10th NATIONAL NUTRIENT DATA BANK CONFERENCE

JULY 22, 1985

Introductory Remarks. Doris Howes Calloway. University of California, Berkeley.

It is my pleasure to welcome you to this 10th National Nutrient Data Bank Conference, on behalf of all your hosts; the University of California, Berkeley and Davis campuses, Stanford University and the Western Human Nutrition Center of the USDA.

It is appropriate that the sponsors are principal universities in partnership with the USDA. It is that partnership that, for over a century when nutrition has been in and out of vogue more than once - that has sustained the difficult, often monotonous, under-valued and under-rewarded research on what is in foods, what people eat, and what they ought to eat, in scientific and economic terms.

This research underpinned the establishment of nutrient standards before specific nutrient requirements were known and understood, let alone quantified; it has formed and continues to form the basis for much food and drug law, for advertising claims and their regulation, and for public education.

The partnership between academic institutions and agriculture dates from the Morrill Act, signed into law by Abraham Lincoln in 1862. The Morrill Act gave states public land, 30,000 acres for each senator and representative in Congress. Funds derived were to be made available to a designated college, to foster learning about "agriculture and the mechanic arts". California was among the first to act - the legislature authorized the formation of a State University in 1866 and a complete University (including arts and sciences) was created. Agricultural research has been a feature at Berkeley since this beginning and the first permanent building on the campus, which is still standing (South Hall), was the original College of Agriculture. The Agricultural Experiment Station was formally created in 1874, the first in the United States. The first person in the U.S. officially named a Professor of Nutrition was M. Jaffa, appointed to the University of California, Berkeley in 1908. He founded in 1912 and was the Chair of the first Department of Nutrition among the U.S. agricultural universities. Food composition was a principle interest of Jaffa. The University of California, Davis campus began as "The University Farm"; it was later authorized to teach a three-year course in vocational agriculture which it began to do in 1909.

Studies of food and feed composition are of course older than this chauvinistic bit of U.S. history. According to Atwater, (in his 1896 USDA Bulletin, "The Chemical Composition of American Food Materials") The earliest known quantitive analysis of food materials was that made, of potatoes, by Pearson in England in 1795. (Most of the earlier analytical work was by and for apothecaries). Studies of animal feed crops began in Germany in the early 1800's. The first systematic analytical method was developed at the German Agriculture Experiment Station at Weende (est. 1857), under the directorship of Henneberg. The systematic method for proximate analysis was widely adopted in the 1860's, and was the method used by Atwater in its first application in the United States, to analyze maize corn, (this occurred when he was a student at the Sheffield Scientific School of Yale University, in 1869). The Henneberg or Weende method (Z. Biol. 21:613, 1885) has remained virtually unchanged in principle up the the present.

Compositional data were first used to formulate animal feeds. The early enthusiasm for this approach to animal production waned when it was discovered, in cold economic terms, that all nitrogen was not created equal, that feeds of like proximate composition did not support the same growth of or yield from farm animals.

Atwater's classic studies of digestibility were a first step in taking account of physiological availability as a variable. Differences in protein quality were first assessed by animal growth and much of the mystery about balancing and blending of feeds was resolved only when analysis of amino acids and knowledge of essentiality and requirement became known.

Like problems continue to confront us, and I am heartened to see your continued efforts at their solution. Questions that your conference will address are: how to know how much of what is present in a food or feed is physiologically available for meeting nutrient needs - as consumed, in a host of mixtures, and prepared in different wrap and in different containers; and how does what is present in foods and diets relate to nutrient requirements, health and longevity?

This information can be put to fullest use only if we also can know what people do eat, what they formerly ate and what will be available for them to eat in the future. And know all this in an increasingly complex technological food-based system.

I salute your attention to this subject and leave you with a final thought, courtesy of Ogden Nash:

"Our daily diet grows odder and odder. It's a wise child that knows its fodder."