Careful tests of the instrument and comparisons with the standard non-portable electrocardiograph have demonstrated that it gives an accurate and dependable record. Its rugged construction and reduced weight permit it to be taken to the patient's home with facility.

(The electrocardiograph was demonstrated at the meeting.)

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The nutritive value of the various layers of the wheat and corn kernel.

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Much work has been done on the relative vitamine content of the several layers in cereal grains. The peripheral layers and the germ are rich in vitamines. There is, however, not so much information available with regard to the relative content of the proteins in the various layers. The present contribution concerns itself with a chemical as well as a biological analysis of such proteins. The milling fractions of wheat and corn[1] were analyzed to determine their content of total protein, gliadin (the portion soluble in 70 per cent alcohol), globulin (the portion soluble in 5 per cent potassium sulfate solution) and glutenin (obtained by subtracting the protein representing globulin and gliadin from the total protein). The methods followed were those outlined in Methods of Analysis of the Assoc. of Official Agricultural Chemists, 1920. At the same time, the biological value of the wheat

[1] These samples were kindly supplied to us by the Washburn-Crosby Co.

and corn fractions was determined according to Mitchell's method,[2] using rats as the experimental animals.

Chemical analysis showed that among the samples of wheat (bran, middlings, red dog, first clear, second clear and patent flour), the gliadin content increases as we go from bran to patent flour; the globulin content is much higher in the bran, standard middlings and the red dog than it is in the three grades of flour; and the glutenin content diminishes as we proceed from the outer layers to what represents the patent flour. Corn shows similar results. Corn meal is richer in zein (corresponding to the gliadin of wheat) than is corn feed meal; whereas the latter is richer in glutenin than is the corn meal. Cross and Swain[3] have shown that glutenin yields more tryptophane, histidine, arginine, lysine and tyrosine, and little less cystein than does gliadin; from which, and from our own experiment, one is tempted to draw the conclusion that the peripheral layers of the cereal grains contain more of the dietetically balanced protein than does the white flour.

The animal experiments, excepting for minor details, were carried out as suggested by Mitchell (see above). The diet consisted of the milling fraction (corresponding to about 1.3 per cent nitrogen), together with 2 per cent cod liver oil, 0.5 cc. aq. sol. of rice polishing (corresponding to 1 gm. of rice polishing), 7 per cent butter, 15 per cent lard, 4 per cent salt mixture (Osborne and Mendel's), and enough starch to make a total of 100 per cent. Our results show that the fractions which contain the pericarp and the germ, and which are the ingredients found in whole grain flour, possess a higher nutritive value for rats than fractions which are composed mainly of the endosperm (patent flour). It cannot, at present, be decided whether this difference in nutritive value is due to a difference in the kind and quantity of protein, to a difference in the amount of vitamine, or to a combination of both these factors.

[2] *J. Biol. Chem.*, 1923, lviii, 863, 905.

[3] *J. Indust. and Engin. Chem.*, 1924, xvi, 49.