May we humbly ourselves to always remember that there are two sides of the teacher's desk. Let's begin with the problem of helping the student with a definition of "meat". The Meat Inspection Division of the U.S.D.A. published in 1947 this quoted definition, "Meat is the edible portion of the muscle of cattle, sheep, swine or goats which is skeletal or which is found in the tongue, in the diaphragm, in the heart or in the esophagus, with or without the accompanying and overlaying fat, and the portions of bone, skin, sinew, nerve and blood vessels which normally accompany the muscle tissue and which are not separated from it in the progress of dressing. It does not include the muscle found in lips, snout or ears." Thom have defined meat commercially as all portions of the carcasses of the various animals that are commonly used for food as well as edible organs.

How do you define meat? Experience has encouraged a follow-up for the latter definition with a decisive terse Classification of Animal Tissue.

I. Muscle - characterized by its ability to contract
   a. Involuntary - smooth or simple spindle shaped cell. Eaten as tripe and sausage casings. Heart tissue is the exception.
   b. Voluntary - cylindrical cells with many nuclei. The lean of roasts, steaks, chops

II. Connective Tissue - characterized by abundance of inter-cellular material.
   Kinds are:
   a. Connective Tissue proper called collagen and elastin. Occurs in conjunction with muscle.
   b. Blood
   c. Fat (Adipose)
   d. Cartilage and bone

III. Epithelial Tissue - characterized by the lack of cellular material, hence a high proportion of the mass is nuclear material.
   Eaten as liver, kidneys and sweetbreads.

IV. Nervous Tissue - characterized by irritability.
   Eaten as brain and in company with muscle.

It is possible to animate the outline by using a sample of flank steak, a partially boned round and/or chuck for each student to observe and
make the association. A liver and set of brains will make the list of fresh product more complete. It is easy to hold class interest and certainly many of the folks refresh their previous exposure to anatomy and physiology. A dissection microscope may be the answer to sharing the minute structure and organization of muscle. Then a multi-nucleated cylindrical muscle cell may even be seen to be striated. I'm told that a "ray scope" to project the microscope field on a screen is more satisfactory for demonstration use with classes. We can always use blackboard drawings to help comprehend the features shown in pictures if there is too wide a transfer between the fresh product appearance and the photograph.

This plan has been used to help identify a technical definition of meat for general classroom use. We think it works.

CHAIRMAN KUNKLE: I will step out of the picture and yield to the discussion leader who was drafted to twist the ends of this meat tale together, and I am sure that all of us consider our teaching obligations one of the responsibilities, and yet, there are a few critics on the sidelines who would take us apart, and admit that we hobble into classrooms at the appointed hour, or a few minutes thereafter, that we lean on crutches during the session, and then cripple out of the classroom after the bell, leaving the students wondering just what did that fellow try to teach us today, so we have selected, on the recommendation of Sleeter Bull, his associate, Mr. Richard Wheeler, who hails from Clemson, and is now doing graduate work at the University of Illinois.

We are proud to have Mr. Wheeler lead us in the discussion.

MR. RICHARD WHEELER: Mr. Chairman, fellow workers.

Professor Bull informed me about this time yesterday that he had volunteered me to assume his responsibility here this afternoon.

Being very new in the field of teaching, I am sure I am not able to add anything to these papers that have been so ably presented this afternoon, by members that are much more experienced in their field of teaching than I am, so, at this time, if there are any questions or further contributions to be added to the program, we would like to have them.

MR. FRAZIER: I would like to ask a question. On this carcass evaluation grading, I am not just clear from what has been said how much of that belongs in the meats work, and how much of it belongs in the production courses.

I rather got the opinion that it should be started in the first course, in Animal Husbandry, and continued, in what John said, into the Livestock Judging Course.

How much further would you carry it into the first meats course, or do I have the wrong opinion.

MR. ANDERSON: I have always felt that so many students come to a College of Agriculture with very little background, and the
instructor gets up and talks about the covering over the loin, and the
value of the round, and the fat back, and so on, and that this beginning
demonstration, using the live animal, and the cuts will bring out a lot
of these points more clearly than the instructor is able to do in the
judging ring floor. That is a beginning proposition. In order to have
some idea that the steer produces a carcass of superior character, has
the type of meat that we like, we talk about the economy proposition, the
commercial grade, and we all know that these cows must be used, with a
little idea on the character of cow meat, and that not all cow meat is
poor meat, and that gives them a broader viewpoint of the whole thing.

I can use the same illustration on hogs; and I can use the same
on lambs, and bring out the type and character. It takes such a long
time in sheep judging work for students to comprehend what is underneath
the hand and the wool, and then get down into the degree of finish.

When you take your meat specialization and get your first pro-
duction courses, of course, you have to take it more seriously, and elab-
orate more, and bring it out. As you go into advance work, you make the
students participate -- take them out to the barns and let them select
the individuals that will produce the desirable carcasses, and then after
the slaughtering section, they go to the meat cutting laboratory and cut
the carcasses into wholesale cuts, and make comparisons, and then cut
them into retail cuts.

But in the first carcass, if they have a chance to see the in-
dividual, it assumes some value in character, and then the next time go
into the carcass and then into the cut, which is the idea that I wanted
to get across, I think that that largely breaks the ice for the meat
courses, and these students have a better comprehension of what meat is,
and the carcass is, and the carcass value.

MR. WHEELER: Is there any further discussion?

MR. KASTELIC: I would like to say that I was impressed with
Professor Kunkle's illustration with regard to the description of the
tissues in meats, particularly connective tissue, and so on.

One difficulty I find in this connection, while I think it is
very desirable to simplify your description, I am rather loath to leave
the student with the idea that it is simple, and while there is little to
be gained by giving the complex structure of it, just how do you go about
leaving the student with the idea that while we may talk about it at the
stage that you are teaching him, say, in the first course of meats, that
there is a lot more associated with the structure of tissue than you are
able to give him at a particular level that you happen to have him at?
What do you do in that instance?

I am speaking now in terms of the structure of tissue as defined,
that you find described in the physiology texts, and so on.

Do you leave it, or not, by saying nothing about it, or do you
warn him that he must be required to think about these tissues in a little
more detail than you are able to describe at that particular level?

CHAIRMAN KUNKLE: It is assumed that the physiology and anatomy
courses have already been scheduled. This is supposed to be a quick re-
view.
When we had the illustrious visitor, Szent-Gyorgi from Cambridge on the Campus this spring, I took a new lease on my limited abilities, because he insisted that muscles were very simple, and by watching and carefully observing it, you can learn a lot about it, so it sort of inspired me to think maybe we can move from the things that are known to these unknowns that you are raising the question about, without taking a great big leap, and run the risk of falling flat.

MR. WHEELER: Are there any further contributions?

CHAIRMAN RUNKLE: Thank you, Mr. Wheeler.

I would like to take this opportunity to thank those who prepared papers on this section, and particularly the end of the afternoon when it is so difficult to keep a classroom alive and alert, and therefore, I am proud of all of you for having given your undivided attention.

We will give the session back to Mr. Tomhave.

(Mr. W. H. Tomhave assumed the Chair.)

CHAIRMAN TOMHAVE: I am sure that everyone enjoyed the entire program. As I said in the beginning, the Program Committee set up a very strenuous program.

(Chairman Tomhave made some announcements.)

CHAIRMAN TOMHAVE: We will now stand adjourned until eight o'clock tonight.

(The meeting recessed at 5:15 o'clock p.m.)

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