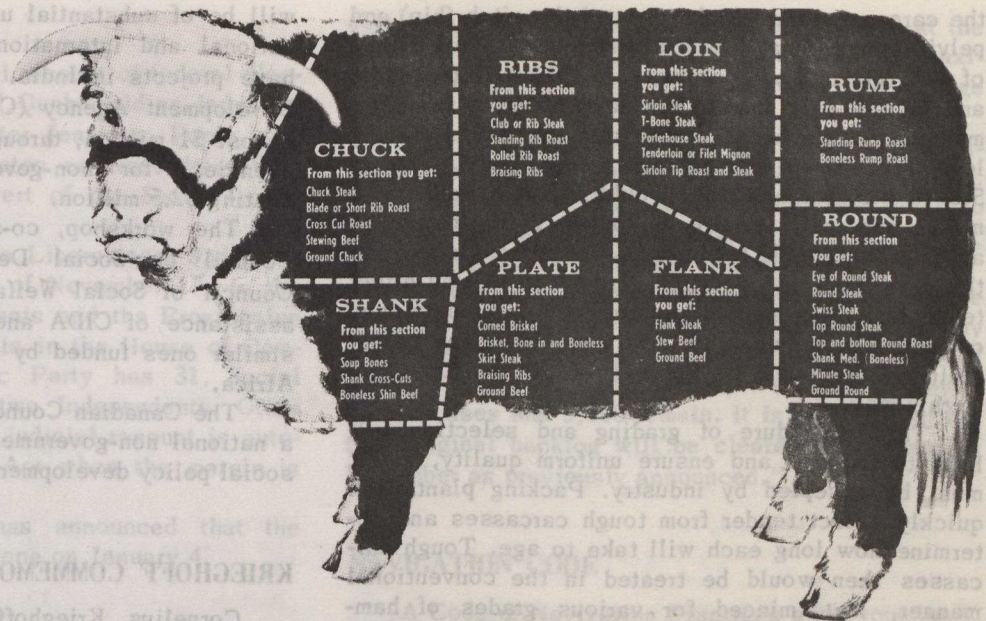


NEW METHOD OF BEEF-GRADING WILL PRODUCE JUICY STEAKS

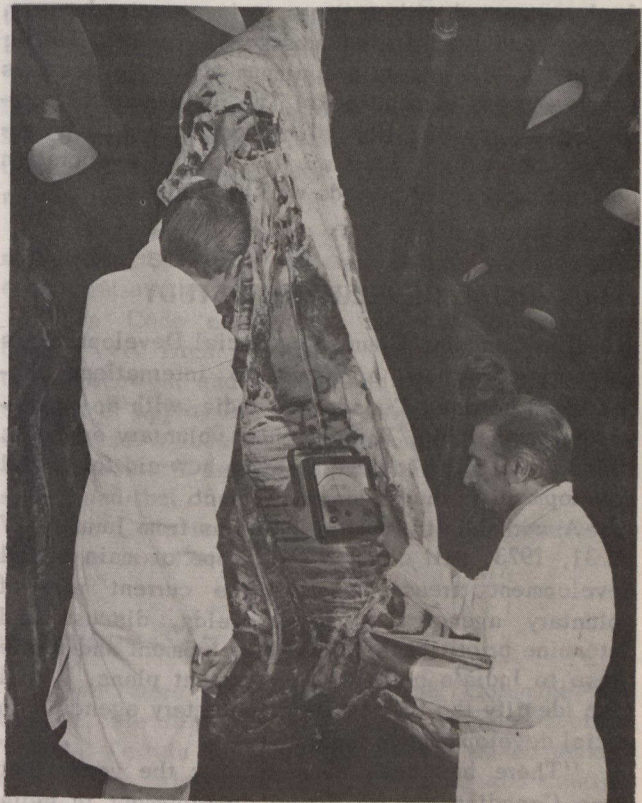


Having steak or roast beef for dinner this evening? If so, your chief concern will be taste and tenderness, the most important palatability characteristics of meat. Beef can have good colour and flavour but, if it is tough and cannot be cut or chewed, it is virtually inedible.

Even the best quality of meat offered to the consumer lacks uniformity in tenderness because two steers from the same herd, raised under similar conditions, slaughtered at the same time, processed under similar conditions, graded into the same class, and aged under identical conditions, can be vastly different with respect to tenderness. Standard practice for obtaining near maximum tenderness is to age meat for 14 to 15 days at temperatures of 34 to 36 degrees Fahrenheit. But these conditions were established without taking into account the influence of ante-mortem factors on tenderness.

For years, the National Research Council of Canada has co-operated with Canadian railways and the meat-packing industry in an effort to improve methods of storage, refrigeration and transportation in order to optimize quality and palatability. During a general program of research on the biochemistry of meat tenderness in the Food Technology Section of NRC's Division of Biology, it was established that variations in pH - that is, acid content - of poultry meat just after slaughter markedly influenced tenderness. Later, these observations were tested and confirmed on beef. Further studies conducted at Canada Packers' plants in Toronto, Ontario, and Hull, Quebec, as well as in NRC's Ottawa laboratories, have led to the development of a simple, yet inexpensive, method for distinguishing tender meat from tough meat.

"This method does not tenderize meat," explains Dr. A.W. Khan, who has been working on this problem for the past two years. "It is a grading method whereby industry can separate animals that



Dr. A.W. Khan (right), National Research Council, grades beef carcasses with a pH meter.

are going to yield tender meat from those that will be tough. The former will require less aging time, the latter, of course, a longer period of aging."

GRADING METHOD

Beef carcasses are graded on measurements made by a pH meter immediately after the carcasses are split into halves after slaughter. The pH measurements are taken on muscles exposed during normal splitting of