Minnesota Branch

University of Minnesota, November 4, 1925.

2905

The anti-rachitic properties of breast milk.

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The cause of rickets in breast-fed babies has not been satisfactorily explained. It is not due to deficient phosphorus or calcium in the milk, as Von Meysenburg,[1] Von Meysenburg and DeBuys[2] have shown that the milk consumed by rachitic infants is no lower in its phosphorus or calcium than that received by normal infants. Courtney,[3] making a similar finding as regards K and Ca, points out that the diets of the mothers were deficient in fresh fruits, vegetables, and milk.

Contrary to the finding of Lesné and Vagliano[4] that breast milk does not have anti-rachitic properties we have found that it may be strongly anti-rachitic. While we can not state definitely that the anti-rachitic factor is present in breast milk only, as it is present in the food of the mother, we have found that a diet containing an ample supply of green vegetables, fruits, eggs, and milk, in addition to a small daily dosage of cod-liver oil, the fat of breast milk is markedly anti-rachitic.

The milk fat used was obtained from two sources; one a composite fat from the milk of three mothers on the same diet and one a fat from the milk of one mother. The first sample was fed at a level of 15 to 20 per cent of the food intake to three rats with severe rickets. One of the rats refused the fat, the other two took it for three days and on autopsy showed good line

[1] Von Meysenburg, L., *Am. J. Dis. Child.*, 1922, xxiv, 200.

[2] DeBuys, L. R., and Von Meysenburg, L., *Am. J. Dis. Child.*, 1924, xxvii, 438.

[3] Courtney, A. M., *Am. J. Dis. Child.*, 1923, xxvi, 534.

[4] Lesné and Vagliano, *Compt. rend. soc. biol.*, 1924, xci, 143.

tests.[5] The second sample was fed to six rachitic rats at levels ranging from 5 to 25 per cent of the food intake. It was found that a fat level of at least 8 per cent was needed to produce a distinct line test. This may explain the results of Lesné and Vagliano, who fed only 5 per cent of the ether extract of mother's milk. We are continuing this work to ascertain if the factor is present in milk only as it is present in the food of the mother.

2906

A test of indolinones as agents for prevention and cure of polyneuritis.*

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Substances which have been reported as having a specific action in relieving experimental pigeon polyneuritis include various hydroxypyridins,[1] thyroxin and pilocarpine,[2] β-propylindolinone,[3] tyramine,[4] and histamine,[5] although the antineuritic effect of histamine has been questioned.[6] Attempts to prevent polyneu-

[5] McCollum, E. V., Simonds, N., Shipley, P. G., and Park, E. A., *J. Biol. Chem.*, 1922, li, 41.

* Published with the approval of the Director as paper No. 567, Journal Series. Minnesota Agricultural Experiment Station. The results presented formed a portion of the thesis of Mr. Dahl for the M.S. degree, University of Minnesota, 1924.

[1] Williams, R. R., *J. Biol. Chem.*, 1916, xxv, 437; *ibid*, 1916, xxvii, 431; *ibid*, 1917, xxix, 495.

[2] Dutcher, R. A., *J. Biol. Chem.*, 1919, xxxix, 63.

[3] Dutcher, R. A., Holm, G. E., and Bierman, H., *Science*, N. S., 1920, lii, 589.

[4] Abderhalden, E., *Arch. physiol.* (Pflüger's), 1923, cxcviii, 571; Lipschitz, W., *Z. physiol. Chem.*, 1923, cxxiv, 194.

[5] Abderhalden, E., loc. cit.

[6] Cf. Koskowski, W., *Arch. Intern. pharmocodynamie*, 1922, xxvi, 367.