In camp and kitchen : a handy guide for emigrants and settlers / by the author of "The successful home cook," etc.

Contributors

Yates, Lucy H.

Publication/Creation

London : Andrew Melrose, 1912.

Persistent URL

https://wellcomecollection.org/works/wugshz84

License and attribution

Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
https://wellcomecollection.org

In Camp and Kitchen

Lucy H. Yates

JOHN HODGKIN, F.L.S.

IN CAMP AND KITCHEN

IN CAMP AND KITCHEN

A Handy Guide for Emigrants and Settlers

By the Author of
"The Successful Home Cook," etc

LONDON: ANDREW MELROSE
3, YORK STREET, COVENT GARDEN, W.C
1912

He must go—go—go away from here,
On the other side the world he's overdue;
Send your road is clear before you
When the old
Spring-fret comes o'er you,
And the Red Gods call for you!"

The Feet of the Young Men.—KIPLING.

INTRODUCTION

One who has had much to do with outgoing colonists and knows a great deal about their wants and difficulties, has summed up in a couple of terse sentences their primary needs. These are, he says—

Things to Take: Time, Patience, Money.

Things to Leave: Hurry, Worry, Doubt.

The summary is an excellent one. It covers all the necessary ground; it is capable of infinite enlargement as to meaning, and at the same time it packs away into the smallest possible compass all that the traveller, the pioneer or future citizen can require. It is, in fact, a complete manual in itself, and all that we do here is to interpret it in fuller detail, and we do this in order to save the time, the patience and the money of those who perhaps have little of either to spare.

Much has been written about the romance of colonization, and stories of pioneering experiences are of thrilling interest—when read at home. It is difficult to see the romance, as it is difficult to experience the thrills when actually undergoing the hardships and battling with the difficulties on the spot. What really helps, then, is not the ability to see the romance or the picturesqueness of the

situation, but the ability to see the humorous side of things. A sense of humour saves many a situation, and to be able to laugh in the face of hunger and hardship, because it brings goodwill to bear on the subject, does wonders in the way of smoothing down the rough side both of men and things.

One of the daily trials will be the imperative need of getting meals ready. Those three meals a day are perpetually hindering other work, taking up much time and thought, and involving much carrying about of tools and materials. Yet they cannot be done without, and are not to be despised or treated with indifference. In fact, from the health point of view they are of more consequence than making progress in other ways, for without health and strength the colonist is of no good at all.

Those who set out with the idea of "roughing it" are very apt, in their early enthusiasm, to think lightly about the food question, but when they find themselves thrown on their own resources, obliged to use their own initiative in everything, it is wonderful how important a matter cookery becomes, and how much is made of a little knowledge or skill in this direction.

"Can you tell me of a simple cookery-book to send out to my boy in Canada?" a lady asked us

one day. "He says he finds meals are so much more important than he ever imagined they were, and he wants to know how to do so many things."

It is the simple book we have tried to write, one that the average young man—or young woman—will have the time and patience to read and the money to buy. It may not tell all that they will want to know, but at least it will tell them enough to make for comfort, economy and health, and we trust that all useless and needless technicalities have been avoided. The great Food question comes first, and has received the bulk of attention, as it should do, but there are a few useful suggestions further on which may help to make the difficult way easier. It is not possible to meet the wants of all types of settlers, for some go to pioneer work and others go to live under advanced conditions—more advanced, in fact, than they leave behind them in the old country ; nevertheless, all must take with them a certain amount of time, patience and money, and all must leave behind hurry, worry and doubt, while all, wherever they are, will find, we think, some use for our Handy Guide.

L. H. Y.

LONDON, 1912

CONTENTS

I

COOKING IN THE OPEN: AND ELEMENTARY COOKING APPARATUS

The ideal colonist is he who is able to turn his hand to anything and to supply a table although having practically nothing in the way of cooking utensils. Necessity will teach him how to use his ingenuity in building and manufacturing contrivances of his own, and it is to such a handy man that we offer the following suggestions.

A kettle, a " billy " and a frying-pan may seem a quite sufficient kitchen equipment at first, but some means of baking will soon seem necessary. Bread, for instance, or whatever takes the place of bread, is so much more satisfactory when baked. Hence it is worth while to spend a little time in building up a fireplace in which heat can be retained for some considerable time. Much must depend upon the kind of fuel that can be obtained, but mostly this will be wood, or charcoal made from wood, or the dried droppings of cattle, when coal is unprocurable.

The most elementary type of fireplace for boiling purposes is made by gathering together large stones of even size, and to form a square with them,

opening at one side, and of course open at the top. The size of this top opening is regulated by the size of the kettle or pan that is set over it. Place the stones with as much regularity as possible, and fill in the spaces between with clay or earth. If the soil is clay and stones are not to be had, form a fireplace with the clay itself in such a way as to have four walls with opening at the side and at top. Make a small fire first in the firehole with the driest grass and twigs, then feed it with small pieces of wood, and when it is burning well fill up with wood and dried grass and any fuel you have, packing it lightly but closely. It is possible to build a fire that will be bright and quick for boiling, or one that will burn steadily for hours, for stewing or baking purposes. With practice a good deal of skill is acquired, and the more the fireplace is used, the better will it serve its purpose. When new it is slower in getting to work on account of damp, but will burn quite quickly when hard and dry through. To dry the fuel that is going to be used is a great economy of time, and can be done when the fire itself has gone out. Keep the firehole clear and free from ashes.

An oven can be made to stand on top of this fireplace by coating a large biscuit-tin with clay and baking it. A little ingenuity will devise a door for this oven, and it will be found to answer quite

well for baking bread and cooking a pudding or for making a slow stew.

In building a fire in the open take notice as to the way the wind blows and take advantage of it as much as possible, as it will help or hinder the fire from burning. Sometimes a screen of stones built up on the windward side will help matters considerably.

A small pair of bellows should be included in the colonist's outfit, as well as a small pair of tongs, for any fire will burn the better for a little coaxing with the bellows first, and pieces of wood can be more skilfully arranged with the help of tongs than without them. Then whenever any sawdust is met with it should be carefully collected and mixed with oil or paraffin into little cakes, to make quick and easy firelighters.

An open bonfire, with tripod of three sticks or iron supports, may be all that it is possible to get together for the quick boiling of saucepan or kettle, but the results can never be so good as when a built-up fireplace is made. On the other hand, a good bonfire leaving a thick bed of burnt ashes and embers is sometimes the best contrivance for roasting large pieces of meat, birds, and so on. Suppose it is desired to cook a whole large fish, a rabbit, fowl or other troublesome creature (troublesome because of the plucking and drawing,

skinning, etc., that it seems to require), all trouble is saved by making a covering of wet clay well pressed down as a thick coating over the fish, bird or animal, after having let out the blood, making it into a sort of ball of clay. Bury this ball in the hot ashes and embers, heaping them over it. In about an hour or rather more, the ball can be broken open and feathers, fur or scales will be found to have stuck to the clay, leaving the flesh perfectly baked and juicy, and the entrails will have dried up inside.

Suppose a big roast of meat is wanted—a half-side of a sheep or pig. The outer skin has, of course, been taken from the meat in this case and all internals too. Make a rather deep circle on the ground, paving it with flat stones, or beat the clay very flat and hard. Build a big fire on this and let it burn right through, then sweep aside all embers and ashes, brushing the stones or clay clean, lay down the meat and cover it first with a thick layer of leaves, then pile over it the embers, some brushwood, and finally more clay until it is closely covered and none of the heat can escape. Leave for two or three hours ; uncover, and clear off all ashes, and the meat should be found well baked through. In a similar way bread can be cooked on hot stones, using only a thick layer of leaves and ashes for covering.

A little experience will make any one quite skilful in the use of the most unpromising materials, and if compelled to do it a man can generally produce a quite appetising meal with nothing but a clay fireplace and a few old meat tins. The total absence of what Americans call "fixings" —the little additions which the ordinary cook at home considers indispensable—need not, and will not deter the camp cook from making savoury meals, but as circumstances alter cases very considerably, it is possible only to make suggestions here, which each one must adapt or improve upon to suit himself. When hungry men are craving to be fed the absence of seasoning or condiments is not missed, but good baking, frying or boiling has to be accomplished somehow.

Where the camp is a more or less permanent one or the preliminary to a settlement and house-building, there may be a number of people to cook for, and hence it is worth while making some form of Trench Kitchen. For this, dig a trench about three feet deep and four or five feet wide, and at right angles form a series of narrow trenches close together. Arch over these with stones and turf and make hollows in the top of the ridges to hold saucepans and kettles. A hole for the firing is made at the end of each ridge, the smoke from which passes along the side trenches that are

arched over and is drawn up a "chimney" that is set up in the middle of the cross trough at the further end which connects all the trenches. To create a good draught a long tin funnel helps to make this chimney. If there is any likelihood of the trench kitchen becoming flooded out by rains it can be tented over. A series of "ranges" is created by forming ridges in this way so that boiling and stewing, frying and grilling can all be going on at the same time. All the same, the need of an oven for baking will be felt, and while small ovens for placing over a firehole can be made out of biscuit-tins as before mentioned, a large one can be built out of stones and clay, or with the help of an iron-hooped barrel, in this wise: cover the barrel with clay or turf and stones, well wetted and beaten down over it, and give it time to solidify, then build a fire inside the barrel. The wood will burn away, leaving the iron hoops as supports. If the covering is sufficiently thick, such an oven is quickly heated and retains its heat quite a long time, the fire being built inside it and swept out when burnt through. Insert a piece of piping in the middle of the top of this barrel-oven to act as a vent for the smoke. Arrange a door with a piece of sheet iron sufficiently large to cover up the opening; it need not, of course, be put on hinges, as stones will help to keep it in

position. Food that is put into this oven to cook, after the oven has been heated and swept out, should be enclosed in a bag of paper if not already in a dish. A little practice will enable any one to judge how long the heat may be relied upon to last, and how long time must be allowed for the cooking in paper or in a dish.

Food that is already cooked can be kept hot for hours by following the Thermos principle. This is the principle of storing up heat, but not of generating it. Anything that is already hot can be kept hot, and anything already cold can be kept cold. In a Thermos flask there is a vacuum between two surfaces which is a non-conductor preventing the escape of heat, likewise in the Thermos jar, and whatever is put in at a certain temperature retains that temperature for a very long time without alteration. While it is hardly possible for the pioneering colonist to make a good Thermos flask or jar, he can carry out the same principle of storing heat in other ways. The Hay-box Oven is a primitive construction, perhaps, but it answers extremely well and costs very little to make. What is wanted is a strong wooden box with well-fitting lid—a thick box and one that is large enough to take a thick layer of hay or sawdust at the bottom as well as all round the jar put inside the box. Cook over the fire the

soup, stew, pudding or whatever it may be, and when sufficiently cooked and whilst boiling hot, lift the jar or pan off the fire and set it in the middle of the Hay-box Oven. Pack hay and sawdust closely round it, filling up all spaces, then over the top as well and put on the box cover, then a piece of blanket folded, or a rug. You may go away for hours, all the day or night, if you like, and come back to find your soup or stew perfectly cooked and thoroughly hot.

A hole in the ground, lined with hay and sawdust, will answer the same purpose, if care is taken to cover the place very thickly to allow no escape of heat. The advantage of the box is that it is portable and can be used anywhere.

The Biscuit-tin Oven has the advantage over the Hay-box Oven in that it can be used for actual cooking by placing it over the firehole and keeping a fire burning underneath it. But unless the biscuit-tin is covered with clay made hard the solder is very apt to melt and cause the oven to give way when exposed to great heat. The same objection arises with regard to the use of empty fruit and meat cans as cooking pots. On the other hand, stone jam jars are valuable, and make excellent stew-jars; especially useful are they for holding anything that is to go into the Hay-box Oven to be kept hot for hours.

Where there are no saucepans and no jars to use, nothing but the open fire and a billy, it is an improvement to have two of these billies and to set one inside the other with water between. The "billy," be it understood, is nothing more than a tin can with handle slung across it, but there are improved forms of it, such, for instance, as the cans which navvies use to carry their coffee or soup when going to work, and some of these are made in enamelled ware, with close-fitting lid. If one of these better cans were to be placed inside a rougher one of tin, the outer one would get all the smoking and hard usage, while the better one would be clean enough to set on the table when required. If a little hook is made in the wire of the handle it will prevent slipping when the billy is suspended over the fire.

The principle of this kind of cookery—what a colonist would doubtless dub "glue-pot cookery"—is sound, and it is copied by many inventors of more elaborate things which, in spite of their elaboration, however, cook none the better in reality than two cans one inside the other. The Warrener, for instance, which is much liked by camp cooks and travellers, is in principle but a glorified glue-pot. What is really better than the Warrener is the Hutchings steamer, which is a kind of conjuror's cabinet, having a tier of com-

partments or pans one fitting above the other, each one being a sort of steamer, the bottom one holding the water. This is guaranteed by its maker to cook as perfectly on the "top floor as in the basement," and one or more of the compartments can be used without the other, while a whole dinner may be cooked at the same time with nothing but the one pan. These Hutchings steamers are likewise fairly cheap, and can be procured at the large ironmongery stores anywhere in London.

Still another of these "glorified glue-pots," if we may be pardoned for using the term, is the Welbank Boilerette, the Cooker that Looks After Itself, as its advertisement declares. This is much less expensive than the Warrener, and can be had in several sizes. It cooks everything—whether porridge, soups, stews, joints, fowls or vegetables—in their own juices, and so preserves the fullest flavours and makes tenderness certain. Like the Warrener, it must be used in conjunction with some sort of stove or fireplace, not on the hearth or open fire.

The frying-pan is another article which must be classed among elementary cooking appliances, for it is almost indispensable for the quick preparation of a meal. It is well to take two frying-pans, one of black iron for quick frying of fish or meat,

the other of enamelled iron for cooking eggs and making damper. The iron one will not often need washing if it is well rubbed with paper after each time of using, but the other one will want washing with soap and perhaps a little sand or ashes to keep it white and smooth.

Some travellers argue that bread as well as meat can be roasted on a spit—no doubt meaning that the spit can be run through the middle of a piece of dough, and by careful watching and turning the bread cooks all over. But a spit is not difficult to make, only in cutting them from wood care must be taken not to use poison woods ; take the straight branches of trees that are well known and familiar. Wild shrubs and wild vegetables should be looked upon with distrust ; a few are harmless, but many are not. It would be better to make the spit with an iron or wire rod, setting it in supports at either end, if at all possible to do so. The fire must have burnt clear red before attempting to roast anything on a spit, otherwise smoke will spoil the flavour of the food.

II

THE LOG-HUT OR CAMP KITCHEN

SOME men possess considerable natural aptitude in cooking, and any skill of this kind will serve them in good stead when they become colonists, and where there is not natural aptitude it is well worth while acquiring a little knowledge by dint of study. Supposing all other kinds of employment fail, a cook's job is generally to be got and no one grudges his wages. A little story may be cited which bears out the truth of this. The son of an army chaplain and a public school-boy, decided to go out to the Colonies, and before doing so took a course of lessons in land surveying. He went out to a large farm and at first did fairly well, but then he fell on evil times, and having no capital was soon on his beam ends. A chum of his who came across him remembered certain school study feasts, and as he was himself a kind of sub-contractor in a lumber camp, offered his friend the post of camp cook for a hundred or more men, at good wages. The offer was promptly accepted. The new cook, who was a smart lad, soon had everything well organized and in apple-pie order. He pleased the men mightily and could always rely on their help for the harder

tasks of chopping firewood, washing-up, and so on. Soon he acquired a real liking for his job and got through his work quickly and easily. When the second season came round he again enlisted as camp cook, but this time, having some capital, he went into partnership with his friend the sub-contractor. The two prospered. They sub-contracted for the woodwork to be done on one of the railways then being built, and the "cook's" knowledge of mathematics and surveying then came in useful. In a few years' time he blossomed out as a railway engineer with an important post, big salary, house, servants and horses. Of course he had his mathematics and his land surveying to help him. Still it was his wage-commanding knowledge of cookery that had set him on his feet, and on the road to fortune.

Most open-air cooks have to make the best they can out of the situation, for the site of a camp is not usually settled with much regard for their convenience. If there is good water within reasonable distance that is much to be thankful for. The planning out of the kitchen will depend chiefly upon circumstances; where there are only two or three to be catered for it is not a difficult matter, but where a dozen or more men want at least two meals a day, it is a matter requiring some contrivance and organization.

Choose a position as much protected from wind as possible for the camp kitchen, and have it separate from the rest of the camp. Where rocks or boulders can be made use of take them into service, but build a furnace, (one or more), with stones, of a size convenient to hold pans and cauldrons, and make a table also.

If a circular form is taken for the furnace it can be partly domed over, which enables more draught and a greater degree of heat to be obtained. Where a good deal has to be turned out of the kitchen it is a good plan to have a row of furnaces and build a chimney to connect with them, making the walls thick at bottom and narrow at the top. The chimney should come immediately behind the furnaces with a hollow base three feet square, gradually narrowing up to a height of six feet or more. A hole or flue of stones welded together with clay should connect each furnace with the chimney. If the whole battery is built in one block flues are easy to shape, and a splendid heat should be obtained from the stoves.

Where a log cabin or stone hut is being built the greatest care should be given to the erection of the fireplaces for cooking purposes, as the comfort and likewise the safety of the whole construction will depend on this part being secure and sound. The more good masonry work is put

into the fireplaces the greater and more economical will be the amount of heat obtained from the fuel that is consumed. Thick, well-made walls prevent the escape of heat.

For the hearth and base of furnaces and chimney use as large stones as can possibly be found, the flatter the better. If the large stones require much levelling take smaller ones in preference and fit them together as evenly as can be with sand and clay. Excellent fireplaces can be built with stones and mud, but a little cement is of course much better for binding together the stones. Build the fireplace in the middle of the wall at the end of the hut, or across one corner. Make the hearth a little higher than the floor level. Sacrifice a little space, if need be, to have the fireplace inside the hut, and not, as is too often done, outside as a separate projection. Level the hearth, cover with a thin bed of cement or mortar or wet clay, and place thereon the largest and flattest stones, making the level as straight as you can. Now build round this hearth thick walls, starting them in a trench dug at least eighteen inches below the level of the ground. The walls should surround the hearth on three sides, leaving a part of the side facing into the hut open. Carry them up to about two or three feet high and gradually narrow them to bring the top nearer towards a

dome shape. A good builder will then carry his furnace up in chimney shape right out through the roof of the hut, but if stones fail then the rest of the chimney can be a zinc or tin pipe. Experts, who are able to use mortar, will give the chimney a bend to right or left which prevents too strong a downward draught, or the fire from being put out by rain.

With a hearth such as this it is well to place upstanding supports about the middle, such as a pan or kettle could be rested upon; this helps in the cooking very much, and prevents any spilling when the fire burns down. With an open hearth with thick-walled sides, such as this, much can be done, but it is well worth while going to the trouble of building a furnace oven, as before described, in addition.

Additional Portable Appliances

Only in very remote districts indeed would any one be limited to such rough fireplaces as these. Fuel of some other kind, such as oil, would assuredly be procurable to some extent, and a portable oil stove would take the place of the gas ring and gas appliances in town houses. The outgoing colonist would not be ill-advised to take with him a portable oil stove of some make, and when doing so he might as well choose one that will do

more than merely boil a kettle. A small-sized Rippingill, with one tank can, when required, cook a full-sized dinner and will burn no more oil than a simple boiling stove. When buying such a stove buy a can for holding oil, a filler, and an extra wick or two, and carry something wherewith to clean the stove and keep it in good condition, then wherever oil is procurable the little stove can be brought into use and prove of endless comfort. There may be occasions when the stove must be packed away and resort be had to the rougher and more primitive methods of the clay fireplace or the tripod in the open, but the stove would in that case take no harm and come out smiling when opportunity favours it again.

The same remark applies to the spirit lamp or traveller's Etna; though methylated spirit is more difficult to procure than is kerosene or paraffin oil. Still there are occasions when travelling or when camping in a tent, or making a journey by boat, when a portable spirit stove or lamp is of great service, or in sickness.

Electric Cooking Apparatus

One must bear in mind that all Colonists are not going out as pioneers, but that many will be setting up new homes in districts where in certain matters conditions of living will be even more

advanced than they are in the old country. For instance, in parts of South Africa, the Transvaal, and the Cape, electric power is fast coming into common use, while gas is not used at all and coal is scarce and expensive. In such cases, electric lighting will be found general in quite small townships and in quite small houses, and therefore the electric cooking stove will become, not a luxury such as we in England would deem it, but a necessity.

Having ascertained how far electric power is in use in the district to which the colonist is going, and also how it is supplied and how available, it is possible then to consider the advisability of taking out a portable electric stove, such, for instance, as can be connected up with an ordinary light in any room. A portable stove of this kind, about twelve inches square, which is a combined Grill and Water Boiler, can be had for 35*s*. complete, with flexible wiring for connecting up. Its consumption is about 750 watts of electric energy per hour or about three-fourths of a unit —the cost of course depending on the price charged per unit in the district. In any case, this is a little stove that at a cost of approximately a penny will produce a full meal with tea, coffee or soup, a grilled steak or chop and toast in something less than half an hour. It is so small and

so capable, that, whether sure of finding electric power or not, the outgoing colonist would add little to his expenses and less to his luggage by taking one on the chance of finding it useful.

But when certain of electric power and when going out to establish a home forthwith, in a district where electricity is in common use, certain fittings and assuredly a cooking stove, should be taken without hesitation. There are some to be got out there no doubt, but they are cheaper here, and also there is more variety to choose from. Several types of electric ovens are now on the market; the price of them varies according to size and capacity. One that is strongly to be recommended for wear and capability, for family use in a small kitchen, is the "X.L." It stands 36 inches high; it is 24 inches in width, and weighs 130 pounds. It is a thoroughly good and strong stove and can be installed wherever electric current is obtainable. One of its commendable points is its perfect freedom from dust or smoke, another is that each of its compartments can be used independently of the others, being controlled by separate switches. There is also a minimum and a medium switch, and when both are put on together the maximum degree of heat is obtained. The oven is large enough to hold a joint and pastry or bread, while the grill, the hot-plate and plate-

warmer can be used or shut off, as desired. The price of this complete is £18 10*s*. f.o.b. at any English port. These "X.L." stoves are manufactured by O. G. Hawkes, Ltd., at Globe Works, Bromsgrove Street, Birmingham.

Smaller and less expensive is the "Tricity" range and outfit supplied by the Berry Construction Company, 29a, Charing Cross Road, whose wholesale agents are Messrs. Gillespie & Beales, Amberley House, Norfolk Street, Strand, W.C. The Tricity Cookers are listed for Direct or Alternating Current Circuits of not less than 100 voltage. In addition to the oven and hot-plate, either of which can be used independently of the other, the outfit comprises an extension cooker which gives another boiling ring, and the whole equipment of utensils consists of thirteen articles, comprising a complete apparatus. The full list with stove and extension cooker costs £12 10*s*., but the oven and hot-plate alone is four guineas. Ordinary tin kettles and saucepans will answer, but the outfit is purchasable in parts and may consist of as few articles as any one wishes to take.

That fine explorer, Boyd Alexander Smith, and in fact all experienced travellers, speak of the value of having a mincing machine at hand. It comes in useful for so many purposes, making

tender and digestible meat that is often too tough to use in any other way. It assists in making savoury dishes out of remnants, will grind down the stale crusts, and save much trouble in many ways. A good mincing machine can be got for 12*s.* 6*d.*, but one that has adjustable parts, making it useful for cutting up vegetables and beans, is a little more in price.

III

DEALING WITH STORES, ETC.

Purification of Water—Storage of Water—Disposal of Refuse and Waste—Keeping Food Stores—A Curing House—An Ice House, etc.

THE importance of having a supply of water can hardly be over-estimated. A township depends upon it, and a log-hut or cabin must be pitched as near to a water supply as is possible, while no journey of any length can be undertaken unless water is carried or obtained at fairly frequent intervals, and this whether the climate is hot or cold. Some ready means of purifying water that is abundant yet of doubtful quality is likewise essential, also some means of catching the rainfall as it occurs. Then we must consider the storage of water in camps and locations not intended to be permanent ones. On all these points it is desirable to be ready with knowledge and resourcefulness.

Experienced travellers like the late Sir Francis Galton, W. B. Lord and Thos. Baines all speak of ways of filtering water and of making it fit for human consumption, writing at a time when the portable filter was almost unknown. Still if a portable filter saves much trouble it is also heavy

to carry about, and rougher and readier forms must sometimes be resorted to. An excellent filter for camp use is described by the two writers last named. They say—

Take a wooden box or barrel, long and deep. Bore a number of holes in the bottom and then fasten inside it a bag made with a folded piece of blanket. At the bottom place a layer of grass, moss or twigs, then a layer of sand, then fresh layer of moss, and so on until the barrel is half-filled. Make a cover which will fit well inside the barrel like a second bottom ; press it down and weight it to keep it from rising. Half-sink this barrel in a pond or stream, and the water which will gradually filter up to the upper compartment can then be baled out clean and clear. If it needs purifying still further after this clearing, boil it with a pinch of alum, and then expose it again to the air. Alum has a chemical effect on organic matter, and a small handful of it will purify a whole hogshead of water.

This arrangement of cask or barrel can be carried out by fitting a smaller cask inside a larger one, the smaller being perforated with holes, and the space between it and the larger one filled with stones and sand, then the double cask can be sunk in the pond. These rough and ready filters are very useful where a collection of water

is found in hollow places, the drainage from streams and after a rainfall, the quality of which may be doubtful or too muddy for drinking purposes. If water is merely thick, not putrid, it can be filtered through a cloth. But where it is putrid, and is yet the only water available, it should be first boiled, then mixed up with crushed charcoal and allowed to settle again exposed to sun and air. Alum is a purifier and charcoal is a disinfectant. There is no other way of using salt water than by distilling it.

How to store water, in places where it is difficult to keep any supply, is another matter. Every drop of rain water is of value, and should be caught, as far as possible by means of piping from the roofs of sheds, ending in barrels, but this source of supply can be increased by suspending blankets or canvas sails by the four corners between trees, weighting them with stones in the middle to make the water run towards the centre, and placing underneath this a barrel or bucket. Dew water brushed off leaves and grass into basins in the early morning will yield a great deal more than might be imagined, and in dry climates there is often a heavy fall of dew before sunrise.

A precaution which old travellers take to pre-

vent thirst is to keep the outer clothing damp and a wet cloth folded round the throat. Where water is not fit for drinking it still can be used to moisten clothing, and this little precaution prevents evaporation from the skin.

As an indication where water may be found in strange districts, Galton advises watching the flight of birds. Converging flights of birds are usually safe guides, especially towards evening. Dogs also have an instinct for discovering water, but cattle are less trustworthy, as their tracks may often lead from rather than towards water. When digging for water, in default of spades, a hole can be made with a sharp-pointed stick, holding it upright and stirring it round, scraping out the loosened earth with the hands. Where soil or sand is found moist lower down, water will generally collect when a hollow is made for it. The native bushmen keep their holes open by a rough contrivance of twigs tied together and converging to a point.

When carrying water in pails from a spring or well, place a thick wreath of grass or leaves round the edge of the pail to prevent spilling. Leaves floating on the top will also help to keep the water in. Where water has to be carried for a journey, over the shoulder or from a saddle, nothing is better than leather bags, or skin bags answer the

purpose well. Stone jars are heavy and unsatisfactory.

The water supply for a district of isolated homesteads or camps is sometimes a difficult matter to arrange where there is no spring or river near enough. Some form of co-operation in the matter of well-sinking is very desirable, and the wells should be concreted and protected in the common interest. Well boring is beyond our scope and cannot be gone into here, as it requires some engineering knowledge and skill, but it may doubtless come into the day's work at some time or other. Making a cistern for rain water is, however, another matter, one for the individual camper or hut-dweller to attend to, and therefore we may here give Dr. George Vivian Poore's clever adaptation of the old Venetian system, as cited by the editor of an admirable work on *Small Estate Management*, by A. C. Freeman, a useful book published by Rebman & Co., 129, Shaftesbury Avenue, London, W.C., which will give invaluable help to those laying out homesteads.

" His cistern, which received rain from the roof of a four-roomed bungalow cottage (giving about 1,100 feet square of surface), was circular, partly sunk in the ground, and built of concrete. The dimensions were: internal diameter 7 feet, depth 10 feet.

It was divided into two compartments by a cement diaphragm, perforated at the bottom by agricultural drain-pipes. Both sections contained a filter bed, consisting of 1 foot of sand, 1 foot of fine gravel, and a top layer of coarse gravel, also one foot thick. The water on draining off the roofs into the gutters passed through a double strainer and then entered at the top of the first section of the cistern, being filtered downwards, and then filtered upwards as it rose in the second half, which was provided with a pump having a copper suction pipe (lead and ironing being of course inadvisable where soft, solvent rain water is concerned). A good cover protected the top. The storage capacity of this cistern was 1,600 gallons, or forty gallons a day for a drought of six weeks. Although the cottage was near a small town the water proved of excellent quality, pure, chemically and bacteriologically, and used for all purposes, and appreciated by a family in spite of its having a slightly yellow caste and a faint smell. An undoubted improvement would be to use as a substitute for the strainer an utomatic tilting separator, which divests the first few gallons (the washing shower) from the reservoir. Such water is perfectly fitted for all domestic purposes, but the supply from an ordinary cottage roof may not be adequate

for a household. In such a case a surface well may be sunk to provide water for washing, bathing, live stock watering, etc. Such wells should be sunk about 10 to 12 feet deep, the upper 8 or 10 feet being lined with impervious material (concrete with smooth cement surface) covered over. In this way the water can only rise from the bottom, and if the land is being well cultivated the ground water is sure to be pure. Dr. Poore had a shallow well, only 5 feet 6 inches deep, in his highly cultivated garden, the sides lined with concrete pipes protected by 4 inches of concrete right to the bottom. This well generally contained 3 feet 6 inches of water (about ninety gallons), yet it was chemically and bacteriologically pure and quite potable."

It may be useful to those who are making a dwelling within a township if we quote further the author's words about water carried from main pipes. He says —

"Where water is obtained through mains it is well to make some provision against the effects of frost. In Canada the general practice is to carry the supply pipe into the house below the frost level, into a sunken earthenware box, open at the bottom and resting on a drainage pit filled with sand or breeze. The tap proper is placed within this box, and rising from this to the

sink level are two pipes, one within the other, the outer one being a tap spindle, the inner the actual water pipe. At the base of this pipe is a vent-hole. When the tap spindle is turned on the water rises and flows out; when turned off the vent-hole is opened and at once drains the stand-pipe, so that freezing is impossible. A somewhat easier method is to bring the pipe through a small closed copper vessel placed just at the entrance of the pipe into the house. When there is any sign of hard frost it is merely necessary to place a small flamed lamp beneath the copper vessel to prevent any possibility of freezing. It is inexpensive, saves much inconvenience, and also loss arising from damage done by bursts."

Having made what suggestions we can to help the colonist in the matter of securing and storing a water supply, we must now consider that other important item, the disposal of waste water and other refuse. It is amazing what an amount of refuse matter and waste water accumulates from day to day in a camp or quite small settlement. The ground is the one safe and sure receptacle for all waste matter, even kitchen waste where there are no fowls or pigs to consume the scraps. But all vegetable refuse and bones should be burned before returning it to the soil, hence a scrap heap can be made and set fire to once a week, the

whole of it when raked out being dug into the soil again. Ashes from fires should be put into a box and kept for use in the earth closet, the waste matter from the latter being dug into a field or garden, not into a pit, and it should not be too far below the surface. Dry soil does quite as well as ashes for sprinkling into the closet pail, and this dug into the earth again at short intervals is the most sanitary and easy way of disposing of this waste. If the precaution of using plenty of dry earth is used no flies will gather about the organic matter, nor will any smells be noticeable.

Waste water from baths and from kitchen washing-up is valuable wherever bush fruit is grown, and can always be poured round trees, or round young plants in a garden plot. The main point in disposing of all refuse is to restore as much as possible to the land. Where this is done carefully and with discrimination the ground benefits and nothing offensive is left to annoy by sight or smell. The secret of successful French and Dutch gardening is this careful digging in of all refuse matter, vegetable and other, and not in the applying of expensive guanos and manures. The authority quoted above has a good deal to say on this matter of returning refuse matter to the soil. To quote him again—

"The splendid productive soils of the Dutch, French and Italian gardens are the result of many years of careful cultivation, a system whereby the soil is continually being enriched with what we are pleased to call 'Waste' material. Therefore for both hygienic and practical gardening reasons, the earth-closet system is to be advocated. While on the question of soil enrichment we would point out that those who cultivate small holdings, allotments and gardens should be taught to return as much to the soil as possible. All green-stuff, trimmings, leaves and so on, should either be dug in or placed to ripen in a compost pit and used as fertilizer when digging over the land. Sticks and wood should be burned and the ashes added to the pit because rotting wood in the soil attracts insects and so must be avoided. Such enrichment is valuable in any situation, but will be found to work marvels in lightening heavy clays and in bringing fertility to poor, porous soils. In our experience the most productive gardens have been those with 'made soils' which have been enriched for generations. Dr. Poore's experimental garden, dressed regularly with dry closet-soil, brought in over £56 per acre, the crops being ordinary orchard and bush fruit, asparagus, potatoes, green stuff and flower all grown in the open, no glass being used and very little labour available."

And now we must pass on to the keeping of stores—of stores of vegetables and dry goods and things in constant requisition for the kitchen.

It is easy to make a series of store closets with deep boxes that are lined with zinc, turning the tops to face outwards, fitting in shelves if required, and then making a door to fit. These boxes can be piled one over the other, all facing the same way, and a curtain can cover them all if they are in any way unsightly. Dry goods and groceries generally require keeping in a temperate place, therefore these and linen and clothing can fill this series of damp-proof boxes. But when it is a question of storing fresh vegetables and fruit, potatoes, dried meat, dairy stuff, liquors and so on, an outside storehouse is imperative, also in hot weather all food must go into some cool place to keep it from insects and the atmosphere.

It is a comparatively easy matter to dig out a pit some feet away from any tent or building, to dig it out of the earth in a shaded and protected spot, and then to brick the sides and build them up to a sufficient height above so as to make the whole depth of the sunk pit some eight or ten feet. Roof over the top of the pit with corrugated iron, and if there is heat or frost to fear make a thatch over this. Make one or two steps down into the pit and arrange also some shelves as seems

convenient. If such a storeroom rises but a little way above ground and is protected at the top, it will be found to be of even temperature all the year round, admitting neither frost nor heat. It should be ventilated by perforating holes round the roof, but need not have light admitted except by the door. Failing the possibility of digging out and building such a storeroom, remember that pits in the ground lined with a collection of leaves or dry twigs and well covered over with earth and more branches, make excellent keeping places for stores of roots and fruit. There is no better preservative than Mother Earth.

A good deal of meat, especially pork and beef, will have to be salted and dried for use at different times, and while salting and pickling are comparatively easy processes, needing only watching and frequent rubbing and turning, the later processes of curing and drying by smoke are more difficult, and for this purpose it is well to build a curing house.

A smoke-curing house for hams and bacon may be made with two large-sized packing cases. Remove the top and bottom of one of the cases. From the other case remove one board at the top, the middle board ; also cut a fairly large square hole on one side, large enough for any one to put

head and shoulders through. With the boards that are cut away form a door by nailing batten on the inside or outside, and fasten to the box by means of hinges at bottom and catches at the top. If no hinges are at hand use stout pieces of leather, even the uppers of old boots will do. The catches are merely small, flat wedges of wood about the length of the middle finger, and as broad as two fingers. Nail or screw them in the middle on the box just above the flap door. By turning to left or right they will fasten the door firmly. Inside the top box fasten a series of rods, say six inches apart and six inches below the top. Over the long slit formed by removing one board as directed form a slanting roof with two boards kept in position by fastenings at each end. Nail pieces of netting from the edges of the slanting roof to the box. You thus provide ventilation and prevent insects from creeping in. Pierce the bottom of this case with a number of holes. Now choose for the site of the curing house sloping ground, dig a trench 18 inches deep and 6 or 7 feet long. Cover over the trench with flattened stones or bricks well packed together with earth. Over the top opening of this trench place the first case that had the top and bottom knocked out, and on this fix the second case. Suspend the hams and bacon inside the top case

and then fasten the door tightly. At the lower end of the trench light a fire with wood refuse and sawdust, but avoid using pine or any resinous wood. The fire must be kept smouldering and the smoke will find its way up the trench, through the lower box into the curing chamber above, escaping very gradually by the ventilation outlets. Peats are best of all for keeping in a smoke fire. The smoking should be kept up for from three to five days, according to the amount of meat inside the curing chamber.

Before placing the meat in this chamber it should be wiped dry after curing it with rubbings of dry salt, or by a mixture of saltpetre, black pepper, sugar and common salt. This may have been rubbed in for a week or ten days before the smoke cure was begun. If hams are intended for long keeping sew them up in cloths after curing with salt and before smoking them. Pieces of beef lightly salted and dried by smoke can be kept almost indefinitely, but they should be soaked and scraped before using for food.

Biltong, or Jerked Beef as it is called in the United States, is a handy way of keeping meat for a length of time and is easily prepared. It is made by cutting the raw beef into slices, sousing the slices in sea water, then drying them hard in the sun. It can be kept threaded on spikes of wood,

and when required the slices are taken off, soaked and washed, and laid in a frying-pan, with a little oil or other fat, and covered with plate, cooking over the fire for about an hour. A spoonful of vinegar put in the pan would tender the meat and improve the flavour.

The converse to a smoke house would be an ice house, but wherever there is any dairying done this little place will prove a great boon, and it can be provided all the year round in most Colonies by taking a little forethought. In many places ice can be carried from lakes and ponds in the winter and stored for use in summer, and failing ice a fall of snow may be utilized, for snow that is packed into blocks and sluiced over with water will soon harden into ice. For storing it dig a deep hole, 4 to 8 feet deep, and build into this a house with walls of double thickness; the outer one may be of logs, the inner one of rough boards. Pack the space between the boards with sawdust, shavings or tan bark. The flooring should be of rafters placed close together about a foot above the ground. See that this open space is well drained. This can be done by digging a sloping trench a foot or two at the bottom and filling up with loose stones. The door of the house should also be double and packed with sawdust. The roof, which should come well above the

hole, should slope and be composed of rafters well boarded over and covered with thick thatch of straw or fern. The thatch should project well beyond the walls but leave a ventilating space all round. Ice in blocks covered with sawdust can be kept in a quantity in this house, or blocks of ice at the bottom will make a cool storeroom of it for milk and butter in the summertime. Its main object, however, is to keep a store of ice for the dairy itself.

IV

THE STAFF OF LIFE

Making Bread—Oven and Hearth-baked Bread—Patent Yeasts for Travellers' Use—Quick Bread; the Damper, Pancake, Flap-jack, Chupatty, etc.—Dumplings and Pie-crusts—Uses for Dry Bread, etc.

BREAD is one of those things for which civilized man craves, and even in the most out-of-the-way places he is loth to exist without it. The many substitutes for bread rarely satisfy an Englishman, and he is driven to find some way of making a solid loaf. Nevertheless to bake bread presents a difficulty which can only be overcome by building an oven such as before described, or by using hot flat stones; the latter way of baking is as good as any when a little practice has shown how to do it skilfully. But the baking is only one difficulty; another and more serious one is to find a yeast wherewith to make a dough. German and other dried yeasts are usually to be bought in towns or from stores, and wherever there is a brewery barm can be got, but there are also dried and compressed yeasts that are put up in cakes for the use of travellers, which the outgoing colonist might procure, probably, at a ship chandler's stores. Yeatman's Yeast Powder is one of these. But

failing any way of procuring dried yeasts there is another way of making a liquid yeast that is sure of producing a sweet and wholesome bread. For this the dried Bavarian hops are required, which are to be bought in packets from the chief English stores (they are known as the Phœnix brand), a packet of which will last a considerable time. A handful of these hops is boiled in water in a saucepan until the goodness has been extracted, then strained off, the hops thrown away, and the liquid returned to the pan with a spoonful of sugar, salt, and one or two tablespoonfuls of flour. These are stirred together and boiled up—never mind if it is a little lumpy—and then left to ferment. The mixture is ready for use the following day and will keep good for about ten days or a fortnight. In using, mix enough of this liquid with sufficient flour to make a small soft ball—technically called a "sponge," setting this in the middle of the panful of flour which is intended for the bread When this sponge has risen a little make the dough by adding to it warm water slightly salted, and working in the rest of the flour gradually until it can be kneaded with the hand and forms a large ball of dough, not too stiff and yet not too soft. This is then set to rise again in a warm place, and will take some five or six hours. Some people mix up the yeast and flour and water straight away

and let one rising suffice. Either way should produce a light and wholesome dough. About four tablespoonfuls of the liquid yeast (or an ounce of dried compressed yeast of another kind, stirred to smooth paste with water), a large tablespoonful of salt and four pounds of flour, will make a nice quantity of bread. The amount of water depends a good deal on the kind of flour, but the result must be a rather firm dough ; if too little water is put in the bread will be stiff and dry, if too much it will be puffy and full of holes.

The dough can be mixed in the evening and left to rise all night, provided the pan containing it be set in a warm, sheltered place. The next morning, as soon as the oven has been made hot, or as soon as the hot stones of the hearth are ready, take up the dough, divide it and shape lightly with floured hands into loaves and bake them. The point to bear in mind is that while dough takes several hours to rise, it takes little harm by waiting until the oven is ready for it ; but as yeast after it has been mixed with water ferments very quickly, the dough itself should not be made till the whole process of making it can be done right away. The science of the thing is that the introduction of yeast into the moistened flour causes carbonic gas to form, and the formation of these bubbles makes the dough swell out until the fer-

mentation being finished the gas would cease to form and the dough would sink back, having lost its lightness. When the dough has about doubled its proportions, we stop the formation of the gas by baking the bread. Patent dried yeasts operate more quickly than do liquid home-made yeasts, and six hours is quite long enough to allow for the rising. Liquid yeasts might be given a little longer.

If bread is made twice a week, the loaves should be made larger, and for taking out on journeys round flat cakes, made not too thick, are a convenient form ; likewise for baking on the hearth these will be the handiest and cook the best. A round and rather thick ball of dough, cut across the top with a blunt knife, will give the Coburg loaf, which is a good shape for baking in an oven.

Combinations of flour and maize meal, or of rice and flour, oatmeal and flour, and so on can be tried when a change is wanted. Where eggs and milk are procurable, there is a delicious American bread which is made by mixing two cupfuls of maize meal with every one of ordinary white flour, adding a little salt, two eggs and a cupful of milk to every three cups of the combined flours, with a spoonful of baking-powder rubbed in before moisture is added. This mixture is shaped into loaves and baked in tins—old biscuit tins floured

inside will do quite well. The same mixture could be transformed into a cake of quite excellent quality by rubbing into the flour a little butter or lard, and a few raisins and spice and sugar.

Excellent light buns for supper are quickly made by rubbing a little baking-powder into flour, adding salt, sugar and a few currants and spice, mixing with milk to a stiff dough, rolling out on a board, cutting into triangles and baking on flat hot stones, on both sides. Or if the milk has soured, mix a little soda with it and make up into a dough with flour alone and bake in the same way.

The Australian Damper is really a thick, plain pancake, often merely a handful of flour made into a stiffish batter with water and a little salt and baked over the embers of a wood fire or on the hot stones. But the correct way of making Damper is to take a flat board or a dried sheep-skin on which to knead. On this the flour is poured from the sack and sprinkled with salt. A hole is made in the middle of the heap of flour into which water is slowly poured, the right hand being kept moving round and round working the flour and water together to a thick, adhesive dough. This is then kneaded on the floured board until a firm ball is the result, and then with the hands a flat pancake is made about two inches thick. The embers are cleared away to leave a flat, bare place

and the damper is lightly dropped upon it and covered with leaves, then the embers are raked back and it is left for about an hour, when it will be baked crisp and brown. A frying-pan without a handle might be inverted over the damper if the ashes were dirty. Fresh eggs beaten up with milk and used instead of water would make a richer and crisper and more nourishing damper. Scotch oatmeal added to a little flour, or the oatmeal alone mixed as for dry oatcake and baked on the hot stones, would be a more nourishing substitute for bread than is damper alone.

The Flapjack is a similar kind of thing to the damper, but it is fried in a pan, with very little fat, that is to say, only enough to grease the pan, and fried on both sides. If made with cornmeal or buckwheat and mixed with milk and eggs, it becomes a very palatable thing, and has the merit of being quickly prepared. These pan cakes are just the thing for eating with sugar-cane syrup or molasses.

A Cornmeal Pone is made with a quart of Indian meal, a teaspoonful of salt, a little melted lard and enough tepid water to make a soft dough. It is moulded lightly with the hands into an oblong mound, higher in the middle than at the sides, is brushed over with melted lard and dry flour, and is baked in hot oven rather crisply and broken

into pieces, not cut. A broad leaf is laid over and under the pone if it is baked in the ashes.

A Johnny Cake requires two cupfuls of buttermilk, a teaspoonful of soda, and two of salt, a good bit of butter melted soft, and enough Indian meal to make the cake so that it can be rolled out on a board to an inch in thickness. It is baked on the stones or in the oven in a shallow pan, and is then broken into pieces and eaten with butter.

Buckwheat Cakes want the true Buckwheat flour, and to every four cupfuls a little salt and enough milk to make a thin batter, also a spoonful of yeast to every cupful of flour. The mixture is beaten well and left to rise overnight, and is then fried in greased pans on both sides, and eaten with syrup.

The Chupatty is another form of thin or hastily made bread, and is generally made with Indian meal. If made with ordinary white flour, rub in a saltspoonful of salt to every half-pound, and mix to a light dough with cold milk. Cut this dough into pieces about the size of an egg, roll each piece into long, thin strips not more than an eighth of an inch thick. This is best done with the help of a floured board and a rolling-pin or smooth bottle, as the secret of making nice chupatties lies in the rolling. It should be rolled out at least six times, then the strips are placed on

a baking tin and baked in a hot oven for about ten minutes. This is as crisp as water biscuit, and is very digestible. Where a dry biscuit or cake is wanted for a journey the chupatty is very useful.

Any bread that has become stale can be freshened by dipping it in water and putting into a hot oven to steam through for a few minutes.

Dumplings and Pie-Crusts

When baking bread and making a stew or boiling meat with vegetables, small pieces of the dough can be broken off and dropped into the pan to form dumplings. If yeast or baking-powder has been worked into the dough the dumplings will be light though plain, but if they are wanted a little richer they should be made with chopped suet mixed with flour and water.

The ordinary plain suet dumpling requires half as much chopped suet as flour in weight, and a little salt. It is mixed with either water or milk to make into a stiff dough—it is lightest when somewhat stiff—and if tying it up in a cloth to boil in water allow room for the pudding to swell. Boil a suet dumpling for two hours at least ; it will not harm by being boiled longer. These plain dumplings are wholesome and excellent food, especially in a cold climate, and should be eaten with syrup or butter and sugar. Sugar is, indeed,

one of the most necessary items on the colonist's bill of fare. The plain suet can be varied by mixing with it stoned raisins or currants or by using syrup in place of milk to mix the ingredients, adding a little ginger for flavour. Or the suet paste may be rolled out and spread with jam or soaked dried fruits and treacle, rolled up again, wrapped round with a cloth and boiled in fast boiling water, or folded in a buttered paper and steamed, for a couple of hours, making a light and appetising roll pudding. Or again, the paste may be rolled out and used to line a basin, the interior being filled with sliced apples and other fruits and sugar, covered with a top crust, then tied over and boiled for as long again. Or the centre may be filled with pieces of steak cut small and rolled in flour and seasoned with salt and pepper, a little water put in to make gravy, a top crust put on, and tied down, and this boiled for about four hours.

If the colonist has built him a good oven and is ambitious of making pastry, having a fond recollection of jam tarts and apple pies as made at home, let him take a nice clean board, and put into a basin say a couple of pounds of flour, two big spoonfuls of dry baking-powder, a teaspoonful of salt, and into this flour rub lightly about a pound of lard or good dripping, rubbing till the flour

feels like dry breadcrumbs in his hands. Mix this to a stiff paste with cold water, then cut off portions and roll out on a floured board. If a proper rolling-pin is not at hand a bottle will answer the purpose.

If it is a fruit pie that is contemplated, fill a dish with pared and sliced apples, or plums washed clean, or other fruit, cover well with sugar, add a little water and then cover with a crust that has been rolled out to about half an inch thick. Make a little hole in the top for the steam to escape, and pinch the edges well and cut them round even with the edges of the dish. Put into an oven that is very hot and bake long enough to cook the fruit well, shielding the crust if necessary with paper. Fruits like blackberries, bilberries, damsons, etc., want well cooking, and should be partly done before the crust is put on. Where no pie-dish is at hand, roll out a sheet of paste and heap up the cut or picked fruit in the centre, with the sugar, and then fold up the paste to make it like a valise and pinch the edges well. Bake it on a greased tin.

The good old-fashioned turnover or pasty is ever welcome, and needs but to have a piece of paste rolled out to a convenient sized round, and on half is spread the jam, mince, or fruit, and the other half is turned over, the edges pinched to-

gether, and it is baked on a tin in hot oven. The Cornish pasty has sliced potatoes, shred bacon, a trifle of onion and pepper and salt, and is folded over and baked in the same way. These are delicious to eat hot. When making a meat pie, cook the meat well before putting on the pastry crust.

This plain short pastry is all that any colonist will require, at least until an elaborate kitchen equipment is at his service, but if he objects to rubbing in the shortening with his hands, he may mix the flour and water to a stiff paste, roll it out on a floured board, spread the shortening on this with the blade of a knife, fold up and roll out again at least twice. This way saves using the hands.

V

THE DAY'S FOOD AND WORK

Popular Ideas about Food Values—Kind of Food Required in Health—Concentrated and Bulk Foods—Initial Preparations for Cooking, etc.

THERE are a good many vague notions current about food which it is well to set right before we come to the actual work of cooking for making ready a meal. For instance, people are content, as a rule, to take what comes handiest, or to choose what is most customary, rather than have the trouble of thinking out or of choosing what might really make a meal of better value. Reliance on what is customary may easily lead to great monotony and to narrowness of ideas. In some cases, of course, monotony is perhaps inevitable, that is to say the material is perforce the same, and can only be varied by bringing the imagination into play in order to make its manner of presentment more varied. A man, for example, writes to us from Canada (he is pioneering in the Far West, let it be understood), and says that his meals consist of beef and potatoes, varied by potatoes and beef. Another writes from the Australian bush and declares there is nothing to be had but tea, damper and mutton, mutton,

damper and tea. Both cases are doubtless exaggerations, but they show the monotony that may exist when there is little time to give to thought about meals. But on the other hand, people who have almost limitless resources at command, as in England, show little more imagination when it comes to planning a week's meals for a family, year in year out, and monotony is their complaint also.

Then we speak of "nourishing food," of dishes that are "rich," "indigestible" and so on, and of drinks that are "too strong" and "too weak," often without quite knowing what we wish to express.

All food is "nourishing" when properly combined and proportioned; if we get an excess of one thing, of fat, for example, or of sugar, it is "too rich" because less easily assimilated. As it is only by what is digested and assimilated that the body is nourished, it is easy to understand that two foods which contain the same amount of nutriment will not be equally nutritious unless both are equally digestible.

What is wanted, speaking roughly, for proper nourishment and upkeep of the bodily system, is a daily sufficient yet not excessive supply of flesh-forming and heat-producing food, enough to repair the constant slow wastage that goes on.

This waste, it is easy to understand, is increased when the body is actively engaged in hard labour and lessened when it is resting or doing sedentary work. The whole science of feeding lies in obtaining a right proportion of the two classes of food in the diet. An excess of either class, unless excreted, is stored up as fat. The reason we cook at all is that we may bring raw materials into a state in which they can be digested easily, and also that we may make those judicious mixtures which shall combine flesh-forming and heat-producing substances ready to be assimilated in the best possible way. There is no one perfect food that will do this for adults, as there is for infants who find all they require in milk. The adult body is only perfectly supplied by a mixed diet, and as regards the selection of materials one of the best and safest guides to take is the individual appetite under normal conditions. Appetite will generally suggest the kind of food the body is needing and will generally indicate when a sufficiency has been taken, also it will show by "loss of appetite" when food is not required and what kind of food is distasteful.

Feeding the human body is very like feeding a fire; combustion is slow but steady and is made more rapid when the draught of air is increased —that is, when the lungs are inhaling and ex-

haling more deeply as in hard labour. The energy expressed by movement, labour, exercise or play corresponds to the burning of the fire, and is made up for by adding more fuel, and what part of the fuel is not consumed is thrown away as ashes are taken away from the grate. How thoroughly the food taken in is consumed must therefore depend a great deal upon its digestibility. That which is raw, hard, lumpy or tough will take long to assimilate, or indeed may be finally excreted as unassimilable. We assist assimilation when we mince or grind down the food to fine proportions—hence mastication. After it is swallowed the digestive juices set to work upon it and make it fit for absorption into the system. In addition to cooking food to make it tender and in addition to mastication, we further assist the work of digestion when we add condiments and flavours to it, because these help to increase the flow of the gastric juices and stimulate the activity of the digestive organs.

We cannot obtain more heat or more muscle by eating special foods for the purpose. Flesh-forming and heat-producing foods must be taken together for each to do their work properly, but we can and do increase the proportions of one or the other according to the kind of work we are doing and the kind of climate we are living under.

An extra cold atmosphere calls for more heat to make up for what is given off by radiation from the surface of the body as well as by increased respiration. Therefore fat and sugar must take a very prominent place in the diet of those who live in cold countries, farinaceous foods likewise. Meat and vegetables are needed where much muscular work is being done and where a stimulating diet rather than a heating one is wanted. A good deal of liquid food and water is needed when perspiration is excessive and where outward heat dries the skin.

Appetite is again the best guide to follow under these different conditions, for Nature prompts and suggests what she is needing by means of appetite and taste. Appetite is also the best individual guide as to quantity, for it is rarely that two people will eat exactly the same amount in the same circumstances. Some appear to eat too much, and others too little, but if we judge results by weight, where that remains fairly constant, the quantities consumed merely correspond with their requirements. It is when an excess of fat is stored up in the system that the supply may be taken to exceed the demand. Yet this again is not altogether a reliable criterion to go by; it, in fact, puzzles many as it puzzled Dr. Johnson and his faithful Boswell.

Talking of a man who had grown very fat so as to be incommoded by his corpulency, Dr. Johnson said, "He eats too much, sir." Said Boswell, "I don't know, sir; you will see one man fat who eats moderately and another lean who eats a great deal." Johnson: "Nay, sir, whatever may be the quantity a man eats, it is plain that if he is too fat he has eaten more than he should have done. One may have a digestion that consumes food better than common; but it is certain that solidity is increased by putting something to it." Boswell: "But may not solids swell and be distended?" Johnson: "Yes, sir, they may swell and be distended, but that is not fat!"

As regards food materials, all fibrous and tough substances cannot be separated from the rest, nor is it necessary to separate them. A certain amount of bulk food is needful for the organs to work upon, and even if it is eventually excreted it still cannot be done without. Highly-concentrated foods, like extracts and essences and tabloids, will not satisfy the ordinary healthy appetite, and even if they did satisfy it they would end in weakening the organs of the body through want of sufficient work and exercise. Tissues and fibres can, however, be made soft and tender, and therefore much more easily digestible, by proper

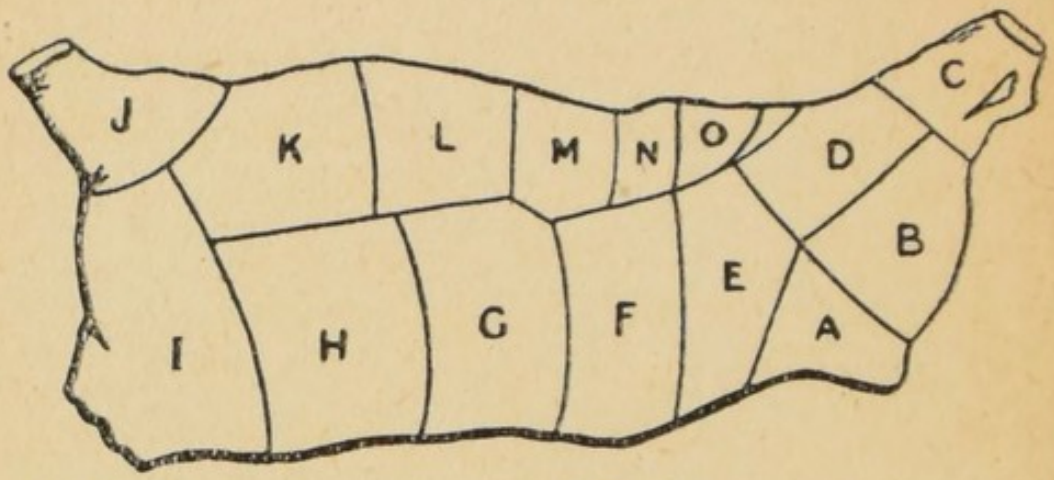
cooking. It should be remembered that the tissues of animals and vegetables toughen as they get older, while birds and meats that are freshly-killed are not so tender as when well hung. Wild birds and young animals are tougher than maturer and fattened ones.

The initial processes of preparing food will present more difficulties to the colonist, perhaps, than the actual cooking. The very first process of all, that of catching and killing the animal or bird, is less troublesome to contemplate than the process of skinning, cleaning and cutting up; still, of course, it comes first.

All animals and birds which are killed by shot must have the blood let out as soon as possible; it is usual to suspend them to drain this away. Then the skin is drawn off, the abdominal and thoracic viscera are removed, likewise the head and tail, and the animal is laid open by cutting down the breast line. In large animals like oxen and sheep by cutting through the middle of the back bone the carcass is divided into two equal parts, called sides, and the sides are again cut up into joints after quartering. The anterior portion is known as the fore-quarter, the posterior as the hind-quarter. In small animals like lambs the whole of the quarter is considered as one joint.

In cutting up a side of beef the usual method

followed is according to the following diagram :



A. Rump.
B. Buttock.
C. Shin.
D. Buttock Steak.
E. Aitchbone.
F. Sirloin.
G. Ribs.
H. Chuck Ribs.
I. Clod.
J. Shin.
K. Shoulder or Bladebone.
L. Brisket.
M. Thin Flank.
N. Thick Flank.
O. Gravy Piece.

A young ox gives the best beef, but bull beef is dark in colour with a coarse grain. If beef is to be tender it should be hung as long as weather and climate will permit of, but should be looked over every day and moisture wiped off. Any part which is touched with flies should be rubbed over with cloths wrung out of vinegar. If any part seems slightly tainted rub powdered charcoal over it, or black pepper.

The most suitable uses of the different parts for cooking are as follows :

Sirloin and Ribs, prime roasting joints.

Rump, for cutting into steaks for grilling.
Buttock, for stewing steak, or for boiling fresh.
Round or Buttock, for salting and boiling.
Thick and thin Flank, salting, boiling or baking.
Shins and Gravy Piece, for soups.
Chuck Ribs, for second quality steaks.
Bladebone, for braising and stewing.
Clod, boiled or stewed.
Brisket, for salting and pressing, or for baking with potatoes.
Tail, for stewing and soup-making.
Tongue, for salting, boiling and pressing.
The Skirt makes delicious stews and rich gravy.
Beef Kidney is tough and too rich to use alone, but a little added to other stews is excellent.
Liver too coarse to use except for feeding animals.
Knuckles and feet make stiff jelly.

Mutton does not cut up into so many parts, but is simply divided into leg and loin (or if the loin is undivided it makes a "saddle,") and the fore-quarter makes breast, shoulder and neck pieces.

Veal is similarly jointed to beef but is much smaller, and the whole round of the leg is called the fillet and is cut in thick portions or slices; the loin includes the rump, and the neck is really included with the ribs. The breast of veal is ex-

cellent as the gristly parts easily soften, and the knuckles which correspond to the shin and leg of beef are much more tender and gelatinous.

As pigs are killed at different ages and the larger and fatter animals are usually cured and dried for bacon, the smaller pigs are cut up very similarly to mutton and lamb. The hind-quarter gives the leg and hind loin, the fore-quarter the "hand" or shoulder, foreloin, spare ribs and neck, while the head is split into two "chaps." When made into bacon the side is cured whole and the leg becomes the ham, the shoulder half the gammon. The breast gives the part known as "streaky" bacon, and the back and ribs, flank and collar are sold at varying prices.

Certain portions of the interior organs of the carcass are useful for food and quite digestible. The tongues, for instance, which when cut away from the root part can be salted and pickled, then boiled or dried, make an excellent dish. The sweetbreads in young animals are very delicate, and after first boiling them in salted water for a few minutes they can be fried or stewed to make a savoury dish. The kidneys are removed from the fat in which they are embedded and split open and lightly fried or grilled, or beef kidney is added to stews of other parts of beef. Ox tails after skinning and jointing make an excellent savoury

stew or very nourishing soup. Sheep's liver is edible when properly cooked, but lamb's and calf's liver are better and not at all tough when fried and stewed afterwards. Ox liver is not fit for human food. The hearts of very young animals alone are edible, and even then are somewhat tough.

The best suet is that found round about the kidneys, and this fat can be removed in large pieces, which if kept dry will remain sweet for a week or two and is used for making puddings and crusts for pies. The other interior fat of the animal (both of beef and mutton) can be melted down and clarified by pouring into jars containing a little boiling water, then it is useful for all frying purposes and many other things. The interior fat of the pig is also melted down, but it yields lard, a pure white and soft fat that is as edible as butter. This should be run into tins whilst warm and covered with paper when cold to keep it from the air.

Rabbits are split open to let out the blood and the entrails removed directly they are killed, and being thus paunched they can be slung on a stick and kept for some time before skinning, although the fresher they are the more easily will the skin be removed. To do this make an incision down the length of the body, and draw the skin back-

wards, bringing the legs up first and ending by pulling the skin over the head. A rabbit can be turned round for boiling, or be cut into joints for stewing. Hares are treated the same way except that hares are not boiled, but they are often roasted. A better way is to cook a whole hare in a casserole or braising-pan, as the meat is very dry, but the best way of all is to cut it in joints and cook it in a deep stone jar, with red wine and small vegetables and a little fat pork.

Fowls are plucked most easily by first dipping them bodily into boiling water, but this renders the feathers unusable for any other purpose. Plucking is quickly accomplished if the feathers are pulled the reverse way from that which they take naturally, and after cutting off the head, splitting the neck to remove the gullet and windpipe, an incision at the lower end makes it easy to empty the fowl by drawing out the entrails and organs ; wash out with clean water afterwards, then bind together the legs and tie down the wings to the sides, and the fowl is trussed quite sufficiently for ordinary purposes. The reason for fastening wings and legs to the sides is to prevent these from shrivelling and getting too dry by cooking. As the meat of fowls and indeed of most birds is very lean it is an improvement to wrap them in some thin leaf fat, or to cook a piece of

fat bacon with them if braising or roasting, or even if boiling them.

The meat of wildfowl is drier and leaner than that of the domestic fowl and wild ducks are a little fishy in flavour. Prairie hens are plump as a rule but also lean, and most small wild birds are tastier and more tender if they are wrapped in thin slices of fat before cooking. Quick cooking is best for those that are small and young, but fowls of uncertain age are better slowly stewed or boiled.

The flesh of fish contains more water than that of meat or fowl, but it is light and digestible and nourishing when fresh, and plump fish are invariably of primer quality than thin ones. Most fish want scraping as well as washing, and it is well to cut off the heads and remove the entrails; in some kinds like mackerel and herrings they are split open and scraped clean, while in flat fish cutting off the heads and fins suffices. Large fish like salmon and cod have a good deal of interior to be removed before they are cooked and the heads are left on if preferred.

Where a little curing-house has been set up as before described, herrings which have been cleaned and split open can be lightly salted and smoke-dried, and thus the colonist can make his own kippers. Small haddock can also be cured and smoke-dried, mackerel likewise.

Surplus fish can be kept by first cleaning and then salting them and packing down in a barrel, but smoke-curing is a better way of preserving them, and in the log-hut kitchen they can hang in strings from the rafters.

Oysters, clams, mussels and shellfish that are eaten without cooking should be very fresh indeed for it to be trustworthy. Oysters are wholesome and easily digested and are rightly considered a delicacy, and in some places they are plentiful enough.

Lobsters, crabs and shrimps want boiling in salted water until they turn a bright red colour, and when cold they are broken open and the flesh picked out. An iron cauldron or saucepan is best to boil them in. All these should be killed by cooking ; that is they should be alive up to the time they are boiled, as if not perfectly fresh they so quickly decompose and may easily set up ptomaine poisoning. There are circumstances and places where shellfish are a valuable article of food, however, and in moderation they do much to vary a diet that without them would be monotonous and unappetising. A liberal washing in clean water should be given to all creatures that are taken from salt water pools and shallow places. But the same careful cleansing is necessary in the case of freshwater fish, too, especially that taken

from ponds, as they are apt to taste of mud unless well soaked and scraped before cooking.

The initial preparations for cooking which vegetables require make many people forego their use altogether, yet although troublesome enough there is nothing about them that is half so disagreeable as the preparatory work of preparing meat and poultry for cooking. A liberal washing, a scraping or paring, perhaps coring and dividing and cutting up—and that is practically all there is to do except in the case of peas which want shelling, or of beans which want stringing and slicing.

Almost without exception, the edible roots want paring after washing before cooking them in any way whatsoever. The rind is not intended to be eaten and is tough in all except very young roots. While the actual nutritive value of roots, tubers and green vegetables is low, their health value is high, and they are both a welcome and valuable addition to the diet, and whenever a garden patch has been secured the colonist's first thought will be to grow his own vegetables, and as great a variety of them as he can.

Potatoes are the most nutritive of all vegetables and rank next to bread in value, but artichokes have a higher nutritive value than even potatoes, and should be freely cultivated especially where

there is a pig to be fed, as pigs thrive rapidly and produce fine bacon when fed upon these tubers.

The next most important vegetable to the potato is the onion, and this is one of the best of nature's medicines, too. But after skinning an onion the root bit should always be cut out before cooking in any form. Cut away the hard fibres from cabbages before boiling them and boil rapidly in salted water. Never cook outer leaves or woody parts and fibres of anything ; all such parts should be returned to the ground as its share of the proceeds, for they make the most valuable manure.

When gathering cabbages or lettuces, and things of like nature, if not ready to make use of them for a few hours, leave the roots on as they will keep fresh and crisp a much longer time. If on account of frost these have to be dug up and brought under shelter, also leave the roots on, but let them be kept covered with sand or soil and in a dry place. Carrots and turnips keep well in a sand heap. Celery is another excellent vegetable for the colonist to cultivate wherever it will grow ; it is good in all climates and will stand a good deal of frost, and is most wholesome eaten either in a natural state or cooked. Here again, eat only the best parts and let the rest be returned to the ground.

Dried fruits are extremely useful where fresh fruits are hard to procure, and the nutritive value of dried fruits is relatively high in proportion to their weight. They are a form of concentrated food, easily portable and satisfying, but their value is increased when they are soaked in water for some hours and then cooked. But dried raisins, dates and figs are excellent for eating without other preparation, while prunes and apples are better after soaking and stewing.

VI

COOKING FISH, MEAT AND VEGETABLES

The Reason Why in Roasting, Boiling, Baking and Stewing—How to Fry, Braise, Grill, etc., and Use of Condiments and Seasoning.

EVERY one likes to know the "reason why" any particular method is recommended or pursued, and if we cannot give the correct scientific explanation of any process used in the kitchen we can at least give the reason for its being followed. And once we know the reason for a method we are independent of any necessity for slavish following of other directions, because success or failure will be the result of right or wrong in the method, not of a defect in the recipe.

For instance: The principle of Roasting is that of cooking by radiated heat; Baking is a combination of radiated with air-conducted heat. Hence roasting is done before an open fire and baking is done in an oven.

Roasting

The joint should be hung not too near the fire to begin with, in order that sufficient fat may exude to moisten the surface; after a few minutes,

however, it is brought closer that this moisture may become encrusted so as to keep in the gravy. The joint is kept moving in order that it may cook evenly on all sides, and when it is cooked through steam will be seen rising from it.

Now, in place of having a revolving spit and a roasting jack, a substitute can be made by forming a sort of cradle for the joint out of thin wire and suspending this from a nail or hook. It is well to suspend the wire cradle with a piece of twine from the hook or nail as twine will revolve with a twist of the fingers, but wire will not. The fire, whether it is one built on the ground or in a fireplace, must have burnt through clear red before the joint is placed in front of it. In the old cottages in Scotland where a wide-throated chimney and open hearth with flat stone constitutes all the cooking range there is, it is common to see a big nail projecting from the chimneypiece, while the joint is tied in a cradle of string and suspended from the nail, on a level with the hottest part of the fire. Everybody passing by gives a twist to the string and so the joint moves round and the result when done is a perfect roast. The fat that drops is caught by a tin set on the flat stone of the hearth, and a batter mixture poured into this is baked by the time the meat is ready for eating. It would be quite possible to manage something

of this type in a log-hut kitchen, but in tent or camp it would be better to bake rather than roast meat.

Baking

In Baking meats—or in baking anything else for that matter—the greatest heat is needed at first, in order to give the same shock of surprise that frying gives to anything that is plunged in hot fat. The reason for this is to form a crust as quickly as possible and prevent the escape of the juices. An oven that is only just warm will dry the surface without forming this crust, but one that is thoroughly hot will bring the juices up to the surface and make a brown coating very quickly. In the same way pastry or bread will rise when plunged into good heat, but remain white and heavy if the oven is cool. To know whether an oven is hot enough for baking it can be tested by spreading a little dry flour on a piece of tin and putting it in the oven for a few minutes. If it does not brown the oven is too slow ; if it browns readily it is hot enough for meat. Pieces of thick white paper will prevent the surface of anything from scorching.

It is usually reckoned that beef and mutton take from twenty to twenty-five minutes per pound for

both roasting and baking; veal and pork want half an hour per pound, but a fowl or pheasant should not require longer than fifteen minutes per pound weight.

Paper Coverings

There is great advantage in using a paper wrapping when cooking meat or fish on hot stones or in a furnace oven. If a paper bag is greased and folded up tightly it will keep in all the steam and flavour, allowing nothing to be wasted, and proves a very cleanly way of cooking, and saves much washing-up and scouring of tins and pans. In true Paper-bag cookery, now much used in gas ovens and English ranges, the bag is made of a special paper, grease-proof, nevertheless where the right kind of bag is not available wrapping up in ordinary white paper is much better than nothing, but always grease the paper first. Shape the paper, or the bag, so that a hollow forms at the bottom, into which the fat and gravy collects. This facilitates dishing up, as a cut with a knife will let this through into a tin held underneath.

Boiling

Now as to Boiling meat. Sometimes we boil it in order to extract all the goodness as for soup,

sometimes for the sake of cooking meat or fish in this special way. In the first case it should be put over a slow fire in cold water, and when it has reached the boiling point be withdrawn and allowed to cook without boiling again, and cooking a very long time in this way much improves the flavour of broth or soup. But when the meat is intended to be eaten, the water into which it is put should nearly boil when it is first put in with its vegetables, and then be brought rather quickly to the boiling-point, drawn away, and kept boiling very gently indeed. Never on any account let it boil fast, still it must *just* boil or else the meat will not cook. Fast boiling ruins the soup and toughens the meat. When rice is added to broth, it is washed and put in about an hour before the soup is finished ; when barley is put in, it can be added as soon as the broth boils, as it takes longer to soften. A fair-sized piece of meat with vegetables will take from two to three hours to boil it well. For Scotch broth the vegetables are chopped small and the barley and these boiled together with the mutton.

When boiling fish the water should be at the boiling-point when it is put in, but only just reach that point, or rather not quite reach it afterwards. The water should be salted, and a few drops of vinegar will help to keep the flakes of fish firm.

Fish should simmer till the skin shows signs of cracking, then it is sufficiently done. Fish that is boiled fast is flavourless and ragged. But a pudding or anything cooked in a mould may boil as fast as you please.

Some vegetables are better for putting to cook in cold water, others must have boiling water. Dried vegetables and some potatoes want cold water, and dried peas and beans want long previous soaking. Green vegetables and green peas, on the other hand, want plunging into fast boiling salted water and to be kept boiling fast. Potatoes and some of the other root vegetables will steam better than they will boil.

Stewing

There is no doubt that Stewing is the ideal way of cooking all tough meats and old birds. Stews want slow cooking and close covering to keep in the steam, and need several hours to do them well. A stew should be mellow and have plenty of gravy. The best plan is to bring the contents of the stew-pan to boiling point rather quickly, then to set the pan or jar in a corner of the oven or hearth, where it will have gentle heat for a long time. Unless it reaches the boiling-point once, however, it will not start cooking. After it had reached

the boil however it could be set in the Hay-box Oven or in a hole in the ground, and would go on cooking all right for many hours without harm.

Recipes for different stews are given in the next chapter, but the principle of making a stew savoury and nourishing and tender is grasped when we understand that it is necessary to bring it to full heat, that is boiling-point early, then to let it cook well below that point for several hours. Tough meat should then become quite tender, and the gristly pieces soft and glutinous. A little vinegar added to a stew helps to make the meat tender, and seasoning makes it savoury.

A little vinegar added to a stew of game draws out the flavour, and likewise some pickle added to one of venison or dried meat greatly improves it. So, too, does a little red wine.

Fish stews are excellent, and this method of cooking makes very palatable the coarser kinds of river or pond fish. After being scraped to free it from scales, and after washing well in water, it should be dried and cut into pieces of a convenient size, rolled in flour and sprinkled with salt and pepper, packed into the stew-pan with a little vinegar or the juice of a lemon, and with several small pats of butter, then covered down closely and stewed for an hour or so. Omit the vinegar when cooking the more delicate kinds of white

fish, adding only salt and butter, and perhaps a little milk. If liked, a little grated cheese can be sprinkled over a stew of white fish.

A way of greatly improving a plain stew is to first fry the meat and vegetables which compose it, frying them sufficiently to brown them, but not enough to cook them properly; the cooking is done by the stewing, but the frying gives a savouriness which nothing else can. Onions and carrots and potatoes fried before they are added to a stew, for instance, make it very much richer than if put in raw. Rinse out the frying-pan with boiling water and add this to the stew. Such things as liver and bacon, kidneys, giblets, etc., should always be fried lightly before stewing them.

Frying

The object in Frying is to form a savoury and brown crust on the outside so as to keep in the juices within. Hence, as before said, a shock of "surprise" is given by plunging the article to be fried into boiling fat, and cooking it quickly so as to have it juicy and succulent within. On this account we choose things that do not need long cooking for cooking by frying methods. Small things like cutlets and chops, slices of fish and bacon, made-up rolls of minced meat, and so on,

and things that we can dip into batter and roll in flour or breadcrumbs are fried. But we also fry fresh fish that has been split down the back and laid flat, and small birds which want light and quick cooking. The pan and the fat must be very hot, and when dry frying (that is, frying with a pan that is only just rubbed with fat) is chosen, as for a fried beefsteak, frequent turning over and great care to do it quickly and yet without scorching, is needed.

Pour off any fat used for frying into a jar containing a little boiling water. This will clear it and leave it as a cake on the top which can be lifted off and used several times over.

Braising

Braising is a combination of baking and stewing. Really the braising-pan should hold hot coals on the top as well as be surrounded with them, and a tightly-covered vessel set within the ashes of a wood fire, with embers covering the top, would furnish an ideal braise. It is a capital way of cooking when there is only the hearth available, for the piece of meat is put inside the deep pan, with a little fat but no water, and the cover is put on and fastened down, the whole thing being smothered in hot ashes or embers. It can be left

for some hours, and may be set aside to become cold before opening the pan. A large piece of meat braised would take four or five hours to cook well. A leg of pork, for instance, covered with a little fat taken from the breast, cooked in this way is delicious; so, too, is a leg of mutton. The braising pan may be of iron that is enamelled or merely tinned inside, or of glazed earthenware. The difference between a braise and a stew is that for a stew the meat is cut up in pieces, vegetables are usually added, with seasoning and a little water to make gravy, and long cooking in a corner of the oven is necessary, while for a braise the joint is left whole, vegetables are generally omitted and the pan is buried among the ashes.

Grilling

Grilling or Broiling is a method used for cooking small steaks or chops; small fish split and laid open; small birds treated the same way, and require a very hot red fire, with a grill that is somewhat like a magnified toaster. The thing that is grilled must be turned over and over very frequently, to cook both sides quickly and lightly, and it should be cooked through in a few minutes.

Combinations of cooking methods like frying

and stewing, as just mentioned, give better results sometimes than one method alone. For example, sausages that are first boiled and then fried are twice as succulent and savoury as when only fried. A piece of bacon first boiled then baked is likewise much improved.

Condiments

Salt, which toughens meat if added at the beginning, can be put in just before the cooking is finished, but meat that has been salted long enough to preserve it is usually tender after it has been boiled. Salt arrests decay, and while it toughens the fibres it helps to draw out the juices, so that its action is helpful in certain conditions and a hindrance in others. Pepper helps to keep game and poultry sweet, and gives piquancy to any dish. Sauces and wines should never be added except at the last moment or their effect is lost. The practice of adding sauces and much seasoning is not to be commended. The object of all cooking is to bring out the flavour of the thing cooked, not to add another to it, except that other flavour is indispensable as a complement.

A Boiling-pan, a Braising-pan, a Frying-pan and a Stew-pan or casserole, with a roasting spit,

might be considered the full complement of any kitchen. Less can be made to do, but more would not really be necessary, unless the more meant, shall we say, a supply of paper bags ?

VII

SIMPLIFIED COOKERY RECIPES

General directions have been given with regard to cooking of meat and vegetables, making soups, and so on, in the previous chapters, but for handy reference the colonist will like to refer to the recipe itself as he wants it and when he wants it.

Soups and Broths

Gamekeeper's Broth.—Strain off clear about a quart of stock obtained by stewing the bones of game, poultry or rabbits with any meat bones available. Brown scraps and trimmings of meat will have made this stock richer and deeper in colour. Fry till brown a few small onions and carrots, and in the same fat any scraps of game or meat that seem good. Add these to the strained stock and mix with the rest of the fat in the frying-pan a little flour, some pepper and salt, stir up well and thin with a few spoonfuls of the stock, then add all to the remainder and boil up once. A little red wine would, of course, make this richer, but is not necessary.

Ox-tail Soup.—Joint the tail and place the pieces in a deep stone jar with peeled onions, say three or four, as many carrots, and some salt and pepper. Fill up the jar with water. One tail should make three or four pints of strong soup. Stew in a corner of the hearth or oven for four or five hours, and serve a few pieces of meat with the liquor. It is not necessary to thicken the soup, but if it is preferred so, it can have a little flour and dissolved butter rolled together and stirred into the hot liquor gradually, and boiled up once.

Sheep's Head Broth.—Wash the head well and put on in a pan with cold water, a good spoonful of salt, a large cupful of well-washed barley, some onions and turnips, carrots and leeks if to be had, and a piece of celery likewise, and boil very gently for at least three hours. Add cold water always, say two quarts to one head. A little fresh parsley chopped small will give a very nice flavour to the broth, put in when cooked.

Scotch Broth.—The neck and other lean parts of mutton make the best broth, and should be cut small enough to serve a little meat in each plate. Turnips and onions are cut into small pieces and put in with the meat in liberal quantity. A little salt and pepper, and some fresh green peas when in season are added when the rest of the broth has

boiled, and pearl barley, previously washed and soaked in cold water, is put in with the first vegetables as it takes long to cook. Boil two hours.

GRAVY SOUP.—Parts of lean beef, such as the shin and tougher pieces of the leg, with any large bones broken in pieces, make the best gravy soup. The meat should be cut into pieces and put into a deep jar with the bones, and just enough water to cover well. Put in a spoonful of salt and a few peppercorns and leaves of any sweet herbs available, but no vegetables save one or two onions. Cook very slowly indeed, never allowing it to boil hard. After cooking about six hours, strain off, let it get cold to enable any fat to be skimmed off, then warm up as wanted. It should be a rather deep colour and very strong and clear.

RABBIT OR HARE SOUP.—The bones and larger joints, heads, and so on, without any blood, of course, are put on to cook in cold water, and with them put onions and carrots. Cook a long time, then strain and pick off any nice bits of meat to return to the stock. Mix a large spoonful of flour with cold water, also a teaspoonful of salt and half one of pepper, and same of sharp sauce if available. Stir into the hot liquor and boil up for five minutes.

BEEF BOUILLON.—Take a nice piece of fresh beef, say two or three pounds weight; put it on

in a pan with warm water rather more than enough to cover it. Bring it up to the boil quickly, and as soon as it boils add pared carrots and parsnips —no turnips—onions, leeks and celery, as many as the pan will hold, then let all boil *very gently* for three hours or so. The beef and vegetables can be eaten as a dish after the soup has been taken off clear. The latter is most reviving and appetising as well as wholesome. The point is not to let it boil hard, and to keep the broth clear and well-flavoured.

Fish Soup.—The water in which a large fish has been boiled will make a foundation for good fish soup, straining it clear then returning to it flakes of fish carefully picked from skin and bone, and a little minced onion and parsley. Melt a small pat of butter and stir into it some white flour till quite smooth, then a little cold milk, and pour into the stock. Add pepper and salt at discretion, and bring to boiling-point. Small fresh white fish are sometimes boiled in the stock till quite soft and the whole strained through a colander, then finished off as indicated.

Potato Soup.—Boil three or four large potatoes after peeling, and when done mash them down to a pulp ; chop finely a large onion and fry it in butter or lard, but do not let it brown. Dredge a little flour on to this, then add a teaspoonful of

salt and a little pepper and stir up with the mashed potato, and thin down with milk to make it like cream, stir well till it boils and serve.

Soak white haricot beans for twelve hours, and then boil them until they will mash down smoothly, and treat exactly as above, and an excellent white soup will result.

ONION BROTH.—Peel, slice thinly and boil, several white onions, using a deep saucepan and enough water to cover them well. When quite tender and soft stir in half as much milk, and a large spoonful of cornflour or barley meal, with butter, pepper and salt enough to season well, let it boil up a minute or two and serve.

Or bone stock can be used instead of water, leaving out the milk.

The water in which ham or bacon has been boiled will make excellent foundation for peas or lentil soup. Pea flour is less trouble and quite as satisfactory as using dried peas, but if the latter are preferred let them soak at least twelve hours before boiling in this liquor. Boil till soft, then crush through a colander with wooden spoon and season the purée well, adding a little butter also. If too thick, thin down with either milk or water, put in a spoonful of fresh mint chopped or of dried and sifted herbs.

Treat lentils in just the same way, except that

they will not need the previous soaking that dried peas do.

If pea flour is used, mix it well with cold water first, boil the stock and stir in the paste when it is hot and boil well, stirring frequently ; season and add the herbs or mint as before.

If fresh green peas are used, they need no soaking, only boiling till very soft, mashing and thinning down with stock.

Pumpkin or Vegetable Marrow Soup.—Pare, split down and take out the seeds from large marrows or from portions of ripe pumpkin. Boil in enough water to cover well until quite tender, then rub through a colander. Melt some butter and mix with it a large spoonful of flour, and stir this into the marrow, thinning down with a little boiling milk, adding salt and pepper and a spoonful of sugar, a little spice if liked, and boil till all is smooth as a custard.

Tomato Soup.—Cook half a dozen large tomatoes in a little butter, after cutting them in slices and some slices of peeled onion. Cook till tender, and rub down with wooden spoon or pass through a colander. Add enough clear bone stock to make the required quantity of soup, and salt and pepper, with a teaspoonful of sugar also. Then finally stir in some butter and flour mixed together to a smooth paste, boil well and serve.

Mixtures of vegetables like turnips, parsnips, artichokes and potatoes, with onion to make a savoury flavour, make an excellent white soup. Carrots and tomatoes and onion go well together for a soup that is made up with bone stock.

It is an improvement in all these soups to use *baked* flour where flour is mentioned, as this gives the soup a richer flavour. To make it, spread a little white flour on a sheet of paper and bake very slowly in a cool oven, then keep in a tin.

Boiled, Baked and Fried Fish

Boiled Fish (which is never really *boiled* but is cooked just under the boiling-point) is done after much the same method, no matter what the kind of fish. It is better when boiling large fish to wrap them in a piece of clean calico or muslin as the thinner parts get cooked before the thicker are done, and with a wrapping it is easier to lift the fish out without breaking it. Cook in water that is well salted, and if the fish is a white one, like cod, add a little vinegar to the water.

Another way of boiling fish is to lay it in a dish with just sufficient stock—fish stock by preference—to cover it, with a few small onions round it and a little wine or vinegar added.

After boiling, drain the fish well and serve plenty

of nice sauce separately, and boiled potatoes left whole. A large cod, boiled whole, with plenty of mealy potatoes and a dishful of parsley or egg sauce will make an excellent meal.

In boiling portions of fish, like middle cuts, it is better after draining to take away skin and all bones and then serve it in flakes masked under a sauce. It is a neater and more appetising way than to have each one leave a mess of skin and bones on their plate, and a very pretty dish can be made by sprinkling a little grated cheese or parsley on the top and browning the dish before serving.

Watch fish carefully while it is boiling, and as soon as it shows signs of parting from the bone it should be drained. If boiled too long all its flavour is gone, and if boiled too fast it will be raggy and yet tough. Small fish like fresh herrings and mackerel, likewise soles and plaice, all of which are very nice when carefully boiled, should rather be *poached*, much as one would poach an egg.

Baked Fish.—The best way of baking any fish is to do it in a paper wrapping. If the right kind of paper bag is not to be had, wrap it in white notepaper, having buttered this first and put a little pat of butter inside with a sprinkle of pepper and salt. Close up tightly and bake in a rather hot oven and serve in its paper case if possible.

If a large piece of fish is baked in a paper bag the wrapping can be pulled away when it is safely landed on the dish. Small fish are delicious when baked in a paper case, and all the flavour is kept in and the natural juice of the fish as well. This is a clean way of cooking when the oven is nothing but a flat hearthstone, only care must be taken that the paper wrapping cannot catch alight.

FRIED FISH.—A clear hot fire is the first consideration when frying anything, then a clean hot pan, some good fat such as rendered suet or lard, and not too much of it, and the fish must have been well dried after cleaning, then rubbed with flour. If cleaned an hour or two before they will be cooked, the fish should be dipped in milk and coated with flour, then left to dry, in this way a crust forms on them which browns quickly when fried, and is little if at all inferior to the more troublesome method of frying what has been coated with beaten egg and dipped in crumbs of bread. The rough and ready way of flouring fish after drying and then frying in hot fat is quite satisfactory when flavour counts for more than appearance, but you cannot fry fish *without* first coating them with dry flour.

Another way is to make a batter with an egg, a little flour, salt and milk, making it rather thick,

and dipping the fish into this, then putting them at once into hot fat. This, too, is an easy method and a nice crust forms on the outside of the fish which keeps in all the flavour.

Flat fish, like soles, flounders and plaice, are the best for frying, or slices cut across a large fish.

The fat in the pan must be very hot indeed, which is told by a faint blue smoke rising from it.

GRILLED OR BROILED FISH.—This is the camp ready way of cooking freshly-caught fish, and very good it is. After cleaning and emptying, the fish is split down the back, rubbed lightly with oil and laid on a grid and held over the coals. It wants a little skill to grill well, and not to burn the fish, but if quickly cooked in this way, turning frequently on both sides, the result is excellent. Herrings and mackerel broil well, so do trout and some of the small river fish. A pat of butter, a sprinkle of salt and pepper, and a few drops of vinegar are all the sauce that is needed.

Sufficient directions for roasting, boiling or braising meat have already been given, so that we may pass on to savoury dishes, among the best of which are—

Hotpots

For a LANCASHIRE HOT-POT take about a

couple of pounds of lean beef and as many potatoes and several onions. Cut the beef into small pieces about an inch square and roll these in flour that has been liberally seasoned with salt and pepper. Pare the potatoes and cut them in very thick slices; peel the onions and chop roughly. Make a layer of beef, onions and potato alternately in a stewpan just large enough to hold the whole quantity comfortably without leaving much space. Pour in enough water to barely cover, then put on the lid and set in a moderate oven for quite two hours, to simmer well but not boil. It should be very tender and lightly browned on the top. Serve in the same pan. The flouring of the meat keeps that more tender and makes the gravy richer.

For a HUNTER'S HOT-POT take any game or rabbits, and after cleaning and skinning, joint them and roll in seasoned flour, then form layers of rabbit, onion, whole potatoes or pieces of turnip or other sweet roots, and fill up with warm water, closing tightly and stewing for two to three hours or even longer. Venison would be good stewed in this way. Game birds are better stewed without vegetable additions, but with a little pork or bacon cut in strips and put with them. Flour well all the same.

For IRISH STEW take the neck and breast of

mutton and cut in convenient-sized pieces, flouring well in seasoned flour as before, and lay in a deep stewpan with whole onions and potatoes, as many as the stewpan will accommodate. Put in less water, only enough to cover the bottom well, then lay a plate face downwards on the top before putting on the cover of the pan, and cook in good oven for three hours. The plate helps to keep in the steam and to keep the top of the stew from browning.

For making a Hot-Pot with breast of veal or lamb, as sometimes it is possible to do in the spring or summer time, the meat is cut in strips and across in short lengths, is floured and put in a deep jar with a few very young onions, some herbs like mint and parsley, plenty of seasoning and a spoonful of vinegar, as well as sufficient water to just barely cover the whole. The vegetable additions are cooked separately, although a few boiled green peas might be put into the pot just before serving.

A VEGETARIAN HOT-POT is very savoury when no meat is procurable, and a mixture of vegetables, such as carrots, onions, potatoes, turnips and so on, should be pared, cut into neat rounds and fried well in clear fat till all are lightly browned, then sprinkle with pepper and salt and dredge flour over very lightly, put the vegetables in the stew

pan, rinse out the frying-pan with hot water, add just a tablespoonful of vinegar or sharp sauce, and pour over the rest. Cover down closely and stew for an hour in the oven. A little American green corn taken from the husk and put into a vegetable stew makes it very nice.

A bottle of curry powder would be of great assistance to a camp cook, as a spoonful of this stirred into a stew or a sauce would make a wonderful difference to the savouriness of the dish, to stews of mutton especially, and of vegetables without meat. After frying the vegetables, let the curry powder be stirred into the fat in the frying-pan and mixed with that and the flour, then a little hot water or stock added, and just cooked a little before pouring it into the stew-pan. The addition of an apple or a ripe tomato, or failing everything else a spoonful of vinegar, will give the desirable flavour of acidity which a curry should have.

Fried Steak and Onions

In making this very favourite dish it is well to remember that the best results are gained by combining frying and stewing, that is, frying first and stewing for a short time afterwards. Only so do you get the mellow flavour and the full

savour which frying should give. Thus, cut the steak into small squares and flour well, then fry in a little, not much, hot fat, on both sides, rather quickly, so as to brown well. Then lay the pieces of steak as they are done at the bottom of the stewpan. While these are being fried a quantity of onions can be peeled and sliced up, and with a little more fat added they are put into the frying-pan after the meat is finished. Toss them frequently to brown lightly all over, and to make them thoroughly tender cover for five or ten minutes with a plate large enough to fit the frying-pan, and so let them steam through. Then add to the steak, rinse out the pan with warm water, add pepper and salt to it, and pour over the onions, cover the stewpan down closely and set in a corner of the fireplace to simmer for an hour or so. Then the dish will be found both appetizing and digestible.

Calf's Liver, Pig's Fry, etc.

In frying liver follow the same method as just described for steak, only cut the liver or the pig's fry into slices, not too thick, and flour very thoroughly, frying till just lightly browned. Fry some bacon afterwards which has been cut into strips, and add to the liver ; then fry the onions

as before, season them and add with a little stock to rinse out the pan, and cover the stewpan and cook for an hour or more in the corner of oven or fireplace.

When frying Mutton Chops coat them with flour first, as this keeps the outside from getting dry. Make a nice gravy to go with fried chops by adding a very little flour to take up the fat in the frying-pan, some spoonfuls of sharp sauce, salt and pepper and a little stock or water, boiling this and serving it with them. It takes but a minute or two to make gravy, and it makes a great deal of difference to the dish and its value.

After frying anything like bacon or ham it is an improvement just before it is quite finished to cover it over in the pan with a plate and let it steam through for five minutes, thus making it very tender.

Toad-in-the-Hole

Beat four tablespoonfuls of flour and two eggs, and a saltspoonful of salt, together with a little cold milk, adding more milk when the batter is perfectly smooth, enough to make it like thick cream. Cut about a pound of beefsteak and one or two kidneys into small pieces, lay them at the bottom of a well buttered baking dish or pie-dish, sprinkle

with salt and pepper, and then pour over them the batter. Set the dish in a hot oven, but shield the top to keep from scorching before the meat is done through. Mutton chops or sausages can be substituted for the beef and kidney, and mushrooms help to give a nice flavour. Australian tinned mutton or American corned beef may be used this way also and make a very savoury dish, though less savoury than fresh meat, of course, and therefore where cooked meat is used a little gravy should be made separately and poured over the portions as they are served. Fresh meat can be lightly fried before covering it with the batter, to make it more savoury.

Beefsteak, Kidney and Mushroom Pudding

A plain suet crust made with half a pound of beef suet chopped, a pound of flour and teaspoonful of salt, rubbed together and mixed rather dry with cold water, then rolled out twice before lining the mould with it, is the first step towards making this pudding. Grease the mould well, line it with crust rolled to about half an inch thick, and cut out a piece for the top to fit exactly. Then proceed to fill with steak cut into small squares, each one rolled in flour mixed with salt and pepper, and add a few pieces of ox kidney cut

small, and mix with the meat some peeled mushrooms if these are to be had, or oysters if these are available, and failing either the pudding will be very good without them. Fill level with the top, wet the edges of the crust and pinch down the covering piece, after pouring in sufficient cold water to nearly but not quite cover the meat. Then tie down with a cloth, or screw on the cover of the mould, whichever kind of mould is used, and plunge it into a deep pan of boiling water, and keep boiling very fast for four hours—certainly not less than three. If making a larger pudding give it still longer time to boil. The moulds with screw-on covers are much to be recommended, as when using a cloth, however carefully this is tied over, some of the gravy and goodness of the pudding is apt to ooze through into the water. Take off the cover, bind a clean cloth round the mould, and serve, or turn it out into a deep dish if preferred.

Where mutton is more plentiful than beef, lean parts, chops trimmed from all fat, and kidneys cut in half, with mushrooms, or without them, would make another delicious pudding.

Mushrooms alone, plenty of them, liberally sprinkled with pepper and salt and floured, might be packed inside a mould lined with suet crust, and a few strips of bacon or salt pork put

with them, then boiled for a couple of hours, and a very savoury pudding would result.

When boiling beef or mutton with vegetables, as before directed, small balls of this plain suet crust dropped into the broth when it boils and cooked for an hour or so, are, in the opinion of many people, a great addition to the dish and certainly help to make it a little more substantial.

The same crust lines the mould when sliced apples, plums, berries and wild fruits are used for the filling, with sugar added, and when boiled this turns out an excellent pudding. Boil always two hours. A suet crust improves with long boiling, but is not at all good when too little done.

For a JAM ROLL make the crust in the same way, rolling it out to about a quarter of an inch thick, in a long strip of ten or twelve inches wide. Spread with jam, or treacle, with chopped fruits, soaked dried fruits and syrup, or anything that is available, and then begin at one end and roll up, not too tightly, pinching down the edges to keep it compact. Take a cloth, wring it out of hot water, sprinkle lightly with flour, and place your roll pudding across one corner, fold over the sides towards the middle, then roll up neatly and securely, but again not too tightly, as the pudding wants room to swell, fasten securely, and plunge

into fast-boiling water, and keep boiling without intermission for two hours. Unroll from the cloth and serve on hot dish.

A plain boiled suet pudding may be boiled in a cloth, or in a greased mould tied down, and served with hot treacle or cane syrup, or white sauce in which some spoonfuls of jam have been boiled, sweet sauce with wine, and so on, or with the gravy from meat.

The plain pudding may be made richer by adding currants or a liberal quantity of stoned raisins to it, or mixing with it treacle, marmalade or jam, and then boiling and serving with sauce.

Golden Pudding is of the same type, but may be called the Sunday edition of the weekday variety. It is made by mixing the same plain ingredients with eggs instead of milk or water, adding a little baking-powder to the dry flour first, then a spoonful of orange marmalade and two of clear sugar syrup, and after mixing and putting into a buttered mould this is boiled for two hours and served with a sweet sauce containing a suspicion of something spirituous—whatever Sunday rations permit of!

While on the subject of boiled puddings, it will not do to leave out a recipe for Christmas Pudding, as there may be occasion for the colonist to make his own some day.

Equal quantities (whatever the weight, this depending upon the size of pudding required), say, half a pound each of stale crumb of bread grated finely, flour, suet minced, currants and stoned raisins and sugar; mix these together first, then add two ounces of candied fruit shred small, half a packet of mixed spice and teaspoonful of ginger, a teaspoonful of salt, four eggs and quarter of a pint of brandy or rum. Mix thoroughly and keep for two or three days before boiling, then put into moulds and tie over closely, and boil five hours.

To simplify this, leave out the candied fruits and spices, using only the plainer ingredients, and all raisins can be used instead of currants if preferred. A pound of figs cut very small might take the place of any other fruit, and the spirituous liquor can be omitted altogether, using milk in place of it.

Equal quantities, say half a pound, of stoned and chopped raisins, suet and flour, mixed together with cold milk, and boiled for four or five hours, make a very excellent substitute for a rich plum-pudding.

Baked Milk Puddings

It is a mistake to put eggs in baked milk pud-

dings, except it be when a custard is required. A deep dish makes the best puddings of this type, and the heat at which they are cooked must be only moderate ; they do exceedingly well on the flat stones in front of a fire or in the hearth after a fire has been swept away, or at the bottom of a clay oven as mentioned in the early chapters of this book.

Wash whole rice and barley very thoroughly before using, then allow three large tablespoonfuls of either to each pint of milk used. Roughly speaking, it is sufficient to cover well the bottom of the dish that is used. Add sugar and a little salt and spice if liked, then pour in the milk—cold—and stir up well and set to cook.

Tapioca is done the same way, but is not washed before using. Tapioca is more nourishing than either rice or barley. Sago makes another change, and is also very nourishing, and hominy is likewise good, though it is improved by preparing as ground rice, namely, by boiling in a saucepan with the milk first, till stiff, and when cool one or two eggs and a little spice are beaten in and the mixture is poured into a buttered dish and baked till just brown on the surface.

Macaroni is broken into inch lengths and thrown into boiling salted water and cooked till just tender, then drained, mixed with one or two

beaten eggs and a little milk, with grated cheese, pepper and salt, or instead with a little sugar and spice, poured into a buttered dish and cooked till firmly set.

Or, after boiling till tender, and draining from water, it can be returned to the saucepan with plenty of butter and grated cheese, pepper and salt, with either a little cream or some tomato sauce, and after tossing with a fork cover down and leave to simmer for ten minutes, then turn out into a dish and eat with a fork.

Batter Puddings

To make a light batter, good either for baking as a Yorkshire pudding, for boiling to eat with sauce, or for frying as Pancakes, allow to every egg two large tablespoonfuls of flour, half a salt-spoonful of salt and a breakfast-cupful of milk.

When mixing, break the egg first into a basin, add the salt, then the flour and a quarter of the milk, then beat well and briskly, so as to work out all traces of lumps, and gradually beat in the rest of the milk. A little water as well as the milk makes the batter lighter than one made with all milk. Increase the proportions according to the size of pudding or the number of pancakes required.

This batter can be poured into a shallow baking-tin containing some hot fat—for a Yorkshire pudding—and baked rather quickly in hot oven, or poured into a buttered mould which it will three-parts fill, tied down and boiled or steamed for two hours, or taken by small cupfuls and poured into a well-greased frying-pan and turned over as it sets and browns.

Omelettes

For an omelet the freshest of eggs will be needed, and they are broken on to a plate, salt and pepper added and not more than a tablespoonful of milk ; this is lightly beaten with the blade of a knife until just mixed, then poured into the pan, which contains butter that is on the point of turning brown. Leave to set, then pass a knife round the edge and underneath, fold one half over the other and slip on to a hot dish.

If a cheese omelet is wanted, add some spoonfuls of grated cheese to the mixture and cook as just directed.

If minced herbs or mushrooms are added, put the herbs with the eggs, but cook the mushrooms in a separate pan with some butter, and just before folding the omelet over slip in the cooked

mushrooms between. Fried giblets and livers and strips of bacon are introduced in the same way to make another variation.

Cheese and Stale Bread

By grating the bread and cheese and mixing these with an egg, salt and pepper and just a little milk, the mixture can make a kind of pancake in the ordinary way, or be baked in a buttered pie-dish in the oven as a savoury pudding.

Supposing there are some stale crusts and a bit of dry cheese, but no eggs or butter. Pour a little boiling water, or better still a little boiling milk, over the crusts in a dish and leave to soften, then put a little ale or cider into a frying-pan, slice up the cheese very thinly, lay it in the hot liquor, and while it is getting hot through beat up the soaked bread with a fork, add a sprinkle of salt and then put all into the frying-pan and toss up till the whole is thoroughly light and hot through.

Another way is to pour milk over broken crusts and set these in a dish inside the oven and when hot to cover thickly with grated or sliced cheese, salt and pepper enough to season well, and return until just browned on the surface.

If very dry crusts of bread are dipped in milk

and baked between two plates, then spread with butter and toasted cheese, they make a very relishable supper.

Using Tinned Provisions

In place of fresh milk condensed milk makes excellent milk puddings, batter puddings, bread, and so forth. If using the sweetened milk leave out sugar mentioned in the recipes. Do not add too much water to the milk.

Corned Beef can be cut into small squares and lightly fried, then served inside a wall of mashed potato, with a tomato gravy made and poured over. Or served inside a batter baked in dish as mentioned in Toad-in-the-Hole.

Make a curry sauce by using some bone stock, or stock made by dissolving a soup square, adding to it a good spoonful of curry-powder or paste, a little salt and pepper and tomato or Worcester sauce, and a spoonful of baked flour mixed smooth with dissolved butter. Boil up and allow to simmer. Fry till very brown some thinly sliced onions, dredge with seasoning, and fry also slices of corned beef in same pan after the onions are done. Place all in the curry sauce and leave to simmer for half an hour, then serve with boiled rice or mashed potato.

Tinned Australian mutton chops can be added to a stew of onions and potatoes when these have partly cooked, and with plenty of seasoning make a very palatable Irish Stew.

Tinned Rabbit is improved by having a little curry added to the gravy after it has been made hot and by cooking it gently to mix the flavours. Some boiled onions and white sauce accompany tinned rabbit excellently well.

Tinned Fruits and Vegetables can be made hot and served with cooked rice or custard sauce, according to what they are, and whether sweet or savoury. Tinned peas, for instance, and tinned mushrooms, go well with rice and a curry sauce ; tinned tomatoes, cheese, pepper and salt, are tossed together and fried for a few minutes.

Kitchen Wrinkles

Fill all saucepans with cold water as soon as done with and set aside ; when ready to wash them heat the water and it will be easy to scour them with soda and sand. Never leave a pan to be dry before washing, as it will be ten times harder to clean and probably require scraping.

Pour all fat that has been used for frying or baking into a jar containing a few spoonfuls of boiling water ; this clarifies the fat and causes

all crumbs and sediment to fall to the bottom. The fat can then be lifted off in a cake and used over and over again.

Soup that has been over-salted can be corrected to some extent by putting in raw potatoes and bringing up to the boiling-point again—not letting the potatoes break up and spoil the colour of the soup.

Raw potatoes are one of the best preventives of scurvy, and can be eaten if they are grated, while plain boiled potatoes, eaten hot or cold, are the best corrective in a diet that contains too much salt meat.

Sliced raw onions placed about in saucers are excellent disinfectants where there is infectious sickness about; change at least every day and substitute fresh onions. Small-pox and other fevers have been kept away by having onions hanging in the room. Saucers of slaked lime are also good disinfectants, particularly where there is any damp or bad smell about.

To take the stains from steel knives clean first with damp earth, then rub with a cork and some emery powder and methylated spirit, or with powdered wood ash.

To Boil Rice

Rice is so often badly-cooked that the Black

Man's way of boiling it may be worth quoting. He says—

"Wash him well; much wash in cold water; rice-flour make him stick. Water boil all ready, very fast. Shove him in; rice not burn, water shake him too much. Boil twenty minutes. Rub one rice in thumb and finger; if all rub away him quite done. Put rice in colander, hot water run away through; put cold water through him, then put back in pan, cover him and keep hot, then soon rice all ready. Eat him up."

Vegetables which have strong flavours, such as green cabbage, nettles, turnip-tops, and so on, should be drained from the first water, then returned to the pan with fresh boiling water. They will be much more easily digested if this is done.

VIII

PRACTICAL HINTS FOR THE HANDY MAN

Mosquitos, Gnats and Wasp Stings

When camping out, these troublesome insects can inflict much torture, and one way of keeping them out of a tent is to hang up a piece of raw meat outside it for them to settle upon. To paint freely woodwork and canvas with petroleum and ordinary oil mixed together is another way of keeping insects at a distance. For the stings themselves, a mixture of common soda and salad oil mixed together is a great means of allaying the irritation. Pull out the sting if it is still visible and bathe with warm water and common salt, then with oil and soda. Rubbing the body freely with oil or fat is a preventive of insect bites, and it is said that those who will eat spices freely, particularly cinnamon, will never be bitten.

Screening Sun-Rays

Where light is wanted yet the sun's rays must be kept out, of cellar or room, the best way is to mix whitewash and ordinary blue, coating the window with this inside. When afraid of sun-rays on the head remember not only to protect

the head itself but also the nape of the neck and the spine. A thick pleat of something in the lining of the coat or shirt and high collar are very necessary in order to guard these nerve centres both from excessive cold and heat.

Roof-Fire Risks

Roofs, more especially those covered with shingles, boards, tarred felt or any form of thatch, are a source of danger from fire. An excellent and simple way of protecting them is to run a fairly large pipe, with small perforations all along its course, along the ridge pole, connecting it with the house water supply if in town or with the water cistern in the country. By turning a tap, which should be controlled from a place easily got at, the pipe is filled with water which escapes through the perforations and covers the whole roof with a thin sheet of water. This will extinguish sparks from passing locomotives or a forest conflagration, and prevent fire from both internal or external heat. In hot climates the system can be employed for cooling the roof.

Waterproof Putty

A plastic waterproof paste is often useful. It can be prepared by almost anyone anywhere

by taking a piece of ordinary cheese, steeping it in water until quite soft, then rubbing and kneading it well with about half its weight of quicklime. With this you can put in panes of glass, stop up cracks, and make wooden cases waterproof.

Cutting Glass

When without a glazier's diamond make a stout wire or thin iron rod red hot and draw a line with it, very lightly, where you want the glass cut; unless it is very thick glass it will snap off quite easily. And for opening a bottle that is too tightly corked, instead of breaking the neck and splintering the glass, take a piece of string and soak it in turpentine, tie it tightly round the neck of the bottle where you wish it broken off, then set fire to the string, and the glass will snap off easily at the heated line.

Rust on Tools

It is not an easy matter to remove rust from tools without damaging them. Better by far is to preserve your tools from rust. Professor Olmstead, of Yale College, gave the following recipe for keeping tools from rusting, which deserves to be more widely known: Melt together six to eight parts of lard to one of resin and stir till cool.

It will remain semi-liquid. Rub on tools or any polished surface in a very thin film. It will protect the metal from damp and can easily be rubbed off again when the article is wanted. The resin prevents the oil or lard from becoming rancid. When too thick, thin down with benzine.

Re-sharpening Files

Files that are constantly in use soon become clogged and will not work properly. The material that clogs them should be washed or dissolved out. Sawdust can be got out by steeping in hot soap-suds. For iron filings use a very dilute solution of sulphate of copper. For copper use dilute nitric acid. For zinc dilute sulphuric acid. Use all acids very weak, then wash well and dry thoroughly.

Nailing Boards

Many people in putting up boards will nail one after the other, making a complete job of each board. But this is not the right way. First nail the board down on one side, the starting side, let us say the left. Next place the second board in position and nail down the left. This done, nail down the right side of the first board. Now place board three in position, nail down its left

side, then the right side of board number two, and so on right along. The object of this is to get the boards close together and so make a compact job of it. They are practically wedged in close to each other. To obtain the best results do not drive the nails straight down but at a slight angle, right and left. Boards nailed thus cannot be shaken loose. But in nailing up cases that have to be opened again, drive the nails straight in as that makes lifting up with a screw-driver much easier. To rub nails and screws with vaseline, a tin of which should always be kept in the tool-box, makes them much easier to drive in and prevents rusting.

Gates Without Hinges

Hinges are one of the weak points in gates of all kinds, especially heavy wooden ones that have to undergo much hard wear and tear ; they are apt to break and cannot always be replaced. Say you have a three or four-barred gate, with vertical bars longer than the horizontal. The top and lowest bars of the gate must project beyond the horizontal and should be pierced with round holes. The gate is hung by having its end post passed through the hole in the lower bar ; the top bar is then placed in position and

the top of the gate post passed through its hole. The intermediate bars are nailed to shorter posts which do not come higher than the level of the top of the gate. A gate of this kind will swing easily provided the holes are made large enough.

Another gate is more like the swinging section of a fence, and is intended to block watercourses which run dry, at certain seasons. On the other hand if the fence is brought down too low or made too solid it may be swept away when the water rises. The method is to construct a string hurdle, planned so as to stop gaps, with a strong and long top bar. This top bar just rests in bifurcated posts on each bank or side, the posts forming a sort of V-shaped rest. If necessary, this top bar can be rivetted to the posts and the bottom of the hurdle weighted with stones. If not weighted, however, the result is that the watercourse is fenced over but the hurdle swings when the water rushes through without being carried away and falls back into position as the stream subsides.

Watches as Compasses

All watches are compasses, and this fact may help any one out of a difficulty when uncertain of their bearings. All that has to be done is to

point the hour hand to the sun. The south lies exactly between that point and the hour twelve ; thus at six o'clock the exact south will be found at the point marked three on the dial.

If the way has been lost and bearings cannot be taken either from an elevation or by a compass or watch, and a watercourse can be found, follow that downwards ; it will at least prevent travelling in a circle, and most likely lead to some habitation.

Substitute for Coffee

The grains of corn, such as wheat or oats, make an excellent substitute for coffee if dried and browned on tins over a fire and then bruised or ground up. So do small beans of the haricot variety. They may be crushed between stones and then roasted in a pan over the fire, and boiled with water, the liquor being poured off clear. All raw fruits and root vegetables like potatoes are preventives of scurvy, and dried fruits like peaches and apples are excellent sustaining food on a march, while dried raisins are better than all.

To Make Limewash

Mix quicklime in a bucket with hot water and glue. If for disinfecting purposes add a little carbolic solution. Care must be taken not to let

a splash get into the eyes, and if by accident it does so, bathe the eyes at once with warm water and vinegar. The acid neutralises the lime.

To Make Whitewash

Put some whiting into a pail and add powdered dry size. Pour on boiling water till the mixture is as thick as cream, and to keep it white add a little common washing blue. A tint of salmon pink or terra-cotta is obtained by mixing some Venetian red with the whiting. Whiting is easier and safer to apply than limewash, but is no use for disinfectant purposes.

Suggestions

Agates are sold for sixpence by tobacconists and can be kept with a piece of tinder in a little tin box, to use instead of a flint for procuring a spark from steel.

The burning-glass taken from a telescope and held over tinder in hot sunshine will cause it to ignite.

Firewood should be looked for under bushes, as the driest and easiest to light is always found there. Old tree roots make excellent firewood. Large logs make the best fire when placed transversely and built in with smaller wood.

When obliged to sleep on the ground scrape a hollow for the hip bone to rest in and another for the shoulder, then much better rest is obtained.

A piece of mackintosh should always be taken with any rugs, but failing mackintosh a piece of tarred or painted canvas is excellent for keeping out damp. Brown paper is an excellent non-conductor of heat, and if placed between rugs and blankets makes one worth two in warmth. A bag filled with grass or dry earth makes a good pillow. Thick quilts or rugs with sheets of wadding quilted in between them are better for bed-coverings than blankets when camping out, and are lighter to carry.

Take care to keep the extremities warm when in cold climate. Increase the warmth of knitted woollens by lining them with thin flannel or silk, and cut the legs from stockings that are worn out at the feet and use these for covering the arms. Keep the mouth covered if you would keep warm in keen frosty weather, as this prevents rapid evaporation of the heat of the body. The Red Indians knew this, and one of them seeing a white man suffering from cold once remarked to him, "You no keep your breath warm and so, you cold."

Much sugar should be consumed in cold climates, and eating sweets freely is much to be com-

mended. Toffee can be made easily over a camp fire at night, and is wholesome faring for anyone. Chocolate is excellent food likewise, and peppermint candies are good for stimulating digestion and warming the stomach.

A thick dressing-gown is a great comfort in either hot or cold climates ; it can be worn while day clothes are airing or drying and is a better sleeping dress than night clothes when travelling.

During cold weather, after washing the body, rub well with oil to help to keep the skin soft and free from sores. A horse-hair flesh glove to use for a vigorous dry rub is better than too frequent washing in water.

Grease the soles of shoes when much walking has to be done, and a layer of grease between the foot and shoe is a great preventive of foot sores. The harder the ground the thicker the socks or stockings should be.

A Summary of Useful Things

A mincing machine, a small sewing machine, English-made steel knives (plated knives are in common use in Canada, but they are apt to be very blunt). Kitchen tools, horn spoons and enamelled plates and cups. Small pair of bellows. A leather roll containing chisel, gouge,

files, nippers, screwdrivers, gimlet and hand saw, with a few nails and screws—this is as indispensable as a "Housewife," although the latter article must not be left behind. A can-opener and strong clasp-knife, some strong glue, a shoemaker's reel of thread and some cobbler's wax, and tin of vaseline, are all excellent if not absolutely indis pensable.

Printed by BUTLER & TANNER, *Frome and London.*