ORIGINAL ARTICLES

THE ANALYSIS OF MINERAL CONSTITUENTS IN BIOLOGICAL MATERIALS

PART I. ESTIMATION OF PHOSPHORUS, CHLORINE, CALCIUM, MAGNESIUM, SODIUM AND POTASSIUM IN FOOD-STUFFS

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INTRODUCTION

In view of the important bearing of different minerals on the health and productive power of various animals, the accurate estimation of many inorganic constituents of feeding stuffs is of great interest. It is now well known that minute quantities of several minerals such as iodine, manganese, copper, cobalt etc. exert a powerful effect on the general metabolism of the animal body. There are certain other substances such as phosphorus, calcium, magnesium, sodium, potassium, chlorine, etc. which are required in much greater quantities, and are indispensable not only individually but in a well balanced mixture for the proper functioning of the animal body. As all these materials are supplied to the animals in their food, it is often discovered that animals suffer from malnutrition due either to the deficiency of some of these materials or due to their unbalanced distribution in the ordinary food-stuffs available. It is necessary, therefore, to know exactly the amount of various minerals present in the diets of animals and with a view to study these aspects of the nutritional problem in this country, the Imperial Council of Agricultural Research has been financing several schemes for the study of the composition of animal food-stuffs in different parts of India. A difficulty, however, arose in the interpretation of the data supplied by different workers in that the method used for analysis varied considerably from place to place and, probably due to this reason, the results of analysis of identical samples in different places did not agree well. Recently the Imperial Council of Agricultural Research, having considered the position, has made tentative recommendations for some methods of analysis to be followed by workers in this country. These methods are based on (1) official and tentative methods of analysis of the Association of Official Agricultural Chemists, U. S. A. (A. O. A. C.), (2) Technical Communication No. 9 of the Imperial Bureau of Animal Nutrition (Rowett method) and (3) the experience of some of the Indian laboratories including our own.

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