

second is to coagulate the albumen contained in the juice, and thus effectually and completely to plug up the pores, and to retain within the meat the whole of the internal juice. Thereafter the cooking goes on through the agency of the natural moisture of the flesh. Converted into vapor by the heat, a kind of steaming takes place within the piece of meat, so that, whether in the oven, or on the spit, or in the midst of boiling water, it is in reality, when skilfully done, cooked by its own steam.

"A well-cooked piece of meat should be full of its own juice, or natural gravy. In roasting, therefore, it should be exposed to a quick fire, that the external surface may be made to contract at once, and the albumen to coagulate before the juice has had time to escape from within. And so in boiling: when a piece of beef or mutton is plunged into boiling water, the outer part contracts, the albumen which is near the surface coagulates, and the internal juice is prevented either from escaping into the water by which it is surrounded, or from being diluted and weakened by the admission of water among it. When cut up, therefore, the meat yields much gravy, and is rich in flavor. Hence a beef-steak or a mutton-chop is done quickly, and over a quick fire, that the natural juices may be retained.

"On the other hand, if the meat be exposed to a slow fire, its pores remain open, the juice continues to flow from within as it is dried from the surface, and the flesh pines, becomes dry, hard, and unsavory. Or if it be put into cold or tepid water, which is afterwards gradually brought to a boil, much of the albumen is extracted before it coagulates, the natural juices for the most part flow out, and the meat is served in a nearly tasteless state. Hence to prepare good boiled meat, it should be put at once into water already brought to a boil. But to make beef-tea, mutton-broth, or other meat soups, the flesh should be put into cold water, and this afterwards very slowly warmed, and finally boiled. The advantage derived from simmering, a term not unfrequent in cookery books,

depends very much upon the effects of slow boiling, as above explained."

This passage contains the whole theory of the art of cooking meat. If we want to give our patients the full richness of the flesh, we must order a chop or steak, or something of that sort; if we want the flavor chiefly, and not the strength, we give beef-tea; if we want bulk rather than either flavor or strength, we can order the meat to be boiled to rags. This knowledge gives us all the command of the kitchen we can expect to have.

So much for animal food; let us now consider what the vegetable world affords in the shape of albumen, and how it is to be prepared for the table.

1st. *Soluble Vegetable Albumen* exists in a greater or less quantity in the juices of all plants, and in greatest abundance in the so-called grains. In its proportion of nitrogen, carbon, oxygen, and hydrogen, it is exactly the same as animal albumen, but differs somewhat in the amount of Sulphur and Phosphorus. It is soluble in water and various acids.

2nd. In the seeds of leguminous and corn plants, besides the vegetable albumen, is formed a substance called *kleber*, by Beccaria, by Liebig, vegetable fibrine. It is insoluble in water, but soluble in alkalies and acids.

3rd. A modification of this is vegetable gelatine, which like *kleber* is insoluble in water, and soluble in alkalies and water.

4th. The last and most recently discovered albuminous ingredient in vegetables, has so close a resemblance to caseine, as to be called by Liebig, vegetable caseine. This name is now rejected, for though like, it is essentially different from the caseine found in milk, and the name it goes by is *legumin*. It is found only in small quantities, and is confined to a few of our esculents. It is soluble in water, and is precipitated by all acids. From these chemical facts, we are now able to infer the digestibility of vegetables, as well as their nutritive property, for, as a general rule, while their power to nourish the body is in direct ratio to the total amount of their