. Song or Reading.
4. Reporting on Recipes.
5. Breakfast Cereals, F. B. 817.
6. Quick Breads as a Cereal, Bul. p. 13.
7. Use of Left-Over Breads and Cereals, F. B. 817.
8. The Cookery of Potatoes, F. B. 817.
 Note—It is suggested that the leader come to the next meeting with enough liquid yeast (see directions in F. B. 1136) for each member to make one loaf of bread.
9. Assignment for next lesson.
10. Exhibit: Starchy Foods.

To demonstrate the relative fuel value in various foods rich in starch, as many as possible of the following foods may be exhibited. These foods in the quantities given have equal fuel value.

Beans, dried	2	tablespoonsful
Bread, white	1	average slice
Bread, whole wheat.....	1	average slice
Corn:		
Starch	3	tblsp
Meal	3	tblsp
Flakes	1 1/4	c
Hominy	3	tblsp
Puffed	1 1/4	c
Macaroni	1/4	c
Oats, rolled	1-3	c
Peas, dried	2	tblsp
Potatoes, white	1	medium
Potatoes, sweet	1	small
Rice, polished	2	tblsp
Rice, puffed	1	2-3 c
Wheat, shredded	1	biscuit
Wheat, puffed	1	2-3 c
Wheat, flour	1/4	c

(This table is taken from "Manual of Homemaking" by Rose and Van Rensselaer).

QUICK BREADS.

Quick breads is a name we give to biscuits, muffins, griddle cakes, cornbread, and other similar breads that are made and baked as soon as mixed.

Since quick breads are so exclusively used, we need to learn some of the principles underlying the making of good quick breads. The first thing of importance is to know the ingredients used and the effect or use of each ingredient. The ingredients for quick breads are: flour, liquid, a leaven, or something to make the bread light and porous, salt, and shortening.

The flour may be either a white flour or Graham flour.

The kind of liquid used in quick breads depends upon the kind of leaven that is used. If baking powder is the leaven use either water or sweet milk for mixing the bread, but if soda is the leaven, use sour milk. If you wish to have light, porous bread instead of heavy, soggy bread, you must know the amount of leavening material to use and how to add it to bread.

GENERAL PROPORTIONS OF INGREDIENTS FOR BATTERS AND DOUGHS.

Pour Batters.

(General Proportion: Moisture to flour 1 to 1).

Kind	Liquid	Eggs	Shortening	Sugar	Leavening	Flavoring	Flour
Popovers	1 c	1	—	—	Steam	1-2 tsp salt	1 c
Griddle Cakes .	1 c	1	0-1 tbsp	—	1-2 tsp B. P. or 1-2 tsp soda	1-2 tsp salt	1 c
Waffles	1 c	1 or 2	1 tb	—	2 tsp B. P.	1-2 tsp salt	1 1-2 1 3-4 c.

Drop Batters.

(General Proportion: Moisture to flour about 1 to 2).

Kind	Liquid	Eggs	Shortening	Sugar	Leavening	Flavoring	Flour
Muffins	1 c	1	1-4 tbsj	1-2 tbsp	3-4 tsp B. P.	1-2 1 tsp salt	2
Cake	1 c	2-4	1-2 2-3 c	2 c	3 tsp B. P.	1 tsp vanilla	2 1-2 c 3 c

Doughs.

(General Proportion: Moisture to flour about 1 to 2 2-3 and 1 to 3).

Kind	Liquid	Eggs	Shortening	Sugar	Leavening	Flavoring	Flour
Dumplings . . .	1 c	—	0 to 1 tbsp	—	4 tsp B. P.	1-2 tsp salt	2 2-3 c
Short Cake . . .	1 c	—	1-4 to 1-2 c	—	4 tsp B. P.	1-2 tsp salt	2 2-3 c
Rolled Biscuit .	1 c	—	2 to 3 tbsp	—	3-4 tsp. B. P.	1-2 to 1 tsp salt	2 3-4 c
Drop Biscuit . .	1 c	—	2 to 3 tbsp	—	3-4 tsp. B. P.	1-2 to 1 tsp salt	2 1-4 c
Drop Cookies . .	1-2 c	1	1-2 c	1-2 c	—	1-2 to 1 tsp salt	1 1-2 c
Rolled Cookies .	1-4 c	1	1-3 c	3-4 c	2 tsp B. P.	1-2 tsp vanilla	2 c

Note: These proportions are only approximate and will not always be found to be correct on account of the variability of the quality of the materials particularly because of the difference in absorptive power of flours.

As children we learn that when we add a little soda to vinegar, small bubbles form in the mixture and that it foams and perhaps runs over the side of the vessel, but after it stands a while the foaming ceases. This happens because when soda is combined with a liquid containing acid, a gas is formed. It is this gas that makes bread rise, and it is formed when soda is used with sour milk. If the bread is mixed and allowed to stand for a long time before it is baked, the gas escapes, and the bread will not be light.

The same action takes place when baking powder is put into a mixture and water or sweet milk is added. Baking powder is made by combining soda and an acid, in the form of cream of tartar. And with this combination it is only necessary to add a liquid to get the same kind of gas that we get when we combine soda and sour milk.

The other ingredients for quick bread are salt, which is used to give a better flavor, and shortening to make the bread more tender.

The proportion of ingredients depends upon whether the bread mixture is to be made a batter or a dough.

If soda is used in place of baking powder, use sour milk and allow 1-3 level tsp of soda to each cup of milk, unless it is very sour, then allow $\frac{1}{2}$ level tsp to each cup of milk. The rule for baking powder is to allow 2 level tsp baking powder to each cup of flour, unless eggs are used. But when eggs are used 1 $\frac{1}{2}$ tsp baking powder to each cup of flour is sufficient.

To Mix Batters—Mix flour, salt and the leaven, add the beaten eggs and melted shortening and then the liquid gradually.

The egg is folded into the mixture in order to retain the air that has been beaten into the egg, and when heated the air expands and helps to make the bread light.

To Mix Dough—Mix flour, salt, and leaven, cut or rub in the shortening until it is well mixed with the flour, then add the milk to make a soft dough. Put on board and get into shape with as little handling as possible.

Roll lightly and put to bake as soon as possible.

Mixing and Baking—Before mixing quick breads you should:

1. Have the pans in which the bread is to be baked clean and oiled if necessary.
2. Measure all ingredients and mix the leavening agent with the flour rather than add it to the liquid.
3. Mix the ingredients as quickly as possible and put the bread into the pans.
4. Bake at once in a hot oven.
5. Serve as soon as baked.

Potatoes.

The potato has a place in our food list which no other vegetable occupies. It appears on the table of many families at least once a day and often at all three meals. The main food value of the potato is in its starches and mineral matter. For this reason it forms a well balanced combination with meat, fish, or eggs. With milk it is almost a balanced ration. So far as the food value is concerned rice may take the place of potatoes, and certainly there is no need to serve rice and potatoes at the same meal. Potatoes, however, contain a much larger amount of minerals and vitamins than rice.

Not only may potatoes be prepared in an almost endless number of ways as a vegetable served with meat and in milk and in cheese combinations, but they are also used in soups and salad making and sometimes in desserts and with flour in baking. The flavor of potatoes is acceptable to almost everyone, and they are quickly and completely digested if properly cooked. Strange to say, however, though it is easy to prepare potatoes well in a variety of ways, few people really know the best method and the result is the loss of food value and poorer quality of product. To cook

properly requires evenly applied heat and a high temperature in order to break up all the small starch grains. Baking is far better than boiling, for in boiling, the outside of the potato breaks away, giving it the appearance of being done when it may be still hard in the center. Baking or steaming potatoes with the skin on wastes none of the small amount of protein or mineral matter and so far as is known does not greatly affect the potency of Vitamine C. When potatoes are available in only small amounts, it is undoubtedly wise to cook them in such a way that as little as possible of the mineral matter, vitamins and other food value is lost, and if they are to be boiled, it is probably wise to put them at once into boiling water as this shortens the time of cooking and therefore reduces the loss to a minimum. For the same reason boiling potatoes with the skin on is better than to peel and slice them.

BAKED POTATOES.

1. Bake potatoes of medium size and smooth skin. 30 to 40 minutes should make them mealy.
2. Boil large potatoes 5 minutes and then bake 40 minutes.
3. Boil large potatoes with sweet fat and then bake slowly in moderate oven. This will keep skin tender and edible.
4. Baked potatoes must be broken open as soon as tender. Too much cooking, because of the confined steam, will make the starch sticky and the potatoes soggy.
5. When the potatoes are baked, and the family is not ready for them, the potatoes may be cut in halves and the mealy centers removed, beaten smooth with cream or fat, returned to the shells and kept warm in the oven.

To make stuffed potatoes—Use method 5 and brown in oven.

Cream of Potato Soup.

1 qt milk	1 tbsp chopped onion or onion sprouts
1½ c cold mashed potato or 3 medium potatoes boiled in their skins, peeled and mashed	1½ tsp salt
2 tbsp fat	½ tsp white pepper or ¼ tsp red pepper
	1½ tbsp flour

Heat the milk in a double boiler with onion, which should be removed before the milk is used. Melt the fat, add the flour, mix until smooth; add the milk and cook, stirring, until the mixture is smooth. Add the salt, pepper, and the mashed potato, beating until smooth.

Corn and Potato Chowder—Use the recipe given above omitting half of the potatoes (¾ c) and add 1 c well cooked corn.

Potato O'Brien.

2 c diced cooked potatoes	¼ tsp pepper
1 tbsp flour	1 green pepper, cooked and chopped
1 tbsp fat	½ c grated American cheese
½ c skimmed milk	½ c bread crumbs mixed with 1 tbsp melted fat
1 tsp salt	

Make the sauce, using the fat, flour, milk and seasoning. Mix the potato and the green pepper with the white sauce and cheese. Put in a baking dish and cover with the bread crumbs and brown in a hot oven. Canned red peppers may be used in place of green peppers. This dish can be used instead of meat.

PROGRAM 6—STARCHY FOODS.

Yeast Breads.

Literature:

Farmers' Bulletin 1136, "Baking in the Home."

1. Roll Call.
Response—Brief report on results with recipes since last lesson.
2. Music.
3. Report of current events or reading a magazine article.
4. Conditions for growth of yeast. Bul. 1136.
5. Setting of sponge and methods of mixing. F. B. 1136.
Yeast Bread, page 17.
6. Usual Bread Failures and Their Remedies.
"Yeast Breads," page 17.
General discussion.

Suggested Recipes:

Liquid Yeast, Bul. 1136.
Rolls, Bul. 1136.

Note—Ask each club member to bring a loaf of bread to the next meeting. Compare with the help of a score card and discuss.

7. Assignments for next meeting.

Yeast Breads.

There are many factors which help to determine whether it is wise for a housewife to make the bread used in the home or to depend upon baker's bread. A few of these determining factors are: the price of bread materials and fuel in that particular locality; the value of the housewife's time as well as her skill in bread making; quality of bread available at the local baker's; and the quality and cost of available yeast. It lies within the power of every housewife to overcome two of these difficulties—to secure a good quality of yeast and to become a good bread maker.

Raised bread is a dough made from flour, salt, and liquid, lightened with yeast. All flours are not equally well adapted to bread making. The safest thing for the housewife is to find the brand of flour in her own locality which gives the best results. It is not difficult to test bread flour. It is made from hard or spring wheat. The best bread flour is creamy in color, slightly grainy or "gritty," and cakes but slightly when squeezed in the hand, that is, it does not "stick" closely, but falls apart. It absorbs more water than flour made from soft wheat.

Pastry flour is made from winter or soft wheat. It is white, soft, and smooth in texture and will retain the finger prints when it is squeezed in the hand. Since much depends on the quality of flour used in bread making, the housewife should learn to discriminate.

Today pure culture yeast, free from bacteria, can be obtained in three forms, compressed, liquid, and dry. The first two named are active and need great care to keep in good condition; but these forms are most reliable. Liquid yeast made according to the method given in "Baking in the Home," Farmers' Bulletin No. 1136, is a proper way of securing a pure culture of yeast, provided it can be kept in a refrigerator. Otherwise, more satisfactory bread can be made by using dry yeast. By this method there is little possibility of securing a bacterial growth, as is common in the method of saving a piece of dough from previous bread making. Dry yeast is easily kept but does lose power of fermentation.

The amount of yeast to be used for a loaf of bread depends upon the kind of yeast, time for making bread, and the temperature. Experiment has shown that if sufficient time is allowed, a small quantity of yeast will

yield as good results as a much larger quantity. An excess of yeast does detract from the flavor and appearance of both crumb and crust; at the same time it is expensive. But by using a larger quantity of yeast, bread can be made in less time and all stages controlled more completely.

General Proportions for Compressed Yeast.

- To rise in 3 to 4 hours.....1 cake to 1 pt liquid
- To rise in 6 to 7 hours..... $\frac{1}{2}$ cake to 1 pt liquid
(Or over night in cold weather)
- To rise over night in warm weather, $\frac{1}{8}$ cake to 1 pt liquid.

Milk, water, or a combination of the two, may be the liquids for bread making. The general proportion for one loaf of bread is one cup of liquid. Sugar in large quantities and fat prevent the quick rising of the bread. One teaspoon salt and one tablespoon sugar to one loaf give best results as to flavor and size of loaf. Good bread can be made without any fat, although a small amount is supposed to make it more tender and to keep it from drying out.

See bulletin for temperature to be kept for each rising of the dough. Bread may be mixed by the two methods, the sponge process and the dough process. When a large amount of seasoning, such as fat, eggs, or sugar is to be used or when it is to stand over night the sponge method is used. The dough process may be used for the quick rising when much yeast is used, or the dough might be left over night. Remember that yeast fermentation takes place more quickly in a sponge than in a dough. A beginner might well use the "dough process" with much yeast for the first attempt. In either process avoid working in flour after the first kneading, for this dry flour that does not get all the fermentation process is likely to leave heavy white streaks in the bread.

It may be desirable to know how to make yeast at home, and how to utilize the dried yeast cakes in emergencies.

To Make Dry Yeast—Use directions for liquid yeast, Farmers' Bulletin 1136. After the yeast mixture has set the 24 hours, add enough cornmeal to make a dough. Roll or pat the mass until it is $\frac{1}{4}$ -inch thick. Cut with the biscuit cutter and leave in a cool place until the cakes are completely dry. Store in a cool place. In using the dry yeast cakes, follow directions in the bulletin.

COMMON DIFFICULTIES WITH BREAD.

Defect.	Cause	Remedy.
Soggy and heavy bread.	Too much moisture, or insufficient cooking, or poor yeast.	Bake longer. Good yeast.
Sour and poorly flavored.	Let rise too long. Baked too slowly. Incomplete baking Old acid yeast.	Care as to length of time for rising and baking. Fresh yeast.
Cracked crust on top and sides.	Oven too hot. Too much flour.	Test oven for proper temperature. Knead flour into bread only at first kneading.
Poorly shaped loaf.	Inexperience in handling and shaping. Rising and baking unevenly in oven.	"Practice makes perfect." Press evenly into sides of pans. Place pans in oven so heat can circulate around.
Streaked bread.	Uneven mixing and kneading. Setting dough in too hot. Setting dough in too warm a place. Crust formed in first rising.	Mix bread and knead thoroughly. Do not fold dry flour into loaves. Use only on outside of loaf and only enough to keep from sticking.
Baked dark brown on top, white on bottom.	Oven too hot to brown all sides evenly.	Regulate heat of oven. A piece of wrapping paper may be placed over top of bread in oven to prevent getting too brown on top.
Large holes in crust and crumb.	Insufficient kneading to distribute air bubbles evenly. Let rise too long. Oven too cold.	More thorough kneading. Rise to only twice its bulk.
Mustiness.	Mold that thrives in close, moist atmosphere.	Scald and dry the flour and bread boxes. Thoroughly cool bread before putting bread in bread box.
Rancidity.	Wrapping bread in cloth while still warm.	Never wrap bread in cloth, use paper.

PROGRAM 7—SWEETS AND THEIR PLACE IN THE DIET.

Literature:

Farmers' Bulletin 535, "Sugar and Its Value as Food."
Farmers' Bulletin 653, "Honey and Its Use in the Home." (5c each).
Confections, page 20.
Cakes, page 22.

1. Roll Call.
Response "My Greatest Success With Recipes Thus Far."
2. Routine Business.
3. The Food Value and Digestion of Sugar, F. B. 535.
4. Practical Use of Sugar in the Ordinary Diet, F. B. 535.
5. Food Value of Honey, F. B. 653.
6. Honey in Cookery, F. B. 653.
7. The Two Types of Cakes and Methods of Mixing, Bul. p. 22.
Note—The loaves of bread should be brought to this meeting. They should be compared and judged. Use score card, Bul. 1136.
8. Assignment for next lesson.
If it is possible some of the club members should try a few of the honey recipes given in Bul. 653.

THE PLACE OF CANDY IN THE DIET.

Perhaps no food habit is on the whole more harmful to children than the use of candy in excess. Nor is there any habit more easily formed. The fact that children need more energy than adults accounts for their apparently abnormal appetite at times. Candy, because of the quickness of its digestion, supplies the energy which the children want and satisfies the appetite before the body's needs are really met. Eaten between meals and in large quantities, it is irritating to the stomach and takes away the appetite for foods which serve for building materials as well as fuel. That is why children who have the candy habit often refuse to eat at meal times, and are pale and anaemic. Then we often hear the remark that a child's teeth are decaying because of the excessive use of candy. This condition is not caused so much by a lack of proper care of the teeth as by a diet lacking in building stones (foods rich in minerals) for the teeth.

Candy is too concentrated to be an ideal food, but if it is desired, a small amount may be given at the end of a meal, when it will serve merely to supplement other foods and can do no harm. Only plain candies made from pure ingredients should ever be allowed. Fruit with a high per cent. of sugar, such as raisins, figs, dates, and prunes, are healthful if eaten in right quantities and at the end of the meal.

Home made candies are healthful and are more economical than the commercial products. Every housekeeper should learn to make well two or three kinds, utilizing fruits, nuts, popcorn, and syrups, which may be in the house.

Following are a few recipes for some simple, wholesome, and delicious candies.

Taffy.

Boil syrup, sorghum or molasses, and vinegar (1 tsp to 1 c syrup) until brittle when tested in cold water. Pour on cold buttered platter. When cool enough to handle pull until light, handling as little as possible. If a strongly acid molasses is used, soda (1½ tsp to 1 c molasses) may be added when the boiling begins. To prevent syrup from running over rub the rim of the sauce pan with fat.

Pop-Corn Balls.

1 c syrup 1 tsp vinegar 2 or 3 qts popped corn

Boil together the syrup and vinegar until syrup hardens when dropped in cold water. Pour over freshly popped corn and mould into balls or fancy shapes. Either honey, maple syrup, molasses, white cane syrup, or corn syrup may be used.

Peanut Brittle.

1 c white corn syrup 1 tsp vanilla
1 tsp vinegar 1 c freshly roasted peanuts, halved
1 tsp salt

Cook the corn syrup, vinegar, and salt in a sauce pan until a little dropped in cold water forms a soft ball. Put the peanuts and this syrup into an iron skillet and stir until the syrup becomes a golden brown. Remove from the fire and stir in vanilla. Have ready a shallow buttered pan, pour candy in and spread out in a thin sheet. Allow to cool, then remove pan and crack into pieces.

Stuffed Dates.

Use the best dates. Remove the stones. Fill with peanuts, walnuts, hickory nuts, or any nuts available. Peanut butter makes a good filling that is different. Press dates in shape and roll in chopped nuts, cocoanut or a mixture of cocoa and powdered cinnamon.

Stuffed Prunes.

Steam 1 lb prunes and remove stones. Stuff part of the prunes, each with another prune, stuff others with chopped salted nuts, or stuff with a mixture of 1 c each raisins and walnuts and a few candied cherries. Another suggestion is to stuff prunes with stiff orange marmalade.

Wholesome Candy.

To a measure of cleansed and pitted prunes, add an equal measure of raisins, and a fourth of their measure of nuts. Run this mixture through a food chopper, form into balls, roll in ground cocoanut, peanuts, or in powdered sugar. This is more wholesome than sugar or syrup candies because of the valuable mineral substances which these fruits contain.

Fudge.

2 c sugar 1 c milk or water 1 tsp vanilla

Making—Mix sugar and milk, drop in whole chocolate. Boil rapidly stirring until it forms a "soft ball" in cold water. Add butter, let cool. Add vanilla and beat until it begins to show a dull finish. Pour quickly into a buttered pan and cut into squares.

Divinity.

3½ c sugar 2 egg whites
½ c light colored syrup 2 tsp vanilla
½ c water 1 c nuts chopped or 1 c raisins

Boil first three ingredients together. Stir until the sugar melts, then cover for a few minutes until all crystals are washed down. Let boil until it forms a "soft ball" in cold water. Then pour a cupful over the well beaten whites, beating well. Remove the mixture to the stove and let cook until it forms a "hard ball" in cold water. Pour over the egg mixture beating constantly. When it begins to stiffen add vanilla, fruit or nuts and pour into buttered pan to cut into squares.

Cakes.

There are two different classes of cakes—(1) cakes containing fat and (2) cake with no fat (sponge cake). The methods of mixing as well as baking for the two are quite different.

Preparing the Pans—Pans for sponge cakes are not to be greased—try to use the same pan for all sponge cakes and never grease it. The pan for cakes that contain fat should be well oiled. It is well to line the pans with paper and to oil the paper thoroughly, or to oil the pans well and to sprinkle a little flour over them before adding the cake batter.

Suggestions for Baking.

1. For a sponge cake the oven should be hot enough to brown a sprinkle of flour in five minutes; brown flour in two minutes for cakes with fat. The temperature is 300°-400° Fahrenheit.
2. For loaf or butter cake 280° Fahrenheit to 400° Fahrenheit. In this latter case the low temperature may be used to start the cake and the temperature raised very gradually at first and then more rapidly. The shape of the loaf is also important. A half pound sponge cake or angel food cake baked in a Turk's head pan (center tube) stands a comparatively high temperature better than does the same weight of cake baked as an ordinary loaf. Under experimental conditions, it has been found a good plan to put a sponge cake into an oven heated to 410° F., turn gas out for 5 to 10 minutes, lower to 330° F., then at last raise to 370° F.
3. Small layer cakes require a hotter oven than does a loaf cake.
4. Cake will crack if too much flour is used.
5. Place the cake as nearly in the center of the oven as possible.
6. In baking cake divide the time required in quarters. During each quarter the baking should proceed as follows: First quarter—The mixture should begin to rise; second quarter it should continue to rise and begin to brown; third quarter—it should continue browning; fourth quarter—it should finish baking and shrink from the pan.
7. If the oven is too hot open the check draft or open the oven door. Or in some cases the cake may be covered with brown paper, but there is danger of the paper adhering to the cake.

Mock Sponge Cake.

3 egg yolks	2 c flour
1½ c sugar	¼ tsp salt
1 tbsp lemon juice	1 tsp baking powder
½ c water	3 egg whites

Mixing—Beat the yolks of the eggs until thick and lemon colored. Add the sugar and continue beating; then add the flavoring and any other liquid that the recipe may call for. Beat the mixture well. Add the salt to the egg whites and beat until the whites are stiff. Sift the flour (and baking powder, if used) several times. Add part of the dry ingredients

through the sifter to the yolk mixture, then add some of the egg whites. Repeat until all the dry ingredients and the egg whites have been added. Mix by lifting the wire egg beater straight up and down through the mixture. Turn at once into an oiled pan. Bake in moderate oven for 50 or 60 minutes.

Standard Cake.

$\frac{1}{4}$ c fat	$1\frac{1}{2}$ c flour (sifted)
$\frac{1}{2}$ c milk or water	2 eggs
$\frac{1}{2}$ c sugar	$2\frac{1}{2}$ tsp baking powder
1 tsp flavor	

It has been found that a cake of good quality may be made by melting the fat and adding to the other ingredients.

Method (1). Mix the sugar with the well beaten eggs. Add the flavoring, add some of the dry ingredients and part of the milk. Repeat until all the dry ingredients and the milk have been added. Add the melted fat.

Method (2). Beat the yolks, blend in the sugar then add all ingredients, except the egg white. Beat, and finally fold in the beaten whites.

Try one of these methods and see if you prefer to put more time on a cake. Does the better quality pay you for your time?

"Convention" Method of Mixing—Cream the butter; then gradually add the sugar. Cream the mixture. Add egg yolk, well beaten. Add flavoring. Then add some of the milk and part of the dry ingredients. Repeat until all the milk and dry ingredients have been added; mix well, cut and fold in the whites of the eggs quickly. Then turn into oiled pans.

White Cake.

Modify the standard cake recipe by omitting the yolks. Observe rules for mixing just the same. Flavor with vanilla.

Chocolate Cake.

Use standard cake recipe, using only 7 tsp fat; add $\frac{1}{2}$ c more sugar, 3 squares of bitter chocolate melted over hot water, and add a few grains of salt.

If you prefer a more delicate chocolate cake follow the directions given above but mix the melted chocolate with 1-3 c boiling water and let cook "gently" until a smooth paste is formed. Then use only $\frac{3}{4}$ c liquid in the cake.

In either case the chocolate may be added after the egg yolks have been mixed with the sugar.

Nut Cake.

Use only 8 tsp fat; and 1 c chopped nuts. Flour the nuts and add last.

Cake Containing Fruit.

Use 1 c raisins, clean and flour them, and add last. Raisins should be chopped.

Boiled Frosting.

1 c sugar	$\frac{1}{2}$ c water
1 tsp vinegar	1 egg white
1 tbsp flavoring	

Mix sugar, water and vinegar. Cook gently until the syrup (when dropped from a spoon) "spins a thread" 3 inches long. Remove from the fire, and gradually pour the syrup over the egg white which has been beaten stiff. Continue to beat the mixture. When it begins to stiffen add the flavoring and spread over the cooled cake.

Uncooked Frosting.

4 tsp water, (milk, cream or fruit juice), $\frac{1}{2}$ tsp flavoring.

Method—To the liquid add enough sifted powdered sugar to make of right consistency to spread; then add flavoring. Fresh fruit juice may be used in place of boiling water.

PROGRAM 8—FATS AND OILS.

Literature:

Farmers' Bulletin 391, "Economical Use of Meat in the Home."

Farmers' Bulletin 1207, "Milk and Its Use in the Home."

U. S. D. A. Bulletin 469, "Fats and Their Economical Use in the Home," (Supt. Documents, 5c).

U. S. D. A. Bulletin 505, "Digestibility of some Vegetable Fats," (Supt. of Documents, 5c).

U. S. D. A. Bulletin 507, "Studies on the Digestibility of Some Animal Fats," (Supt. of Documents, 5c).

U. S. D. A. Bulletin 613, "Digestibility of Certain Miscellaneous Animal Fats." Free.

U. S. D. A. Bulletin 630, "Studies on the Digestibility of Some Nut Oils," (Supt. of Documents, 5c).

U. S. D. A. Bulletin 687, "Digestibility of Some Seed Oils," (Supt. of Documents, 5c).

U. S. D. A. Bulletin, "Digestibility of Some By-Product Oils," (Supt. of Documents, 5c).

1. Roll Call.

Response—My best salad dressing recipe.

2. Routine Business.

3. Report on some current topics.

4. Report on Experiments of Last Lesson.

5. Value of Fat in the Diet for Fuel and for Growth, F. B. 1359; Bulletin, Study of Fats and Oils.

6. Digestion of Fat, F. B. 1359, "Mills and Its Uses in the Home." Study of Fats and Oils.

7. Economics with Fats, F. B. 391; Study of Fats and Oils.

8. Assignment for next lesson.

Exhibit.

An exhibit of foods containing fat as listed under "A Study of Fats and Oils," will be found helpful.

A STUDY OF FATS AND OILS.

In the preceding lessons, carbohydrates and proteins have been studied. In the present lesson a third group of foods will be considered, namely, fats and oils, which, like sugar and starches, give heat and energy to the body and are therefore an essential part of a well balanced diet. However, perhaps no other class of foods needs such careful study in order that it may be given its proper place in the diet.

The amount of fat found in foods varies greatly. Certain foods which are very rich in fat are classified as fatty foods, though they may

contain some of the other food principles. Below is given a classification of typical fat foods, many of which are well known as such, though others may be suggestively new.

Practically Pure Fat—Commercial cooking fat, cotton seed oil, peanut oil, olive oil, corn oil.

Foods Averaging 4-5 Fat—Butter, suet, goose oil, fat salt pork, oleo-margarine, drippings, chicken fat, lard.

Foods Averaging 1-2 Fat—Peanuts, bacon, cocoanut, chocolate, double cream.

Foods Averaging 1-3 Fat—American cheese, egg yolk, cocoa, olives, nut meats.

It is well to read the list given above often, so that one may come to know those foods which have a large or small amount of fat. We must remember some of the foods which contain the most fat, where we find them, and how they are used. Fats must be studied from the standpoint of digestibility, of their place in our diet, and the practical uses to which they are put in everyday cooking. In other words, we must understand how the fatty foods which we eat are taken care of within the body, whether we should eat more or less fat, and the methods of cooking it so it will be most easily digested.

There is a general belief that fats as a class of foods are hard to digest. This is not altogether well founded but has arisen because we do not give fats their proportional place in the diet, that is, we eat too much or else we do not know the best method of cooking foods which contain fats or we have too much food "fried" in hot fat, often in such a way that the food is "soaked" in "grease." In the first place we must remember that fat is a concentrated food and that in its pure state in the body produces $2\frac{1}{4}$ times as much heat and energy as pure sugar and starches. Therefore, we do not need it in such large quantities as we do other kinds of food. For example, we should not plan a meal including butter, whole milk, fat meat, with a rich gravy, hot chocolate with whipped cream, cheese, a salad containing nuts and served with a mayonnaise or a French dressing and dessert with whipped cream, for every one of these contain fat, and the body cannot take care of so much at once. Then, too, in the South, especially in the summer time, we should eat sparingly of fatty foods because we do not need as great a quantity for fuel and energy as we do in the winter.

Another reason why we say fats are hard to digest is that we do not always follow the best methods of cooking them. If we heat a fat until it smokes, the high temperature breaks it up into harmful products which are not fats and which are indigestible. Then if other foods such as potatoes, pies, dough nuts, eggs, and meats are fried in hot fats in the generally accepted way so that they absorb a great deal of "grease" or are thickly coated with it, the digestion of these foods is retarded or held back because some of them are partly digested in the mouth and some in the stomach, while fats are mainly digested in the small intestines. For this reason foods soaked in fat cannot be readily acted upon by the digestive juices in the mouth and stomach. Naturally, some fats are more easily digested than others. Those which are hard in form and texture such as suet and beef drippings are more difficult to digest than the softer kinds such as cooking oils, butter, and cream. The fat which is found in egg yolk, cream, and milk, is in a most digestible form, and excess amounts of these products eaten are not so likely to produce digestive disturbances as an over abundance of other fats.

Then we see that we need to be careful in our use of fats. Nevertheless, we must realize that they do have a large place in our diet, and that with intelligent judgment, they can be used often and in many dishes. The foods which are listed on a preceding page are valuable and economical additions to our diet. Chocolate is rich in fat that is easily digested. Some nuts contain a large per cent. of fat. We should by all

means learn to use more peanuts, for it is now realized that they are important as human food. They are high in food value, possessing in large amounts carbohydrates, proteins, and fats. They are not particularly hard to digest if properly prepared and combined with other foods. In simple sweets and sandwiches they form a wholesome addition to the school lunch. Butter and butter fat or cream and eggs should have a regular place in our meals not only because of the fat but because they contain one of these so-called life giving elements known as vitamins, which are essential to our physical well being. No substitutes can quite take the place of these products. And because of their concentrated food value, these fats are an economical addition to our diet.

Because a large amount of fat or shortening is used in pastry, the latter should be considered in connection with a lesson on fats and oils. It is well understood that fat in flour mixtures make them more tender. Because of the moisture which comes in contact with pie crust, it is particularly desirable that this part be tender and flaky. A great many people make good pie filling, but fail miserably on the crust. Good pie crust is not difficult to make if one is careful and directions are closely followed. If all the materials which go into pastry are cold when they are combined, the dough is more easily handled and a lighter mixture is made. However, if it is not possible to have everything cold, the recipe given below with hot water will make a very good pastry, though of a different texture from that made of all cold materials. The fact which usually causes the trouble in pie making is the addition of too much water. When too much water is added the inexperienced cook immediately tries to remedy her mistake by adding more flour and the resulting crust is apt to be tough. She should add a mixture of fat and flour if anything. A hot oven is necessary for the quick baking of pie crust. If the crust is baked first on an inverted pie tin, and the filling added, a lighter crust is obtained.

Quick Pie Crust.

3 c flour	½ tsp salt if butter is used
1 c shortening	1 tsp salt if lard is used
½ c boiling water	½ tsp baking powder

Method of Mixing—Put salt, baking powder, and flour in a sieve, put the shortening in a mixing bowl, pour boiling water over it and beat it with a fork until creamy. Sift in the flour mixture. Stir together and roll out. This recipe makes enough pastry for two pies which have two crusts. If only one pie is made the remainder of the pastry can be wrapped in oiled paper and put in a cool place for a later baking.

In connection with this lesson it is also desired to emphasize one valuable and pleasing source of fat in the diet which has been largely neglected by the average housekeeper in the past, that is, salad dressing. In a later lesson the place of salads as a food will be discussed. But since oil, which is practically pure fat, or egg or egg yolk, which is largely fat, form the basis for the uncooked salad dressings it seems fitting to consider them at this time.

There are three types of salad dressings, two oil and one cooked dressing. Mayonnaisé is an emulsion and is made from oil, acid, (vinegar or lemon juice), and eggs. Either the yolk or the whole egg may be used. Seasonings such as salt, white pepper, paprika, or a small portion of cayenne may be added according to taste. Most of the vegetable oils may be used. Peanut, cotton seed, and corn oils seem particularly good. Olive oil has been used a great deal but as a rule, one must cultivate a taste for its flavor. Then, too, it is much more expensive than the newer vegetable oils. If cream can be used freely, it makes a delightful addition to the mayonnaise if beaten stiff and folded in the dressing after it is made and

just before it is served. Furthermore, whipped cream added to mayonnaise will increase the energy value of the salad. This dressing makes pleasing combinations with fruit and meat foundations. The recipe given below makes enough dressing for several servings.

Mayonnaise Dressing.

1 egg yolk	salt
1 tsp boiling water	pepper
1 to 1 1/4 c oil	1 tsp sugar
1 tsp lemon juice or vinegar	

Method—Beat egg yolk, add boiling water, and beat well. If both yolk and white are used, the water may be left out. Add oil a few drops at a time, beating well after each addition. When the mixture begins to thicken, the oil may be added in larger quantities. Thin the mixture with lemon juice or vinegar, and finish with oil. The consistency should be that of thick cream. Condiments, such as salt, white pepper, cayenne, paprika, can be added last. If the mixture should separate, it will be necessary to start over again, using egg yolk and adding the mixture to the yolk as the oil was added in the beginning. This may be varied by the addition of chopped onions, peppers, and pickles, then served over lettuce, cucumbers, beets, or any one vegetable.

French Dressing in Quantity.

1 c oil (olive, peanut, cotton seed, corn oil)	1 tsp mustard
1-3 c vinegar	1 tsp pepper
1 1/2 tsp salt	1 tsp tomato catsup added if desired

Mixing—Mix dry ingredients, add vinegar, then oil. Place ingredients in a large bottle. Shake vigorously each time before using.

The materials which go into a vegetable salad are often made more appetizing by first marinating them with French dressing, and later draining and serving with either mayonnaise or cooked salad dressing. By marinating is meant the mixing of a dressing with salad materials and letting the mixture stand until it is thoroughly flavored with the dressing ingredients. Enough dressing for a week's use may be made as easily as a smaller amount, provided one has a place to keep it where it will not spoil. French dressing may be kept at ordinary temperature.

The third type of dressing is prepared quite different from the first two. It is cooked dressing and is really a type of custard. It is probably a little more difficult to make, in that we must be careful of the heat used. Almost every one has had the experience of having a custard curdle. This condition is usually brought about by cooking too long at a too high temperature. A double boiler is the best vessel to use, though a smooth dressing can be made in a sauce pan.

Cooked dressing can be served on meat, fruit, or vegetable salad, though an oil dressing is usually preferable with a meat salad, because the large amount of fat present added to the protein makes a better proportion of food values. Whipped cream folded into a cold cooked dressing just before it is served makes a delightful addition, at the same time increasing the food value.

Cooked Salad Dressing.

2 tsp fat	1 tsp salt
1 egg	1 tsp mustard
1 c milk	2 tsp sugar
1 tsp flour	f. g. paprika
1-3 to 1/2 c vinegar	White pepper

Method—Mix mustard, salt, sugar, pepper, add vinegar, and heat to boiling point. In top part of double boiler melt fat, add flour, blend well and gradually add milk. Stir constantly until it thickens; add hot vinegar and seasoning and let thicken again. Pour this hot liquid slowly over the slightly beaten egg, stir constantly. Cook over hot water until it thickens. Cool immediately to prevent curdling. This makes a mild dressing and it will keep for a long time in a cool place. It will save time to make the dressings in quantity.

A careful study of this brief discussion will show the housekeeper that there is much to be learned about fats and oils, their preparation, their place in the family meal, and their relation to the human body, and finally, she will see that there is much to be learned about their use from the standpoint of economy. Often a housekeeper is more extravagant in her use of fats than of any other food. A little time and intelligent discrimination in this connection will frequently help her to reduce the grocery bill more than she could realize was possible. Below are some practical everyday suggestions which will aid her in practicing economy in the use of fats and oils.

Use pork drippings for seasoning potatoes, ginger bread, and ginger cookies.

Use beef drippings for seasoning potatoes.

Use beef drippings for meat pastry, and for sauces with left over meats.

Use ham, bacon, and sausage fats for soups and vegetables.

Use chicken fats for cakes, ginger bread, and spice cakes.

And finally, NEVER throw away any fat. When it has become too old and discolored for other purposes, use it for soap making or sell it to a soap maker.

PROGRAM 9—FRESH FRUITS AND VEGETABLES.

Literature:

Farmers' Bulletin 256, "Preparation of Vegetables for the Table."

Farmers' Bulletin 871, "Fresh Fruits and Vegetables as Conservers of Other Staple Foods."

Farmers' Bulletin 808, "What the Body Needs."

Farmers' Bulletin 1228, "A Week's Food for an Average Family."

Farmers' Bulletin 1313, "Good Proportions in the Diet."

1. Roll Call. My favorite salad.

2. Routine Business.

3. The Place of Fruit and Vegetables in the Diet, F. B. 871; F. B. 1228; F. B. 808.

4. General Principles Underlying Vegetable Cooking, F. B. 256.

5. Fruit and Vegetable Salads, F. B. 256.

6. Discussion—What Vegetables May We as a Club Can to Present to the School for the Hot School Lunch?

7. Assignment for next meeting.

FRESH FRUIT AND VEGETABLES AS A TONIC.

Do you have "Spring Fever?" When spring comes, do you awaken in the morning with that "tired feeling" for which there seems to be no remedy? Then do you go to your physician and ask for a spring tonic? Do you have too much acidity in the stomach or that form of indigestion known as "sour stomach?" Then do you go to your physician and ask for medicine for indigestion? Instead of taking pills and tonic, did you ever try what watching your diet will do?

One of the most important functions of food is to regulate the body processes. Foods most helpful in accomplishing this purpose are green leafy vegetables, "roughage," and fresh fruit. Too many people do not

eat enough of these, particularly through the winter when fresh, green things are hard to obtain. That is why our systems become "clogged" and we feel "run down" in the spring.

When we begin to have that "tired feeling," we immediately decide that we need an iron tonic; then we either go to our doctor for a prescription or to a drug store for a patent medicine. And we do need iron and other kinds of mineral matter also; but largely the natural source from which to obtain them is fresh fruits and vegetables, though milk supplies abundance of lime. How much better to spend our money for appetizing foods with which to tone up our systems than to put it into disagreeable medicines, which after all, will only partially correct the trouble. Not only will green vegetables and fruits supply the mineral matter needed by the body, but the same things will help to overcome the tendency to "sour stomach" or too much acid in the stomach. All too frequently, particularly in the winter, the meals we serve consist largely of meat, eggs, bread and grits or some other cereal.

In the first place if we would look more carefully to our diet through the winter, we should not feel in the spring so great a need of tonic. Hence, we should make every effort to have a winter garden with as many different kinds of vegetables as we can possibly grow. There are not many parts of Texas where some vegetables cannot be grown in the winter. But provisions may be made even if a winter garden is not possible. In the spring, when vegetables and fruits are abundant, enough should be canned to last through a period of at least six months. If they are properly canned, they may be as palatable as when fresh, and certainly they will be as beneficial from the standpoint of dietary value. Study the sheet, Food for a Family of Five, and find out how to stock your pantry. It pays to study one's diet and try to "balance the ration."

Recently a woman was heard to say that she used to take regulatory medicine all the time. Then she began to study the subject of diet and now she no longer needs medicine. "And," she said, "I'd rather spend my money for grape fruit than pills."

Fruit and Vegetable Salads.

The salads of former days were "salet," that is green herbs with salt. The salads of today include not only green herbs but many other foods as well.

Salads are of two classes: those which serve largely as a stimulant to the appetite and those which are really nutritious foods. To the former class belong all fruits and fresh or crisp vegetables such as peaches, pears, grapes, lettuce, celery, tomatoes, and radishes. To the latter belong salads with a foundation of meat, such as chopped chicken, ham, tongue, tuna fish or salmon, or of the more nutritious vegetables such as beans, peas, and potatoes. A salad of the latter group may serve as the main dish of luncheon or supper.

Before beans, peas, potatoes, or other similar vegetables are combined with a crisp vegetable for a salad, they are usually allowed to stand for awhile in a French dressing to become well seasoned. They may be served with the same dressing or it may be drained off and the salad served with mayonnaise or cooked dressing.

The lettuce to be used alone or in combination with other things should be carefully washed, and if it is wilted, it should be allowed to stand awhile in cold water, then wiped dry, wrapped in a clean cloth and if possible placed on ice until time for serving.

To Make An Attractive Salad.

1. Have all salad materials perfectly clean.
2. Have all salad materials dry so the dressing will cling.

3. Have all ingredients as cold as possible.
4. Have cooked vegetables cut into uniform pieces.
5. Do not combine two strongly flavored vegetables such as celery and onions in the same salad.
6. Do not combine ingredients until ready to serve.
7. Use a well mixed and well seasoned salad dressing.
8. Make a harmonious color combination.
9. Arrange attractively on plate.

Remember that some fruits and salads can be obtained at all seasons of the year, and remember, further, that a good salad attractively served may save a meal from failure or may be the crown of a good dinner.

Salads may be made in the greatest variety of combinations, and it is much better to learn combination than to depend on a set recipe. Below are given some popular combinations.

1. **Meat**—The white meats like veal, chicken, and turkey are more attractive in salad, but any kind of cold meat may be used.

Chicken and celery (or finely chopped white cabbage), chicken, sour apples, celery, nuts.

2. **Fish**—Tuna, green peppers, (chopped) celery; salmon, small amount pickles and onions (chopped).

3. **Egg**—Egg and green pepper; egg and potato.

4. **Vegetables**—Potato, onion, green pepper; potato, green pepper, cucumber; potato, carrots; carrots (grated raw or boiled and cubed) and peas; beets and peas; beets and cottage cheese; string beans, or baked beans, or Lima beans; green pepper, sliced or chopped, or stuffed with cream cheese and mayonnaise; tomato, sliced; tomato cut in halves, covered with stiff mayonnaise, sprinkled with chooped green peppers; tomato with center removed and stuffed with meat combination or cottage cheese.

Fruits—Any fresh fruit, with the possible exception of berries, and some canned fruits make delicious salads; apples, nuts, celery (or finely chopped white cabbage); peaches, halves filled with mayonnaise and nuts; bananas, finely chopped peanuts; pears, halves filled with mayonnaise, sprinkled with grated cheese.

Fruits and vegetables may be shredded or cut in cubes, balls or fancy shapes. Containers may be made of orange or lemon rind, apples, peppers, tomatoes, pears, cabbage leaves, lettuce hearts, beets, or cucumbers.

Note—These suggestions are to some extent based upon Foods and Cookery, Matteson & Newlands.

PROGRAM 10—THE CHILD'S DIET.

Literature:

Farmers' Bulletin 712, "School Lunches," (Supt. of Doc. 5c).

Farmers' Bulletin 717, "Food for Young Children."

1. Roll Call—Things a Child Should Not Eat.

2. Routine Business.

3. Music or Reading by a Child.

4. How I Have Improved My Children's Diet.

5. Name as many ways of giving one quart of milk to the child under twelve years of age as possible. F. B. 712; F. B. 717.

6. Discuss the packed school lunch or the hot school lunch (which ever is the problem of the community). F. B. 712.

7. Review of the Child's Diet, F. B. 717.

8. Assignment for next lesson.

Note—Have prepared an exhibit of necessary equipment for rural school lunch with cost. A list of this may be obtained from your County Home Demonstration Agent.

THE FEEDING OF YOUNG CHILDREN.

"One hundred thousand infants die every year in the first year of their life. Why? Because they are incorrectly fed." Then the wise mother must realize that she cannot spend too much time and thought in the study of her baby's needs and of the food which she gives it. Often a mother puts her baby on the bottle simply because it is convenient. Perhaps she does not know that the breast fed baby has ten times the chances of living that the bottle fed baby has. On the other hand, sometimes the mother's milk is not sufficient, and it is necessary to supplement it or to replace it entirely. Every child is a separate problem in itself. No specific rule can be laid down for all children; hence the necessity for careful study of each individual case.

One of the most critical times in the child's life is the time of weaning and the period immediately following, for it is then that the change is being made from an all milk diet to solid food. And such a change must be slow because the baby's digestive tract must be gradually accustomed to solid food. The failure of mothers to realize this fact causes the heavy death rate among children under two years of age. It should be remembered that the foundation of the child's future health is built in the period when its diet is changed from liquids to solids.

Weaning should begin about the eleventh month. Small amounts of cow's milk should be given in addition to the regular breast feedings. This amount should be increased each month, and the number of breast feedings decreased. By the fourteenth month, cow's milk and food of a semi-solid character should have taken the place of breast feedings. Listed below are foods and amounts which should be included in the day's diet:

Food for Children 11-14 months of Age—Cow's milk 3 to 4 cups; strained cereal (oatmeal or cream of wheat) 4 to 6 tsp; egg yolk beaten and added to milk; fruit juice (orange, stewed prune, or apple) 4 tsp.

If milk is pasturized, orange juice or tomato juice should be given the child each day to supply the anti-scorbutic vitamin C which has been destroyed in the milk during the heating process.

The cows milk supplies the protein for growth.

The cereal supplies the carbohydrates for energy. If the bowels have a tendency to be loose, oatmeal should not be given.

The egg-yolk supplies iron and other minerals which are lacking in both the mother's milk and cow's milk.

The fruit juices supply mineral and vitamins and tend to act as regulators for the body.

As the child grows older, the amounts of solid food given should be gradually increased. It must be remembered that each child is a separate problem. The effect of the various new foods on the digestive tract must be closely watched, and at the first symptom of trouble, the food believed to be its cause must be left out of the diet. Those foods which may be selected and added to the diet gradually are given in the following list.

Food for Children 14-22 Months of Age—Milk, 1 quart a day; cereals well cooked; oatmeal (strained); cream of wheat; corn meal mush; egg, poached or soft cooked; custard; steamed spinach pulp; mild fruit juices; orange; stewed prunes; stewed apples; cream soups (mild flavor); milk toast; dry toast; meat broths; mild creamed vegetables.

During the months directly after weaning the child is usually allowed to sit at the family table where the stronger foods for the older members of the family will tempt him. Unless there is a special effort to make the child understand that he has his own diet separate from that of the other members of the family, he will form his first bad food habits at this time.

Some of the materials which are the greatest foes to the good digestion of children are: coffee, tea, spices, peppers, pickles, candy, strong meats, rich gravies.

When once regular food habits of the right kind are established the mother will have no trouble in directing other living habits of her child, so that she will feel certain of his healthy development.

Feeding Children 2-6 Years of Age—As the digestive tract becomes stronger, the quantities and varieties of food may be increased still more. In the list below are found those foods from which the child's meals may be selected during the pre-school age: milk, one quart a day, cereals, soft cooked eggs, mild creamed vegetables, baked Irish potatoes, custards, cocoa, milk toast, buttered toast, cream soups, stewed fruits, fresh fruits (bananas and highly acid fruits should be left out), simple cookies.

Children grow so fast during this period that they require more food in proportion to their size than do adults. A simple cookie or a cracker, a glass of milk, a slice of bread and butter, or a fresh fruit, given in mid-morning and again in mid-afternoon prevents the child from growing hungry. It is better to give this additional food at a regular time. Irregular between-meal eating will develop unsatisfied hunger and cause poor digestion.

The Early School Age—7 to 12 Years—School life creates a new program of daily living for boys and girls. They usually walk to school, play harder, and expend more energy in every way than ever before. Increased activity calls for more food. Though good habits of digestion may be thoroughly established by the time school age has been reached, they may be entirely upset in the life of the child because of the hastily prepared and hastily eaten breakfast, and the cold, unattractive lunch, which does not contain the foods which he needs.

By all means the school children should begin the day with a well-cooked, hot breakfast. The breakfasts given below will serve as types, and may be given with the use of similar foods.

Breakfast for Boy or Girl of Early School Age—No. 1—Oatmeal and stewed fruit, buttered toast, soft cooked eggs, cocoa. **No. 2**—Hot milk toast, stewed prunes, bread, butter, cocoa.

The Cold School Lunch—Heretofore, too little importance has been attached to the school lunch. All too frequently the lunch is made up of left over cold biscuits and cold meat—sometimes fat meat at that—and syrup, or in place of meat, hard fried eggs. This is hastily packed in a paper bag or wrapped in an old newspaper, and by noon it has become even more unappetizing than it was in the beginning. It is now a known fact that there is a definite relationship between the kind of lunch the child takes to school and the progress which he makes in his work. For this reason too much thought can not be given to the preparation of the school lunch.

Since milk should be a regular part of the child's diet, it should certainly be given a place in the school lunch. A pint jar with a screw top is a clean, safe container in which to carry enough milk for the noon lunch. A plain substantial basket should be provided in place of the newspaper wrapping. To this should be added a napkin, drinking cup. Sandwiches should be wrapped separately in oil, tissue, or some kind of clean paper other than newspaper. The lunch should be packed in the order in which it is to be eaten, the food to be eaten last being packed in the bottom of the basket. The well prepared school lunch should contain: (1) a pint of milk; (2) a variety of well cooked food; (3) a sufficient amount to satisfy the appetite; (4) foods which will supply protein.

Foods which are rich in protein and are easily digested if prepared properly are: eggs, prepared in various ways; milk, used plain and in combination; meat, finely ground for sandwiches, cheese, made with pastes for sandwiches.

The Hot School Lunch—It has been found that, as a rule, children who have hot lunches are better nourished than those who must eat cold lunches. Mental alertness depends to a great extent upon physical fitness. Then certainly whenever it is possible, the child should have a hot school

lunch, particularly on cold winter days. And we must do everything possible to hasten the time when hot lunches will be prepared and served at all schools. In the meantime, all schools, no matter how poorly equipped, can do the next best thing—serve one hot dish to supplement the children's cold lunches. According to some reports, it is surprising to see the improvement in the children physically and mentally where the one hot dish is served regularly and systematically. Then too, the serving of one hot dish often prepares the way for the establishing of the full hot lunch.

Suggestions for the Hot Dish at School—Cocoa, chocolate, vegetable soup, creamed vegetables, rice and cheese, spaghetti and tomato sauce, cream of tomato soup, cream of corn soup, any other soups, macaroni and cheese, baked potatoes.

For the Lunch Box—Sandwiches—Peanut butter, nut, nut and raisins, eggs, cottage cheese, chopped meat, pimento cheese, bread and butter, lettuce.

Desserts—Custards, rice pudding, wafers, cookies, jelly roll, ginger bread, stewed fruits, baked apples.

Fresh Fruits—Apples, peaches, ripe grapes, plums, oranges.

Miscellaneous—Nuts, simple candies, pop corn balls, peanut brittle.

Food Material Which Should be Omitted From the School Lunch: Pie, pickles, soggy biscuit, tough, overcooked beef, bananas, hard fried eggs, tea, coffee, highly seasoned foods, foods with strong flavors and odors.

The Supper—A nourishing, substantial breakfast, a fruit, or simple cake or sandwich at recess time, a well-balanced, ample school lunch, and a sandwich, cookie, or fruit after school is out, form a reasonable food allowance for the healthy young school child until supper. Most children play or work strenuously between the time school is out and supper time. They are hungry for supper, as they are for any other meal in the day. While they should have enough food to satisfy their normal hunger, the food in the evening meal should be very simple and easily digested. Remember that their bed time is not far away, and no unusual activity will take care of an excess of heavy food in their stomach at night.

Simple foods such as those suggested in the types below should be prepared and served to the child of early school age for the evening meal:

No. 1—Cream soups, baked Irish potato, bread, butter, milk.

No. 2—Creamed chicken, butter and bread, prune whip, milk.

After reading these suggestions, relative to the feeding of young children, does the mother feel that she has neither the time nor energy for such careful consideration of her child's food problem as seems necessary? If her son's physical well-being, his mental development, sometimes his very life are to a large extent dependent upon the amount, variety, and preparation of his food, and if motherhood is her supreme task, then surely she must feel that the study of food in relation to her child's welfare is worthy of her best thought and effort.

PROGRAM 11—PRINCIPLES OF WISE EATING.

Literature:

Farmers' Bulletin 808, "How to Select Foods," 1. "What the Body Needs."

Farmers' Bulletin 824, "How to Select Foods," III. "Foods Rich in Protein."

Farmers' Bulletin 1228, "A Week's Food for an Average Family."

Farmers' Bulletin 1313, "Good Proportion in the Diet."

1. Roll Call—A menu that meets all requirements for an adequate meal.
2. Routine Business.
3. Report on Salads.
4. What the Day's Food Should Provide, F. B. 808; F. B. 1228. Principles of Wise Eating. F. B. 1313, Good Proportion in the Diet.

5. How Much Should We Eat? F. B. 808; F. B. 1228.
6. Grouping Foods to Show Their Uses, F. B. 808; F. B. 1228.
7. General Discussion: How Shall We Overcome Food Prejudices in Children?
8. Assignment for next lesson.

Principles of Wise Eating.

The woman who has thoughtfully considered the lessons and discussions in this bulletin must realize that there is much to learn about food. Without doubt if she has given the subject any study she has gained some knowledge which will be helpful to her in her daily work with food materials. Looking back over the lessons preceding the one now under consideration she will find that the following subjects have been considered: Why is it worth while to study food? What food is; the relation which each has to the welfare of the human body; the preparation of the different kinds of foods; and something of their combinations in meals.

It will be well at this time to summarize briefly the principles which have been deduced from the study of the lessons in this bulletin.

First, then, the human body is made up of different chemical substances. In order to grow, to develop, to keep in repair, and to function properly it must be constantly supplied with the different kinds of foods which contain these same substances.

The fact must be emphasized again and again that the body can not continue to do its best work with a one-sided diet, whether that consists largely of bread and meat or of "sweets." It has been found also that some foods contain elements known as "life givers" or "vitamines," which are absolutely essential to physical well being. These are found in whole milk or butter, in fresh fruits and vegetables—tomatoes may be mentioned particularly—and cereals not too finely milled. If we live to a great extent on canned products or on highly concentrated or refined foods, we shall fail to have these elements in sufficient quantities. In many cases a man or woman has for years lived on a concentrated or a one-sided diet in apparent good health and then in maturity or old age has developed a disease which may be directly traceable to the inadequate diet. In the second place, we have learned that cooking, or the application of heat to foods, has a most direct relationship to their digestibility or their usefulness in the body. Materials eaten are not food in the true sense unless they are so prepared that the body can use them to the best advantage. Many thinking women who are considered excellent cooks by friends and family, if honest with themselves, will find their cooking will not stand the test of high standards and will realize there is room for great improvement in their preparation of food for the family.

We have learned also that the human machine should be fed regularly with plenty of wholesome food. However, it is easy for the body to be over-fed, which condition is just as bad as undernourishment. And again we are more likely to over feed the body, thus clogging the machinery, when our diet is not balanced, for we eat too much in our effort to satisfy with one kind of food the need which our bodies feel for another kind. Then a person's diet is depending to some extent upon his occupation. A man engaged in hard, active, outdoor labor needs more and heavier food than one who leads an indoor life. The farmer or carpenter needs more than a clerk or bookkeeper. The same general rule applies to women, though on the whole men need more food than women.

We have learned also that children should not have the same quantities and kinds of foods as their elders. And finally since the mother has it in her power not only to build the foundation for her children's future health, but to train them in food habits which will last throughout life,

she must realize that the consideration of her children's diet in their infancy and early childhood is of more importance than any other phase of the food problem in her home.

PROGRAM 12—MEAL PLANNING AND TABLE SERVICE.

Literature:

Farmers' Bulletin 808, "How to Select Foods." "What the Body Needs."

Farmers' Bulletin 1228, "A Week's Food for an Average Family."

Farmers' Bulletin 1313, "Good Proportion in the Diet."

1. Roll Call—Do's and Dont's in Eating.

2. Business.

3. Some Economies in Meal Planning, Bul. p. 35.

4. Some Suggestions for Setting a Table.

Note—A properly set table may be demonstrated.

Suggestion: If enough interest is manifested in these lessons, it might be well to have some reviews in the form of general discussions.

Meal Planning.

The planning of meals is perhaps the biggest problem which the housewife has in the management of her home. "What shall I have for dinner today?" is a question which gives her no little concern, and all too frequently the decision is left until the last minute, with a "hit or miss," unbalanced, poorly prepared meal as a result.

It is understood that three meals a day form the basis for meal planning. Whether or not the dinner or main meal should come at noon or in the evening is a matter to be determined by the needs of the individual family and to some extent by the community life.

In the planning of meals, the food principles already discussed should be followed. For dinner or supper a meat or meat substitute is the principal dish. Two vegetables, one nutritious and starchy, the other a milder, green vegetable should be included in one meal for the day. It is better to serve one of them in the form of a salad. The fuel, mineral, and general, regulating value of salad is not sufficiently appreciated by most housewives. Then, too, it offers more possibility for variety than any other dish. Foods which have roughage of texture such as cabbage, apples, beans, and cereals with a part of the husk are needed in the meals. They furnish bulk which helps the outward movement of foods in the intestines.

The serving of soup first, either in the dinner or supper menu, is wise. Digestion is stimulated by the eating of hot soup before the other dishes. For lunch or dinner, a cream soup with its many possibilities for variation is good. For supper a meat or chicken soup, called clear soup, may be served.

Since the dessert comes last, the kind is dependent on the food value of the rest of the menu. If there has been little protein and the salad and vegetables have been light green foods, the dessert should be heavier and more nutritious, for example, a custard which contains two protein foods, milk and eggs. If a roast has been served with a rich gravy, supplemented by a salad of potatoes, eggs, or cottage cheese, the dessert should be light, perhaps only a little fruit. Study the food chart, outlines, and suggestions given in this bulletin and follow this principle of balancing the meals. Successful meal planning, after all, is largely a matter of understanding food values and so proportioning the food material in the menu that a balanced meal results. Each meal should be simple, well cooked, and abundant.

In planning the food content of the meal, then, the housekeeper should provide the following:

A limited amount of meats or meat substitutes (Protein).

A larger amount of starches—potatoes and breads or other cereal foods (Carbohydrates).

A moderate amount of butter, animal and vegetable fat. (Fats).

Plenty of vegetables and fresh or dried fruits. (Minerals).

The outline given below, if followed will make the homemaker feel reasonably sure of having provided the proper amount and kind of food for her family.

Breakfast Plan—(1) Fruit in some form. (2) Cereal. (3) Some muscle building dish such as eggs, fish, or a small amount of meat. (4) Bread. (5) Hot drink.

Dinner Plan—(1) Light soup, if desired. (2) Meat or meat substitutes. (3) Starchy vegetable or cereal. (4) Green or leafy vegetable or salad. (5) Dessert. (6) Beverage.

Supper Plan—(1) A hot dish, such as meat or a hot meat substitute such as macaroni and cheese, or cheese souffle. (2) Creamed vegetable. (3) Dessert—fruit preferred.

To reduce these suggestions to a more specific form, the following menus are given as types:

Breakfast.

No. 1

Cream of wheat with fruit
Buttered toast
Poached eggs
Cocoa

No. 2.

Oatmeal and raisins
Graham muffins
Crisp bacon
Marmalade or preserves

Dinner.

No. 1.

Swiss steak
Mashed potatoes
Pear salad (canned pears may be used)
Prune whip

No. 2

Cream soup
Baked salmon loaf
Rice
Fruit salad

Lunch or Supper.

No. 1.

Macaroni with cheese
Tomato salad (canned tomatoes may be used)
Hot biscuit

No. 2.

Boston baked beans
Vegetable salad
Corn muffins
Apple butter

Thus far in connection with meal planning, we have considered only the content or food materials in the menu. But the thoughtful housewife must consider also economy of money and time. It is by no means the most expensive meal which is always the most wholesome. The last minute meal with perhaps canned goods for the foundation costs more than one that is carefully planned. By thinking ahead the housewife can prepare fresh dishes that are both more wholesome and inexpensive than those hastily thrown together, and she can also utilize left-overs to better advantage. Sometimes Monday is "blue" for a family because the "scraps" from Sunday's dinner must be eaten. These "scraps" should not be thrown away. But a few minutes of thoughtful planning on the part of the housewife often will enable her to make some left overs more de-

licious than the original dish. Or perhaps by a little thought, she may see that she can just as easily wait until the following day to use the leftovers and prepare something new for Monday. Indeed, it is far better at the beginning of the week to plan the meals, as well as other household affairs, for the entire week. Such a schedule must necessarily be more or less elastic, subject to alternations and adjustments. By thus planning, one can have not only better balanced and more appetizing meals but at the same time, she can have less expensive ones, often reducing the grocery bill to a surprising extent.

Nor is there saving in money alone. By planning she will save her own time and strength. In the first place, she thus eliminates that uncertain feeling of "what shall I have for dinner?" which is a constant source of mental discomfort. And by thinking and ordering or buying ahead she keeps a well stocked pantry.

Then, too, it takes less time to prepare a well thought-out meal than one that is not planned. Furthermore, she derives more pleasure from systematic work than from scattered efforts. Altogether, wise planning will mean more to a woman than she can possibly realize until she has given it a trial. If she has not been accustomed to doing systematic planning, she will perhaps find it difficult at first, but by persistent effort she can eventually train herself to such a method and thus save money, time, and strength, and at the same time make the work and the life of her home more pleasant and attractive to herself and to the other members of the household.

Occasionally, it might be well for the housewife to test her meals and herself by asking these questions:

1. Does this meal contain a sufficient amount of protein? fat? carbohydrates?
2. Does it contain one or two green vegetables? fresh or dried fruit?
3. Is there a pleasing variety?
4. Is it as well cooked as it might be?
5. Has it been prepared at a minimum cost of money, time, and strength.
6. Finally, is it served as attractively as possible?

Table Service.

The simplest meal may be greatly improved by being attractively served. And when once the housewife has formed the habit of thinking at mealtime about the appearance of the table and the serving of each dish, she will find it requires no more of her time and energy to serve the meal in a pleasing way than it does to be careless or indifferent.

In the preparation to serve a meal, the first consideration is the table cover. The kind of cover used is to a large extent determined by circumstances and by individual preference. If the table has a smooth top, doilies or table runners, made of strips of crash or Japanese toweling, may be used. When a large table cloth is used, it will keep clean longer if a heavy cloth is placed under it. This is called a silence cloth, and a clean cotton blanket or some other thick cloth can be used for this purpose. Regardless of the kind of covering that is used for the table, it should be clean.

In placing the table cloth on the table, have the center fold in the center of the table. The cloth should hang evenly at both sides and ends of the table.

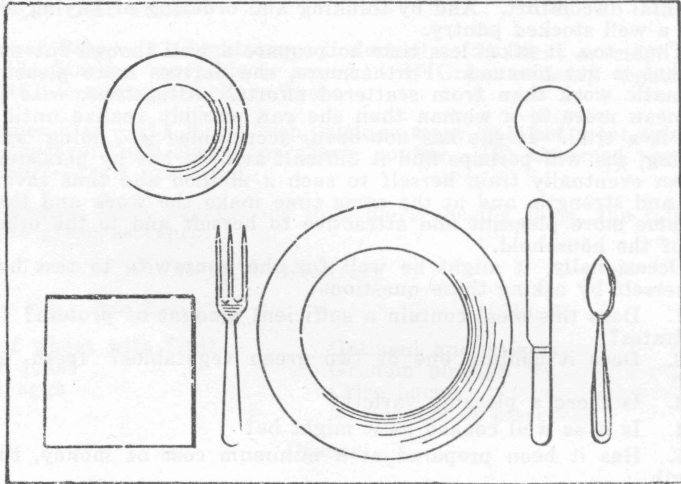
The appearance of the table is improved if a low bowl of flowers or fruit or a growing plant is placed in the center.

In setting the table see that all dishes are clean and that the glasses, knives, and forks are polished and bright. The silver and china arranged for each individual are known as the cover. Covers should be laid about

twenty inches apart, and one inch from the edge of the table. The plate is the center of the cover, knives are placed at the right of the plate, the cutting edge toward the plate, spoons should be placed at the right of the knife, and forks should be placed at the left of the plate. The napkin should be at the left of the fork, or in the center of the cover, if a plate is not used. The glass stands at the tip of the knife, and if a bread and butter plate is used, it should be placed above the fork.

Salt and pepper shakers should be in reach of each person. Only dishes and food to be used during the meal should be on the table.

DIAGRAM.



Serving.

Spoons or other silver should be placed by the dish in which they are to be used. After the table is set, chairs should be placed so that the seat of the chair comes only to the edge of the table cloth.

In serving food, some member of the family should be responsible for pouring water and other beverages, bringing hot food from the kitchen, cleaning the table for dessert and bringing it in, if it is to be served as a separate course. If first one and then the other leaves the table during the meal to replenish food or attend to things in the kitchen, it interferes with conversation and causes members of the family and guests, if any are present, to feel that they are causing extra trouble; therefore, the housewife or the one responsible for serving the meal should be sure that everything is either on the table or in readiness before the meal is announced, and then she should leave the table only to bring in hot food or serve another course. It should be kept in mind that much of the enjoyment of a meal depends upon the temperature at which the food is served, and special attention should be given to serving hot food piping hot and cold food cold.

As soon as children are old enough to come to the table they should be taught how to conduct themselves properly, for if bad habits of behavior at the table are formed in childhood, they are difficult to overcome in later life. Children should certainly be trained to remember the following simple courtesies of every day life:

1. Be on time for meals.

2. Remain standing until elders are seated; sit straight in their chairs.
3. Keep elbows at side rather than rest them on the table.
4. Use knife for cutting food and not for conveying it to the mouth. It should be placed across the plate when not in use for this purpose.
5. Use the fork for conveying food to the mouth.
6. Use a spoon only for eating liquids and soft foods and for stirring beverages.
7. Remove spoon from cup or glass and lay in saucer, before drinking beverages.
8. Place knife and fork together on plate when passing it for a second helping.
9. Take small bites.
10. Chew food with mouth closed.
11. Eat slowly.
12. Do not talk when the mouth is full.
13. Eat soup from the side of spoon.
14. Eat crackers with soup instead of crumbling them in it.
15. When the meal is finished, place the knife and fork side by side on the plate.
16. Remain seated until every one has finished eating.

Then to be a material success, a meal must consist of food that is well selected, well cooked, and simply and attractively served. But it should be said that it may have all these material qualities and yet be largely a failure because some member of the family is late, the children are ill behaved, or the mother and father are too tired to enjoy it. Meal-time should be a time when the petty cares of the day are forgotten as far as possible. It should be the occasion for real conversation in which each one of the family has a proportionate share. And if all the members of a united family gather at the table, if personal grievances and business worries are temporarily forgotten, if there is a happy give and take in conversation—jokes and laughter—and good humor, each meal, no matter how simple the food or humble the service, may be a crowning event in the family's daily life.