

Further studies may show that this phenomenon may occur under other conditions also.

Conclusions. 1. The intravenous test dose method for the determination of Vitamin C saturation in the body by the study of the urinary excretion eliminates the factor of uncertain absorption of the ascorbic acid from the gastro-intestinal tract, but the problem of faulty kidney elimination remains. 2. In order to properly evaluate this factor a study of the blood curve for possible renal retention is essential. 3. A test is outlined which permits a more complete study of Vitamin C saturation. 4. Results illustrating certain types of curves obtained with and without renal retention are presented and interpreted. Thus far retention of Vitamin C has been noted in patients with marked nitrogenous retention only. 5. All patients with nitrogenous retention do not have Vitamin C retention, but renal retention of Vitamin C may occur. To our knowledge this has not been demonstrated before.

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Sexual Abnormalities in an Inbred Strain of Mice.

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An interesting sexual abnormality was observed in the Little-Murray dilute brown strain of mice. To date this abnormality has been observed in 10 animals, and is evidently hereditary. All the abnormal individuals were descendants of the same pair of mice, the ancestors of which were inbred by brother to sister matings for many generations. A pedigree chart (Table I) gives further details.

Mouse No. 6 was 23 months old when killed. Externally the animal was a normal female. Internally no female sex organs were present. A large nodule was found in the peritoneal cavity. Microscopical sections showed that the nodule was surrounded by a fibrous capsule. A few definitely recognizable but atrophic seminiferous tubules were present near the periphery. The rest of the tissue was composed of diffusely distributed large cells, of embryonal type, and was diagnosed as embryonal carcinoma of the testis (Fig. 1).

Mouse No. 323 was 20 months old when killed. At autopsy a large, yellow, necrotic nodule was found on the right side, half way between the kidney and the bladder. On the left side a small oval

body was found in the same position. Inserting a probe into the vagina, a blind ending could be felt. No other sex organs could be

TABLE I.
Pedigree Chart. The abnormal animals are marked with parentheses.

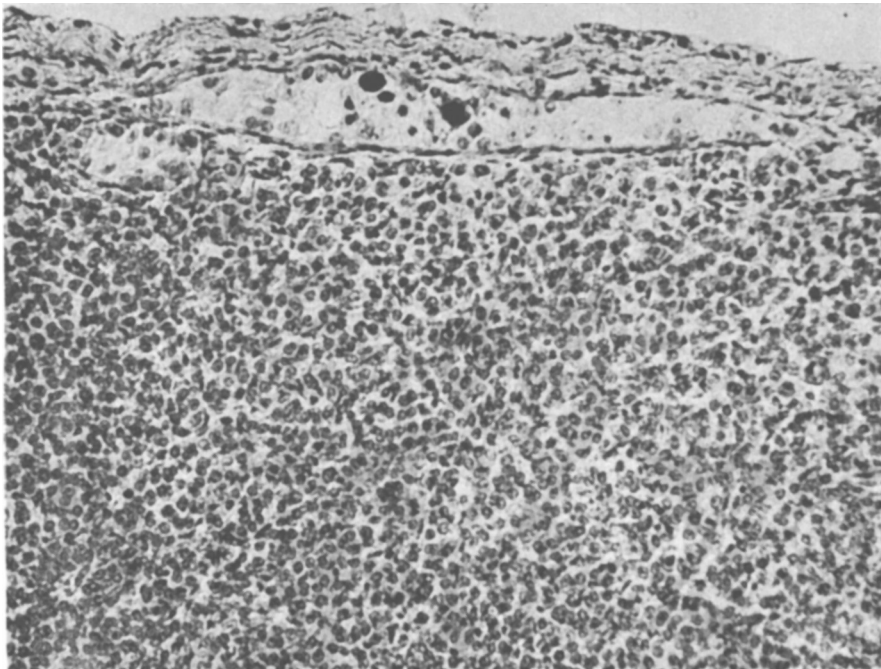
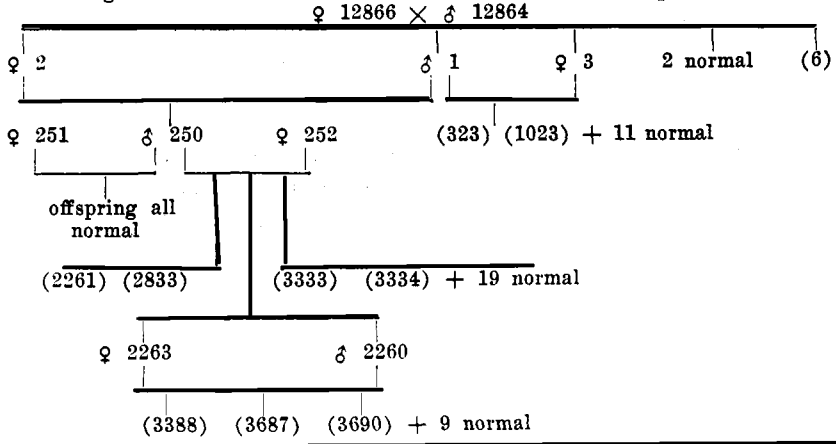


FIG. 1.
Diffuse embryonal cell carcinoma of testis of mouse No. 6 showing tunica albuginea, seminiferous tubules and some dark staining concretions. $\times 250$.

found. Examined microscopically the yellow nodule of the right side showed almost complete necrosis. Only a very small peripheral area was still cellular, and showed faint outlines of seminiferous tubules. The small body of the left side was surrounded by a fibrous capsule and contained seminiferous tubules in which actively dividing spermatogonia and spermatocytes were present, but there were no spermatozoa. Interstitial cells were present in the stroma.

The condition found in 6 other animals was very similar. In one of them, mouse No. 3388, the position of the internal organs was sketched and serial sections were cut of all the parts that might possibly contain any accessory sex organs. The observations made on this animal will be described in more detail.

The serial sections showed that the vagina was about 5 mm. long and ended blindly. Two lobules of fat forming a pad were attached at the base of the bladder. The testes were partially imbedded in the adipose tissue half way between the kidneys and the bladder and supplied with blood vessels from the fat lobules. The whole fat pad including the testis was serially sectioned. The gonadal tissue was comparable structurally to an undescended testis. It was surrounded by a thin tunica albuginea. The seminiferous tubules were separated from each other by a fibrous stroma which at some places, especially near the periphery, contained interstitial cells. In some of the tubules the seminiferous epithelium showed degenerative changes; in others it was actively dividing. Spermatogonia and spermatocytes were present—no spermatozoa were found (Fig. 2). The sections of the surrounding fat pad showed no other sex organs.

As was stated previously, the condition found in the 5 other animals was similar to the one just described in detail. Slight variations were observed in the structure of the stroma of the testes. In 2 of the mice (3333 and 3334) the testes were quite large and contained adipose tissue, into which the seminiferous tubules were imbedded. Few interstitial cells were found near the hilum in these glands. In other animals the seminiferous tubules showed degenerative changes and complete hyalinization. Concretions were found in several testes. The sac-like ending of the vagina was similar in all of them.

It was observed that the vagina of mouse No. 3687 and 3690 also ended blindly. These animals were anesthetized and the peritoneal cavity examined. Testes were found in both of them. In 3687 the testes were left in while in 3690 they were taken out, and two ovaries of a dilute brown female were transplanted in the same position.

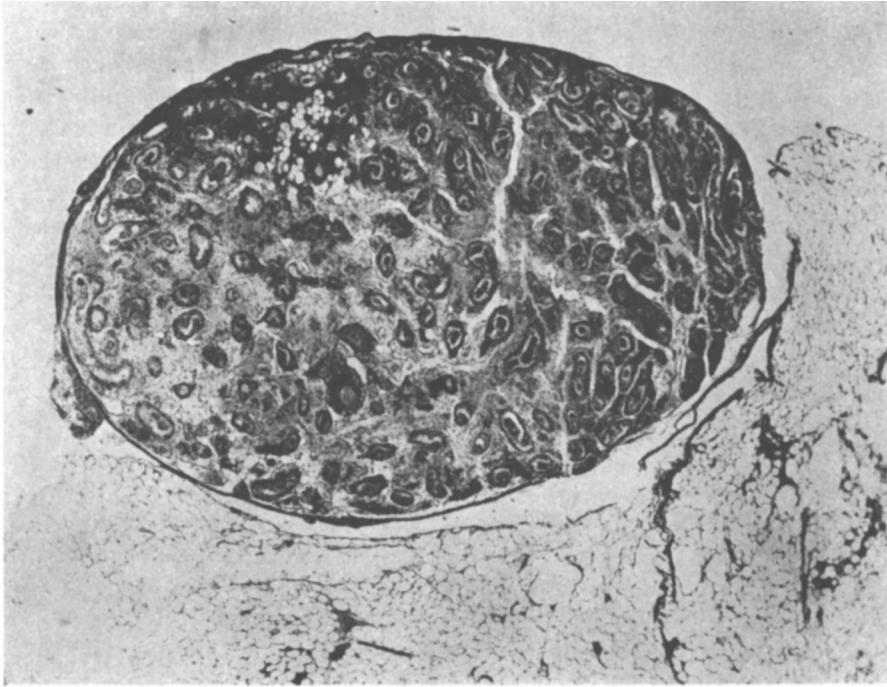


FIG. 2.
Testis of mouse No. 3388. $\times 25$.

Mouse No. 3687 died 2 months later at the age of 26 months. The internal organs showed very marked postmortem changes. One of the testes was much enlarged and several round nodules were present on the liver. Although microscopic sections showed far advanced necrosis and definite diagnosis was impossible, it is probable that this mouse too had an embryonal cell carcinoma of the testis which gave rise to metastases in the liver. Mouse No. 3690 is still alive.

Several descendants of this line are alive and are kept under careful observation. So far no other abnormal individuals have been found.