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The presence of anti-ophthalmic vitamin and the absence of anti-rachitic vitamin in dried spinach.

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Steenbock has noted the decrease or disappearance of the anti-rachitic substances in leaves, and MacCollum has distinguished between the anti-rachitic and the anti-ophthalmic vitamin A. Experiments on spinach have covered a period of two years and at the beginning of this period the dietary ingredients were procured in large quantities and stored in the dry state in galvanized iron containers to insure uniformity of product covering all of these experiments. Changes might take place due to ageing, but the experience of others shows that such change would be the disappearance of a vitamin and never the production of a vitamin.

In very numerous experiments spinach has demonstrated no anti-rachitic property except the small effect of the phosphate it contains, which is usually offset by the increased growth. It is not possible to feed as much roughage to a rat as to a true herbivorous animal. If 50 per cent. of the diet is made of leaves, such as alfalfa meal or dried spinach, rats die in a relatively short time. Spinach was fed in quantities varying from 0.01 per cent. to 75 per cent. of the diet and in no case was any appreciable anti-rachitic effect noted. On the other hand, 0.1 per cent. showed a definite retarding of ophthalmia (keratomalacia) and a slightly greater amount was able to prevent ophthalmia over a relatively long period. Very advanced cases of ophthalmia were cured in six days by feeding half a gram of spinach a day. In case the lens of the eye had already popped out the spinach did not cause it to go back in the eye in six days, but apparently the cornea was regenerated in order to protect the extruded lens and the eye assumed a healthy even though a somewhat deformed condition. In case the lens had not popped out of the eye, the eye in every way appeared normal after the spinach diet.