

the inherent qualities of the leaves used. The next step in the investigation was therefore to assay infusions of digitalis prepared by a uniform method from various lots of digitalis leaves obtained from various sources. Great variations in the strength of the products were noted.

It was found that an infusion prepared according to the U. S. Pharmacopeia from our stock of English leaves yielded a product with the lethal dose of 13.5 c.c. That of an infusion from another lot of English leaves was found to be 9.6 c.c., while still another lot of English leaves yielded an infusion, the lethal dose of which was 8.7 c.c. per kilogram. An infusion prepared from some German digitalis leaves found in the hospital pharmacy proved very inferior in quality, giving a lethal dose of 19 c.c. per kilogram weight.

#### POTENCY OF AMERICAN LEAVES

It was especially interesting to find that certain American grown digitalis leaves yielded a product of a very high quality. Two lots of American leaves were assayed by us. One was a supply of Wisconsin leaves kindly presented by Dr. George B. Roth of the Hygienic Laboratory in Washington. The second was obtained from Dr. E. Kremers of the Pharmaceutical Experiment Station, University of Wisconsin. The first yielded an infusion with a lethal dose of 7.6 c.c., and the second an infusion with a potency of 7.8 c.c. per kilogram weight of cat. It is evident that both infusions made from the American grown leaves were superior in potency to those made from our stock English and German leaves, and in fact superior to all other leaves assayed by us. We have in America, therefore, a digitalis which is unsurpassed. Through the kindness of Dr. Kremers a supply of Wisconsin leaves was secured and is now being used exclusively in the wards of the Johns Hopkins Hospital.

#### THE MORAL

These investigations strikingly emphasize the need of standardization of digitalis. Variations in lethal dose from 6.6 to 19 c.c. per kilogram weight—approximately 300 per cent.—were found in infusions prepared from these various leaves. Certainly this is greater than should be tolerated by the profession.