It may be added in this connection that the strain of hemolytic streptococcus isolated from the empyema-fluid during the entire period of observation remained strongly fibrinolytic *in vitro,* although it had been exposed *in vivo* to sulfanilamide in concentrations of 5.5 to 10.9 mg % for 5 days.

It was observed by several authors, including Madison and Snow,[4] Huntington,[5] and Kemp,[6] that sulfanilamide failed to neutralize fibrinolysin formed *in vitro* by *beta* hemolytic streptococci. The possibility may be considered that sulfanilamide may counteract fibrinolysin that was produced *in vivo.*[7] To this end, the action of sulfanilamide upon fibrinolysin present in peritoneal exudates of mice infected with *beta* hemolytic streptococci was tested. The experiment was carried out in the following way: Decreasing amounts (volume 0.5 cc) of 0.8% sulfanilamide dissolved in physiological saline solution were mixed with 0.5 cc of a 1:10 diluted peritoneal exudate and incubated for 2 hours; then 0.2 cc of plasma, 0.3 cc of saline, and 0.25 cc of the calcium-chloride solution were added. The experiments revealed that sulfanilamide failed to retard or inhibit the fibrinolytic activity of the peritoneal exudate.

10573

Non-Effect of a High Yeast Diet on Survival of Adrenalectomized Rats.

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Verzar[1-5] and his associates have developed a theory that the function of the adrenal cortical hormone is to maintain adequate phosphorylation processes in metabolism. One manifestation of this

4 Madison, R. R., and Snow, J. E., PROC. SOC. EXP. BIOL. AND MED., 1937, **36**, 592.

5 Huntington, R. W., PROC. SOC. EXP. BIOL. AND MED., 1938, **38**, 328.

6 Kemp, H. A., *Texas State J. Med.*, 1938, **34**, 208.

7 Neter, E., *Arch. Path.*, 1938, **26**, 1082.

1 Laszt, L., and Verzar, F., *Pflüger's Arch.*, 1935, **236**, 693.

2 Verzar, F., and Laszt, L., *Pflüger's Arch.*, 1936, **237**, 476.

3 Laszt, L., and Verzar, F., *Pflüger's Arch.*, 1937-8, **239**, 136.

4 Laszt, L., and Verzar, F., *Pflüger's Arch.*, 1937-8, **239**, 653.

5 Verzar, F., and McDougall, E. J., *Absorption from the Intestine,* Longmans, Green & Co., London.

TABLE I.

No. of rats	Treatment	Avg days survival	Range, days	No. living indefinitely
59	Yeast	7.3	4-17	4
56	Untreated	8.1	4-16	5

action is the transformation of dietary flavin (pro-vitamin G) to flavin phosphate (vitamin G), a process which, according to them, can not go on in the absence of cortical hormone. A crucial point in their argument is the claim that flavin phosphate, as present in liver extracts or in yeast[1, 2, 3] will extend the lives of adrenalectomized animals (rats), whereas non-phosphorylated flavin will not. This report receives support from the experiments of Pijoan and Oberg,[6] and is compatible with the results of Sandberg and Perla,[7] who found that a special diet, one item of which was 5% yeast, helped maintain their adrenalectomized rats.

We report here non-confirmatory studies concerning the effects of a high yeast diet on the survival of adrenalectomized rats.

A total of 115 rats of both sexes, approximately 30 days of age at the time of operation, were used. Litters were divided and half were adrenalectomized and yeast-treated; half were kept as untreated adrenalectomized controls. Treatment was as follows:

28 received brewer's yeast† to the extent of 5% of the stock diet,* starting 5 to 7 days before adrenalectomy.

25 received brewer's yeast to the extent of 10% of the diet, starting 2 to 10 days before adrenalectomy.

6 received baker's yeast‡ to the extent of 10% of the diet, starting 6 days before adrenalectomy.

During the preadrenalectomy observation period any animals not gaining weight normally were discarded.

The results are shown in Table I. Since no difference was found in the various groups receiving different types and amounts of yeast, all results are pooled. No suggestion of a life extension as a result of yeast treatment was found; and in other respects such as weight

[6] Pijoan, M., and Oberg, S. A., PROC. SOC. EXP. BIOL. AND MED., 1937, **36**, 187.

[7] Sandberg, M., and Perla, D., *J. Biol. Chem.*, 1936, **113**, 35.

* The stock diet used is made as follows: GLF Calf Meal, 88.8%; ground meat scraps, 8.9%; brewer's yeast, 0.7%; cod liver oil, 1.65%.

† Each gram contained not less than 25 international units of vitamin B_1, and not less than 42 Sherman units of B_2 (G). This was kindly supplied through the courtesy of Mead Johnson & Co.

‡ Each gram contained not less than 20 Sherman units of B_2 (G). This was kindly supplied through the courtesy of Mr. Charles N. Frey of the Fleischmann Laboratories.

changes, etc., treated and control animals responded in an identical fashion.

Of the animals that survived indefinitely, presumably because of accessory cortical tissue, those in the treated group continued to gain weight just as well when the yeast supplement of the diet was discontinued.

Summary. Fifty-nine adrenalectomized rats were fed a high yeast diet and their survival compared to 56 control animals on a stock diet. Reports that there is a factor in yeast (presumably vitamin G) which will extend the lives of adrenalectomized rats were not confirmed. The survival of treated animals was entirely within normal range.

10574 P

Conversion of 1,2,5,6-Dibenzanthracene by Rabbits, Rats, and Mice. Significance in Carcinogenesis of this Conversion.

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Boyland studied chemically the conversion of certain carcinogenic as well as non-carcinogenic compounds.[1, 2] This communication reports a study, by combined chemical and physical methods, of the conversion and excretion of 1,2,5,6-dibenzanthracene by rabbits, rats, and mice. Ether extracts of the urine and feces of injected animals were examined by spectroscopy in the ultraviolet region of the spectrum with the hydrogen discharge tube as a source of light.

Rabbits, rats, and mice were injected subcutaneously or intramuscularly with 2-10 cc of a solution containing 500 mg of pure 1,2,5,6-dibenzanthracene in 100 cc of olive oil. The urine and feces of the injected animals were collected from metabolism cages at intervals of 3 days.

The urines were acidified with HCl and extracted continuously with ether for 48-72 hours. The ether was extracted (1) with 10% Na_2CO_3 solution to separate the acid compounds, and then (2) with a 10% NaOH solution to separate the phenolic compounds. The residual ether contained the neutral compounds. The extracts (1) and (2) were next acidified with HCl, and reëxtracted with ether.

[1] Boyland, E., and Levi, A. A., *Biochem. J.*, 1935, **29**, 2679; 1936, **30**, 728, 1225.

[2] Levi, A. A., and Boyland, E., *J. Soc. Chem. Industry*, 1937, **61**; *Chem. and Industry*, **15**, 446.