TABLE I.
Recovery of Added Iron to Biological Material.

Material Analyzed	Iron per Specimen	Iron Added	Total Iron Recovered
	mg.	mg.	mg.
300 cc urine	0.074	0.040	0.119
300 " "	0.052	0.040	0.091
1 gm liver	5.630	1.000	6.611
2 " "	11.260	0.700	11.964
11 " feces	1.670	0.500	2.180
25 " "	6.327	3.000	9.235
3 " milk powder	0.056	0.050	0.108
4 " " "	0.074	0.050	0.119

color reported[1, 2] does not occur when one drop of the thioglycollic acid is used in the presence of these low concentrations of iron. The color is permanent for 30 minutes. In high concentrations of iron, 1 mg. or more, there is fading with the subsequent return of purple color on shaking with air.

Thioglycollic acid is specific for both ferrous and ferric iron, as is shown by standard solutions of ferrous iron, which yield the usual red color with ammonium thiocyanate only after oxidation with $KMnO_4$ but yield quantitative results with thioglycollic acid both before and after oxidation.

6703

Effect of Testicular Hormone on Hypophysectomized Rats.

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The purpose of these experiments was to analyze further the factors necessary for the maintenance of the prostate. It is well known that prostatic atrophy follows either hypophysectomy or castration. The atrophy which follows castration can be prevented by the use of testicular hormone. Moore and Price[1] believe that the prostatic atrophy which follows hypophysectomy is entirely secondary to the changes which occur in the testes. Moore has quoted unpublished

[1] Michaelis, L., and Guzman Barron, E. S., *J. Biol. Chem.*, 1929, **83**, 191.

[2] Cannan, R. K., and Richardson, G. M., *Biochem. J.*, 1929, **23**, 1242.

[1] Moore, C. R., and Price, Dorothy, *Am. J. Anat.*, 1932, **50**, 13.

experiments by Vatna that testicular extracts maintain the prostate in hypophysectomized rats. Moore believes that secretions produced by the hypophysis stimulate the functions of the gonads, that is, both germ cell production, and hormone secretion, and that the prehypophyseal hormone has no direct action on the prostate. It is not impossible, however, that under normal physiologic conditions, the prostate is supported directly by both the hypophyseal and testicular hormones. Some experimental evidence supports this latter theory.[2]

We have injected hypophysectomized rats with a hormone prepared from urine which is believed to be derived from the testes.[3] The dose was calculated to be that which would scarcely replace the normal secretion from the testes. If the hypophyseal hormone exerts a direct influence on the prostate it would be expected that, under these conditions, atrophy of the prostate would ensue. The table shows some typical findings in 3 rats that were littermates. These findings are in complete accord with Moore's theory of prostatic maintenance. The histologic appearance of the organs of these animals was even more striking than the gross appearance or weight. There seems to be no question that the prostate can be maintained by the thermostable hormone in urine in the complete absence of the hypophysis or hypophyseal secretions.

In addition to the above findings in the prostate a singularly interesting observation has been made in regard to the testes. Moore[4]

TABLE I.

Weight in Grams of Organs of Littermate Rats, Showing Effect of Injection of Male Sex Hormone into Hypophysectomized Rats.

Rat No.	49	49-B	49-A
Wt. at end of experiment	184	130	122
Testes	2.246	.393	1.603
Epididymis	.738	.159	.503
Seminal Vesicles	.573	.080	.507
Ventral Prostate	.251	.021	.206
Dorsal "	.139	.018	.071
Thyroid	.048	.026	.020
Adrenal	.028	.007	.005
Days	—	29	29
Remarks	Control	Hypophysectomized	Hypophysectomized. Injected

[2] Graber, H. T., and Cowles, R. A., PROC. SOC. EXP. BIOL. AND MED., 1932, **30**, 384.

[3] McCullagh, D. Roy, Cuyler, W. Kenneth, and Frawley, John T., *Trans. R. S. Canada, Sec.*, 1932, **5**, 183.

[4] Moore, C. R., Sex and Internal Secretions, Williams and Wilkins, Baltimore, 1932, 356.

has made the following statement: "The conception of the interactions between the gonads and hypophysis is supported by a wealth of determined facts and both the conception and the facts argue against the possibility of stimulating either gonad by administration of gonad hormones. A great many biologic and clinical procedures have been carried out on the supposition that such a stimulation would follow, but no endocrine gland has yet been proven to be stimulated by the administration of substances which it itself produces."

In our experiments, the testicular hormone maintained the testes in an apparently normal condition after the hypophysis was removed. It was impossible, either grossly or microscopically, to differentiate between the testes of the hypophysectomized animals that received injections of the hormone and those of the normal littermate controls.

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Intravenous Administration of Wheat Germ to Patients with Pellagra.

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During the past 200 years various diets, drugs, and minerals have been recommended as therapeutic cures for pellagra. Yeast and wheat germ are two of the materials sometimes used in the treatment of this disease. Both of them contain fat, protein, and carbohydrate and are especially rich in the vitamin B complex. Goldberger and associates[1, 2, 3] have found that both yeast and wheat germ are efficacious in the prevention of pellagra and possess curative properties when administered orally to the pellagrins. While studying various methods of treatment we observed[4] that the mortality rate was very high in those individuals who because of oral

[1] Goldberger, J., and Tanner, W., *U. S. Public Health Report*, 1925, **40**, 54.

[2] Goldberger, J., Wheeler, G., Lillie, R., and Rogers, L., *U. S. Public Health Report*, 1926, **41**, 297.

[3] Goldberger, J., and Wheeler, G., *U. S. Public Health Report*, 1927, Reprint No. 1181, 2383.

[4] Spies, T., *Am. J. Med. Sci.*, 1932, **184**, 837.