marked proliferation of glia cells which are sometimes seen to invade the dying nerve cells.

(3) The nucleus tuberis is composed of rather large elongated cells arranged into 3 or more groups. These groups of cells lie close to the basalar surface, ventral to the fornix, and extend from the infundibulum to the mammillary body. This nucleus shows considerable cell destruction in all of the epileptic brains. A great many of the remaining cells are chromatolytic. The medial cell groups are usually affected more than the lateral.

(4) The basal optic ganglion is composed of a group of large cells flattened over the lateral, dorsal and medial surfaces of the optic tract near the chiasma. In the epileptic brains studied this nucleus shows a varying amount of chromatolysis but very little if any cell destruction.

The cell groups most markedly affected in the 4 epileptic brains studied are the substantia grisea of the third ventricle, the mammillo-infundibular nucleus, and the nucleus tuberis. It is believed by the author that these are centers for the control of the thyroid, parathyroid and suprarenal glands. The basal optic ganglion which seems to be concerned to a less degree with epilepsy has been shown by Greving to have fiber connections with the hypophysis.

These findings suggest the possibility that epilepsy may be the result of a functional disturbance of the glands of internal secretion, probably a hypersecretion caused by irritation of the nervous centers in the diencephalon.

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The Effect of Yeast Upon Metabolism.

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Although several workers have investigated the effect on the metabolism of human subjects of adding yeast to a diet in such quantities as are commonly recommended for therapeutic purposes, the results reported have shown considerable variation. Further studies, with and without yeast, seemed important both for confirmation and additional information.

Plan of Experiments: Table I shows the general plan of the 3 experiments. We studied our several subjects over longer periods

of time than most workers. Breakfasts and dinners were eaten in the home of one of the subjects. Luncheons were eaten in the laboratory. The food was weighed and liquids measured.

TABLE I.

Exp. No.				
1 Low protein Low purine	3-3 day periods No yeast 3 day analyses	2-4 day periods Plus yeast* 4 day analyses	2-4 day periods No yeast 4 day analyses	
2 Same	3 weeks on unweighed diet	11 days on weighed diet—no yeast 3 day analyses on last 9 days	24 days on same diet plus yeast No analyses	11 days on same diet plus yeast 3 day analyses on last 9 days
3 High protein High purine	3 weeks on unweighed diet plus yeast No analyses	7 days on same diet but weighed No analyses	3-2 day periods 2 day analyses	3-2 day periods No yeast 2 day analyses

*During the yeast periods, one cake of yeast was ingested at each meal.

The urines were analyzed for volume, specific gravity, total nitrogen, ammonia plus urea nitrogen, uric acid, creatinine, total phosphorus, glucose, total phenols, acidity and formol titration. Blood was analyzed for N.P.N., urea nitrogen, uric acid, creatinine, total phosphorus and glucose. The feces were analyzed for total weight, moisture, total nitrogen and total phosphorus.

Results: During the yeast ingestion there was an increased excretion of nitrogen and phosphorus (sum of urinary and fecal). The larger share of this excess excretion above the control periods was found in the feces, indicating a poor utilization of yeast nitrogen and phosphorus.

The total urinary phenols were less during and following the yeast periods in 5 of our 6 subjects. This seems significant, especially because the added yeast contained considerable tyrosine which is a possible source of phenols. This decrease seems to suggest a decreased intestinal putrifaction brought about by a change in the intestinal flora.

The addition of yeast to a low protein, low purine diet after the subjects have arrived at a low uric acid elimination caused no increase in uric acid excretion. If the yeast was added while the uric acid elimination was still high, or, while the subjects were on a high protein, meat diet, an increased uric acid elimination promptly followed. When yeast was discontinued after high uric acid excretion, the uric acid excretion fell off promptly. There was no increase in blood uric acid even after several weeks of yeast ingestion.

While yeast generally produced a greater regularity and ease of evacuations, the moisture of the feces did not seem to be noticeably or consistently increased. The yeast feces were more bulky and easier to mix and sample. This change in the character of the feces was probably the result of yeast fermentation and greater porosity.

There were no consistent changes which could be correlated with the ingestion of yeast for the blood and urine glucose, creatinine, acidity, urea, etc.

In our study, the changes following the ingestion of one cake of yeast per meal permit the following conclusions: 1. The yeast had little effect on nitrogen metabolism. Most of the added yeast nitrogen was excreted in the feces. 2. The yeast had little effect on phosphorus metabolism. Most of the added yeast phosphorus was excreted in the feces. 3. The yeast protein does not seem to be well utilized. 4. There is no retention of uric acid following yeast ingestion as is evidenced by no change in the blood uric acid. The ingestion of yeast does not cause an increased excretion of uric acid unless the level of uric acid excretion is already high, then the ingestion of yeast causes an increased excretion of uric acid which promptly falls off when the yeast is discontinued. 5. The ingestion of yeast caused a change of intestinal flora as evidenced by the reduction of urinary phenols. 6. The ingestion of yeast caused no consistent changes in the moisture content of the feces; however, the greater bulk and porosity due to fermentation caused evacuations to be easier.

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Studies on Hemoglobin Formation in the Rat.

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The purpose of these experiments was to study the relationship between the protein and vitamin composition of the diet and the hemoglobin forming process in the rat. In a study of this type, hemoglobin estimations and red corpuscle counts are of diminished significance unless the blood volume factor is controlled. For control of this factor we have developed a micro-modification of the Kieth-Rowntree plasma-dye method which makes possible repeated blood volume determinations in the rat. The method tested upon measured samples of blood *in vitro* shows an error not exceeding