primary amino groups in the physiological activity of lactogenic hormone.

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## MULTIPLE NATURE OF THE RAT "FILTRATE FACTOR"—A COMPONENT OF VITAMIN $B_2$[1]

IN our attempt to purify the "filtrate factor,"[2] a dietary component of vitamin $B_2$ essential for rat growth, we have obtained evidence that this factor must consist of at least two entities, one of which is extractable from acid solution by diethyl ether; the second factor remains in the residue.

The methyl alcohol soluble fraction from cane molasses was adsorbed on fuller's earth. The filtrate was acidified and extracted for 72 hours with ether in a continuous extractor (Preparation I). The residue was subjected to a second 72-hour extraction (Preparation II). These extracts, as well as the residue (Preparation III), were fed to female rats maintained on a vitamin B complex-deficient diet supplemented with thiamin, riboflavin and a source of $B_6$ in the form of a wheat germ eluate. Each preparation was fed for 56 days at the equivalent of 3 gm daily of the original molasses. The gain in weight (above that of the controls) was: Preparation I, 60 gm; Preparation II, no gain; Preparation III, 58 gm.

At this point it may be noted that black, gray and hooded rats receiving Preparation I exhibited no change in pelage coloring, while those receiving Preparation III showed a marked graying of black hair and a lightening of gray hair, although the nutritive state and growth were essentially the same in groups I and III. This experiment was repeated with new preparations and again the graying was observed in the rats receiving the residue and the coat was normal in those receiving the ether extractable fraction, although again growth was comparable in both groups. The graying of fur in "filtrate factor"-deficient rats was first noted by Morgan, Cook and Davison[3] and by Lunde and Kringstad.[4] The present work would seem to indicate that the "anti-graying" activity goes with the ether extractable component of the "filtrate factor."

The evidence for a relationship between the "chick anti-dermatitis factor" and the "rat filtrate factor" is conflicting. Woolley *et al.*[5,6] and Jukes[7,8] have demonstrated that pantothenic acid (Williams) is the "chick anti-dermatitis factor."

Hoffer and Reichstein[9] and Subbarow and Hitchings[10,11] have shown that the fraction extracted with ether is in all probability pantothenic acid and is a component of the rat "filtrate factor"; however, El Sadr and co-workers[12] found that β-alanine did not replace the liver or yeast "filtrate factor." Woolley *et al.*[5] have reported that the "chick anti-dermatitis factor" is readily destroyed by alkali. We have prepared an iso-amyl alcohol extract from a rice bran preparation. Its activity was not destroyed by heating in 1 N NaOH solution at 100° C. for 1 hour. It would, therefore, appear that the factor extractable with iso-amyl alcohol is not identical with the "chick anti-dermatitis factor."

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# SCIENTIFIC APPARATUS AND LABORATORY METHODS

## AN ELECTRIC STERILIZER FOR THE CULTURE ROOM

To avoid the use of an open flame in culture room or transfer case a small electric sterilizer has been used for a number of years and found to be highly satisfactory. The constant heating of the culture space resulting from the use of a gas jet or an alcohol lamp; the resulting convection currents of air carrying con-

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