

THE FOOD SUPPLY OF THE FUTURE .

PRUDENCE BROQUET .

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THE FOOD SUPPLY OF THE FUTURE.

According to the hypothesis of Malthus, the population tends to increase in geometrical ratio, while the reproduction of food goes on by arithmetical ratio : consequently there could not be enough food to supply the population, and death must come to the ones who were crowded out or who were least fitted to survive. But Malthus was a young man just returned from college when he wrote this book, and after discussing the question with his father around their fireside, and being severely attacked by the critics, he reconsidered the subject, and in a few years wrote another book, which exactly disputed the doctrine of the first. He did not say that he had disputed the arguments in the first work and what seems remarkable is that people did not find it out for several hundred years.

Ricardo and others wrote of the diminishing returns of land; but this theory has as yet no apparent foundation, either in science or experience. Every year since these theories have been presented there has been a constant gain in the means of subsistence in proportion to the ratio of population. Modern science has proved that land is a mere instrument for the conversion of certain elements of nutrition from one form to another. The supply of energy which can thus be converted is immeasurable. Soil is not necessary for plant growth. Vegetation may be produced in water, with the proper temperature, certain elements of plant food in very small quantities, and the air will supply all other materials which are necessary to its perfect development. Its store is inexhaustible. Nature need not be depended on, for it has often been demonstrated that irrigation can make fertile otherwise barren regions, as Egypt, which would be a desert were it not for the annual overflow of the Nile.

Irrigation in the United States may be accomplished by placing

dams in the mountains and hills, which will hold the water that falls in winter till it is needed in spring and summer. By this means the dry part of the United States, where almost nothing is now raised, could be made to feed as dense a population as Italy or Spain.

The farmers and gardeners near Paris grow about five times as much on a given piece of ground as the best farms in America produce. They make the soil, reflect the light by walks, and protect the vegetation by glass coverings. Most substances needed for plant growth are found in abundance in the most barren soils. The ones lacking are phosphorus, potassium, and nitrogen, which are all supplied by manure.

It seems to be a law of progress that when a great want is defined the discovery of its supply soon follows; so large mines of phosphorus have been discovered in England, France, Germany, Spain, and in different parts of the United States, which contain enough to supply the agriculture for untold thousands of years. There has also been a large bed of sea salt discovered near Strassford, Germany with potash compounds on top.

Bacteria are also a source of help to the gardner and farmer. They are known to work on leguminous plants by producing nitrogen from the air, and it is not improbable that they might be made to do the same service for other plants. Even if they would not do this, their work may be utilized by planting crops of clover, peas, beans, etc., after other crops are harvested, and so enriching the worn out soil for the next season.

The most expensive food is animal products, which is grass, grain and vegetables prepared in an expensive way by the animal machine. If the land devoted to grazing and stock-raising was used for agriculture, and the grain fed for fattening made into flour, cereals and other foods, it would nourish many more people than now, when they

get it second handed. The cultivation of the vast amount of land which is now used for ranches would give employment to many idle persons.

Meat is not a necessary article of diet. The strongest animals do not eat it. Gorillas, elephants, horses; all are strict vegetarians. It is a stimulant, but not as highly nutritious as vegetables and cereals. The vegetarian diet is richer in nutrients and is better fitted for the physical, mental and moral growth of mankind. The eating of flesh causes many diseases, such as rheumatism, gout, nervousness, cancer, scrofula, scurvy, etc. It also hastens old age, and causes premature death. Many diseases of animals are communicated to man by eating diseased meat, and children who eat it excessively are nervous, restless, lean, and often have tendencies to habits of unchastity. The first food of the human infant is nearer in composition to the food of the young herbivorous than to that of the young carboniferous animal. This is nature's food for man, and it is evidently better suited for him than the carboniferous diet.

The knowledge of vegetarianism is not new. It was known and practiced in Babylonian times, as a cure and preventative for many diseases; but this practice has partially fallen into disuse, till by wrong living it has become necessary to adopt it again. It is now used by many of the leading physicians and surgeons in the best hospitals and sanitariums, and is advocated by many magazines and health clubs.

The food supply may be greatly economized by not consuming more food than their bodies require, and by eating food in the right proportions of each food principle. This cannot be done till persons understand the science of nutrition. Many disorders and diseases are brought about by over eating. What is taken above the needs of the

body is not only wasted but remains in the system, clogging the machinery and causing imperfect elimination of the waste and worn out tissues. The quantity of food eaten by the Americans is much larger than that consumed by any other nation. It is true that they do more work and therefore require more food, but still the food is in excess of the requirements.

Most of the waste is with meats, which are used to supplant bread, potatoes, and other vegetable foods.

Meat causes our diet to be unbalanced, for the fat is much in excess of the protein, while they should be nearly equal.

It is false economy to have one food principle do the work of another, for it is always accomplished with much waste.

The sea furnishes food of which we do not make full use. We are just beginning by legislation to protect the fisheries at certain seasons, so that they may be more productive.

The legislature also protects the food supply in other ways such as making laws against the adulteration of food and appointing persons to inspect many kinds of food before they are placed on the market. Food is also produced artificially in laboratories by imitating nature. Professor Schutzenberger, of Paris, has just reported to the French Academy of Science, the manufacture of a compound similar to the pepsin into which the albuminoids of our food are transformed in the process of digestion.

The animal products eggs and butter, are duplicated by artificially manufactured eggs, and by oleomargarine. The latter is made from scraps of beef and other fat which is otherwise wasted, and only a small percent of butter is added to give the flavor. This product is just as nutritious and wholesome as butter, and tastes so much like it that only an expert can detect the difference. With all these methods

of producing food, there is little danger of the future generations going back into barbarism in a combat for food. It is consumption, not reproduction that is limited.

But after the food materials are produced they are worse than wasted if the consumer has not the means and knowledge to rightly manipulate them. These means are not wanting. From the fireplace, rude iron stove, advanced range, gasoline and oil stoves we have the Aladdin Oven, which is a box made of some non conducting material as asbestos paper or hard wood. It is lined with tin and has a door by which material may be taken out and put in. A lamp under the oven supplies the heat, and none of it is lost or escapes to where it is not wanted. The greatest value of this oven is in cooking articles that require a slow heat, such as meat and some vegetables. It has the advantage of developing the best flavor of the article cooked, and in saving labor for the cook, and does not make it necessary to serve "roasted mistress for first course." This oven was intended as a benefit from the scientific to the laboring world. A dinner of four or five courses may be placed in the oven and left five hours while the person is absent working and he will return to find it ready and not burned. Cooking pails that the laborers may carry to their work are made on the same plan.

The expense of the oil for fuel is very small, and an appetizing, wholesome, warm dinner takes the place of a cold, non-nutritious, expensive lunch of cake and pastry. With this oven for slow cooking, and a gasoline stove or range for quick cooking, any food may be prepared as to bring out its best qualities.

Great men in all lines have spent life times in studying to understand the laws of nature and of man. Many years of experiment have been necessary to prove each new law, and to develop the best in all sciences.

Blackstone learned the laws of government, Darwin learned the

laws of life evolution, Lowell learned the laws of poetic expression . Each mastered the laws of some department, and each had a lofty purpose and did systematic work for its accomplishment; but none of these have worked for a higher purpose or one that would raise all humanity to higher standard of living than did the scores of men and women who have been, and are now, spending their life and talent in determining the laws of the Science of Nutrition of the human body.

This has long been understood and practiced with domestic animals, but it has not been thought worth while till of late years to do the same for man.

The work done on the food question by Count Rumford, and what is being done by Professor Atwater and such women as Doctor Mary Green, Mrs. Able, and the host of modern Domestic Science teachers has raised the food question from something only fit for the most ignorant and uncultured persons, to the dignity of a science, on an equal basis with all other sciences, which demands the attention of the most highly cultured.

The change of the food supply from the past to the future is not so much in the quantity as in the quality of the food; that is, the different method by which it is prepared.

In prehistoric times, food was eaten raw; now it is cooked, but when it is cooked by scientific methods, and prepared in the right proportions and served in proper combinations it will be as much changed as it was after cooking, from what it was when served raw.