Table III. Foods Without Detectable (1 γ) Amounts of DDT

Applesauce	Corn[a]	Potatoes, mashed[a]
Beans, string[a]	Corn bread	Rolls[a]
Bean soup	Dry cereal[a]	Root beer
Cake[a]	Grapefruit juice	Steak, pan broiled[b]
Catsup	Gravy[a]	Sirup[a]
Clam chowder	Jello salad	Tea[a]
Coffee, black	Oleomargarine	Toast[a]
Cola beverage	Peas[a]	Tuna fish salad
Combination salad	Potatoes, escalloped[a]	Vegetables, mixed
		Vinegar

[a] Other portions contained a measurable amount of DDT (5 γ or more).
[b] Calculation based on aliquot chromatographed.

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BIOCHEMISTRY OF MYOGLOBIN

Quantitative Determination in Beef and Pork Muscle

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Chemical Studies with Purified Metmyoglobin

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Studies have been initiated to determine the concentration and chemical reactivity of myoglobin, the major heme pigment present in lean meat. A procedure has been developed for the quantitative determination of myoglobin in beef and pork muscle and reactions of purified metmyoglobin (Fe^{+++}) prepared from beef muscle with ascorbate to form myoglobin (Fe^{++}). Reactions of the latter compound with nitrite to form nitric oxide myoglobin were also studied. This work on quantitating the concentration and reactivity of myoglobin is of importance in evaluating the uniformity and stability of myoglobin derivatives in fresh and cured meats during storage or various processing procedures. Chemical changes in the myoglobin of meat attributable to irradiation with gamma rays from a cobalt-60 source are now being studied in this laboratory.

The heme pigments constitute a class of very important biochemical compounds. Much work has been done with hemoglobin and heme catalysts in oxidation (catalase, peroxidase, cytochromes, etc.), but relatively little has been done to elucidate the functions and reactions of myoglobin, the oxygen-carrying pigment in muscle.

The importance of understanding the chemical changes associated with the color of lean meat during irradiation by gamma rays (cobalt-60) or other treatments prompted studies on myoglobin in muscle.

While visual observation of beef and pork muscle indicates that considerable variation exists in the heme pigment content, few quantitative data are available on the myoglobin content of beef and pork muscle. Shenk, Hall, and King (*10*) described a method for the determination of "muscle hemoglobin" (myoglobin) and presented data for beef muscle. Crandall and Drabkin (*1*) and Drabkin (*2*) reported data on the myoglobin content of rat, human, horse, dog, and beef muscle. Husaini (*6*), Hershberger (*5*), and Weiser (*12*), and their associates, have reported twofold variation in amount of total pigment (hemoglobin plus myoglobin) in beef muscle.

As the authors were interested in measuring the changes occurring during irradiation, a method was adopted for the determination of myoglobin in beef and pork muscle.

Work was also undertaken to gain information about the in vitro chemical