

the same leaves was 9 c.c. per kilogram. Four days later the same preparations, having been kept on ice, were restandardized, and gave the lethal doses of 6.8 c.c. and 9 c.c. per kilogram, respectively, showing that the preparation did not deteriorate rapidly on standing, a fact which has been pointed out recently by Hatcher.

These figures indicated clearly a difference in potency due to the method of preparation. The New York technic for preparing the infusion was then ascertained<sup>3</sup> and applied to our own stock of English leaves. The lethal dose of this infusion was found to be 11.1 c.c. per kilogram of cat. An infusion made from the same leaves by the method formerly employed by our pharmacist gave a lethal dosage of 13.5 c.c.

In order to ascertain still further how great a difference in potency of infusions may result from variations in the methods of preparing them, our pharmacist, Dr. Wahl, prepared three infusions from the same lot of Allen's English leaves, by slightly different pharmaceutical methods. Infusion 1 was prepared according to the U. S. Pharmacopeia.<sup>4</sup> Infusion 2 was made by macerating the leaves with water plus 10 per cent. dilute alcohol, instead of adding the alcohol to the finished product as directed in the U. S. Pharmacopeia. Infusion 3 was prepared by macerating the leaves with boiling water in a closed flask, and gently beating the contents of the flask during the whole process of extraction. The lethal dose of Infusion 1 was found to be 11.4 c.c., that of Infusion 2, 9.5 c.c., and that of Infusion 3, 10.6 c.c. per kilogram weight of cat. Thus it will be seen that a considerable variation in the potency of an infusion of digitalis may result from differences in methods of preparation.

#### VARIATIONS DUE TO THE SOURCE OF THE LEAVES

The difference in the potency between the New York infusion and our infusions just described could not be entirely explained by variations in the method of preparation, but were also obviously due to differences in

3. The method of preparing the infusion employed at Johns Hopkins is the official method of the U. S. P. The New York technic differed from this in some details which need not be gone into in this place.

4. Although the U. S. P. gives specific direction for preparing the infusion of digitalis, we have good reason to believe that those directions are not always followed. Compare Alpers: Jour. of Am. Pharmaceut. Assn., June, 1915, p. 715.