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MANUAL

OF

MILITARY COOKING

1916



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1916

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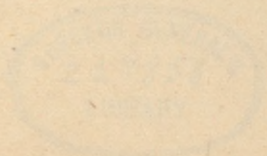
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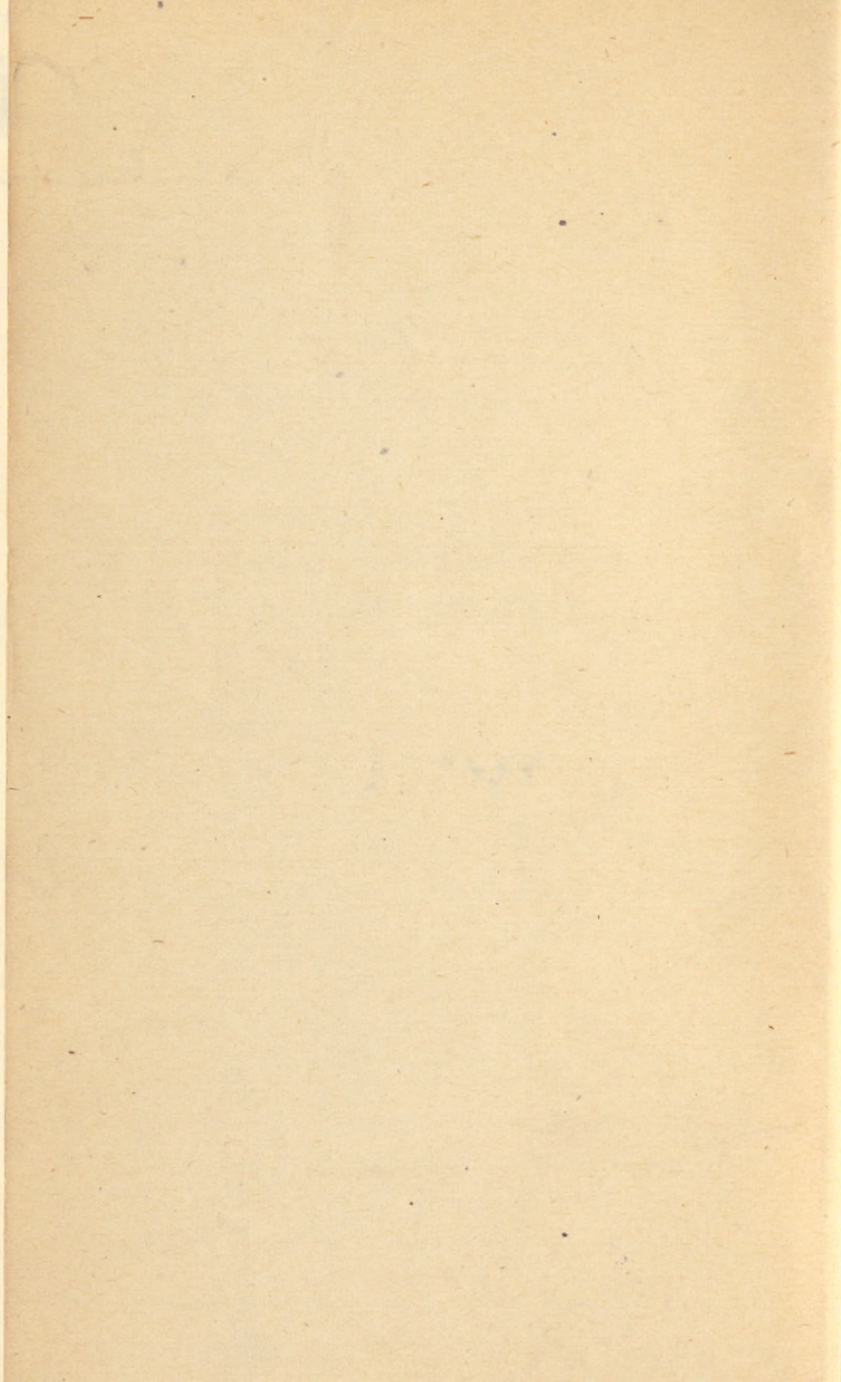
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MANUAL
OF
MILITARY COOKING
1916



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Annex

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SECTION 1.

CONTENTS.

	PAGE.
Duties of the Company Commander.....	3
“ Captain of the week.....	3
“ Orderly Officer.....	3
“ Quartermaster.....	4
“ Regimental quartermaster-sergeant.....	4
“ Company Sergeant-major.....	4
“ Company Quartermaster-sergeant.....	4
“ Battalion Orderly-sergeant.....	4
“ Orderly-corporal.....	5
“ Orderly-man.....	5
“ Sergeant cooks.....	6
“ Orderly cook.....	7
“ Regimental cooks.....	7
“ Regimental butcher.....	8
“ Storemen in regimental ration store.....	8
Daily Orderly-man roll.....	9
Weekly duty roster for cooks.....	10

THE COMPANY COMMANDER.

The Company Commander, before signing the company diet sheet should satisfy himself that the diet is good and varied, and if messing money is stopped from the men, all articles purchased should be shown on the diet sheet. The messing accounts should be presented to the Company Commander for examination and signature daily.

THE CAPTAIN OF THE WEEK.

The captain of the week should visit the messes at the midday meal.

THE ORDERLY OFFICER.

The Orderly Officer will visit the messes, accompanied by the battalion orderly-sergeant, at all meal hours.

He will be present when rations are issued and inspect them previous to issue, to see that they are of the proper quality,

He will make an inspection of the regimental kitchen daily, and ask for the diet sheet, and compare the dinners with the description shown.

Note the general appearance of the food, cooks and kitchens. See that no articles of clothing, other than absolutely necessary are kept in the kitchen. He should see that the following notices are posted in the kitchen:—

No smoking is allowed.

Cooks or others are not to have their meals in the kitchen.

No person is allowed in the kitchen unless on duty.

Cooks are not to make tea or coffee for themselves before the issue to the troops.

Utensils are only to be used for the purpose for which issued.

If cleanliness is not found, favourable results cannot be expected.

Should* the orderly-officer receive a complaint relative to messing, an investigation should be held immediately, in the presence of all concerned, with a view to fixing the responsibility. Officers inspecting, on receiving complaints, will send at once for the sergeant-cook, and not deal with the company cooks, except in the presence of the sergeant-cook.

All complaints, after investigation, if found to be frivolous, should be severely dealt with.

If meals do not compare with the diet sheet, a report should be made to the C. O.

THE QUARTERMASTER.

He is responsible that no exchange of rations take place only under his orders, and with the Army Service Corps. He is responsible that rations received, and not used for the purpose for which they are received, are returned to the A.S.C. He should receive a receipt, acknowledging their return. He is responsible for the rendering, at the proper time, to the A.S.C. of the ration indent also that the indent agrees with the diet sheet. He is responsible for the refuse and dripping account. He should see that all monies received for their sale are credited to the regimental funds. The Q.M. should see that he receives from the sergeant-cook the Diet Sheets for the Battalion, so that he may be able to indent for the article required for varying the mens messing. He should see that sufficient utensils are provided for the proper system of messing. The Q.M. should make frequent inspections, at uncertain hours, of the regimental kitchen, to see that everything is being carried out in a proper manner.

DUTIES OF THE REGIMENTAL QUARTERMASTER SERGEANT.

He should be present at the issue of all rations, and supervise the issue under the direction of the Quartermaster. He is responsible for the cleanliness of the meat and grocery stores. He should be careful to report to the Quartermaster at the earliest possible moment any irregularities that may occur in these departments, with a view to having them investigated. He should check the ration indents with the diet sheet pointing out to the Quartermaster any errors. He should be present when the rations are delivered by the Army Service Corps, to see that he gets the proper quantity.

DUTIES OF THE COMPANY SERGEANT MAJOR.

He is responsible that the C.Q.M.S. is kept informed of any alterations or casualties that may occur affecting the rations.

DUTIES OF THE COMPANY QUARTERMASTER SERGEANT.

He will submit to the Quartermaster a ration indent conforming to the diet sheet. He will be present with the orderlies of his company at the issue of the rations, and will satisfy himself that they are the correct amount indented for his company. He will then see that they are handed over to the sergeant-cook.

DUTIES OF THE BATTALION ORDERLY-SERGEANT RELATIVE TO MESSING.

The Battalion Orderly Sergeant should parade the orderly corporal and orderly men of each company in clean fatigue dress at meal hours, and should march them to the regimental kitchen. He will report to the sergeant-cook, "all present" the sergeant-cook will then call them in by companies, and see

that they get their proper messing. The B.O.S. will parade the C.Q.M.S. the orderly-corporal, and orderly-men at any hour the ration call may sound and march them to the place where rations are issued. He will report to the Quartermaster. He will also visit the barracks rooms or tents at meal hour on the second call being sounded, either by himself, or in company with the orderly officer, to ascertain if there are any complaints. The orderly-corporal will assist the Battalion Orderly-Sergeant in all the above duties.

DUTIES OF THE ORDERLY CORPORAL RELATIVE TO MESSING.

It is the duty of the orderly corporal to parade himself and the orderlies of his company in clean fatigue dress at breakfast, dinner, and supper hour, when taking the meals from the regimental kitchen. He will see that the orderly men only get the meals for their own mess. He is responsible that all meals for guards and prisoners are made out in the mess and taken to the guard room. If his battalion is providing other guards, he is responsible that they receive their proper rations. He is to see that the meals for men absent on other duties at the meal hour are taken to the regimental kitchen and kept hot. If the numbers are too great for this, the sergeant-cook should make other arrangements.

He is responsible for the orderly men at any hour the ration call may sound.

He must see that the rations are taken to the kitchen and handed over to the company cook.

He will see that the ration indent signed and initialed by the C.S.M. and the C.Q.M.S. is rendered to the Q.M. at the proper hour.

DUTIES OF THE ORDERLY-MAN.

He comes on duty at reveille and prepares the tables for breakfast. The plates and mugs are laid out, and then he divides the bread and butter so that each man gets an equal share. When the first call sounds for breakfast, the orderly men parade in clean fatigue dress, and are marched to the regimental kitchen by the battalion orderly-sergeant and corporal. The sergeant-cook then issues the food provided for the meal to the orderly-men of the various companies. The orderly-men will take the food to their mess and will divide it equally between the men. The N.C.O. in charge of each mess should be present to see that this is done. On the visit of the orderly-officer or the battalion orderly-sergeant to ascertain if there are any complaints, the orderly-man of each mess will stand to attention and answer Yes or No, Sir, as the case may be. After breakfast is over, the orderly-men will collect any food that is left over, which may be of use, and return it to the company cook, or put in a place previously arranged for; the refuse being carefully gathered up and placed in the garbage tin. They will get hot water from the regimental kitchen for the washing of dishes and scrubbing of tables, etc. All dishes borrowed from the kitchen, will be returned properly cleaned. The N.C.O. in charge will see that the other men peel potatoes and assist in the general cleaning up. The tables should be scrubbed after every meal. The orderly man is responsible for washing the potatoes and vegetables, and will take them to the company cook. After the cleaning up is finished, the orderly-man will put the plates on the table in a uniform manner, with the plates and mugs upside down. The knives, forks and spoons being retained by the men. When the ration call sounds, the orderly-men will parade in clean fatigue dress, and be marched to the place where rations are issued. On receipt of their rations they will hand them over to the sergeant-cook. After this duty is performed the orderly-men is responsible that everything is kept tidy in his mess. The assistant orderly man is available for morning and afternoon parades.

The same routine is followed through dinner and supper, with the exception that after supper all utensils are put in some place provided for them; the tables being kept clear for the night. The orderly-man and his assistant are

held responsible that all bedding, equipment, rifles, kits and utensils belonging to the men of his mess are not tampered with by unauthorized persons. This means that one or the other must always be present in the mess or tents.

THE DUTIES OF SERGEANT-COOK.

The Sergeant-cook should have charge of the cooks and kitchen of his battalion. The cooks should receive their orders from him. The work of the kitchen should be divided amongst the cooks who will be detailed weekly, so that each man knows what he has to do, in addition to the work of cooking for his company.

He will afford every facility for varying the diet of the different messes, so that each company may have a complete daily change throughout the week. He will be personally responsible that no misappropriation takes place. Rations should be received by the sergeant-cook, who will satisfy himself that the various articles received are correct, and that they agree with the diet sheet.

He will issue the various articles to the company-cook, and will see that the full quantity issued is actually used.

That the meals are prepared and cooked as laid down on the diet sheet for his guidance.

The rations when received, should be locked up in a cupboard, and the key retained by the sergeant-cook.

He will return all surplus rations to the Quartermaster's store daily.

He will prepare the diet sheet to the best of his ability, so as to give the greatest possible variety.

The sergeant-cook will arrange that the half battalion having a roast one day, should have stew the next, and so on, (see specimen diet sheets at end of book.) The diet sheet should be completed and signed on the Friday of the week previous to which it is required. When giving instructions to the cooks under him, he should demonstrate to them by making any particular dish, and giving full details during the preparation. When the dish is being prepared again, he will see that his previous instructions are carried out. Patience and tact are required, especially when training young soldiers for the duties of cook. When assistant cooks are allowed, they should be trained under the supervision of the sergeant-cook with a view to replacing the cooks when required. The meat when issued to the cooks will be placed in the dish belonging to the particular mess for which it is intended, care being taken to mark the dish with the number of the mess.

He is responsible that the cooks are clean and tidy in their appearance, at all times. He will see that the meals are ready to be served at the proper hours. He should not have any dealings with contractors for the exchange of rations.

The sergeant-cook is responsible that the following regulations are carried out:—

No smoking is permitted in the kitchen.

Cooks or others are not to have their meals in the kitchen.

No persons allowed in the kitchen unless on duty.

Cooks are not to make tea or coffee for themselves before the issue to the troops.

Utensils are only to be used for the purpose for which issued.

Cooks should not sleep in the kitchen.

The sergeant cook will see that all dinners are in place, ready to issue, by the time the first call sounds, giving all turn about daily in getting their dinners issued. When all dinners are issued, the cooks should go to dinner, returning to the kitchen in time to supply the orderly-men with hot water, and to receive from them any dishes that belong to the kitchen, being careful to see that they are returned clean. The cooks are responsible for the cleanliness of the apparatus they are working on, also company cupboards, if in use. Everything is then tidied up, and left in order, for the preparation and serving of the supper. The cooks, with the exception of the orderly-cooks, should then be relieved from duty for the afternoon. After supper the kitchen should be cleaned up for the night, all stoves must be cleaned out, all ashes emptied, boilers filled,

and fires laid for the morning. The days work is not finished "until" everything is ready for the resumption of work the next day.

Each cook should be supplied with at least four suits of suitable clothing for kitchen work. The cost of washing should be paid from the regimental funds.

Cooks, and all men handling food, should be careful that their hands are always clean, and that their finger nails are kept closely trimmed and clean.

NOTES ON THE SELECTION OF A MAN FOR THE DUTIES OF SERGEANT-COOK.

The duties of a sergeant-cook are many and varied. It is therefore necessary that the N.C.O. selected by the commanding officer to attend a course of instruction in cooking should be possessed of the following qualifications: Cleanliness, sober habits, punctuality, a knowledge of his duties as N.C.O. and a fair education. An N.C.O. on joining for a course of instruction, should thoroughly understand his position. He should know that to be proficient in his own duties, he should know the duties of the cooks working under him. To do this, it is necessary that he perform the actual work of a company cook, which consists, in not only cooking the food of his company, but in the general cleaning up of the kitchen in which he works. The Manual of Military Cooking states that the sergeant-cook shall have complete control over the cooks of the battalion and shall see that the work of the kitchen is divided between them, in addition to cooking for their companies. A sergeant-cook can have but a poor idea of this, if he has not performed the work himself.

THE ORDERLY-COOK.

It is essential that a sergeant-cook, to ensure the proper working of his cooks, should have a system of detailing them for their various duties. To do this, in a proper manner, he must post up in a prominent place a roster of his men (a specimen will be found in this book.) The first man on the roll to be taken as orderly-cook, the second man as assistant. The assistant becoming the orderly-cook of the following week, and so on. This duty is in addition to cooking for their company. The duties of the orderly-cook and assistant, are as follows: They should be present in the regimental kitchen immediately after the rouse sounding. Their first care is the fires, which should be lighted or if kept burning all night should be cleaned, and made up. Their next duty should be to get the water boiling for tea or coffee for breakfast. By this time, the remainder of the cooks have arrived in the kitchen. The orderly cooks should then go away to make up their beds, tidy their quarters, wash, and return to the kitchen. After dinner, when all work in the kitchen is done, the orderly cooks and assistants take their turns in looking after the fires, etc.

Either the orderly-cook or his assistant should be present throughout the day. On leaving at night, they should be careful to see that there is no danger from fire, if fires are left banked. If fires are not banked, they should be laid ready for lighting in the morning. He will leave no lights burning, lock up and retain the key. If he goes out, he should leave the key with the commander of the guard. The orderly-cook is responsible for all the utensils in the kitchen.

REGIMENTAL COOKS.

Good men whose habits are known should be selected for cooks. They should be clean soldiers, adaptable, honest, sober and conscientious. Men who have lately suffered from any contagious disease should not be employed in the kitchen. It is not wise to put a man in the kitchen who is useless on parade. The section commander is the best man to pick out a soldier for this work.

A cook's duties commence half an hour after the "rouse" sounding. After making his bed, washing himself, and leaving his quarters tidy, he will

report for duty. His first care is to see that he has all utensils required for his company's breakfast. He will make the coffee, and cook the breakfast, so as to have everything ready by the time the first call sounds. All utensils should be marked so that there can be no mistake in the issuing of the food.

When all the food has been issued he will go to his own breakfast. After breakfast he will return to the kitchen. The cooks then get ready to receive the meat, and on receipt of it they will prepare the meat according to the diet sheet. They will place the meat in dishes, already marked with the number of the mess, dealing with one mess at a time if it has to be boned. The cook then places it in the oven and is responsible that it is cooked and ready to serve on the first call sounding. After the meat is placed in the oven, he assists the other cooks who are preparing pies or stews to prepare their dinner. When all dinners are prepared, they will start cleaning up, ascertaining from the roster if they have any particular duty. When everything is clean, and in order, the sergeant-cook should allow them alternatively to absent themselves for a time.

DUTIES OF THE REGIMENTAL BUTCHER.

His character and habits should be the same as the man selected for cook. He should be used to the cutting up of meat according to the Manual of Military Cooking. This method being found best for messing purposes. He should issue the meat according to the diet sheet, taking care to apportion the meat so that the best joints are provided for roasts. He should arrange his work so that he has everything ready for issue at the time appointed by the Q.M. who will allow the sergeant-cook ample time to get dinner ready. After the issue of meat, the butcher must see that he scrubs everything well with soap and soda. He cannot be too clean if he wants to keep flies away. The Q.M. should inspect the butchers shop daily to see that this is done. The butcher should have a reliable man as an assistant. The butcher and his assistant could also act as storeman for the issue of the grocery and vegetable ration. The sergeant-cook should not be employed as issuer of the groceries.

DUTY OF STOREMAN IN THE REGIMENTAL RATION STORE.

The storeman, when issuing groceries indented for, will compare the company indent with the diet sheet, pointing out any errors to the Q.M.

The store at all times should be kept clean and tidy.

NOTE.—It is only by being careful as to details that systems work smoothly. This should be borne in mind by every one connected with the soldiers messing.

BATTALION C.E.F.

Mess

No.

ORDERLY-MAN ROLL

Regimental No.	Name.	No. of Rifle.	No. of Equipment.	Dates when performed.	Remarks.
	<p>The names should be entered in alphabetical order.</p>				

Kingston,

19

No.

Mess

N.C.O.

Coy.

I/c.

Battn.

BATTALION C.E.F.

MONTH OF 19 . . .

DETAIL OF DUTIES FOR COOKS OF ABOVE BATTALION,

Company.	Regimental No.	Name.	DUTIES.																									
			Orderly-Cook.	Assistant Orderly-Cook.	Tables, forms, shelves.	Steelware and cupboards.	Baking dishes and Tinware.	Windows and Walls.	Kitchen generally.	Orderly-Cook.	Assistant Orderly-Cook.	Tables, forms, shelves.	Steelware and cupboards.	Baking dishes and Tinware.	Windows and Walls.	Kitchen Generally.												
"A"			1															1										
"A"				1												1						1						
"B"					1																							
"B"						1																						
"C"											1										1							
"C"																						1						
"D"																												
"D"																												
Base																												
" "																												

Kingston, 16 . . .

Sergeant-Cook.
Battalion.

NOTE:—The assistant Orderly Cook of this week, becomes the Orderly Cook of next week.

BATTALION C.E.F.—Continued.

MONTH OF

16

Company	Regimental No.	Name.	DUTIES.																Remarks.						
			Orderly Cook.	Assistant Orderly-Cook	Tables, forms, shelves.	Steelware and cupboards.	Baking dishes and Tinware.	Windows and Walls.	Kitchen generally.	Orderly Cook.	Assistant Orderly Cook.	Tables, forms shelves.	Steelware and cupboards.	Baking dishes and Tinware.	Windows and Walls.	Kitchen generally.									
"A"							1																
"A"							1																
"B"							1																
"C"																							
"C"																							
"D"																							
"D"																							
Base																							
Base																							

Kingston,

19

Sergt. Cook.

Battalion.

NOTE.—The assistant orderly cook of this week becomes the orderly cook of next week.

SECTION 2.

CONTENTS.

	PAGE.
Messing arrangements in camp.....	13
" on the march.....	13
Cooking in the field.....	14
" Mess tins.....	14
" Camp Kettles.....	14
The building and working of field apparatus.....	15
Fig. 1 Tripod.....	15
" 2 Crotch and stick.....	15
" 3 Kettle trench.....	15
" 4 Single clay trench.....	15
" 5 Mess tin trench.....	16
" 6 Double mess tin kitchen.....	16
" 7 Single mess tin kitchen.....	16
" 8 Fireplace with canned meat tin.....	16
" 9 Wall trench.....	17
" 10 Brick trench.....	17
" 11 Mud and stone trench.....	17
" 12 Barrel Oven.....	17
" 13 The Aldershot Oven Canadian Pattern.....	17
" 14 Improvised oven.....	18
Plan of a battalion kitchen in camp.....	68
Fig. 19 The Government Range.....	18
Method of erecting and working the government range.....	18

MESSING ARRANGEMENTS IN CAMP.

Messing arrangements in camp are practically the same as in barracks. The same routine is gone through by all concerned. A battalion in camp should be far better than one in barracks, as regards accommodation for cooking and dining. Four dining tents, one for each platoon, with two messes to a platoon, should be placed in the rear of each company. The regimental kitchen should be placed in the rear of the dining tents, about 30 or 40 feet away, and in the centre of the battalion. If the camp is permanent, it will be a good plan to enclose and cover the whole area, occupied by the kitchen, with rough scantling and boards. The kitchen if laid out properly, would cover a space of about 75 by 25 feet. This will give ample room for three stoves, one table and one cupboard per company including the base company. This plan has a decided advantage over the company kitchens. In the battalion kitchen the sergeant cook can carry out his duties, as they should be carried out. He can have complete control of the cooks of his battalion which is an impossibility under the old system of company kitchens. It is easier to keep things clean and in order. He is able to supervise the cooking, and the serving of the meals to the dining tents by messes. It is easier for the C.O., the Q.M., the Sanitary Officer and the Orderly officer to inspect one kitchen, than it is to inspect four or five. Unsanitary and careless methods, employed in cooking and serving food, are entirely done away with, if the system laid down for the messing of a battalion is adhered to. A plan of a battalion kitchen will be found in this manual.

A sergeant cook should not be employed as officer's mess cook or caterer, or sergeants mess cook, storeman, or on sanitary work outside his own kitchen.

MESSING ARRANGEMENTS ON THE MARCH.

The messing arrangements of a battalion on the march are supervised by the quartermaster, he should arrange for separate transport for everything connected with the soldiers food, the sergeant cook assisting him in this. Owing to the introduction of travelling kitchens, it is now possible for the sergeant cook, and the cooks, to travel with the battalion. The meals are cooked while on the march, and are ready for serving on arrival at the camping ground. One man per kitchen is sufficient to look after the fires; the remainder acting as escort to the water cart, and the transport carrying the rations and utensils. If the battalion has no field kitchen, camp kettles are generally used. This necessitates other arrangements being made. If the C.O. decides the men are to have their meals on arriving at the camping ground, it will be necessary for the sergeant cook to go forward with his cooks and transport three hours in advance; as, if the cooks travel with the battalion, the troops would not get their food until one and a half hours after their arrival. Which ever method is adopted, the sergeant cook is responsible that the meals are served at the time appointed. He should see that he has a good supply of water for preparing the meals, also that he has sufficient camp kettles (ten men to a kettle) and wood to cook with. He will detail his cooks to the various duties, such as chopping wood, washing potatoes and vegetables, cutting up meat, carrying water etc. A careful sergeant cook will always keep a supply of dry wood handy, and have a good man for lighting fires. After the meal he will divide the work of cleaning the kettles and packing them, collecting unused wood, burning or burying refuse, and reloading the transport. If this is done there will be no confusion, and every man will know what he has to do. The sergeant cook will then report to the quartermaster, when everything is clean, and ready to move.

COOKING IN THE FIELD.

MESS TINS.

In the field, every man should be able to prepare food for himself, and other soldiers, at any time. In view of this the battalion should be under the instruction of the sergeant cook at various times for the purpose of showing the men how this can be done.

COOKING IN MESS TINS.

The cook should bone the meat, cut it up into pieces of equal size, so that each man receives his fair share. It is then laid out on clean waterproof sheets with each man's vegetables. The companies then file past in double ranks each man receiving his ration of meat and vegetables in his mess tin from the cook. The man then prepares his own dinner by cutting up the meat into small pieces, peels and washes his vegetables, places them in the mess tin with the meat, and add seasoning, with sufficient water to cover. If flour is issued, a paste can be made with the addition of a little water, which can be mixed in the mess tin lid, and can be used as crust for his dinner, or be made into dumplings. The lid is placed on the mess tin, which is then rubbed over with a piece of fat. That is done to protect the tin from the fire, and allows the carbon formed on the outside to be easily rubbed off with a piece of rag or grass, when the dinner is cooked. The kitchen is then formed by placing the mess tins, as shown in figure 5, with the opening facing the direction of the wind. The fire is then made by placing small sticks (gathered in the vicinity of the kitchen) one on another and a light applied. One man is sufficient to look after the fires of each kitchen, and should frequently change the position of the mess tins, so that all the dinners are cooked at one time. One and a half hours after the fires are lighted, the dinners should be ready for serving, the men filing past and receiving their mess tins which should have their numbers plainly marked thereon. Care must be taken by the man

looking after the kitchen, that the dinners are not cooked too rapidly, otherwise the meat will be rendered tough and indigestible. If cooking with one or two mess tins, it can be done by using the method as shown in figures 6, 7 and 8

When cooking in mess tins, the ration of bread and butter should be issued by the Company Quartermaster Sergeant to the men before marching off.

Dinners for four men can be cooked in two mess tins if the meat is cooked in one tin, and the vegetables are cooked in the other. After the meal is over the mess tins should be thoroughly cleaned by the men inside and out, and inspected by the section commanders before being marched off.

The following dinners can be made in a mess tin; recipes for the same can be found under the heading of "Recipes."

Sea pie, meat pudding, Irish stew, plain stew, boiled meat, stew and dumplings, soup, stewed steak.

In laying out kitchens for cooking in mess tins they should be in line, facing the wind, four feet apart. A company mess tin kitchen should take up a frontage of about 120 feet. The other companies in rear in echelon. By using this method the companies are not annoyed with the smoke of the kitchens in the rear.

The distance between companies should not be more than seven paces.

COOKING IN CAMP KETTLES.

When cooking with camp kettles, the sergeant cook on learning the number of men per company in mess, will issue to each company cook, sufficient camp kettles to cook for his company, allowing one kettle to ten men. As these kettles are used for breakfast, dinner, and supper, it is absolutely necessary that they should be thoroughly cleansed after each meal. The company cook is held responsible that this is carried out. The kettles should be marked with the number of the mess to which they belong. In preparing the dinner the cook should deal with the meat in the following manner. His kettles with a little water in the bottom of each placed in a row close to the table where he is working. He then separates the meat from the bones, which are sawn into small pieces and placed in the bottom of the kettle. The meat is cut up small, and placed on top of the bones, the vegetables, pepper and salt are then added; barely covered with water and placed on the fire.

The method as shown in figs. 3, 4, 5, 10, 11 can be used. For a camp of three or four days, fig. number 3 should be used. If the camp is long, the method shown in figs. 3, 4, and 5 should be used. When cooking for small detachments, methods shown in figs. 1 and 2 can be used. If long sticks are not available, methods shown in figs. 6, 7, and 8 mess tin cooking can be used. After the evening meal the kettles must be filled with clean water, and placed so that no time is lost in the preparation of breakfast.

THE BUILDING AND WORKING OF FIELD APPARATUS.

Fig. No. 1 represents a simple device for use where the number of men does not exceed ten. It is easily constructed. Get three sticks of equal length, tie them together at one end, place the opposite ends on the ground, spread them out sufficiently to allow of a camp kettle to hang between them. Hang the kettle on a hook formed from a piece of wire, and attach to the top of the tripod. Or use a piece of stout string, light the fire underneath the kettle. If cooking a stew, bring contents to a boil, and then allow contents to simmer until done.

Fig. No. 2 is a similar arrangement to number one. To make it, get two forked sticks, drive them into the ground sufficient distance apart to allow three or four kettles to hang on a straight stick, which is put through the handles of the kettles, the ends of the sticks resting in the forks of the upright sticks; then proceed as in figure one.

Fig. No. 3. This is a kettle trench. It is the simplest and best way when time is limited, and the ground is hard, rocky, or sandy. The kettles are

placed in two rows ten inches apart, with the ends inwards. More kettles are then placed on the top of the others, as shown in sketch. Messes should be by kettles, with 15 kettles to a trench, two trenches to a company, allowing ten men to a kettle. The sergeant-cook will apportion the meat, vegetables and potatoes to the messes, which the cooks will cut up and place in the kettles. Lighting the fires will be done by a man who is used to the work. Small pieces of wood should first be lighted, then the fire fed with larger pieces. The contents of the kettles brought to a boil, and allowed to simmer. One man is sufficient to look after a trench, and care should be exercised by him that the dinners do not boil, dry, or burn. To avoid this, the position of the kettles should be frequently changed, and water added from time to time. The dinners ought to be ready for serving in one and a half hours from time of lighting the fires.

Fig. No. 4. This is a single clay trench and the tools required to construct it are: One pick, one spade, and eleven camp kettles. Pick out a spot with a gentle slope, if possible, for the trench and proceed as follows: Drive a peg into the ground to mark the center of the chimney, 13 feet below drive another peg. This marks the bottom center of the trench two feet below, drive another peg, marking the centre of the splay mouth, then two feet from this peg drive another, marking the outside edge of the transverse trench. These pegs must all be in line. The trench is now pegged out, and any number of trenches may be pegged out in this manner, on either side, by measuring off four feet from each peg, and parallel to it. Now proceed to mark out the trench with the spade, dig out the ground round the first peg, to a depth of six inches, then continue digging from the first peg, towards the second peg, gradually increasing the depth to eighteen inches at the mouth of the trench. The trench when finished is twelve feet long, and nine inches wide, and with a splay mouth, two feet by two feet, by eighteen inches deep and carried for eighteen inches up the trench, which forms the fire place. The traverse trench is four feet, by two feet, by two. The clay is now mixed for making the holes for the kettles. A rough chimney is built two feet high, where the first peg was driven. A sod of turf, a piece of hoop iron, or a piece of stick covered with clay is placed across the trench and close to the chimney, a kettle is placed next to the turf and a second turf is placed on the other side of the kettle with the clay, which should be fairly stiff, but easily workable, mould around the kettle, up to the lugs. Place another kettle on the trench and proceed in a similar manner, until you have eleven kettles in the trench, finishing over the fire place. Starting from the chimney, remove the kettles one at a time, and as they are removed, the hands should be dipped in water, and rubbed round the hole left by the kettle, making it smooth all round. The fire should now be lighted, the kettles cleaned out, filled with water, and placed back in the holes that have been prepared for them. Care should be taken in moving the kettles. They should be lifted straight out of the hole, and put back straight, not sideways. The holes will be damaged if this is not done. The trench will cook for half a company, and last a long time. It should be cleaned out occasionally, care being taken to keep the chimney clear. When the trench is dry, it should be whitewashed, which adds to its appearance. This trench is used when a battalion is camped for any length of time and no other apparatus is available. For economy in fuel, this is the best apparatus to build. The trench must always be built with the splay mouth facing the direction of the prevailing wind.

Figs. No. 5, 6 and 7. A full description of figs. 5, 6, and 7 will be found under the heading of Cooking in Mess Tins.

Fig. No. 8. CANNED MEAT TINS.—Tins or cans that have held preserved meat can be used as cooking pots. Care must be taken in opening a can that the top is not entirely removed leaving, about two inches. It may then be used as a lid. Another can then be cut open and emptied and the solder melted so that the bottom can be removed. The edges can be overlapped about an inch all round, which will allow space for the first one to rest upon. Cut away on each side of a portion of the side of the tin that soldered a piece about one inch wide and one inch and a half deep and overlap them in the form of a V. This will bind them together and form the flue.

In the front of the lower one, a piece about two by two inches should be cut away to form an opening for the fire. Feed the fire with any sprigs, cones or small wood that may be found near. These tins can be used for making tea or coffee, stews or any sort of meal that can be prepared in a camp kettle or mess tin. The bottom tin can be used as a fire place for a mess tin or camp kettle.

Fig. No. 9. WALL TRENCH.—If the ground is damp or marshy, a wall trench could be used. Cut sods of turf about eighteen inches long and nine inches wide, lay them in two rows six feet long, two feet six inches apart and two feet high, place the wood all over the bottom, between the walls. Light the fire, and place the kettles on the wood. When the contents of the kettles are brought to a boil, stout sticks should be passed through the handles of the kettles, having two on a stick. The ends of the sticks resting on the wall. This will lift the kettles off the fire and they may now simmer until done. This trench should be built sideways to the wind. If this is not done the heat is lost by being carried through the trench. The walls can be strengthened by getting six stakes, three feet long, sharp at one end, and driving them through the wall into the ground, an equal distance apart. This trench will hold twelve large kettles, sufficient to cook for 120 men.

Fig. No. 10. BRICK TRENCH.—If bricks are available, a trench may be made facing the wind as per sketch, by placing two layers of bricks lengthways, one on top of the other, in two rows, ten inches apart, bridging the joints of the bottom row with the top row. The fire is lighted in the usual way. The kettles placed on the trench as close together as possible. To ensure a uniform heat, pieces of wood cut small must be placed in the spaces between the kettles.

Fig. No. 11. MUD AND STONE TRENCH.—Procure some stones of fair size and place them in two rows eleven inches apart. Face them up with mud or clay and light the fire. Place kettles on trench which should be about eight inches deep. Then proceed as in fig. 19.

Fig. No. 12. BARREL OVEN.—If a good sized barrel can be obtained it can be used as an oven. Hollow out the ground to fit the bulge of the barrel. Then lay the barrel in the hollow, cover over with clay or mud that has been previously mixed well with chopped grass, hay or straw and water to a depth of eight or ten inches, well beaten down. Light the fire and when the wood of the barrel is burned away the hoops will support the top and sides. When the oven is sufficiently heated, the embers should be raked out, or leveled and the meat, or bread etc. placed therein. Cover the lid of the barrel with clay and place in front as a door, make secure with a piece of wood then pack all round with clay, care being taken to see that all crevices are closed up, to prevent the escape of heat.

Fig. No. 13. THE ALDERSHOT OVEN, CANADIAN.—The Canadian Aldershot oven consists of two arches, two doors, and four bolts. The length of the two sections, when fitted up is about 5 ft. 1 inch, and the width 3 ft. 6 inches. It will cook for about 250 men.

ERECTING THE OVEN.—Select a gentle slope on clay soil if possible avoiding sandy or marshy ground. The mouth of the oven should face the way of the prevailing wind. The place where the oven is to be built, must be cleared, and levelled. Sods must be cut for the building of the sides, back and front of the oven. In placing the two sections of the oven together the back should overlap the front and then be bolted together. The back of the oven is then placed in position and wedged in place. The sods are built around the sides front and back and pegged together with sharpened pieces of wood or sticks. A trench is then dug in the front, 18 inches deep. Two feet wide, and 6 foot long, for the cook to work in, leaving a space of twelve inches between the edge of the trench and the oven. The clay or soil from the trench should be mixed with water adding straw or grass, to assist in binding it. It is then thrown on top of the oven to a depth of at least 10 inches, beating it well down. The roof should be built with a slight slope to carry off the rain.

DIRECTIONS FOR WORKING.—The wood should be placed in the oven over night, ready for lighting in the morning. By doing this the wood is kept

dry. When the oven is heated, rake out some of the embers, scattering the remainder evenly about the floor. The meat may be put in immediately after the fire is drawn. If using the oven for the baking of bread, the dough should not be put in until 20 minutes after the fire is drawn.— Otherwise the top heat will become so intense that the bread will burn on top.

When the dinners are put in, put up the door, wedging it tightly with a piece of wood long enough to reach from the door to the outer edge of the trench. Fill up crevices with wet clay to prevent the heat or steam escaping. If this is done, steam will form the necessary moisture and the dinners will not be burned. When the top of the oven sinks lower than 14 inches, it should be taken to pieces beaten to former shape, and rebuilt.

FUEL AND TIME REQUIRED.—First day 300 lbs. of wood for four hours. Second and subsequent days, 150 lbs. of wood for 2½ hours.

Fig. No. 14. IMPROVISED OVENS.—An improvised oven can be made with a biscuit tin, or any other tin, providing that it is a large enough and does not leak.

METHOD.—A fire place is first dug in the side of a trench. A piece of perforated tin or iron, a few pieces of hoop iron, or old gas pipes can be used to form a grate. The biscuit tin is then placed on the fire place, and the walls of turf, brick or sticks, covered with clay well worked, are built, taking care to see that the flues are left clear. The walls should be of sufficient height to leave a clearance of two or three inches on top of the oven. The top is then put on, being made of pieces of stick or wood, pieces of tin iron, or turf, well covered with clay.

A hole is left near the front for a chimney, which can be a piece of drain pipe or a piece of tin bent in the shape of a stove pipe. After the oven is hot the dish to be cooked can be placed in the oven. A damper can be made by placing a piece of tin in front of the fire, and adjusting it so that either raising or lowering it, will control the amount of air admitted to the fire.

The lid of the tin will act as a door for the oven.

These ovens will give good satisfaction if the fire is properly regulated.

Fig. No. 19. THE GOVERNMENT RANGE.—The proper method of erecting and working the range issued by the Government for use in camp.

The ground should be levelled and the stove placed thereon, it must not be raised on bricks, stones, etc. It is not necessary to dig holes under the firebox to create a draft. The stove can be banked about 3 inches high round the bottom with earth. In fixing the chimney the pipes must be placed one over the other, and not telescoped from the inside. The stove must be thoroughly cleaned at least once a week. When cleaning it must be turned upside down, and all the soot, ashes, etc., removed. The fire should be carefully attended to, only a moderate fire being necessary. If a large fierce fire be made, it will burn what is in the oven, instead of baking it; also unnecessarily wasting fuel. The boilers issued with the stove must not be used for trench fires or any other purpose, than cooking. By placing the stove on the ground, in a level manner, and banking a little earth round it, it excludes the various currents of air that find their way underneath the walls of the stove, and concentrates them in one certain direction, namely, the firebox. By this method alone can the stove be properly operated, and the fuel economized.

It is not wise to take off the top of the stove to boil pots. If the tops are taken off, the pots get black, and the stove does not draw properly. When the midday meal is served, the range can be worked with the dampers so that with very little fuel it will keep the boilers boiling for the evening meal, with very little attention.

SECTION 3.

CONTENTS.

	PAGE.
The Diet Sheet.....	19
The preparation of the diet sheet.....	20
The government ration.....	20
Issue of meat.....	20
Cutting of meat, beef and mutton.....	20
Boning of meat.....	21
Keeping meat sweet.....	21
Stock pot.....	21
Dripping.....	22
Fuel, wood and coal.....	22
Coke.....	22
Charcoal.....	22
Turf or peat.....	23
Sanitation.....	23
Care of equipment.....	23
Kitchen floors in camp.....	23
Garbage cans.....	23
Cleaning utensils in camp.....	24
Ptomaines.....	24
Copper utensils.....	24
Cleaning utensils in barracks.....	25
Quartermaster's daily dripping return.....	26, 27
" monthly dripping return and monthly balance sheet..	28
Specimen copy weekly diet sheet.....	29

THE DIET SHEET.

The diet sheet was introduced after most careful study as the best means of systemising the cooking and serving the soldiers' food. It prevents misappropriation. It enables the sergeant cook and the cooks to carry out their work in a proper manner and is a check on all rations received. It prevents waste and accumulation of food. It is information to all concerned as to what is required for the messing a week in advance. The C.Q.M. sergeant and the quartermaster are able to requisition on the ration indent for everything required with the least amount of trouble. The commanding officer can easily see by glancing at the diet sheet how his men are cared for, if the diet is good and varied. An officer making an inspection of a kitchen should ask for the diet sheet and compare the meals with the description shown. By doing this it can be at once seen how the messing of the various companies is carried out. The sergeant cook, in preparing the diet sheet, is responsible that any errors between the drawn and that which is shown on the diet sheet, is brought to the notice of the officer commanding the company. The diet sheet should be affixed to a board and hung in the kitchen, regimental office, company office, quartermaster's office, butcher's shop, dining tents or rooms and the grocery store. The diet sheets should be kept clean.

Extra messing should, if possible, be avoided, but, if used, articles and how dealt with, must be shown on the diet sheet and should agree with the messing accounts. The diet sheet then becomes a check on all moneys contributed by the men.

A specimen diet sheet will be found in this manual.

THE PREPARATION OF THE DIET SHEET.

Care must be taken in preparing the diet sheet that the greatest possible variety is given. The same dishes must not be given day after day; for instance it is not wise to give beans every morning for breakfast or stews every day for dinner, men will soon get tired of dishes that are the same every day. Beans can be given twice a week and ration for the other days can be exchanged for rice, flour or oatmeal. With the bacon ration it is advisable to give it every other day, it is then possible to give every man 4 ounces which makes a very good breakfast. Steaks can be given for breakfast or supper if care is taken by the sergeant cook in saving some of his beef ration. The flour that is obtained by exchanging beans can be used to make meat pies, sea pies, jam puddings, etc. Some of it can be saved for the thickening of stews and soups. Oatmeal can be served as porridge for breakfast but it is not advisable to serve porridge with beans. Oatmeal and beans contain practically the same food values.

If groceries are purchased by subscription from the men, the articles purchased (for instance if pickles to serve with cold meat) should be shown on the diet sheet.

One half of the battalion should be served on one day with stews, meat pies, etc. The other half should have roast. This the only way to use the meat ration economically and to insure a complete change daily.

Soups should be given every day in cold weather.

A sergeant cook should be able, by careful study, to improve on the diet sheet shown.

If extra messing is used it must be used by the whole battalion or not at all, if only used by one or two companies suspicion and dissatisfaction is caused.

The government ration is sufficient to supply all the variety needed if properly used.

The greatest waste is always to be found in the companies or battalions that purchase extras by subscriptions from the men.

The milk ration if properly looked after will be ample for porridge, tea, coffee, milk puddings, etc.

Once the diet sheet is completed and signed by the O. C. Company no alteration should be made unless with the knowledge of the sergeant cook.

The government ration with which the sergeant cook has to deal is shown here.

Meat, 1 lb., Bread 1 lb., Vegetables 6 oz., sugar 3 oz., Potatoes 1 lb., jam 2 oz., Butter 2 oz., Bacon 2 oz., Beans, Rice, Oatmeal or Flour 2 oz., Cheese 1 oz., Milk powder 1 oz., Salt $\frac{1}{2}$ oz., Split peas $\frac{1}{2}$ oz., Tea $\frac{1}{4}$ oz., Coffee, $\frac{1}{4}$ oz., Pepper, $\frac{1}{8}$ oz.

Prunes can be drawn in lieu of jam.

The above is subject to alteration by the Department.

ISSUE OF MEAT.

The beef shall be ox or heifer: The mutton shall be wether or ewe. Oxen must not be under two, or more than five years old. Heifers and cows, not under two, or more than four years old, must be of the best quality, properly fed, and to well slaughtered at least twelve hours before the time of issue. The beef to consist of equal proportions of fore and hind quarter, the head and neck, the offal and shank for four inches above the knee, and upper rock joint to be excluded, and none of the suet to be withdrawn.

The quarter of beef to weigh not less than 125 lbs.

The mutton to be issued in whole carcasses and the heads, offal, shanks below the knee, and hock joints, to be excluded and none of the suet or kidneys to be removed.

The carcasses of mutton to weigh not less than 33 lbs.

CUTTING OF MEAT.

The method used in the service is to joint the quarters as shown in sketch, Fig. 15.

Hind Quarter.		Fore Quarter.		
1 Sirloin	} Roasting	1 Fore Ribs	} Roasting	
2 Rump		2 Middle Ribs		} Baking
3 Aitchbone		3 Chuck Ribs		
6 Topside of Round	} Joints	4 Neck	} Joints	
5 Buttock		5 Plate		
4 Leg	} Stewing	6 Brisket	} Stewing	
8 Flank		7 Leg of Mutton		
7 Silverside	} Boiling	7 Piece	} Boiling	
		8 Leg		
	} Joints		} Joints	

Plate showing joints for roasting and stewing.

MUTTON.

- No. 1 Shoulder roasting
- No. 2 Best end neck, roasting or chops
- No. 3 Breasts, stewing
- No. 4 Loin, roasting or chops
- No. 5 Neck, stewing
- No. 6 Flank, stewing
- No. 7 Leg, roasting

BONING OF MEAT.

All roasting joints must be boned by the cooks who must attain the necessary skill in boning raw meat. No theory can replace the practice of this operation, which, if well done, will reduce the time of cooking, will enable more presentable portions to be served and will procure for the men good soups and gravies without any extra expense. It is easier carved and served, the joints after being boned, should be skewered or tied with string, before being placed in the oven. The bones can then be placed in the stock pot.

KEEPING MEAT SWEET.

To keep small joints of meat sweet over night the following can be done. They can be plunged into rapidly boiling water and allowed to boil for about fifteen minutes, taken out and placed in a cool place or in a good hot oven for the same time and then allowed to cool. This kills any germs or bacteria that may have attacked the meat.

Another method. Dig a hole in the ground large enough to take an apple barrel or good sized box. Place the meat inside and cover with clean damp sacks, put on the lid weighting it with stones.

All raw meats should be well washed with clean cold water before being used.

STOCK POT.

A stock pot will be established to provide good soups and gravies. It consists of a cooking utensil either a boiler or large boiling pot, into which should be placed all available bones, etc., such as are collected when the ration meat is cut up in preparing boned and rolled meat, meat pies, meat puddings and stews. This boiler should be kept gently simmering for four to five hours daily immediately before its contents are required for use. If the ration meat is properly boned it will provide soup for the men of a battalion daily, the stock being continually replenished from day to day. Every effort should be made in a regimental kitchen to reserve a special boiler for making stock in order that, if possible, the surplus portion of unused stock can be carried on from day to day. This process adds considerably to the strength of the soup made.

DRIPPING.

Dripping is the oil extracted from the fat of all kinds of meat during the process of cooking and forms a valuable aid to military cookery. It provides all the fat required for the preparation of paste, puddings, and for frying purposes.

The surplus dripping can be sold and the money credited to the regimental funds. If this is done a considerable saving is effected in the messing of a unit. Every care should be taken by all concerned that fat is not wasted, and that the dripping handed into store for issue is clean, sweet, and free from moisture. It should be firm and vary in colour from white to pale straw, if dirty or brown in appearance it should not be taken over by the quartermaster. After the surplus suet has been collected, it should be cut up into small pieces, the smaller the better, then put into a baking dish, barely covered with water, put into the oven and allowed to boil until the water has evaporated and the pieces of fat become a light brown colour. It must be then allowed to cool, strained through a colander into a clean dish and allowed to harden. It is then turned out of the dish, and scraped clean. Care must be taken when cutting the suet away from the meat that only the surplus is removed; for instance the outside fat should not be taken off unless it is excessive. If the fat is out of proportion to the lean the matter should be reported and an account of all dripping saved, issued or sold, should be kept by the quartermaster.

The sergeant cook should not keep the daily dripping return, he is only responsible for the amount saved, on handing it in to store must obtain the signature of either the Q.M. or the Q.M.S. in his book with the amount handed over. Specimen copies of the dripping return which are daily and monthly, will be found in this manual.

The issue per man for cooking purposes is 1½ ounce.

FUEL.

WOOD AND COAL.

The cooking allowance of wood for each man is one-third of a cubic foot per diem.

If coal is supplied in lieu of fuel wood, ten pounds of the best hard coal, or twelve and a half of soft coal is to be issued as equivalent to one and one-third cubic feet of wood.

The above scale is the maximum allowance but it is to be understood that only such quantity of fuel shall be issued as may be found actually necessary for cooking purposes and any amount issued and not required is to be returned to the supply officer.

The sergeant cook will be held responsible for the economical consumption of coal and it will be his duty to regulate the fires, using no more than is necessary for the cooking required. Coal or gas fires should not be kept burning longer than necessary.

COKE.

Coke is coal, the bituminous qualities of which have been extracted by heat in close chambers. It is rarely issued for cooking purposes.

It has been issued for cooking purposes in Flanders and the ration is one pound per man. The reason of its issue is that no smoke is given off during combustion.

CHARCOAL.

Charcoal is wood charred in chambers made as airtight as possible. It has been used in France by the troops for the same reason as given for coke.

TURF OR PEAT.

Turf or peat is a substance of vegetable origin, and, when in a dry state is issued for kindling purposes, 1/000 kish being equivalent to one pound of kindling wood. It should not be disturbed while burning.

Cow or horse dung may be used for fuel, it should be well mixed with any combustible rubbish such as grass leaves, etc., and formed into convenient pieces for use, and then placed in the sun to dry.

Fir cones and dried furze bushes are excellent for kindling purposes.

In using wood it is necessary to cut it into short pieces and split it lengthways as otherwise it becomes charred and retains its heat.

SANITATION.

Personal cleanliness of cooks is of great importance. They should bathe as frequently as possible.

CARE OF EQUIPMENT.

Baking pans should be well washed with soap and soda, and scoured with wood ashes if burnt. They can be placed in the sun to dry.

Boilers can be treated the same as baking pans.

Camp kettles must be well washed and placed in the sun to be thoroughly dried before being placed in store.

Tables should be well scrubbed with hot water, soap and soda.

Kitchen floors must be scrubbed well every day to remove particles of food or grease that may have been dropped. They should be well swept after the serving of every meal.

Ranges should be well rubbed over with a greasy cloth. This preserves the metal and keeps it free from rust. The stove must be thoroughly cleaned out once a week so as to keep it in good working condition.

SMALL TINWARE should be put in boiling water and well washed after being used. It must be well dried before being put away.

KITCHEN FLOORS IN CAMP.

The kitchen floor in camp must be swept as often as necessary and the sweepings burnt. It should be sprinkled once or twice daily with coal oil or lysol.

The reason that the floor should be sprinkled is this,—The coal oil or lysol kills the eggs of the flies that may have been laid there. Flies will only go to a place where they can feed. Flies feed on filth and dirt and on all food scraps that may be left lying about. If strict cleanliness is observed there will be nothing for flies to feed on and the result will be freedom from flies in the kitchens.

GARBAGE CANS.

The garbage cans when in use should be scrubbed inside and out daily as soon as emptied. They should be then left in the sun with the lids off to dry.

When garbage is placed in the can the lid should not be left off longer than is necessary. As a rule when a garbage can smells it is not the garbage but the can, through not being properly cleaned daily.

A small quantity of disinfectant should be used in the water used to clean the cans.

Soap and soda, or lye for cleaning purposes can be purchased from the regimental funds.

Men employed in working round latrines or stables should not be allowed to handle anything in the kitchens.

The hands and clothing of all persons who handle food or cooking utensils should be scrupulously clean. All bread and meat stores should be clean, well ventilated and inaccessible to flies. Kitchens and their fittings, such as tables, shelves and cooking utensils should be kept clean and tidy. Flies, which carry minute portions of filth and germs on their feet, contaminating all they touch, should as far as possible be prevented from gaining access to the kitchens. They breed only in filth and where there are many flies it is a certain sign that there is filth and dirt in the near neighbourhood. Men who have just recovered from any infectious disease, more especially from enteric fever, should not be allowed to act as mess orderlies or in any capacity be connected with the serving of food.

Kitchens should be roped off and no unauthorized persons be allowed to enter them. These places require constant supervision to ensure the removal of remains of food and greasy water without delay. The most important details which require attention are: (1) That the kitchens and washing places be so located as to be handy for water, but remote from latrines, urine pits, or other receptacles for refuse and garbage. (2) That all sullage water be made to pass readily away. The latter will usually be effected by passage into soakage pits or if this does not suffice, by suitable trenches. This waste is greasy and if allowed to pass directly on to the soil soon makes a felt like scum, which not only impedes the soaking in of the water, but also attracts flies.

CLEANING UTENSILS IN CAMP.

At each kitchen or mess there should be a place provided for cleaning up utensils. This should have a table, or boxes to serve as a table, a straining pit, a sufficiency of clean cloths, and a plentiful supply of hot water. If sand is used for cleaning vessels, it should be previously baked over a fire, and kept in a tin or box near the cleaning bench. Ashes from a wood fire may be used in the place of sand. The whole process should be supervised by one of the sanitary staff. A sufficiency of cloths for washing up should be provided and all those used in the cookhouse or sculleries should be washed daily and dried. All dishes, knives, and other utensils, used at meal times or for food storage, should be cleaned on a table and not placed on the floor or taken to outside taps. For scouring tea cans, etc., clean bathbrick kept in a tin for the purpose should be used. The use of casually collected sand should be forbidden.

PTOMAINES.

Ptomaines are produced by putrefactive agencies, as for instance: If a tin of salmon be opened and a part of the contents consumed, the other part if left in the tin for any length of time, become at once a very active source of danger by decomposition.

The same action takes place in cooking utensils that are not cleaned properly. Any portions of food remaining in the seams, or corners, of cooking vessels will contaminate any fresh food that may be placed therein, and it is liable to cause serious sickness amongst the troops. It is of the utmost importance that all vessels used in the preparation of food, should be thoroughly scalded out before use and should undergo a vigorous cleaning with hot water and soda after use, and if possible, put to dry in the sun.

If this cannot be done, dry the vessel on the stove, taking care not to melt the solder. This drying process also prevents rust and prolongs the life of the utensil.

COPPER UTENSILS.—If using copper cooking vessels, care must be taken in cleaning not to scrape away the tin. When a cooking vessel shows signs of wear it should be retinned. If poorly tinned vessels are used or food is cooked in pots where the copper shows through the tin a dangerous form of poisoning is likely to occur.

CLEANING UTENSILS IN BARRACKS.

New utensils will be cleaned before they are used.

A new iron pot should first have a handful of sweet hay or grass boiled in it then be scrubbed with sand and soap; afterwards clean water should be boiled in it for about half an hour. A new tin should be filled with boiling water in which a spoonful of soda has been dissolved, and placed over the fire to simmer; afterwards it should be scoured with soap and rinsed with hot water. The soda renders soluble the resin used in soldering.

Tins can be kept clean by rubbing them gently with sifted wood ashes. A copper stewpan or vessel can be cleaned with fine sand and salt, in the proportion of half salt to that of sand, then rubbed thoroughly dry with the hand or a brush. If there be any stains a lemon (or vinegar) may be used to remove them.

Colanders should be well rinsed with boiling water, dried, and the frame cleaned and polished with whiting, care being taken that no particle of dust remains on it before hanging up for future use.

Steamers, dishes and other tinware should be well washed with soap and soda water and polished with whiting.

Previous to use, all utensils should be thoroughly clean, and, when possible exposed to the sun daily. The practice of keeping them in cupboards until required for use should be discouraged.

All utensils, after being used, should at once be filled with hot water and placed over the fire to scald thoroughly, then cleaned and well dried.

Grease remaining in a vessel will make it rancid, and moisture will rust it.

In washing any greasy utensil it is better to use the hand instead of flannel, as the latter retains the grease.

Knives and forks (unless plated) should be cleaned with brickdust and flannel, and, if rusty, rubbed with a fresh-cut potato dipped in ashes.

Plate or plated articles can usually be kept clean and bright by washing them with soap and boiling water, rubbing them dry whilst hot with soft cloths.

Utensils with bone, ivory, or wooden handles should never be placed in hot water.

Large knives, flesh forks, choppers, ladles, bowls, etc., should be well washed with hot water and soda, and afterwards polished with brickdust; they should be at once cleaned after use and put in their proper places in the kitchen.

The meat block and benches should be well scraped, and then scoured with hot water, soap, and soda, and be used for no other purpose whatever, except that for which they are intended.

QUARTERMASTERS' DAILY DRIPPING RETURN.

MONTH ENDING.....16.

Date.	No. of men in mess.	Total Dripping Saved.		Signature of Sergeant Cook.	ISSUED.										Signature of Q.M.-Sergt. as to issue.	Remarks.		
		lbs.	oz.		"A"		"B"		"C"		"D"		Base.				Total issued.	
					lbs.	oz.	lbs.	oz.	lbs.	oz.	lbs.	oz.	lbs.	oz.			lbs.	oz.
1.....																		
2.....																		
3.....																		
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29.....																		
30.....																		
31.....																		
Total.....				Total.....														Grand Total...

KINGSTON.....16.

.....Quartermaster,
.....Battalion, C.E.F.

QUARTERMASTERS' DRIPPING RETURN. BATTALION, C.E.F. MONTHLY BALANCE SHEET.

Date.	Average No. in mess.	Dripping saved during month.		Issued free to Companies.		Surplus sold.		Value atper lb.		Remaining on hand.		Remarks.
		lbs.	ozs.	lbs.	ozs.	lbs.	ozs.	\$	cts.	lbs.	ozs.	
Carried forward from last month.....												
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Date, KINGSTON,.....16. Quartermaster. Battalion, C.E.F.

CANADIAN EXPEDITIONARY FORCE.
53RD BATTALION, CANADIAN MILITA, BARRIEFIELD CAMP.

DIET SHEET.

FOR WEEK ENDING MARCH 26, 1916.

SPECIMEN COPY.

	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.	SUNDAY.
BREAK-FAST....	Bacon Potatoes Coffee Bread & Butter	Baked Beans Coffee Bread & Butter	Porridge & Milk Bacon Coffee Bread & Butter	Grilled Steak Potatoes Coffee Bread & Butter	Baked Beans Coffee Bread & Butter	Bacon Potatoes Coffee Bread & Butter	Porridge & Milk Beef Hash Coffee Bread & Butter
DINNER...	Pea Soup Irish Stew Potatoes Vegetables	Scotch Broth Roast Beef Potatoes Vegetables Rice Pudding	Vegetable Soup Meat Pie Potatoes Vegetables	Bean Soup Boiled Beef Potatoes Vegetables Bread Pudding	Scotch Broth Baked Stuff. Fish Potatoes Mashed Potatoes Vegetables	Vegetable Soup Brown Stew Potatoes Vegetables	Pea Soup Roast Beef Roast Potatoes Vegetables Rice Puddings
TEA.....	Cottage Pie Bread & Butter Tea Cheese	Cold Beef Bread & Butter Tea Jam	Minced Beef Potatoes Bread & Butter Tea Cheese	Bubble & Squeak Tea Bread & Butter Jam	Fish Pie Tea Bread & Butter Cheese	Hamburg Steak Potatoes Tea Bread & Butter Jam	Cold Beef Tea Bread & Butter Cheese

Government Ration Only.

KINGSTON, 19th March, 1916.

WILLIAM BROWN, Sergeant Cook.

G. H. WILLIAMS, Major,
Officer Commanding "A" Company.

SECTION 4.

CONTENTS.

	PAGE.
Inspection of Rations.....	30
Quality Beef.....	30
" Mutton.....	30
Sweetness.....	30
Frozen Meat.....	30
Inspection of Canned Goods.....	31
" Bread.....	31
" Vegetables.....	31

INSPECTION OF RATIONS.

It is necessary that a soldier's food should be looked after carefully. This is a duty that should be carried out by officers who besides seeing that the food is cooked properly and well served, should inspect rations to see that they are fresh and wholesome. Meat, both beef and mutton, is judged in conjunction with the terms of the current contract, a copy of which should be hung up in every meat store, as regards its age, sex, quality, sweetness and dressing.

QUALITY BEEF.

A carcass should be healthy and well fed, and should have a well rounded and well filled appearance. There should be waves of fat on the chest cavity and plenty of fat on the pelvic cavity and kidneys; the lean, when freshly cut should be soft and silky to the touch, full of juice, bright cherry red in colour, and well marbled with fat. The fat itself should be moderately abundant and usually of a pale straw colour. The internal organs should be sound and free from disease, and there should be no signs of tuberculous growth or adhesion in the chest and abdominal cavities.

MUTTON.

A carcass of mutton should be well fed and healthy, and should have alternate red and white bars over the loins. The fat should be fairly abundant, firm, and white. The flesh should present the same general characteristics of that of beef, except that the marbling of fat is seldom present.

SWEETNESS.

To decide whether the meat is sweet or tainted, the senses of taste and smell must be employed. Fresh meat is slightly acid to the taste, while stale meat is distinctly alkaline. If there is any doubt, the meat should be probed in its thickest portion, with a clean wooden skewer, well thrust in, if possible close to a bone, and the skewer quickly withdrawn and smelt. In beef, the best place to probe a fore and hind quarter, is at the chuck rib, and pelvic bone, respectively; while a carcass of mutton should be cut down between the hind legs, separating the two portions of the pelvic bone.

FROZEN MEAT.

The meat is cold to the touch, and particles of ice may be seen on cutting into it with a saw. Its colour is not so bright as that of home killed meat. When still frozen, the carcass has externally a white appearance, the fat is also white, distinct from the lean, and rather crumbly. There are generally signs of rough handling, and the outside is dirty and untidy. When thawed,

the meat looks sodden, the fat is discoloured, and the exterior of the carcass sweats considerably. In carcasses of mutton that are frozen, the fore legs are invariably bent towards the body, and as much of the pizzle that can be cut away, from the outside, is removed. The conditions of contract as regards dressing do not apply to frozen meat.

INSEPTION OF CANNED GOODS.

Canned goods may be especially dangerous to health, and need careful inspection. In examining canned foods, it should always be noted if the can is bulged or blown; this is the result of gasses formed by putrefaction of the contents. The processes by which most canned provisions are prepared involve, one, or sometimes two, holes in the can; if there are three holes in it, it is an indication that putrefaction has occurred, and a third perforation has been made to allow the gas to escape. The third hole is often near the rim, and can be felt under the label. A fresh looking label does not prove that the contents are necessarily fresh. Cans are readily perforated by rust, especially if crushed and exposed to the action of sea water. Such cans should always be looked upon with suspicion.

INSPECTION OF BREAD.

The bread supplied must be sweet, well made, properly baked, and of the description or quality known as best household, made from flour clean and free from grit, the produce of good, sound, sweet, and dry wheat. It must be in all respects, as good in quality, as the best plain, or fine bread, (as distinguished from fancy bread) usually sold by the trade as best household bread, with which it must be frequently compared. The bread must be delivered not earlier than 24 hours, nor later than 48 hours after baking.

The main characteristics of a good loaf, fulfilling the conditions enumerated above, are as follows: the crust should be a rich yellowish brown, well baked, but not burnt, as thin as possible, and distributed all round the loaf. The crumb should be cream white in colour, light, flaky, elastic, and full of small evenly distributed cavities. In tasting a loaf, the crumb should always be eaten. Several loaves should be selected from different part of a consignment of bread, and each weighed singly.

INSPECTION OF VEGETABLES.

Potatoes are difficult to judge from outward appearance. If a part of the potatoe is greenish in colour, it indicates that it has been insufficiently earthed, and will go soft and dark in cooking. Carrots, and parsnips, should be firm, and when cut, full of natural moisture, the longer they are out of the ground, the drier they become. If delivered with the tops on, the condition of the tops will prove a fair index to their freshness. The only test as to the freshness of green vegetables is their condition, and this is summed up in one word, crisp.

SECTION 5.

CONTENTS.

SOUPS.

	PAGE.
Pea soup Fig. 16 Proper method of braising	33
Scotch broth " Fig. 17 Method that can be used...	33
Bean soup	33
Vegetable soup	33
Gravies	34

ROASTING.

Roast beef and potatoes.....	34
" " beans	34

STEWES.

Plain stew	34
Irish stew	35
Brown stew.....	35
Braised Meat.....	35
Boiling.....	35
Stewing.....	36
Steaming.....	36
Frying.....	36
Deep frying.....	36
Broiling.....	36

VEGETABLES.

Potatoes.....	37
Carrots.....	37
Parsnips.....	37
Turnips.....	38
Onions.....	38
Fresh peas, and beans.....	38
Vegetable marrow.....	38
Dried peas, and beans.....	38
Cabbage.....	39

BEVERAGES.

Preparation of tea.....	39
" coffee.....	39
Cocoa.....	39

CONDIMENTS AND SEASONINGS.

Salt.....	39
Pepper.....	40
Cayenne pepper.....	40
Mustard.....	40
Sugar.....	40
Cloves.....	40
Allspice.....	40
Cinnamon.....	40
Nutmegs.....	40
Mace and curry powder.....	40

THE COOKING OF RICE—

	PAGE.
Boiling rice in large quantities.....	40
Rice pudding.....	40
Milk powder.....	41
Bread and butter pudding.....	41
Paste for pies.....	41
Jam rolls.....	41
Meat pies.....	41
Sea pies.....	41
Meat puddings.....	42

SOUPS.

Soups, nourishing but simple, should be given as often as possible. To make nutritious, and palatable soups, from the rations can be easily done by a little study and practice. Sufficient soup, for a battalion, can be made from the bones taken from the ration of meat daily. To make soups, extract the nutritious matter from the bones by using the stock pot. The stock pot should be allowed to gently simmer, and must be skimmed, as often as any scum arises to the top. Stock is the basis of the following soups.

PEA SOUP.

INGREDIENTS FOR 100 MEN.—Peas, 4 pounds, 2 ounces; flour, 2 pounds; mixed vegetables, 8 pounds, 4 ounces; stock, 8 gallons; bacon trimmings, 1 pound; pepper and salt to taste.

The peas should be soaked over night in clean cold water, and in the morning, well washed, and then placed on the fire with the stock. The vegetables should be then peeled and well washed, and passed, with the bacon trimmings, through the mincing machine. The vegetables, pepper and salt, should then be added to the stock, the soup being then simmered for three hours, keeping it well skimmed. Mix the flour with cold water to form a thin batter, stir into the soup, bring to the boil, then let it simmer for twenty minutes. The soup during the process of cooking, must be occasionally stirred to prevent burning.

SCOTCH BROTH.

Ingredients.—Stock, 8 gallons; mixed vegetables, 8 pounds, 4 ounces; bacon trimmings, 1 pound; flour, 2 pounds; rice, 2 pounds; pepper and salt to taste.

Proceed the same as for pea soup, with the exception, that the rice should be well washed, and not added to the soup, until one hour before it is ready to serve.

BEAN SOUP.

Ingredients.—Four pounds, 8 ounces of beans; flour, 2 pounds; mixed vegetables, 8 pounds, 4 ounces; stock, 8 gallons; bacon trimmings, 1 pound; pepper and salt to taste.

If any beans are left from breakfast, they can be used for soup. If fresh beans are required, they must be cooked the day before, and rubbed through a colander before being added to the soup. Then proceed as in pea soup.

VEGETABLE SOUP.

Ingredients.—Stock, 8 gallons; mixed vegetables, 10 pounds; bacon trimmings, 2 pounds; flour, 3 pounds; pepper and salt to taste.

Vegetables left from the day previous can be used, but must be rubbed through a colander, or chopped fine, before being added to the soup. If fresh vegetables are used, proceed as in pea soup.

GRAVIES.

Place the required amount of stock in a stew pan, bring the contents to the boil; make the thickening by mixing flour with cold water, or stock, into a smooth batter; add the thickening, keeping it well stirred to prevent it burning; allow it to simmer for 30 minutes; add the seasoning, and colour the gravy by adding a small quantity of caramel made as follows: Place 4 ounces of sugar in a small stewpan, place it on the fire, and allow it to remain until the sugar is of a very dark colour, when it will be seen to boil, or bubble; add about $1\frac{1}{2}$ pints of water, and simmer for a few minutes; allow to partly cool and place in a bottle ready for use.

ANOTHER METHOD.—After the meat has been roasted and removed from the baking pan, pour off the surplus fat then put in the pan about one quart of water or stock, simmer on the top of the fire, adding the seasoning. If the gravy requires colouring caramel can be added. Gravy made in this way seldom requires colouring and is as a rule good and rich, containing the concentrated juices of the meat that has been cooked in the pan.

ROASTING.

Roasting or baking is a most convenient, economical, and satisfactory mode of cooking in the service.

The best oven for baking is one sufficiently ventilated to allow the steam rising from the meat to escape. Meat for roasting has short fibers, held together with but little connective tissue. In cooking this, dry heat is employed. The exterior of the meat is browned to imprison the juices and by prolonging the heat a time, partially coagulates the proteids in solution in the fibers.

The meat is cut up into joints, suitable for each mess, as described in figure 15. It is then boned, the surplus fat trimmed off, rolled, tied with string or skewered, placed in the baking pan, and the lean part covered with surplus fat cut into thin slices. It is a good plan to place in the pan a little dripping for basting purposes. Salt and pepper must not be sprinkled on the meat before baking. The reason for this is that it draws out the juices from the meat, making the outside tough, hard, and indigestible.

Roasts should be frequently basted and turned, so that each side of the meat may be equally cooked.

ROAST BEEF AND POTATOES.

Peel and wash the potatoes, having them as near as possible of one size. Peel, clean, and cut up the onions, grease the bottom of a baking dish, or place in sufficient stock to barely cover the bottom, put in the potatoes, leaving a slight hollow in the centre, into which shake the onions, and sprinkle with salt and pepper.

Place the meat, worse side up, on the potatoes, in order that when the meat is cooked it may be sent to the table with as good an appearance as possible.

Before the dish is sent to the table, all liquid fat should be removed and plenty of gravy poured over the meat.

ROAST MEAT AND BEANS.

Soak the beans over night and place them in the baking dish with sufficient stock to cover them; add the onions (sliced up) with salt and pepper; prepare the meat and proceed as for roast meat and potatoes. In cooking this dish, should the beans absorb all the stock, a little more must be added (hot).

STEW.

PLAIN STEW.

INGREDIENTS.—Meat, mixed vegetables, onions, flour, pepper and salt. Peel or scrape, clean, and cut up the onions; separate the meat from the bones (removing all fat) and cut it against the grain into pieces of about an

inch square; place a little stock in the cooking vessel, add the meat, vegetables and onions, sprinkle with pepper and salt, barley covering with stock. Let it simmer gently for two and a half hours, keeping well skimmed. Mix the flour with water to a smooth batter, add to the stew, stirring it well in, bring to a boil and allow to simmer for half an hour.

IRISH STEW.

INGREDIENTS.—Meat, potatoes, onions, pepper, salt, stock.

Peel, wash, and slice the potatoes; peel, clean and cut up the onions; separate the meat from the bone, and cut into small pieces (remove the surplus fat as an Irish stew should not be greasy); place a little stock in the cooking vessel, and a layer of potatoes in the bottom, then a layer of meat and onions; season with pepper and salt, then another layer of potatoes, and so on alternately until the vessel is nearly full, potatoes forming the top layer; barely cover the whole with stock, and stew gently for three hours. Skim well, care being taken that it does not burn.

When preparing stews in camp kettles, care should be taken that they are not allowed to boil rapidly.

BROWN STEW.

INGREDIENTS.—Meat, mixed vegetables, flour, onions, pepper, salt and stock.

Peel or scrape, clean and cut up the vegetables and onions; separate the meat from the bones and cut it against the grain into small pieces, taking care to remove all surplus fat. Mix the dry flour, salt and pepper well together; place a little stock in a baking pan; rub the pieces of meat in the dry flour, and add to the stock; put in the vegetables and onions; barely cover the whole with stock, and mix thoroughly. Put in the oven. It requires to be frequently stirred, care being taken that the oven is not too hot.

BRAISED MEAT.

Braising is stewing meat by placing it in an air tight stewpan, and the heat applied above as well as below as shown in fig. 16. In the service it can be done satisfactorily by following out the method shown in figure 17.

INGREDIENTS.—Mixed vegetables, onions, small piece of bacon, meat, pepper, salt and stock.

Cut up the vegetables and bacon into small pieces, fry in a baking pan with a little dripping, brown the joint of meat on all sides, place the meat in the pan with the vegetables, sprinkling them with pepper and salt, add sufficient stock to cover the vegetables, then place another pan (upside down) on top, place in the oven. More stock should be added, from time to time, if found necessary. When cooked, the liquor and vegetables remaining in the pan must be well skimmed, and served with the meat. This makes a very pleasant change, and joints that are not fit for roasting, if cooked this way, become very tasty, tender, and digestible.

The time taken for cooking will be a little longer than for roasting.

BOILING.

To boil a joint of meat for table, it should be placed in boiling water, allowed to boil quickly for ten minutes, drawn back from the fire, then let simmer until cooked. The joint of meat should be surrounded with plenty of water in which a little salt has been added, and the lid of the vessel kept on. It must be skimmed occasionally or the appearance of the meat will be spoiled. By placing the meat in boiling water, the albumin becomes solid, and prevents the escape of the juices. If salt beef, or pork, is to be boiled, it should be

well washed, then placed in a vessel containing cold water, and allowed to boil slowly for one hour, the water in which it has been boiled should be then thrown away. Refit the boiler with fresh cold water, place in the meat, and simmer until cooked. Salt meat requires a little longer time to cook than fresh meat. It is placed in cold water, to extract the salt, or brine. If salt meat is placed in boiling water, it would make it hard and tough. The average loss in boiling meat, is about 18 per cent. The time required to cook depends upon its weight:—about 15 to 20 minutes a pound. If a piece of flank weighing about 15 lbs. were boiled as issued, it would require from 1½ to 2 hours, but if boned and rolled, it would require from 3½ to 4 hours, and could be sent to the table as a very substantial joint. The boiling point of water is 212° Fahr., but if salt be added, about 214° Fahr. may be obtained.

STEWING.

Stewing is the most profitable mode of cooking. It renders tough meat tender and wholesome, and more nourishment is obtained, than by any other method of cooking. All that is required is a gradual simmering. Meat of a fibrous and coarse nature, such as legs, briskets, clods, or neck of mutton, should be issued for stewing.

STEAMING.

Steaming is usually performed by steam passing from a close boiler to a close chamber (as shown in fig. 19), or by placing a steamer over a boiler containing boiling water, or by placing a few stones at the bottom of the boiler, covering them with water, and placing on them the dish containing the meat, or other articles to be cooked.

A steamer is a vessel, the bottom of which is perforated with a number of small holes. It should not be placed over the boiler until the water is at a sharp boil. Meat, potatoes, puddings, etc., can be cooked by this method. For economy in fuel this is the best method of cooking.

FRYING.

Shallow frying, is cooking with the aid of fat, using sufficient in the pan to just cover the bottom of it, making it hot before placing in the articles to be cooked. Eggs, bacon, steak, chops, sausages, cold potatoes, vegetables, etc., can be cooked this way. The article to be cooked should be frequently turned, using a slice in preference to a fork. If a fork is used in turning steaks, etc., the juices will escape through the holes made by it.

DEEP FRYING.

The first thing in deep frying is to see that there is plenty of sweet, clean fat, and care should be taken that it is allowed to heat slowly. The vessel should not be more than three parts filled. Attention to these rules will prevent accidents. A pan of fat heated quickly, is liable to "boil over," and as the temperature for ordinary purposes is about 350° Fahr., a splash of hot fat on the flesh, will give severe burn. The fat must be allowed to attain the proper degree of heat before using, if this is not done, the fat soaks into the article, making it sodden, greasy and indigestible. To test the fat for heat, throw in a piece of bread, it will change to a golden colour if the fat is ready; if it remains pale and soft, wait a little longer. All articles to be cooked this way (except raw potatoes) should receive a coating of batter, or egg and bread crumbs, so that it will retain the juices and exclude the fat.

BROILING.

Broiling is cooking over, or in front of a fire, a gridiron being generally used. Care should be taken that it is perfectly clean, and free from grease. It should be placed on the fire slantways, the lower part in front, this prevents

the fat falling into the fire and causing it to smoke. The fire must be clear, bright and tolerably strong. Meat for broiling should be cut thin, and of an even thickness, the meat then will be equally cooked throughout. Previous to cooking, the meat should be sprinkled with pepper, but not with salt. It should be frequently turned, and if firm to the touch, on being pressed with the flat part of the knife, the meat is done. With a clean gridiron, a clear fire, close supervision, and the exercise of a little judgment as to when it should be required, small dainty pieces of meat, and fish, may be cooked, by broiling, in a manner superior to that obtained by any other process of cooking. The average loss in broiling is 8 per cent.

VEGETABLES.

POTATOES.

Potatoes, when boiled in their jackets, lose only one per cent of their protein, and a little over three per cent of their ash, no matter what the temperature of the water was at the start. Almost no starch is removed, when potatoes are boiled in their skins, when peeled, the mechanical action of the boiling water wears off the outer surface, and in this way, as much as three per cent of the carbohydrates, may be lost. By far the most economical way to boil potatoes is in their jackets. When they are cooked this way, they should be thoroughly scrubbed before boiling, and it is a common practice to remove a section of the skin at each end of the potato, or to pare a ring around the middle, so that the moisture may escape, and the cooked potato may not become soggy on standing. When baked in their skins, potatoes probably undergo much the same changes as in boiling, save that they lose practically none of their ingredients, except a little water, which evaporates through the skin.

When it is necessary to peel potatoes, it should be done as thinly as possible, as the best part of the potato is next to the skin. After peeling, they should be kept in cold water, till required for use. If any be spotted in the inside, they should be rejected, as their flavour, and the best part of the nutriment has been lost. If for boiling, a little salt should be dissolved in the water before the potatoes are placed in it, but it is better to steam them, as their flavour is thereby improved, and the waste is less.

New potatoes should always be placed in boiling water, with a little salt, and not steamed.

Potatoes with rough skins are best for boiling, smooth ones for baking, and as a general rule, the smaller the eye of the potato, the better is their quality.

CARROTS.

Carrots are grown in many varieties, and vary greatly in colour, size and flavour, and other characteristics. Those most commonly raised for the table being of medium size, deep yellow colour, tender, and of delicate flavour. Young carrots are much more satisfactory than old ones, as when fully matured they tend to become hard and woody, especially at the core, while not infrequently, the flavour of old carrots is disagreeably strong. Carrots should always be sent to the table with boiled beef. They vary very much in quality, but should be quite firm, and have a crisp appearance when broken. Young carrots should be washed and well scrubbed before cooking; old ones will require scraping and cutting into quarters lengthways. A little salt should always be boiled with them.

PARSNIPS.

Parsnips, which should be served in a similar manner, are excellent for flavouring, and contain a great amount of nourishment.

Parsnips belong to the same botanical order as carrots, and resemble them in form and general habit of growth. The flesh of the root, however, is paler, being white, or light cream colour, and the flavour is quite distinct, and very pronounced.

TURNIPS.

A great variety of turnips are raised as table vegetables. There is considerable variation in the colour, flavour, and composition of the turnip, the yellow fleshed sort, as a group, being commonly distinguished from the white, by the name of "swedes". In the summer the early white varieties are usually preferred, in spite of the fact that they are more watery, while in winter the yellow turnips are more commonly used. Solid as the turnip root appears, they contain, on an average, about 89 per cent of water, or a trifle more than is found in whole milk. Only about twenty per cent of the total protein present is in the form of albumin. Carbohydrates are the principle nutritive material, glucose, cane sugar, pectose or jelly yielding bodies, pentosans, and crude fibre, being the characteristic present.

The flavour of turnips is due to compounds of sulphur. In cooking, these pungent substances are broken down to some extent and pass off into the air. Turnips are used in all stews, and should be mashed to flavour soup, etc. After boiling, they should be thoroughly drained, a little dripping or butter, pepper and salt must be added to taste, and they should then be mashed with the ordinary masher. The turnips should be small, finely grained, juicy, smooth and sound, and should be peeled, as the part next the skin is fibrous and indigestible.

ONIONS.

This well known vegetable may be regarded either as a condiment, or as an article of real nourishment. All the members of the onion family are characterized by their very strong flavour and odour, due to the presence of allyl sulphide. A characteristic oil like organic compound of sulphur. Different varieties of the plant vary somewhat in flavour and composition, and the flavour is usually more abundant in the bulbs, or roots, than in the leaves or other parts. The flavour yielding material is very volatile, and is broken down by heat to some extent, and consequently the cooked vegetable has a much milder flavour than the raw. The proportion of water, and nutrients, in onions varies greatly, not only with the variety but with the stage of growth, and the method of storing them. As a slight flavouring, the onion is considered an improvement to nearly all made dishes. In stews, pies, etc., it will be found better to first place the onions in a little boiling water with soda, and there allowed to remain ten minutes. The water, which will be then found quite green, should be then thrown away, as it contains the indigestible part of the onion.

FRESH PEAS AND BEANS.

Peas and beans should be boiled by placing them in boiling water, into which a little salt, and carbonate soda has been dissolved. By cooking this way the natural green colour is retained and they are made easy of digestion.

The quicker they are cooked, stained and served, the more tender they become.

VEGETABLE MARROW.

Vegetable marrows should be peeled, quartered, and the seeds removed, they should then be placed in boiling water into which a little salt has been added, and boiled until tender. They are also good mashed, for which they must be boiled, drained thoroughly, and mashed smoothly, adding a little butter, or dripping, pepper and salt to taste.

DRIED BEANS AND PEAS.

Dried beans and peas should be soaked over night, and in the morning well washed with clean cold water. To cook, place in a boiler allowing plenty of room for swelling, add a little salt and cold water and bring to a boil, simmer slowly for 2 or 3 hours, or until tender. A piece of bacon fat or rind, previously cleaned, greatly improves the flavour of dried vegetables if cooked with them.

CABBAGE.

Cabbage should be well washed, picked and left in salted water for a short time, to extract or drive away any insects that may be in it. They should be placed in plenty of boiling water, with a little salt and soda added, and boiled quickly, LEAVING THE BOILER UNCOVERED; this not only helps to preserve their colour, but allows the indigestible parts to pass away. As soon as done they will sink to the bottom, and should be taken up at once, stained, and kept warm until served. By so doing they become mellow, and preserve their flavour.

BEVERAGES.

TEA—PREPARATION OF TEA.

Heat the boiler by pouring in to it a pint of hot water which is then thrown away. The dry tea should now be put in, and boiling water poured over it, and the can closely covered for about 8 minutes to draw. It should then be strained and the leaves well rinsed with boiling water before adding the sugar and milk. When making large quantities of tea it will be better to put the dry tea into thin muslin bags, tie loosely, so as to allow sufficient space for the leaves to expand and give out their full flavour; put them in the tea vessel, pouring on the boiling water, and allow to remain in a warm place, closely covered for about 8 minutes; then withdraw the bags, add the milk and sugar, and serve as hot as possible. Tea should never be made in a vessel that has contained broth or soup, unless it has been thoroughly cleaned before use.

COFFEE—PREPARATION OF COFFEE.

Boil the proper quantity of water in a boiler. As soon as the water boils take the boiler off the fire, put in the ground coffee. Add the sugar and stir, cover the boiler carefully and infuse for 5 or 6 minutes. Strain, mix with hot milk and serve.

Another method.—After the coffee has infused a little cold water can be sprinkled on top, which causes all the grounds to settle, leaving the coffee bright and clear. The coffee can then be poured off, mixed with milk, and served.

IMPORTANT.—COFFEE OR TEA SHOULD NEVER BE BOILED.

COCOA.

Cocoa should be prepared as follows: Put the cocoa and sugar into a cup or basin, mix together with a spoon, pour on the boiling water, stirring well, add the milk and serve hot. When preparing it in large quantities, it will be found better to mix the cocoa and sugar into a thin paste with the milk, then add the boiling water, boil the mixture for three minutes, keeping it well stirred, then serve. The boiling develops more fully the flavour and aroma of the cocoa. A teaspoonful of cocoa for each man will be found sufficient; sugar, the same amount as laid down for coffee. Milk as allowed for tea.

CONDIMENTS AND SEASONINGS.

Salt, pepper, cayenne, mustard, sugar, cloves, allspice, cinnamon, nutmeg, mace, ginger, etc.

SALT.—Salt is almost impossible to adulterate. The finest is known by its whiteness, fine crystallization, character, dryness, complete and clear solution in water. It is the most important of the condiments, and is used extensively to prevent the decomposition of animal and vegetable substances, and nearly every description of food prepared.

PEPPER.—Black and white pepper is much adulterated with meal, clay, grate rubbish, burnt bread, etc., which tends principally to subdue its strength. It should have a pungent aromatic odour, and be hot and acrid to the taste.

CAYENNE PEPPER.—Should be of a bright red colour. It has an acrid, aromatic, and extremely pungent taste, setting the mouth as it were on fire. It is often adulterated with brickdust. The various kinds of pepper are used in soups, stews, etc., to give them a warm biting flavour.

MUSTARD.—Mustard of good quality is known by its sharp acrid taste and smell. It is adulterated with pea flour, meal, etc., but this is not injurious to health, mustard being too bitter to use by itself. It is used to flavour roast beef, goose, etc., and tends to correct the effect of the strong oily fat in the food.

SUGAR.—The description usually used in the service is the white crystal. This sugar is nearly free from adulteration. It is used for all culinary purposes in the service.

CLOVES.—Cloves are used to flavour soups, sauces and puddings.

ALLSPICE.—Allspice for meat, etc.

CINNAMON.—Cinnamon is used in sweet dishes and drinks.

NUTMEGS.—Nutmegs in sweet dishes and beverages.

MACE AND CURRY POWDER.—Is used to flavour soups, stews, sauces, etc.

THE COOKING OF RICE.

Boiling rice in small quantities. Wash the rice in several waters, pick out the discoloured and unhusked grains, and place it on to boil in plenty of cold water. This is the secret of having the rice whole, the water keeping the grains separate; leave it uncovered and bring slowly to the boil; shake it occasionally to prevent burning, but do not stir, if it can be avoided. When it has simmered gently, from twenty to twenty-five minutes, it should be tender. Patna rice will not require quite as long to cook as many of the other varieties. Shake in a little salt, and drain it on a colander when the grain will separate and be of the finest flavour.

BOILING RICE IN LARGE QUANTITIES.

Prepare the rice for boiling as already directed. Have ready a boiler containing eight times more water than there is rice. Bring to a sharp boil, throw in the rice, draw the boiler back from the fire, place on the lid, allow to stand for ten minutes, remove the lid, gently stir the rice, replace the lid, allow to remain for ten minutes more, see if the rice is cooked, strain off the water and serve.

Care should be taken that it is not allowed to remain too long in the boiler. Rice should never be overcooked. Rice varies greatly in quality: Carolina is the best, largest, and most expensive. Patna is almost as good; the grains are small, long, and white; it is used chiefly for curries. Madras rice is the cheapest, and yields plentifully. It forms a most valuable article of farinaceous food; it is light, nourishing, easy of digestion, and cheap, and should be kept closely covered to keep insects from it.

RICE PUDDING.

INGREDIENTS.—Rice 8 pounds., milk 4 gallons, sugar 3 pounds., one-half pound of suet.

Wash the rice in cold water, and boil until nearly tender, strain the water from the rice. Grease the sides of the baking dish, mix the milk and sugar together, divide the rice equally between the dishes, well mixed with the milk and sugar. Finely chop the suet and scatter over the top. Bake in a moderate oven for one hour.

MILK POWDER.

To mix milk powder properly proceed in the following manner:—

For large quantities. To one pound of powder, take nine pints of clean cold water, sprinkle the milk powder lightly on the top of the water, about two ounces at a time, then beat it into the water with an egg beater, or whip.

For small quantities, use three level tablespoonfuls of milk powder to one cup of water, or use six level tablespoonfuls when one pint is needed, then proceed to mix as above.

The milk powder MUST ALWAYS BE SPRINKLED ON THE TOP OF CLEAN COLD water, to get the proper result, if warm water is used, or the water poured on to the milk powder, it will form into lumps, which cannot be beaten smooth.

BREAD AND BUTTER PUDDING.

Bread, butter, milk and sugar.

Cut the bread into moderately thin slices, and cover the bottom of a greased baking pan. Mix the milk powder (as previously explained) with sufficient sugar to sweeten, then pour over the bread. Melt your butter, and pour over the whole. Place in the oven, and bake a golden brown. Beef suet, finely shredded, can be used instead of butter.

The above is a good and cheap method of using stale, or left-over slices of bread.

PASTE FOR PIES.

In preparing paste the cook should place his hands under the tap for a few minutes, so that they may be quite cold before touching the ingredients.

INGREDIENTS.—Flour, dripping, salt and cold water.

Finely shred the dripping, should it be hard: if soft, it must be broken into small pieces about the size of a walnut. Mix the flour and salt well together, add the dripping, which should not be rubbed into the flour, but carefully mixed. Work the whole lightly into a smooth paste with the required quantity of cold water, turn out on the table, fold and roll about four times, or press lightly with the hands, roll out, it is then fit for use.

The above paste can be used for meat pies, sea pies, meat puddings and jam rolls.

To make a jam roll, take your paste and roll it out to about one-half inch spread the jam over it, damp the edges of the paste and roll it up, care being taken that the paste at the ends adheres to each other to prevent the jam boiling out. Roll up in a cloth, place in boiling water, and boil gently for three hours.

MEAT PIES.

Meat, flour, dripping, salt, pepper, onions.

Make the paste, separate the meat from the bone, and cut into pieces about an inch square: place a little stock in the baking dish, then the meat and sliced onions, season with salt and pepper, and barely cover with stock, level the surface of the pie, line the sides of the dish with the rough portions of the paste, and cover the remainder; make a hole in the centre, which will allow the unwholesome gas generated by the confined meat cooking to escape: place in the oven; when the crust becomes firm, the pie should only be allowed to simmer gently until cooked; cover with a greased paper if necessary, to prevent the crust being scorched.

SEA PIES.

Meat, flour, potatoes, dripping, salt, pepper, mixed vegetables, onions.

Peel or scrape, clean and cut up the vegetables and onions: peel, wash, and slice the potatoes in halves lengthways. Make the paste, separate the meat from the bone, and cut into small pieces; place some stock in the cooking vessel, add the meat with the potatoes, vegetables, onions, etc., season with pepper and salt, barely cover with stock; cover with paste, making a hole in the centre. It requires to simmer for about 3 hours.

MEAT PUDDINGS.

Meat, dripping, flour, pepper, salt, and onions.

Prepare the paste, and divide into portions; separate the meat from the bones and cut it into thin slices; peel, clean, and slice the onions; have some vessels ready, and equally divide the meat, onions; pepper and salt: barely cover with stock, damp the edges of the vessel, and cover with the paste. Tie up securely with clean cloths, plunge into boiling water, then allow to simmer for four hours.

SECTION 6.

CONTENTS.

Recipes for the cooking for 100 men with canned meat—	
	PAGE.
Beef rissoles.....	43
Meat pies, stewed canned beef.....	43
Sea pie.....	44
Potatoe pie.....	44
Hunters' pie.....	44
Pea soup with salt beef or pork.....	44
Scale of ingredients required for 100 men—	
Baked meat and potatoes.....	44
Baked meat and beans.....	44
Meat pies.....	44
Brown stew.....	44
Plain stew.....	44
Irish stew.....	44
Steamed meat with beans.....	45
Meat puddings.....	45
Sea pies.....	45

RECIPES FOR 100 MEN.

COOKING OF CANNED MEATS.

BEEF RISSOLES.—Mince finely 75 pounds of canned beef, add 37 pounds of bread crumbs, mix 10 pounds of dripping and season with pepper. Chop 6 pounds of onions fine, place in the pan with a little dripping, and stew gently till a nice brown colour, then add the other ingredients, stir the whole well together, divide into balls, and fry a nice brown colour and serve with some flavoured gravey.

Mashed potatoes can be used in lieu of bread crumbs.

Cooked meat left over from dinner or supper can be used as above, but salt must be added if fresh meat.

WHEN MAKING UP DISHES WITH COOKED MEAT, ALL THE INGREDIENTS MUST BE COOKED BEFORE MIXING TOGETHER. THIS IS IMPORTANT.

MEAT PIE.

Canned meat, 75 pounds, 25 pounds flour, 10 pounds dripping or suet, 6 pounds onions, 2 ounces salt, $\frac{1}{2}$ ounce pepper.

Make the paste, cut up and stew the onions with jelly from the meat added. Cut the meat into dice and place it in a baking dish; add the cooked onions, season with pepper; cover with a light crust, and bake in a quick oven half-an-hour.

STEWED CANNED BEEF.

75 pounds meat, 8 pounds of mixed vegetables including onions, $\frac{1}{2}$ ounce pepper. Cut up the vegetables, place in the boiler with sufficient water to cover them; add the jelly from the meat; season well with pepper, and stew gently, keeping the lid of the boiler closely shut until the vegetables are tender, then add the meat; let the whole simmer for ten minutes and serve.

SEA PIE.

Ingredients the same as for stew, with 25 pounds of flour, and 7 pounds of dripping. Make the paste; prepare and cook the vegetables and onions as for stew; when the vegetables are tender, add the meat; cover over with a light paste, and boil or steam for 30 minutes.

POTATO PIE.

75 pounds of meat, 75 pounds of potatoes, 6 pounds onions, 2 ounces salt, $\frac{1}{2}$ ounce pepper. Cut up and stew the onions with the jelly from the meat added; boil or steam the potatoes; when cooked, mash them. Line the sides of the dish with one-third of the mashed potatoes; place the meat and cooked onions in the centre; season with pepper and a little salt; cover over with the remainder of the mashed potatoes, and bake till the potato cover is brown.

As the mashed potato absorbs the moisture of the meat and render it dry, about two pints of gravy prepared from the liquid in which the onions were cooked should be poured into the pie before serving.

HUNTER PIE.

This pie is prepared in a similar manner and with the same ingredients as potato pie, but the top is left uncovered. Both these pies should be baked in a quick oven.

PEA SOUP WITH SALT BEEF OR PORK.

Meat, 75 pounds, peas, 3 pounds, 1 pound flour. Mixed vegetables, 12 pounds. Pepper to season.

Peel, clean, and cut up the vegetables; place the water in the boiler, add the vegetables and peas (which should have been soaked overnight) and boil gently until the peas are soft. Then put into the soup ten pounds of meat which should have been previously well washed in clean cold water, and simmer gently until it is cooked, take it out, cover it up to keep warm. Mix some flour into a smooth batter with cold water, and add it to the soup, keeping it well stirred to prevent burning; boil for thirty minutes and serve.

The remainder of the meat should be well washed with clean water, put in a boiler with sufficient water to cover it, and allowed to boil for thirty minutes; the water in which it was boiled should now be thrown away, the boiler refilled with fresh cold water and the meat simmered till done.

SCALE OF INGREDIENTS REQUIRED FOR 100 MEN:—

BAKED MEAT AND POTATOES...	Meat, 70 pounds, potatoes 80 pounds, onions 4 pounds, salt 1 ounce, pepper $\frac{1}{2}$ ounce.
BAKED MEAT AND BEANS...	Meat 70 pounds, onions 4 pounds, beans, 12 pounds 8 ounces, salt 1 ounce, pepper $\frac{1}{2}$ ounce.
MEAT PIES.....	Meat 70 pounds, onions 4 pounds, flour 20 pounds, salt 1 ounce, pepper $\frac{1}{2}$ ounce, dripping 5 pounds.
BROWN STEW.....	Meat 70 pounds, mixed vegetables and onions 8 pounds, flour 3 pounds, salt 1 ounce, pepper $\frac{1}{2}$ ounce.
PLAIN STEW.....	Meat 70 pounds, mixed vegetables and onions 8 pounds, flour 3 pounds, salt 1 ounce, pepper $\frac{1}{2}$ ounce.
IRISH STEW.....	Meat 70 pounds, potatoes 80 pounds, onions 6 pounds, salt 1 ounce, pepper $\frac{1}{2}$ ounce.

STEAMED MEAT WITH BEANS..	Meat 70 pounds, beans 12 pounds, onions 4 pounds, salt 1 ounce, pepper $\frac{1}{2}$ ounce.
MEAT PUDDINGS.....	Meat 70 pounds, flour 20 pounds, onions 4 pounds, dripping 5 pounds, salt 1 ounce, pepper.
SEA PIES.....	Meat 70 pounds, potatoes 80 pounds, mixed vegetables and onions 6 pounds, salt 1 ounce, pepper $\frac{1}{2}$ ounce, flour 14 pounds, dripping $3\frac{1}{2}$ pounds.

It is to be noted that the whole of the meat ration is not cooked for the midday meal. The thirty pounds not shown, is intended for distribution as steaks, hash, or Hamburg steak, etc., and to be used for breakfast or supper.

SECTION 7.

CONTENTS.

MISCELLANEOUS RECIPES.

	PAGE		PAGE
Puddings.....	46	Tea scones.....	52
Eggs.....	46	Soda scones.....	52
Fried bacon.....	46	Wheaten meal scones.....	52
Currant rolls.....	47	Rice scones.....	52
Raisin pudding.....	47	Beef tea.....	52
Date pudding.....	47	Mutton broth.....	52
Baked rice pudding.....	47	Chicken broth.....	53
Bread and butter pudding.....	47	Rice water.....	53
Tapioca.....	47	Barley water.....	53
Apple pies and tarts.....	47	Toast and water.....	53
Apple puddings.....	48	Sugar water.....	53
Apple rings.....	48	Arrowroot.....	53
Dried figs and prunes.....	48	To prepare sago or tapioca.....	53
Treacle puddings.....	48	To make gruel.....	53
Treacle tarts.....	48	Oatmeal porridge.....	53
Macaroni pudding.....	48	Onion porridge.....	54
Biscuit pudding.....	48	To make stock for jelly and clarify it.....	54
Bread crumb pudding.....	49	Cowheel stock for jellies.....	54
Baked custard pudding.....	49	Bread making.....	54
Arrowroot blancmange.....	49	Water.....	55
Cheap blancmange.....	49	Salt.....	55
Baked rice puddings.....	49	Yeast.....	55
Tapioca puddings.....	50	Setting the sponge.....	55
Plain bread puddings.....	50	Making the dough.....	56
Bread and butter puddings.....	50	Scaling and moulding.....	56
Boiled rice pudding.....	50	Baking.....	56
Bread pudding.....	51	Bread made with baking Powder.....	56
Plain pancakes.....	51	Judging bread.....	57
Pancakes (sugar).....	51	Varieties of bread.....	57
Muffins.....	51		
Tea scones.....	51		

PUDDINGS.

Puddings should also be placed in boiling water. The water should be kept at a steady boil. Flour when used as a thickening in soup, requires 30 to 40 minutes' boiling, oatmeal from 50 minutes to 1 hour.

EGGS.

POACHED.—Break some new-laid eggs into separate cups; then drop them one after the other into a stewpan containing boiling water, mixed with a tablespoonful of white vinegar and a little salt; keep this boiling while the eggs are dropped in at the side of the stewpan; when they have boiled for 2 minutes, drain them on a clean cloth, then place each one on a square or oval piece of dry toast or fried ham, bacon, etc.

BOILED.—For breakfast, should be placed in boiling water, and allowed from 3 to 3½ minutes to set the whites nicely; if liked hard, 6 to 7 minutes will not be found too long; for salad, they should be boiled 10 to 15 minutes.

FRIED BACON.

Cut the bacon into thin slices, trim away the rusty part, and cut off the rind; put into a cold frying pan, that is to say, do not place the pan on the fire before the bacon is in it; turn it 2 or 3 times, and dish it on a very hot dish, poach the eggs, and slip them on to the bacon without breaking the yolk, and serve quickly.

CURRANT ROLLS.

INGREDIENTS.—The same as for plain pudding, with the addition of currants and sugar.

Proceed as for jam rolls, wash and dry the currants, picking out the stalks and any grit that may remain, distribute the currants equally over the paste; add a thin layer of sugar, roll and finish as for jamb rolls.

RAISIN PUDDING.

Flour, raisins, dripping, egg powder, baking powder, salt.

Stone and chop up the raisins if time will allow; if not, use sultana raisins, shred the dripping, then mix the flour, baking powder, egg powder, salt, and dripping, add the raisins, and mix well together; add sufficient water to make a rather stiff paste, divide it into equal portions, tie in a cloth, and boil for 4 hours; if rolled, as in a plain suet pudding, 3½ hours will be found sufficient.

DATE PUDDING.

Dates, flour, sugar, dripping, salt, nutmegs.

Stone the dates, shred the dripping, place the flour, salt, sugar, and grated nutmeg in a dish, mix together, add the dates and dripping, mix the whole well together; moisten with sufficient cold water (mixing lightly) to make a tolerably soft dough.

Tie up in cloths as in plain pudding, and boil gently for 3½ hours.

BAKED RICE PUDDING.

Rice, milk, sugar.

Wash the rice in cold water and boil until nearly tender, strain the water from the rice, butter the sides of the baking dish, mix the milk and sugar together, divide the rice equally between the dishes, and well mix with the milk and sugar; distribute the butter in small pieces over the surface, grate a little nutmeg over the top, and bake in a moderate oven for 1 hour. Slices of candied peel, currants, or sultana raisins may be added to improve the flavour.

BREAD AND BUTTER PUDDING.

Bread, sugar, currants, butter, milk, suet.

Cut the bread into moderately thin slices (remove any hard crust), butter it; wash, dry, and carefully pick the currants, free the suet from skin and chop fine; place a layer of bread at the bottom of the dish, a layer of currants and sugar, and suet, then another layer of bread, and so on alternately, till the dish is nearly full. Pour in the milk at the side of the dish until it appears on the surface. Bake of a nice brown colour in a moderate oven. It will require 1½ hours.

TAPIOCA.

Tapioca, milk, sugar, nutmegs, butter; soak the tapioca in a small quantity of water, divide it equally in the dishes, add the sugar to the milk, and well mix with tapioca, break the butter in small pieces, distribute over the surface of the pudding, grate a nutmeg over each dish, and bake for 1 hour or longer, according to the size of the pudding.

APPLE PIES OR TARTS.

Flour, apples, dripping, baking powder, sugar, cloves.

Make the paste described in No. 1, peel, core, and cut the apples into slices, place a thin border of paste around the sides of the dishes; and add the sugar and cloves, with sufficient water to cover the bottom of the dish, cover with paste, and bake in a quick oven for 1 hour.

APPLE PUDDING.

Flour, apples, baking powder, sugar, cloves, salt, dripping.

Make the paste, peel, core, and cut the apples into slices. Line the inside of a "Cooker" with a portion of the paste. Place in the apples, sugar, and cloves, well cover the bottom of the cooker with water, cover with the remainder of the paste, and with a moderate steam will require from 2 to 2½ hours to cook.

APPLE RINGS.

Apple rings, or any fruit from which the moisture has been evaporated, should be soaked in the same quantity of water for eight or nine hours. They are then used as detailed for apple tarts, care being taken, however, to see that they do not get dry during the process of cooking. Dried or evaporated fruits require more time to cook and absorb more water than fresh fruit.

DRIED FIGS AND PRUNES.

If for stewing, they should be separated and picked over, then soaked over night in sufficient water to cover them. Figs or prunes may be stewed by means of steam, or in a covered dish in an oven. Sufficient sugar to sweeten them should be added, and if required, a little lemon flavouring.

Figs for puddings should be prepared as for stewing, the hard stems removed and the fruit cut into small pieces, then proceed as for Date Pudding.

TREACLE PUDDING.

Flour, treacle, baking powder, egg powder, salt, dripping.

Place the flour, baking and egg powders, with salt in a dish, mix well. Put in the chopped dripping, add sufficient cold water to make a tolerably stiff paste.

Roll out about half an inch thick, spread the treacle over the surface of the paste, damp the edges, roll around, taking care that the ends adhere to each other to prevent the treacle from boiling out. Tie in a cloth, and boil gently from 2½ to 3 hours.

TREACLE TARTS.

Flour, treacle, dripping, baking powder, and bread crumbs.

Make the paste. Grease the inside of a pie dish. Roll out the paste to about one-eighth of an inch thick; line the inside of the dish; spread a thin layer of treacle at the bottom; sprinkle on the bread crumbs. Cut a piece of paste the size of the dish. Place this on the top, add another layer of treacle, then a layer of paste, and so on till the dish is nearly full; bake in a moderate oven till done; time required for baking depends upon the size of the dish; an ordinary dish about ½ hours.

MACARONI PUDDING.

INGREDIENTS FOR 60 MEN.—Six pounds macaroni; 3 gallons milk; 3 pounds sugar; 1 nutmeg; ½ pound butter.

Break the macaroni into pieces about 1 inch long. Drop them into boiling water to which a little salt has been added, and simmer for about 40 minutes.

Proceed as for rice pudding.

BISCUIT PUDDING.

INGREDIENTS FOR 60 MEN.—Ten pounds biscuit crumbs; 4 pounds flour; 3 pounds sugar; 3 pounds suet; 41 tablespoonfuls lemon or lime-juice; pinch of salt.

METHOD.—Thoroughly dry the biscuits, then crush with a rolling pin or pass through a mincing machine. Soak in cold water for about 15 minutes. Remove all skin from the suet, then chop very fine. Add the flour, sugar, suet, salt and lime-juice to the soaked biscuits. Stir well together with sufficient water to make a stiff paste. Grease some basins or dishes and boil or bake till done. The time allowed for cooking depends on the size of the pudding.

BREAD CRUMB PUDDING.

INGREDIENTS FOR 60 MEN.—Eight pounds bread crumbs; 4 pounds flour; 3 pounds currants; 3 pounds raisins; 3 pounds suet; 3 pounds sugar; a little spice and a pinch of salt.

METHOD.—Carefully prepare the fruit, then proceed as for biscuit pudding.

BAKED CUSTARD PUDDINGS FOR 5 OR 6 PERSONS.

One and one-half pints of milk, the rind of $\frac{1}{2}$ lemon, $\frac{1}{2}$ pound of moist sugar, and 4 eggs. Put the milk into a saucepan with the sugar and lemon rind, and let this infuse for half an hour, or until the milk is well flavoured, whisk the eggs, yolks and white; add the milk to them, stirring all the while; then have ready a pie dish, lined at the edges with paste already baked; strain the custard into the dish, grate a little nutmeg over the top, and bake in a very slow oven for about half an hour or a little longer; the flavour of the pudding may be varied by substituting bitter almonds for the lemon rind, and it may be much enriched by using half cream and half milk, and doubling the quantity of eggs.

ARROWROOT BLANC MANGE FOR 5 OR 6 PERSONS.

Four large tablespoonfuls of arrowroot, $1\frac{1}{2}$ pints of milk, 3 laurel leaves, or the rind of $\frac{1}{2}$ a lemon, sugar to taste; mix to a smooth batter the arrowroot with $\frac{1}{2}$ pint of milk; put the other pint on the fire, with laurel leaves or lemon peel, whichever may be preferred, and let the milk simmer until it is well flavoured. Then strain the milk and add it boiling to the mixed arrowroot; sweeten with sifted sugar, and let it boil, stirring it all the time till it thickens sufficiently to come from the saucepan; grease a mould with pure salad oil, pour in the blanc-mange, and when quite set, turn it out on a dish, and pour round it a compote of any kind of fruit, or garnish it with jam. A tablespoonful of brandy, stirred in just before the blanc-mange is moulded, very much improves the flavour of this dish. Cost 6d. with the garnishing.

CHEAP BLANC-MANGE.

One-quarter pound sugar, 1 quart milk, $1\frac{1}{2}$ ounces isinglass, the rind of $\frac{1}{2}$ lemon, 4 laurel leaves. Put all the ingredients into a lined saucepan, and boil gently until the isinglass is dissolved; taste it occasionally to ascertain whether it is sufficiently flavoured with the laurel leaves; then take them out and keep stirring the mixture over the fire for about 10 minutes; strain it through a fine sieve into a jug and when nearly cold, pour it into a well oiled mould, omitting the sediment at the bottom, turn it out carefully on a dish, and garnish with preserves, bright jelly, or a compote of fruit.

BAKED RICE PUDDING FOR 5 OR 6 PERSONS.

Small teacupful of rice, 4 eggs, 1 pint milk, 2 ounces fresh butter, 2 ounces beef marrow, $\frac{1}{2}$ pound of currants, 2 tablespoonfuls of brandy, 1 nutmeg, $\frac{1}{2}$ pound sugar, and the rind of $\frac{1}{2}$ a lemon.

Put the lemon rind and milk into a stewpan, and let it infuse until the milk is well flavoured with the lemon; in the meantime, boil the rice until tender in water, with a very small quantity of salt, and when done, let it be thoroughly drained; beat the eggs, stir in them the milk, which should be strained; the butter, marrow, currants, and remaining ingredients; add the rice and mix the whole together, line the edge of the dish with puff paste, put in the pudding and bake in a slow oven for about three-quarters of an hour. Slices of lemon peel may be added, or sultana raisins may be substituted for currants.

MISCELLANEOUS.

TAPIOCA PUDDING.

Put 10 ozs. of tapioca into a stewpan with a quart of milk, 6 ozs. of sugar, 2 ozs. butter, a pinch of salt, and some grated lemon peel, stir this over the fire till it boils, then withdraw it; add 4 eggs, mix well and bake for half-an-hour in a pie dish. If the eggs be whipped separately, and gently mixed in with preparation, the pudding will be much lighter. All kinds of farinaceous substances may be prepared as above.

PLAIN BREAD PUDDING FOR 5 OR 6 PERSONS.

Odd pieces of crumb of bread, salt, grated nutmeg, moist sugar, currants, and butter. Break the bread into small pieces, and pour as much boiling water on them as will soak them well; let these stand until the water is cool, then press it out and mash the bread with a fork until it is quite free from lumps.

Measure this pulp, and to each quart add $\frac{1}{2}$ teaspoonful of salt, 1 of grated nutmeg, 3 ozs.-moist sugar, and $\frac{1}{2}$ lb. currants; mix it all well together, and put it into a well-buttered pie dish; smooth the surface with the back of a spoon, and place a small piece of butter on the top; bake in a quick oven for $1\frac{1}{2}$ hours, and serve very hot. Boiling milk substituted for the boiling water would very much improve the pudding. Cost 6d.

BREAD AND BUTTER PUDDING.

2 lbs. bread, $\frac{1}{2}$ lb. butter, $1\frac{1}{2}$ pints of milk, 4 eggs, sugar to taste, $\frac{1}{4}$ lb. currants, flavouring of vanilla, grated lemon peel or nutmeg.

Cut the bread into slices, and butter them and place in a pie dish, with currants between each layer and on the top, sweeten and flavour the milk, either by infusing a little lemon peel in it, or by adding a few drops of essence of vanilla; well whisk the eggs and stir these to the milk, strain this over the bread and butter, and bake in a moderate oven for 1 hour or more. This pudding may be very much enriched by adding candied peel or more eggs than stated above. It should not be turned out, but sent to the table in the dish, and is better if made about 2 hours before being baked.

BOILED RICE PUDDING.

$\frac{1}{2}$ lb. rice, $1\frac{1}{2}$ pints milk, 2 ozs. butter, 4 eggs, $\frac{1}{2}$ oz. salt, 4 large table-spoonfuls of sugar, flavouring to taste. Stew the rice very gently in the milk, and when it is tender pour it into a basin; stir in the butter and let it stand to cool, then beat the eggs; add these to the rice with the sugar, salt and any flavouring that may be approved, such as nutmeg, powdered cinnamon, grated lemon peel, essence of bitter almonds, or vanilla; when all is well stirred, put the pudding into a buttered basin; tie it down with a cloth; plunge it into boiling water, and boil for $1\frac{1}{2}$ hours.

BREAD PUDDING.

Bread, currants or raisins, candied peel, sugar, chopped suet, flour, milk, baking powder, and salt.

Soak the bread in warm water for 15 minutes; squeeze the bread as dry as possible; add the fruit, chopped suet, flour and salt; mix well together; dissolve the baking powder in the milk; add this to the other ingredients, stirring well; a little spice, ginger or grated nutmeg may be added to improve the flavour.

Grease the inside of a dish; place in the mixture, smoothing the surface with the back of a tablespoon; steam or boil for 3 hours.

PLAIN PANCAKES.

Mix in a basin with a spoon 4 ozs. of flour, 4 eggs, a little salt, some grated lemon peel, and a pint of milk or cream, and fry spoonfuls of this batter with a little butter in small frying pans over a clear fire.

The pancakes must be fried on both sides, and when done rolled up with sugar inside, and dished up on a warm dish. French pancakes are made by introducing some preserve in the ordinary pancake.

PANCAKES (SUGAR).

Put the pan on the fire with a tablespoonful of dripping, let it melt, pour off all that is not wanted, then pour in 3 tablespoonfuls of the following batter:—

Break 4 eggs in a basin, add 4 small tablespoonfuls of flour, 2 teaspoonfuls of sugar, a little salt, beat all well together, mixing by degrees half a pint of milk a little more or less depending on the size of the eggs and the quality of the flour; it must form a rather thick batter, a little ginger, cinnamon, or any other flavour can be added if preferred, 2 eggs only may be used, but in this case use a little more flour and milk. When set and one side brownish, lay hold of the pan at the extremity of the handle, give it a sudden but slight jerk upward, and the cake will turn over on the other side, which when brown, dish up with sifted sugar over; serve with lemon; chopped apples may be added to the batter; currants and sultanas can be mixed with it.

MUFFINS.

INGREDIENTS.—Flour, eggs, milk, butter, carbonate of soda, tartaric acid or baking powder, and salt.

Place 2 lbs. of flour in a dish; add a good pinch of carbonate of soda, and tartaric acid and a little salt, mix the whole well together; melt about two oz. of butter; add it to the flour; mix lightly; add the eggs and milk, which have been previously well whisked together; stir lightly until it becomes a nice light paste; take it out of the dish and roll it out about three-quarters of an inch thick; care being taken that the ingredients are handled as lightly as possible in mixing and rolling; cut the muffins out a round or triangular shape; place in a hot oven for a few minutes, care being taken that they are turned; 1 egg and $\frac{1}{2}$ pint of milk will be found sufficient for the quantity. In using baking and egg powder, $\frac{1}{2}$ teaspoonful of each will be sufficient.

TEA SCONES.

INGREDIENTS.—Flour, eggs, milk, baking powder, salt and butter. Proceed as above, roll them out a little thinner, and bake them in a hot oven or on a griddle a nice brown colour, and serve hot. (This remark applies to muffins.)

TEA SCONES.

Ingredients the same as above, substituting dripping for butter. Get some nice beef dripping, place the flour and baking powder in a dish, rub the dripping in the flour, and mix the whole well together, add themilk and eggs as before, mix lightly, and proceed as above.

SODA SCONES.

$3\frac{1}{2}$ lbs. of flour, large teaspoonful of carbonate of soda, 1 teaspoonful of cream of tartar, buttermilk, and a small teaspoonful of salt.

Mix the dry ingredients well together, lightly add the butter and milk to make the dough, and divide into from 4 to 6 pieces. Sprinkle a little flour on the baking board, and roll out the dough with the rolling pin to about a $\frac{1}{4}$ of an inch thick, cut in four, and bake on a hot griddle till of a pale brown colour, then turn and bake the other side.

WHEATEN MEAL SCONES.

1 lb. wheatmeal, 1 lb. flour, teaspoonful of carbonate of soda, teaspoonful of cream of tartar, teaspoonful of dripping, half a teaspoonful of salt, and a little buttermilk.

Mix the meal, flour, soda, cream of tartar, dripping, and salt well together, then add the buttermilk to make a light dough, divide, and roll out to the thickness of $\frac{1}{4}$ of an inch, and bake on not too hot a griddle.

RICE SCONES.

\sim 1 lb. rice, $\frac{1}{2}$ lb. flour, 1 teaspoonful of sugar, and $\frac{1}{2}$ teaspoonful of salt. Put the rice and sugar into a saucepan with 1 quart of water, and let it come to the boil; then set it to the side of the fire, and let it steam for 2 hours with the lid closed till all the water has been absorbed, and the rice becomes soft; then sprinkle the flour on the baking board, and turn the rice on it, let it stand to cool, then divide into 6 parts and roll out very thin, cut each in 3, and bake on a griddle not too hot.

BEEF TEA.

To each pound of beef allow 1 quart of water. Pare away every particle of fat and cut the meat (which should be cut from the rump or gravy piece) into very small squares of mince, and put this into a clean stewpan, add the water and set it on the fire to boil, remembering that as soon as the scum rises to the surface it should be removed with a spoon, and a very small quantity of cold water and salt should be poured in at the edge of the stewpan in order to facilitate the rising of the albumen in the form of scum. Unless due precaution be taken to effect the skimming satisfactorily the broth, instead of becoming clear and bright, becomes thick and turbid, and thus presents an unappetising appearance to the eye of the patient.

When beef tea has boiled gently for about half an hour and become reduced to about half its original quantity, let it be strained through a clear sieve or napkin into a basin, and serve with dry toast and salt. The foregoing is intended for patients whose case may require comparatively weak food; in cases where food of a more stimulating character is needed in the form of extract of beef, it will be necessary to double the quantity of meat, and when it happens that beef tea is required in a hurry the meat should be chopped as finely as sausage meat, put into a stewpan with boiling water, stirred on the fire for ten minutes, and then strained through a napkin for use.

MUTTON BROTH.

To each pound and a half of the scrag of mutton add 1 quart of water, a little salt, 2 ozs. of pearl barley. Chop the mutton into small pieces and add with the water in the stewpan; set it to boil, skim it well, add a little salt and the barley, boil gently for 1 hour, strain off the broth through the sieve into a basin, and serve with dry toast; a turnip and half a head of celery may be added where vegetables are not objected to.

CHICKEN BROTH.

Draw the chicken, scald the legs, and remove the cuticle which covers them, cut up the chicken into members or joints, leaving the breast whole, put the pieces of chicken into a very clean stewpan, with a quart of water, a little salt, and 2 ozs. of washed rice, boil very gently for 1 hour, and when done serve the broth with or without the rice, according to taste.

RICE WATER.

Wash 3 ozs. of rice in several waters and then put in a clean stewpan with a quart of water and 1 oz. of raisins, boil gently for $\frac{1}{2}$ an hour, strain through a coarse hair sieve into a jug.

BARLEY WATER.

2 ozs. of pearl barley boiled in a quart of water for 20 minutes and afterwards allowed to stand until it becomes cold; it must then be strained through a sieve into a jug, and a small piece of lemon peel added.

TOAST AND WATER.

Boil a quart of water and pour it on a good-sized piece of crumb of bread which has been well toasted before a clear fire until it becomes nearly crisp and of a dark brown colour; allow this to steep for half an hour; it is then ready.

SUGAR WATER.

To a pint of cold spring water add an ounce of lump sugar and a tablespoonful of orange flower water, mix. This is a very refreshing drink in summer, and is besides perfectly harmless.

ARROWROOT.

To half a pint of boiled water add rather more than half an ounce of Bermuda arrowroot, previously mixed in a teacup with a wineglassful of cold water. Stir this on the fire until it boils for a few minutes, pour it into a basin, flavour with a little sugar, and a small spoonful of brandy or a little red or white wine, or else with a little piece of orange or lemon peel, which may be boiled with the arrowroot.

TO PREPARE SAGO OR TAPIOCA.

Boil 2 ozs. of either in a pint of water for 20 minutes, and flavour as directed for arrowroot; sago may also be boiled in either mutton, chicken, or veal broth, or in beef tea.

TO MAKE GRUEL.

Take one teaspoonful of oatmeal and mix with a wineglassful of water, and having poured this into a stewpan containing a pint of boiling water, stir the gruel on the fire, to boil ten minutes; pour it into a basin, add salt and butter or if more agreeable, rum, brandy, or wine and sugar.

OATMEAL PORRIDGE.

Boil a quart of water in a saucepan, as soon as it boils sprinkle slowly in a cupful of coarse oatmeal, stirring gently until it is thick and smooth enough, pour it at once on to plates and serve with cold milk or treacle.

ONION PORRIDGE.

Take a large Spanish onion, peel and split it into quarters, and put these into a small saucepan with a pint of water, a pat of butter and a little salt, boil gently for half an hour, add a pinch of pepper, and eat the porridge just before retiring for night. This is an excellent remedy for colds.

TO MAKE STOCK FOR JELLY AND CLARIFY IT.

INGREDIENTS.—2 calves' feet, 6 pints water. The stock for jellies should always be made the day before it is required for use, as the liquor has time to cool, and the fat can be so much more easily and effectually removed when thoroughly set. Procure 2 calves' feet, scald them to take off the hair, slit them in two, remove the fat from between the claws, and wash the feet well in warm water, put them into a stewpan, with the above proportion of cold water, bring it gradually to the boil, and remove every particle of scum as it rises; when it is well skimmed boil very gently for 6 or 7 hours, or until the liquor is reduced rather more than one half; then strain it through a sieve into a basin, and put it into a cool place to set; as the liquor is strained, measure it to ascertain the proportion for the jelly, allowing for the sediment and fat at the top. To clarify it, carefully remove all the fat from the top, pour over a little warm water to wash away any that may remain, and wipe the jelly with a clean cloth; remove the jelly from the sediment, put it into a saucepan, and, supposing the quantity to be a quart, add to it 6 ozs. of loaf sugar, the shells and well-whisked whites of 5 eggs, and stir these ingredients together cold; set the stewpan on the fire, but do not stir the jelly after it becomes warm; let it boil about 10 minutes after it rises to ahead, then throw in a teacupful of cold water, let it boil for five minutes longer, then take the saucepan off, cover it closely, and let it remain $\frac{1}{2}$ an hour near the fire; dip the jelly bag into hot water, wring it out quite dry, and fasten it on to a stand or the back of a chair, which must be placed near the fire to prevent the jelly setting before it has run through the bag; place a basin underneath to receive the jelly; then pour it into the bag, and should it not be clear the first time, run it through the bag again. This stock is the foundation of all really good jellies, which may be varied in innumerable ways by colouring and flavouring with liquors, and by moulding it with fresh and preserved fruits. To ensure the jelly being firm when turned out, $\frac{1}{2}$ oz. isinglass, clarified, may be added to the above proportion of stock. Substitutes for calves' feet are now used plentifully in making jellies, which lessen the expense and trouble in preparing this favourite dish, isinglass and gelatine being two of the principal materials, but although they may look as nicely as jellies made from good stock, they are never so delicate, having very often an unpleasant flavour, somewhat resembling glue, particularly when made with gelatine.

COWHEEL STOCK FOR JELLIES.

Procure 2 heels that have only been scalded and not boiled, split them in two, and remove the fat from between the claws; wash them well in warm water, and put them into a saucepan with 3 quarts of cold water, bring it gradually to the boil, remove all scum as it rises, and simmer the heels gently for 7 or 8 hours, or until the liquor is reduced one-half, then strain it into a basin, measuring the quantity, and put it into a cool place; clarify it as directed for calves' feet, using with the other ingredients about $\frac{1}{2}$ oz. isinglass to each quart. This stock should be made the day before it is required for use. Two dozen shank bones of mutton boiled for 6 or 7 hours yield a quart of strong, firm stock. They should be put on in 2 quarts of water, which should be reduced one-half. This should also be made the day before it is required.

BREAD MAKING.

Bread may be broadly divided into two classes:—

(a) Fermented, or leavened bread, in which the carbonic acid gas necessary to distend the dough and cause the loaf to rise is produced by some form of yeast.

(b) Unfermented bread, in which the requisite gas is either produced by chemicals (baking powder), or forced into the dough by a mechanical process.

Fermented bread is usually made in the army, though baking powder may be resorted to on active service, or on extreme emergency.

Fermented bread is manufactured from wheat flour, water, salt, and some form of yeast.

It is necessary to allude to these ingredients briefly, before describing the process of bread making.

WATER.

Soft water is best, and it is essential that it should be clean and pure.

SALT.

The functions of salt are to bind the dough, to prevent injurious fermentation, and to impart a flavour to the loaf. It should be white, crystalline, dry, and soluble in water. The usual proportion is $3\frac{1}{2}$ lbs. to every sack of flour (280 lbs.).

YEAST.

Yeast is a plant of the fungus tribe, which in congenial soil grows very rapidly, and gives off large quantities of carbonic acid gas.

This gas is employed in raising the bread, and making it light and digestible.

"PARISIAN YEAST" is the yeast generally used in the Service in the field, and is made by the baker himself on the spot as follows:—

To make 1 gallon, boil 1 gallon of water, put into it 1 ounce hops, and allow them to simmer 40 minutes. Take $\frac{1}{2}$ pound flour, mix it with a little cold water, and scald it with sufficient of the hop liquor to make a thick paste. Then strain the remainder of the hop liquor on to the paste, thoroughly mix, and allow the mixture to cool down to 90. Then "stock," i.e., introduce the yeast plant, using any substance containing that plant in large quantities, such as 1 pint of old "Parisian" yeast, $\frac{1}{2}$ oz. D.C.L. yeast, 1 pint of beer or stout, or $\frac{1}{2}$ lb. sugar. The yeast should be allowed to rise and fall once before being used. 5 pints are required to each sack of flour (280 lbs.).

SOUR DOUGH YEAST is also manufactured by the baker, and may be used on emergency when "Parisian" or other yeast is not available. It is made as follows:—

Mix about 4 pounds of flour with water into a dough, and allow the mass to ferment for about 12 hours in a warm atmosphere. Directly the mixture shows the slightest signs of movement, add $2\frac{1}{2}$ gallons of water with 1 oz. salt dissolved in it. This preparation is quick-working, but unreliable and difficult to handle. 6 pounds of dough in $2\frac{1}{2}$ gallons of water are required to each sack of flour.

The various operations which take place in turning the above ingredients into bread are as follows:—

1. Setting the sponge.
2. Making the dough.
3. Scaling and moulding.
4. Baking.

It is assumed throughout that two sacks of flour (560 lbs.) are being converted into bread, this being the most convenient quantity for bakers to handle.

SETTING THE SPONGE.

The sponge is a preliminary mixture of part of the flour with the total amount of yeast necessary, and a due proportion of water, and its object is to give the yeast a fair chance to get firmly established.

Sponges are described as " $\frac{1}{4}$ sponge," " $\frac{1}{2}$ sponge," and " $\frac{3}{4}$ sponge," the fraction indicating the proportion of the total amount of flour to be used in setting the sponge. The class of sponge to be used varies according to conditions of climate and temperature, i.e., in a frost the $\frac{1}{4}$ sponge might be used, whereas in a very hot climate the $\frac{3}{4}$ sponge would be employed. In this country the $\frac{1}{2}$ sponge is the one most commonly worked with.

Assuming that a $\frac{1}{2}$ sponge is used with Parisian Yeast, the component parts of it, i.e., 280 pounds flour, 10 pints of yeast and $12\frac{1}{2}$ gallons of warm water, are thoroughly mixed together in a trough, and allowed to rise and fall twice. This takes about 12 hours, when the mixture is ready for the next process, which is:

MAKING THE DOUGH.

The sponge is now broken up, and the remaining ingredients, i.e., 280 pounds flour, 7 pounds salt, and 14 gallons of water are added, and the whole mass thoroughly kneaded. It is then left to work for about 3 hours.

SCALING AND MOULDING.

The dough is now turned out of the trough, cut into lumps, and the lumps "scaled" according to the weight of the loaves required. As considerable weight is lost by evaporation during baking, and up to the time of issue, a 2 pound loaf must be scaled at 2 pounds $3\frac{1}{2}$ ounces, and a $2\frac{1}{2}$ pound loaf at 2 pounds 13 ounces.

The scaled lumps are then moulded or shaped into the form of a loaf, left in a warm place for about $\frac{1}{4}$ hour, and are then ready for the oven.

BAKING.

The moulded lumps of dough are then placed into the oven.

The proper heat for an oven is from 400° to 500° , according to the class of oven used, and the time taken in baking is as follows:—

	In Tins or separate Loaves.	In Batch Bread.
$2\frac{1}{2}$ lb. loaf.....	50 min. to 1 hr.....	$1\frac{1}{2}$ hrs.
2 lb. loaf.....	40 min. to 1 hr.....	$1\frac{1}{4}$ hr.

When baked, bread should be taken at once into the bread store to cool. The store should be dry, cool, and well ventilated, and not more than two layers of loaves of new bread should be placed on one rack.

BREAD MADE WITH BAKING POWDER.

The advantage of using baking powder is the saving of time effected in the production of bread, a feature which may sometimes render this process useful on service when bread has to be produced at short notice. The method of using baking powder is as follows:—

Spread the flour evenly at the bottom of the trough, sift the baking powder over the flour, taking care to break up any small lumps, which, if left, would cause a yellow stain in the bread. The dry powder and flour should then be thoroughly mixed.

Dissolve salt, at the rate of $2\frac{1}{2}$ pounds per sack of flour only, as a considerable quantity of saline matter is contained in all baking powders, in the softest and coldest water obtainable; water which has been boiled and allowed to get cool is the best for the purpose.

Mix the flour, baking powder, and water thoroughly with a rotary motion, constantly stirring up from the bottom. The dough being properly mixed should be scaled, moulded, and placed in a quick oven. To make a good loaf with baking powder, the bread should be in the oven within 30 minutes of adding the water to the flour. No more salt than the above-mentioned proportion should be used, or the bread becomes heavy, dark, and briny. If the dough is allowed to lie about, the effervescence is finished before it is put in the oven. Full directions as to the method of using baking powders, and the proportion required, are given on the tins.

JUDGING BREAD.

The current conditions of contract, a copy of which should be hung up in every bread store, enact that the bread supplied shall be sweet, well made, properly baked, and of the description or quality known as "best household," made from flour clean and free from grit, the produce of good, sound, sweet, and dry wheat; that it shall be in all respects as good in quality as the best plain or fine (as distinguished from fancy) bread usually sold by the trade as "Best Household Bread," with which it shall frequently be compared.

The bread must be delivered not earlier than 24 hours, nor later than 48 hours after baking, and the loaves must weigh 2 pounds at the time of issue.

It is subject to inspection and approval by an Officer or Officers acting on behalf of the G.O.C., and in case of rejection the contractor has the right of appeal to the Officer Commanding at the station, and finally to the General Officer Commanding.

The main characteristics of a good loaf, fulfilling the conditions enumerated above, are as follows:—

The crust should be a rich yellowish-brown, well baked but not burnt, as thin as possible, and distributed all round the loaf. The crumb should be cream-white in colour, light, flaky, elastic, and full of small, evenly distributed cavities.

In tasting a loaf, the crumb should always be eaten.

Several loaves should be selected from different parts of a consignment of bread, and each weighed singly.

When required, the contractor must deliver bread in accordance with the specification, to the extent of half a pound per diem for each soldier included in the ration return for use in the Regimental Recreation Rooms, and for other similar purposes. The right is also reserved to issue Biscuit from Government Stores to the extent of one issue per week.

VARIETIES OF BREAD.

In England, as a rule, bread is exclusively made of wheat flour. Abroad, however, the flour of other cereal grains is also used. Wheat flour is by far the most suitable for bread baking, being the most nutritious, and containing a larger proportion of gluten than other flour.

Indian corn bread, although less nutritious than that made from wheat, is more fattening, in consequence of the greater quantity of oil it contains. It does not bake in the light spongy loaves as wheaten flour, and its flavour is not agreeable. It is, however, excellent in the form of cakes.

Rye bread is little used in England, but common on the Continent. It is wholesome but dark coloured, sometimes black and less spongy than bread made from wheat flour. It possesses the quality of retaining its freshness for a long time.

Oat bread. Owing to a peculiar quality of the gluten which the oat contains, the meal of this grain does not admit of being baked into a light spongy bread.

Rice bread. Rice flour is scarcely ever made into bread, although it is not infrequently mixed with wheat flour intended for bread, and sold under the name of "corn flour." It is cheaper than wheat flour, and is used for dusting the boards, troughs, and dough.

SECTION 8.

CONTENTS.

PAGE.

Economy.....	58
Disposal of refuse.....	58
Fireless cookers.....	59
Table of the relative parts of beef.....	60
Value of various joints.....	60
Hints for O.C. units in cases of emergency.....	60
Travelling kitchen.....	61
Sectional view of fireless cooker.....	66
Sectional view of improvised fireless cooker.....	67

ECONOMY.

To carry on the messing of a battalion or company and to handle the ration properly strictest economy must be observed.

The government ration is sufficient for any man.

All bones must be used for soups and gravies, they must not be got rid of until all the nutritive parts have been extracted.

Suet and fat must be rendered down and used for frying, paste for pies, puddings, etc., the surplus dripping can then be sold for a good price, and the money credited to the funds, and used for the purpose of any small extras in the shape of baking powder, herbs, etc.

Bones can also be sold. Cooks must not be allowed to dispose of any garbage, bones, dripping, etc.

Bacon left over from breakfast will make a splendid flavouring for soups, etc.

Beans that may be left over will make a good soup.

Cold potatoes can be fried for supper or breakfast. Meat left over should be made into rissoles, shepherds pie, hash, etc., for supper or breakfast. Bread can be made into puddings or sliced and fried for breakfast to be served with bacon, it can also be used for thickening soups. Surplus stock can be boiled down, put into jars and used for enriching stews, meat pies, etc. In carving meat it should be cut into thin slices before being served. If cut into large coarse pieces its appearance is not inviting and much waste is the result.

Extra messing is not required, but if used it will be the cause of great waste. When receiving the bread ration it is a good plan to count up the rations on hand, and only take sufficient bread to make up the day's ration. Economy can only be carried out by observing the above and by the introduction of the diet sheet.

DISPOSAL OF REFUSE.

The refuse of a battalion ought to be a source of revenue to help to defray the cost incurred in the purchase of white clothing for the cooks. The method of disposal should be arranged by the quartermaster, through the O.C., and the contractor offering the highest amount. The contractor should arrange for the removal of the refuse daily. All refuse should be considered the property of the contractor. The refuse must be collected after meals by the orderly men of each mess, and taken to the garbage cans, it should not be allowed to accumulate in the barrack room or mess tent. The orderly corporal or N.C.O. in charge of the mess should see this done, taking care that the men are instructed to place all cans, bottles, broken glass, etc., in a receptacle provided for them. The attention of the Sergeant Cook and cooks is drawn to this. The contractor should be held responsible for any nuisances arising through his neglect. Sufficient garbage cans should be provided for

the division of the refuse, that is to say, there should be garbage cans for slops, where drainage is limited and garbage cans for dry stuff. The sloppy garbage should be strained through a closely woven wire basket. This would completely eliminate the present system of putting the garbage irrespective of its condition, into one can. To see that this system is strictly carried out, it should be under the supervision of the sanitary fatigue, who should also be held responsible that the garbage cans are washed out after each emptying. This is the only way to deal with garbage. It has the merit of being both profitable and sanitary. If the system of messing and economy as shown in this manual is carried out the amount of garbage, or waste, would be considerably lessened. The accumulation of garbage, or in other words, the waste of good food, is helped by allowing all sorts of persons to enter barracks and camps selling pies and cakes of very doubtful origin. These people always make a practice of being on hand about half an hour before the meal hour. This practice should be prevented. The origin of these pies, cakes, etc., is in many cases unknown, and the material used in their making may be of the worst description, and the purchaser may be attacked by sickness and probably the cooks are blamed for this. There is no doubt that the consumption of these pies, cakes, etc., previous to a meal dulls the appetite of the men so that when their meal is served they are not so keen to sitting down to it as they should be. Half their food is left on the plate, and finally is placed in the garbage can. Officers Commanding Battalions can control the accumulation of garbage and eliminate waste by insisting that the system laid down in this manual is carried out.

FIRELESS COOKERS.

The "fireless cooker" may be defined as a device constructed for the reception of hot food or for the hot articles from which it is being prepared. It consists essentially of such non-conducting materials as may be necessary to maintain the food at a proper temperature for cooking for a number of hours. It is generally a box-like arrangement lined with a non-conducting material, within which is the "well" or reservoir, into which the vessel containing the hot soup, coffee, stews, meats and vegetables is placed. Many different makes of fireless cookers are found on the market, and various materials—*asbestos*, paper, felt, hay, indurated fibre, etc., are used as non-conductors.

There is quite a range of fireless cookers and also in the nature of the work they do. In some types heated soap stones are placed in the well to keep the food at a cooking temperature for long periods, or to actually supply the heat ordinarily given to the food by placing it upon the range or within an oven. Generally during the ordinary process of cooking a certain amount of heat is continuously applied to the vessel containing the food, and after it attained a certain temperature the heat required is but little more than sufficient to replace that lost by radiation, evaporation, etc. To cook food simply requires the application of a certain amount of heat at temperature between 130 degrees and 385 degrees Fahr. (In the case of fireless cookers between 130 degrees and 212 degrees Fahr.), though the lower the temperature the longer the process will be. The object of the fireless cooker is simply to prevent the loss of heat from food containing a sufficient number of heat units above 130 degrees Fahr. to cook it, thus effecting a great saving of fuel, and incidentally rendering it unnecessary for one to give his constant attention to the food being cooked. Furthermore, some articles are actually better when prepared in the fireless cooker, e.g., tough meats, that are ordinarily improperly cooked by any quick process are rendered more tender and palatable by the long, slow process required when the fireless cooker is used. To prepare food for the fireless cooker the general idea is to place it on the range until the article to be cooked are heated through, or have taken up such an amount of heat that when transferred to the cooker they will contain within themselves sufficient heat to complete the process.

Meat should be cooked in pieces weighing from 3 to 5 pounds. To get the best results, most articles of food to be cooked should be covered with liquid when put into the cooker.

Such vegetables as potatoes, parsnips, etc., should be about half cooked before being put into the cooker. The water drained off, and allowed to finish cooking with the retained heat.

Tea and coffee should be prepared in the utensil provided, and the tea leaves or coffee grounds (which should have been tied loosely in a cotton bag) should be removed before setting the same in the cooker. To get the best results the vessel should be well filled, and where two or more "wells" are provided all should be used if practicable.

TABLE OF THE RELATIVE PARTS OF BEEF.
(VALUE OF VARIOUS JOINTS).

Name of Joint.	Weight before cooking.	When cooked, bone and waste per lb. deducted.	Total loss.	How cooked.
Aitchbone.....	8 lbs. 9 ozs.	3 lbs. 5 ozs.	9½ ozs.	Boiled.
Brisket.....	4 " 13 "	3 " 13 "	6½ "	Boiled.
Buttock in Steaks.....	2 " 4 "	2 " 3 "	½ "	Stewed.
Heart.....	5 " 6 "	4 " 13½ "	½ "	Roasted.
Leg of mutton, piece.....	6 " 8 "	5 " 4 "	3½ "	Roasted.
Fore rib.....	7 " 8 "	4 " 4 "	7 "	Roasted.
Middle rib.....	8 " 4 "	4 " 13 "	6½ "	Roasted.
Round.....	5 " 2 "	4 " 7½ "	2 "	Baked.
Silverside.....	6 " 5 "	5 " 2 "	3 "	Boiled.
Rump steaks.....	1 " 8 "	1 " 7½ "	½ "	Boiled.
Sirloin.....	11 " 8 "	8 " 4 "	4½ "	Roasted.
Tongue.....	6 "	4 " 8½ "	4 "	Boiled.

AVERAGE WEIGHT OF EATABLE MATTER LEFT AFTER
COOKING VARIOUS JOINTS.

Name of Joint and Weight.	Weight before cooking.	Loss of weight by cooking.	Weight of eatable matter.
Aitchbone.....	8 lbs. 9 ozs.	3 lbs. 1 ozs.	3 lbs. 5 ozs.
Brisket.....	4 " 13 "	1 " 4 "	2 " 13 "
Leg of mutton, piece.....	6 " 8 "	1 " 8 "	5 " "
Forerib.....	7 " 8 "	1 " 4 "	4 " 4 "
Middlerib.....	8 " 4 "	1 " 6 "	4 " 13 "
Round.....	5 " 2½ "	8½ "	4 " 7½ "
Silverside.....	6 " 5 "	8 "	5 " 2 "
Rump steak.....	1 " 8 "	½ "	1 " 7½ "
Sirloin.....	10 " 8 "	1 " 8 "	8 " 4 "
Tongue.....	6 "	1 " 6½ "	4 " 8½ "

The difference in this table is accounted for by the weight of bone.

HINTS FOR O.C. UNITS IN CASES OF EMERGENCY.

It is advisable for officers commanding units to institute at the earliest possible moment (if not already in existence) a regimental store, for the purpose of having on hand rations for one day in advance for his men. A supply of preserved meat and biscuits for at least two days should be on hand. He should also have at his command camp kettles to accommodate the whole of his battalion, also a sufficient supply of wood for one day's use. Picks, spades and axes should be kept with the wood and camp kettles. A capable N.C.O. should be detailed with a party of men who have previously been instructed as to their place of mobilization and the work to be carried out. This party should always be available.

TRAVELLING KITCHENS.

The travelling kitchens at present in use in the service consists of two sections mounted on four wheels. The front contains three fireless cookers or flasks, lockers for groceries, tools, etc. The rear section consists of four cooking pots, one water boiler, one oven and two fireplaces.

The cooking capacity is 250 men.

The front section of the kitchen should be used as per instructions given under the heading of fireless cookers.

When cooking with the kitchen great care must be exercised with the fuel. The fire must be properly regulated, and when the cooking pots boil only sufficient fire to keep the pots simmering should be used. When the oven is sufficiently hot to bake, the fire used must also be closely regulated. If using the kitchen when the fuel is limited to the field issue, the fire must not be going longer than necessary. It is necessary to frequently change the position of the joints in the oven to prevent them burning.

To facilitate the issue of meals from the kitchen, sufficient camp kettles should be carried so as to issue the food in messes of ten or fifteen. If this is done the whole company can be served in a few minutes.

If the system of parading the men in a long line and serving each one separately is used it will take over three-quarters of an hour and will cause dissatisfaction. It is impossible to serve every man the same, and probably the men at the end of the line would hardly get any dinner, and what they did get would be cold.

Soups can be made by following the instructions given here.

Separate the bones from the meat as early as possible in the morning, break them up and place in the cooker, cover with sufficient water to make the amount of soup required, place in the vegetables (cut as small as possible), peas or rice and seasoning, simmer for about three hours. The soup can then be transferred to the front section to be used for dinner or supper.



Fig. 3.
KETTLE TRENCH.



Fig. 1.
TRIPOD



Fig. 2.
CRUTCH & STICK

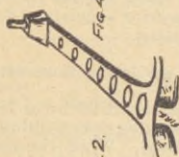
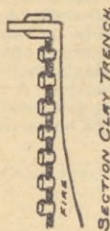


Fig. 4.
SINGLE CLAY TRENCH.



SECTION CLAY TRENCH.

SINGLE CLAY TRENCH.



Fig. 5.
MESS TIN KITCHEN 8 TINS.



Fig. 5.
ELEVATION.



Fig. 6.
DOUBLE MESS TIN KITCHEN.



Fig. 7.
SINGLE MESS TIN KITCHEN.

MESS TIN KITCHEN 8 TINS.

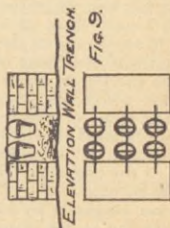


Fig. 9.
ELEVATION WALL TRENCH.

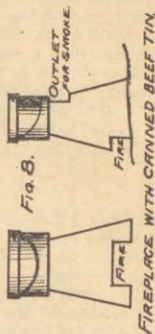


Fig. 8.
FIREPLACE WITH CANNED BEEF TIN.

PLAN TRENCH WALL.

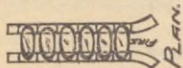


Fig. 10.



Fig. 11.



OVEN MADE WITH CLAY AND BARREL



Fig. 13.

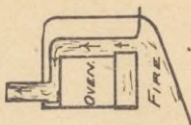


Fig. 14.

SECTION VIEW OF
OVEN MADE WITH
BISCUIT TIN & CLAY.



PLAN OF FIREPLACE.

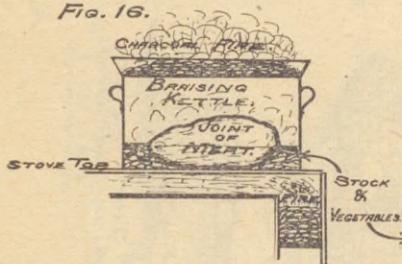


Fig. 13b.

SECTIONAL VIEW
ALDERSHOT OVENS.

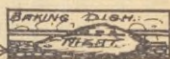
BRAISING.

Fig. 16.



BRAISING CORRECT METHOD.
SECTION VIEW.

Fig. 17.



METHOD THAT CAN BE
USED IN BARRACKS BY
PUTTING A BAKING TIN
UPSIDE DOWN ON ANOTHER
WITH MEAT BETWEEN.

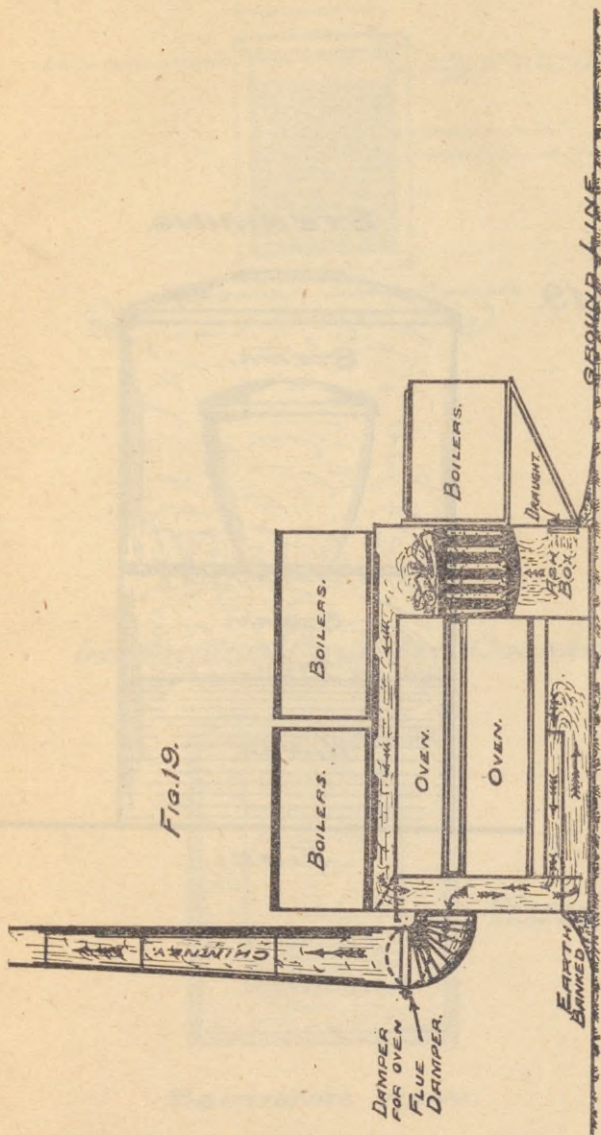
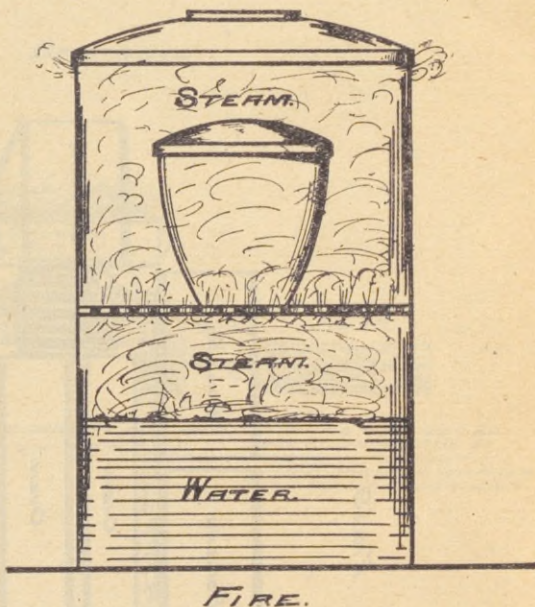


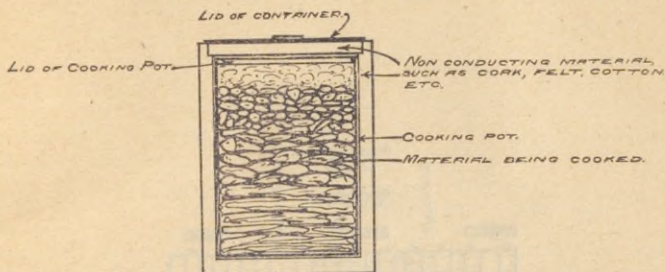
Fig. 19.

GOVERNMENT RANGE. SHOWING HOW IT SHOULD BE ERECTED & WORKED.

STEAMING.

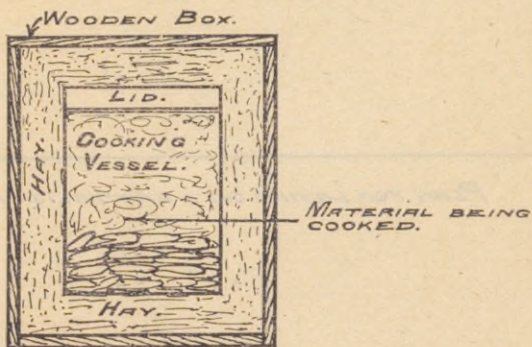
Fig. 19.



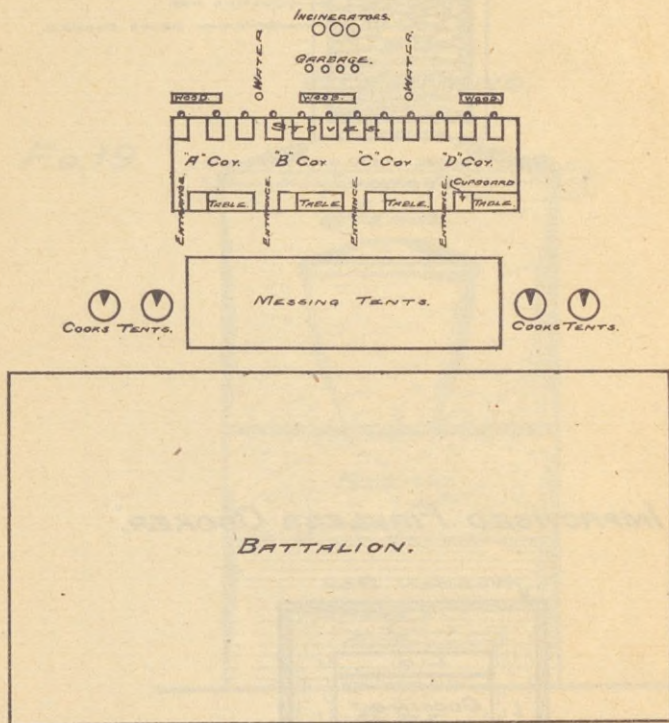


SECTIONAL VIEW OF "FIRELESS COOKER."

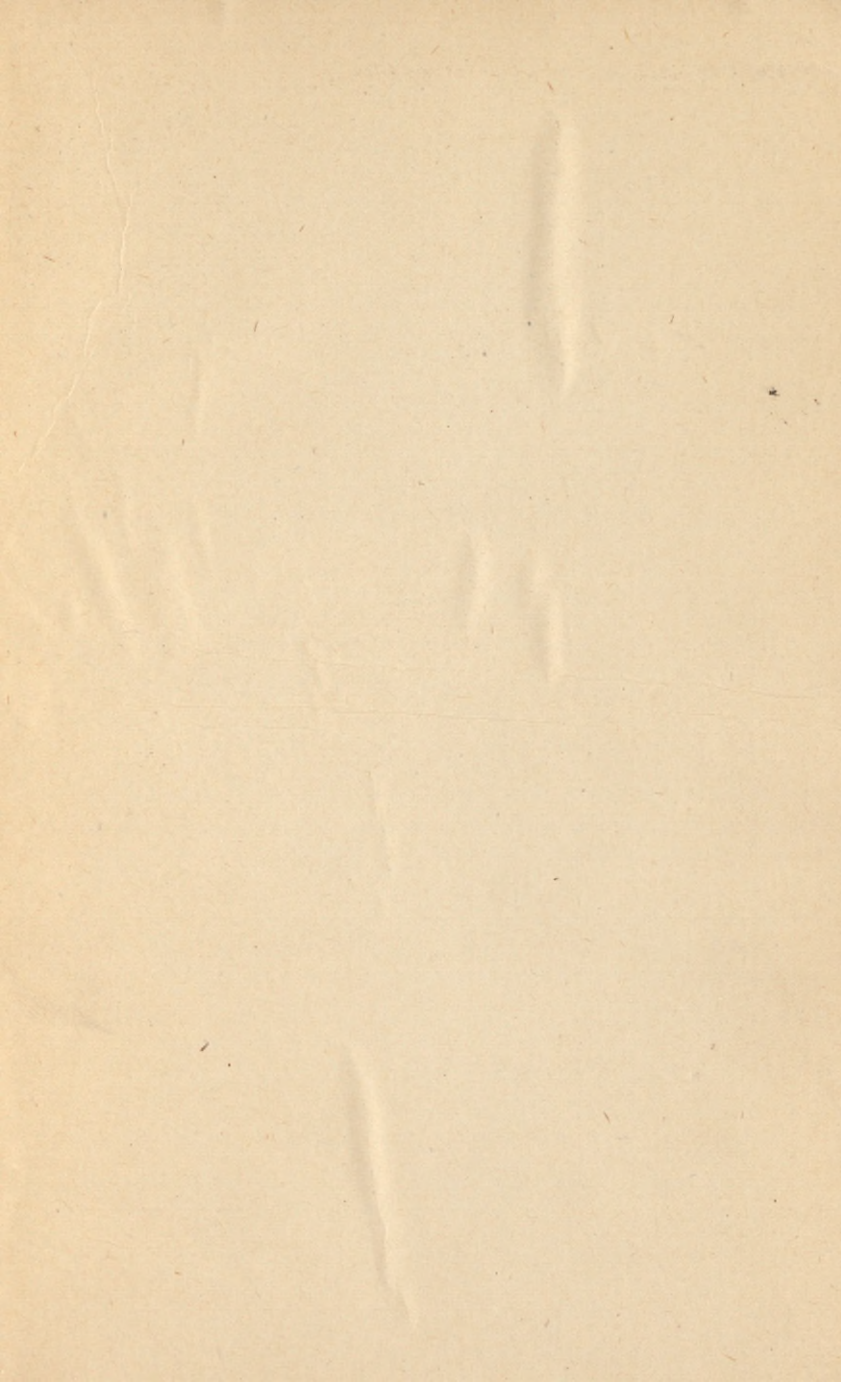
IMPROVISED "FIRELESS COOKER."



SECTIONAL VIEW.



PLAN FOR LAYING OUT A BATTALION KITCHEN.



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