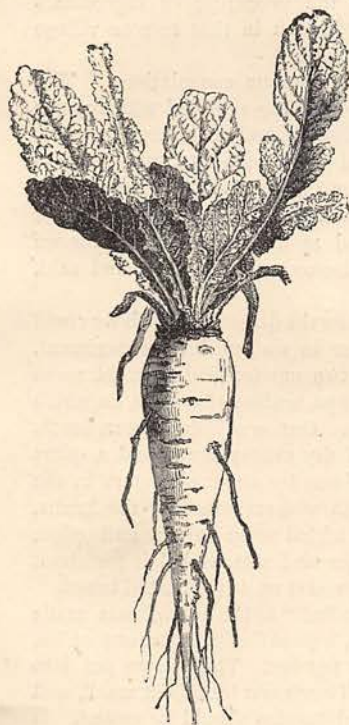


vessel in furious flames and crackling sparks; but at length the volume of flame lessens, and shortly the converter is partially turned on its axis, sending out a momentary stream. The decarbonised iron now receives a portion of "spiegel," or of ferro-manganese, which in mixing with it causes an ebullition, and the issue of a mass of flame, paler in tint and less furious in force than before, and with the addition of this the manufacture of Bessemer steel is complete. In a short time the converter pours its charge of from three to six tons into a ladle, and this is swung over a row of ingot moulds which form the arc of a circle. The ladle is tapped at the bottom, and a stream of pale-straw-coloured metal runs out into each mould in turn. When the metal acquires solidity, the moulds are raised from their still ruddy contents, and the great ingots are taken, yet hot, to be reheated in the furnaces, prior to being sent to the rolls to acquire the form of rails, or to be otherwise treated, according to their intended use.

Since, by processes such as this, the price of steel has been brought so low, and since the durability of the product of these processes has been fully demonstrated, there has been a revolution in the metallurgical world. Steel rails have, to a very large degree, supplanted those of iron; steel plates are beginning to be used for ship and boiler building, and in many other modes the cheap and more durable material is being increasingly used; while as its production is increased, the difference in price between it and iron is lessened, and its use continues to expand. The consequence of this is that the iron-producing districts feel very much more the force of the depression in trade than do the steel-producing districts; and there is in progress a very great change in the facilities of manufacture, for many of the iron-manufacturing firms are changing their works, and becoming Bessemer steel makers. When this change is accomplished "the iron age" will have given place to that of a purer and a longer-lived metal.

A SUMMER EXPERIMENT IN COOKERY.



WE were what landladies know as "a troublesome party." There were not many of us, but we were all independent people, who had formed our own habits and ways. One of us had been long in somewhat enfeebled health, accustomed to indulge in oysters and sweet-breads, in jellies and soups. Another of us had a constitutional inability to eat mutton. One was accustomed to early dinner, and another to late. And now here we were, settled down for a whole month in a little village three miles from any railway station, with one "shop" where every-

thing was sold, from boots to bread, and with one butcher, who supplied the rectory and the Great House, and sometimes killed an extra "beast," generally a sheep, which the village consumed at its leisure.

It was here, and at this dreadful juncture, that we became enlightened as to the meaning of that phrase "butcher's meat," which we had heard so constantly on the lips of the peasantry, and which had hitherto

struck us as mere tautology. We found that there is a "meat" which is not "butcher's." There is the domestic pig, which is either slaughtered in one's own sty, or bought in the form of bacon at "the shop." This was the village *pièce de résistance*. The first day that the butcher entirely failed us, our landlady mildly and timidly suggested "bacon." At the very sound of the word the delicate member of our party went to bed with a bad sick-headache, and stayed there for the remainder of the day.

"Can any fish be got?" we asked wildly.

"No," said our landlady hesitatingly—sometimes a man from the county-town brought over a basket of red-herrings, but he was not to be depended on. There was tinned-fish at the shop, but the village people "did not fancy it," and the stock was stale, seeing that the shopkeeper's own family would not touch it.

What could we do? We told our landlady that we would think about it, and would communicate the result to her, whereon she joyfully withdrew. And we sat and looked at each other.

"I've heard that it is possible to live very nicely without any meat at all," suggested our mutton-hater.

"I've heard of people doing so, and declaring they live the longer for it," said our late diner. "They'll give you a list of vegetable-eaters who have reached a hundred years. But I believe it is with them as with the early risers—they must have been very strong to dare to begin the habit at all."

"It could not hurt us for a little while," said our early diner.

"We might try it for one or two days," said all of us.

"We can't do better while we can get nothing else," said our late diner.

And so we set our wits to work. Our mutton-hater

knew how to make one or two dishes to begin with, and was evidently no tyro on the subject, since she instantly wrote home for sundry books and papers, which she had stored there, and which she thought might be useful to us.

With fear and trembling we sat down to our first dinner. Our newly-appointed caterer was a little fussy and anxious, but not without signs of secret jubilation, which she was only afraid of showing too soon. We had already had experience of such dinners as our landlady could provide—very tough steaks, very greasy mutton chops. But now a soup tureen and plates were set before us.

"Rice soup," said our mutton-hater calmly, removing the lid, and while we were partaking of it with considerable enjoyment, she told us how it was made.

The ingredients were six ounces of rice, one quart of milk, and two ounces of butter. The rice, with a quart of water, had been put in an earthen vessel, and set in the oven until the water was absorbed, then it had been transferred to a pan with the milk, and set over the fire, while the butter was stirred in, then seasoned with salt and white pepper, and boiled for ten minutes. We all pronounced it very good.

The next dish—so to speak, the "joint" of the occasion—was a potato-pie. This we were told was made with two pounds of potatoes, two ounces of finely-cut onions, one ounce of butter, and half an ounce of tapioca. The potatoes had been cut, pared, and put at the bottom of a pie-dish, then sprinkled with pepper and salt; the onions, the tapioca, the butter, and half a pint of water added; the whole covered with bread-crumbs, and baked in a moderately hot oven. This was pronounced a great success. Our delicate friend partook of it, and even the late diner wrote down the recipe that he might instruct his housekeeper in its mysteries.

Our meal concluded with fresh-gathered strawberries. And after resting for a little while we went out for our accustomed walk across the hills, and as our early diner said, "were not ashamed to look a sheep in the face."

When the mysterious packet of books arrived, the hour for selecting our dinner became also a season for all sorts of discussions and discoveries. We found that there were large numbers of people in the constant practice of what seemed to us so novel and so queer. We found that some abstained from flesh-eating on the grounds of its cruelty and selfishness towards the animal kingdom, whilst others did so rather from the belief that the simple diet was more truly wholesome and beneficial to man. We found that most great men, both of ancient and modern times, had given thought to the subject on which we had stumbled in such an impromptu, homely fashion, and that among those who had not only favourably inclined to its theory, but had more or less practised it in their own lives, may be counted Pythagoras, Plato, Diogenes, Plutarch, St. Chrysostom, Seneca, John Wesley, Benjamin Franklin, John Howard, Emanuel Swedenborg, Wordsworth, Lamartine, and Francis W. Newman. We found that such naturalists

as Linnæus, Cuvier, Ray, Monboddio, and Bell have recorded their opinion that the teeth, the stomach, and indeed the whole of the structure of man indicate his adaptation to a fruit and farinaceous diet. We were not by any means convinced; but, at least, we were made aware that we had set up our experimental tent and tripod on no waste ground, but on an ancient battle-field.

We had our difficulties. Our landlady did not approve of our idea, for though we found no real diminution in our weekly bills, she got the notion that we were "mean." "Them as can pay for meat should leave other things for them as can't," we overheard her saying—the good woman's mind being quite unable to travel so far down an argument as to perceive that if such a "mean" course was more universally followed, the price of meat would certainly come within the range of those who now abstain not from choice, but of necessity. The butcher-boys hooted us, but providentially in such broad Sussex dialect that we could not understand what they said. Nor were all our dinners so unmitigatedly triumphant as the first. One or two dishes, highly recommended by the recipe-books, proved quite unpalatable—nay, nauseous to us. Others involved the procuring of ingredients more hopelessly out of reach in that remote village than even fish, flesh, or fowl.

Yet we were not without our consolations. The county paper kept us constantly supplied with reports of the foot-and-mouth disease, and of farmers, graziers, and butchers punished for sending tainted meat to market. We had been apt in other days to pass rather quickly over these items, conscious that they might painfully recur to mind at dinner-time, but now we read them aloud, and looked at each other and said, "We are safe."

However, we soon knew the dishes on which we could fall back when we were in no mood for experiment. We never ventured on two untried dishes at the same meal. We had some soups, besides rice soup, on which we knew we could rely. One was kidney-bean broth. We took half a pint of dry kidney beans and a quart of water, and stewed these for about six hours in the oven, strained the broth without mashing the beans, returned it to the pan, added some parsley and onion, seasoned it with pepper and salt, boiled it for about fifteen minutes, and served it up with toasted bread.

Another, which we called "hotch-potch," was made with four large turnips, a pound of carrots, one onion, one lettuce, and some parsley. These were put into four quarts of water. They must be all cut small, and part of the carrots and turnips should be grated. It should be seasoned with pepper and salt and allowed to boil slowly. Young green peas may be added. Part of them should be put in with the other vegetables, and the rest added about an hour before the soup is ready.

A rather more luxurious soup was made with six ounces of vermicelli, two quarts of new milk, the yolks of four eggs, a pint of cream, and a table-spoonful of mushroom ketchup. The vermicelli is blanched by setting it on the fire in cold water; when it boils, drain

off that water, and put the vermicelli into cold water for a few minutes, and then drain all water entirely away, put it into a pan with the milk and boil it. Beat up the eggs, gradually adding to them the pint of boiled cream, strain this through a sieve and add the ketchup. Pour this into the pan with the vermicelli, drop in a lump of loaf-sugar and a tea-spoonful of salt, and keep stirring the whole until it boils.

The solid savoury dish was a more difficult matter than the soups. The most enthusiastic of us could not help feeling that it lacked variety, though our mutton-hater declared that she liked potato-pie so well that she would cheerfully eat it all the year round! Another little dish was composed of one pint of bread-crumbs, a small handful of chopped parsley, an onion finely minced, a small tea-cupful of dried marjoram, two eggs beaten up, a cupful of milk, a sprinkle of nutmeg, pepper and salt, and about a quarter of a pound of butter, the whole mixed and baked in a slow oven until it is of a light brown colour. This must be served up very promptly.

But some of our pleasantest chief dishes consisted in novel ways of serving up old and familiar articles of diet, such as cheese and eggs. We had eggs with asparagus. We took six eggs, two ounces of butter, half a hundred of asparagus, and four table-spoonfuls of cream. The eggs were well beaten up and put in a stew-pan with the cream, butter, salt, pepper, and the asparagus, which had been previously boiled till tender, and cut into very small pieces. The whole was stirred together on a slow fire till thick, and then served up on square pieces of toast.

Then we sometimes had a cheese fondue, made of half a pound of good toasting cheese, three eggs, half an ounce of butter, a quarter of a pint of rich milk, and three ounces of bread-crumbs. The milk was boiled and poured over the bread-crumbs, and kept covered with a plate for a quarter of an hour, then the cheese was grated, and stirred into the crumbs, together with the butter and the yolks of the three eggs well beaten. All must be thoroughly mixed, and then the whites of the eggs, also well beaten, are added, just before the whole is put into the oven. It should be baked in a mould, and the oven must be rather hot. This dish also must be served with great promptitude.

Of course, the great point of such simple dinners was the fruit dishes at the close. After the bread-crumbs, and eggs, and such ingredients in the foregoing compounds, we never cared for pastry, but ate our stewed fruit from great bountiful old china bowls, with but little sugar and accompanied only by dry bread.

And so we lived for more than a month. Cheese, eggs, and milk were our only animal food. We all felt well-fed and strong: one or two of us had become so virtuously vegetarian, that we felt a sort of compunction in the thought of returning to a way of life which demands a dreadful slaughter-house, a greasy butcher, and a messy kitchen-maid.

"This has been all very well," said our late diner, "but wait till the cold weather comes, and wait till we are back in our dingy London houses, running about,

catching trains and posts, and working against time. Wait till then, and see if we shan't be glad of our roast beef and mutton."

"Perhaps so," said our early diner; "but are we quite sure that the way of life which constantly demands a stimulating diet is itself a desirable thing? If we could bring ourselves to live on less, might not life itself be better worth having?"

"The worst of it is," returned our late diner, "few of us can choose how we will live, if we mean to live at all."

"Granted," said the other, "but at least we can have different ambitions. We can labour for peace in middle life, rather than for wealth in old age. We can relieve our incomes by keeping fewer servants, if we require simpler service from them, and that will save our constitutions from the wear-and-tear of care and worry, which will be better than supplying that waste with feverish stimulant whose very winning requires more effort than it can be worth."

"I could do nearly all our cooking if we lived on vegetables," said our mutton-hater, "but I cannot touch the horrid cold flabby joints."

"I do not say it would be wise for many of us to live wholly on vegetables in our climate, and with our general habits," said our early diner, temperately, "but I do think much reform might be made in this direction. How welcome would be some of the dishes we have lately enjoyed, as a variety from the eternal chop and steak which are offered at our restaurants. How equally welcome would they be on the table of many a modest family, who cannot supplant the insipid cold mutton by game or chicken. How much less temptation would there be to drunkenness if our working men could get such food, instead of the bacon and the salt fish on which they are so often driven back. Also, there is no doubt that the more vegetables are used as a means of nourishment, the greater number of people can live on the land. As Professor Newman says, 'To get the same amount of human food through cattle, needs three or four times as much land as would be required if we fed on crops of grain, pulse, potatoes, or fruit suitable to our climate.'"

"And above all," said the delicate member of our party, who was looking wonderfully plump and fresh, "let this make us remember that everything is well worthy of careful consideration, and that nobody so wise and good as are many of the ancient and modern patrons of vegetarianism can possibly have a hobby-horse which has not some "go" in him, though he may not travel quite to the goal which his driver expects."

As for me, as I turned my back on the sweet Kentish village, and my face towards great London town, I marvelled within me whether the golden age may not be before us rather than behind, and among the light bells of fancy rang out the note of a mystic prophecy concerning the time when "the lion and the lamb shall lie down together, and the lion shall eat straw like an ox," and "none shall hurt or destroy in all the holy mountain."