



Roasting Meat

By MAUD B. STRAIN,
Home Science Instructor,
Department of Agriculture,
Dunedin

MEAT is cooked to destroy possible disease-producing organisms and to increase its palatability. Cooking does not always increase the tenderness. Incorrect timing and temperatures can produce an entirely opposite effect and make the meat flavourless and indigestible. This article describes the method of roasting which has been found by experiment and experience to result in tender, juicy meat with the inside cooked to the right degree of "doneness" and the outside not hardened.

THE meat of any animal is largely made up of muscle tissue comprising bundles of muscle fibres. These are surrounded by connective tissue which attaches the fibres to one another. Each muscle fibre is a sort of tube that encloses a large part of the flavouring and food value of the muscle. Fat is intermingled with the muscle fibres and connective tissue. Meat well marbled with fat is usually more tender and better flavoured and the fat helps to retain the moisture in the meat during cooking.

Changes during Cooking

When it is cooked the meat changes from red or pinkish grey to brown and it loses weight and shrinks. Water and other volatile substances evaporate from the surface, and fat, water, and extracts escape from it. Heat coagulates the proteins (as egg white sets when heated) and causes the muscle fibres to become firmer and shrink. If the temperature is too high, or the cooking period too long, the fibres become hard and dry.

The connective tissue is of two kinds; one is very elastic and tough and is unaffected by cooking, but the other is softened and changed to gelatine by the prolonged action of moist heat. The tenderness of cooked meat, therefore, depends on the composition of the meat and on the temperature and time of cooking.

The palatability of the meat is increased by cooking because of changes in colour, flavour, aroma, and texture. The protein sets and some of the water is squeezed out, giving a firmer texture. The fat melts and some on the outside surface is browned, which develops flavour and aroma.