of pituitary potency than is the weight of the ovaries. Yet when the average weight of the uteri was used as an index of potency of the pituitaries there was no evidence that the pituitaries of semicastrated rats were more potent than those of normal rats.

After the grafts failed to show an increase in the anterior pituitary sex hormone of semicastrated rats the blood was then tested for this hormone. Blood serum from the different types of donors shown in Table I was injected in amounts of about 5 cc. daily into immature female rats. In no instance was a positive test obtained. In some cases a total of 40 cc. of serum was given to each recipient. The hormone must be in the blood in greater amounts in semicastrated rats, or how can the remaining gonad receive more of the hormone needed for the hypertrophy? We have in other cases (not yet reported) obtained the hormone from the blood of certain rats. Thus we know it must be there in small amounts even though we have not detected it from the serum of any of the donors shown in Table I.

Summary. The amount of anterior pituitary sex hormone in the pituitaries of normal male and female rats was not noticeably changed after semicastration. This hormone has not been found in the blood serum of normal or semicastrated nullipara females, or in normal or semicastrated males. The need for a greater amount of the hormone in the blood of semicastrated animals is pointed out.

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Experimental Production of Nephrosis-like Lesions by Sodium Hydnocarpate.

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A 0.1% aqueous solution of a preparation consisting of a selected fraction of the sodium salts of the total fatty acids of hydnocarpus oil was injected intravenously into 6 normal albino rabbits over a period of approximately one year. Injections were given at biweekly intervals into the marginal ear veins. The individual dose was calculated upon the basis of 0.0166 gm. of the sodium hydnocarpate preparation per kilo of body weight, and ranged from 0.022 gm. to 0.03 gm. (0.22 cc. to 0.3 cc. of the aqueous solution). Each animal received a total of 101 injections.

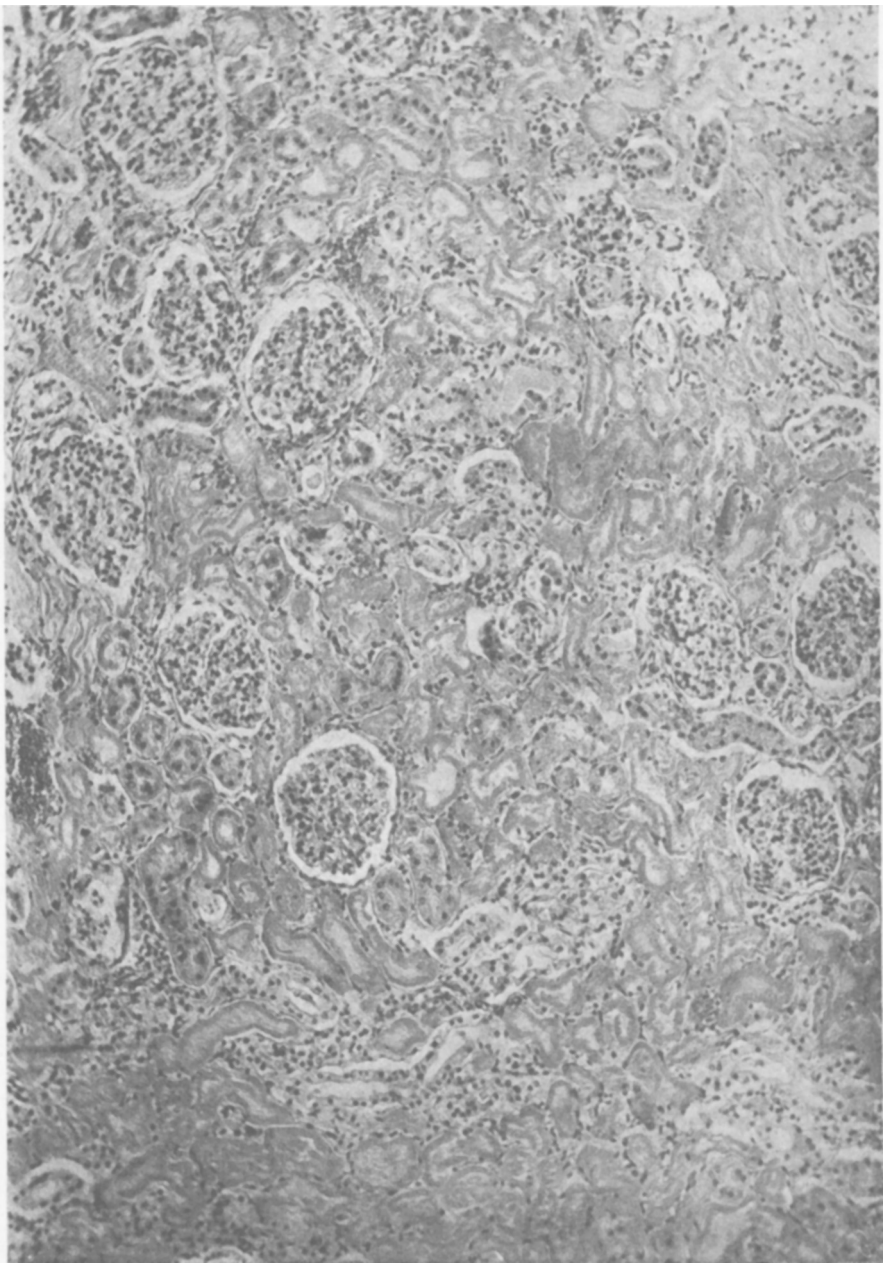

FIG. 1.
Showing non-inflammatory, tubular degeneration in kidney of a rabbit following administration of sodium hydnocarpate. Hematoxylin and eosin, × 156.

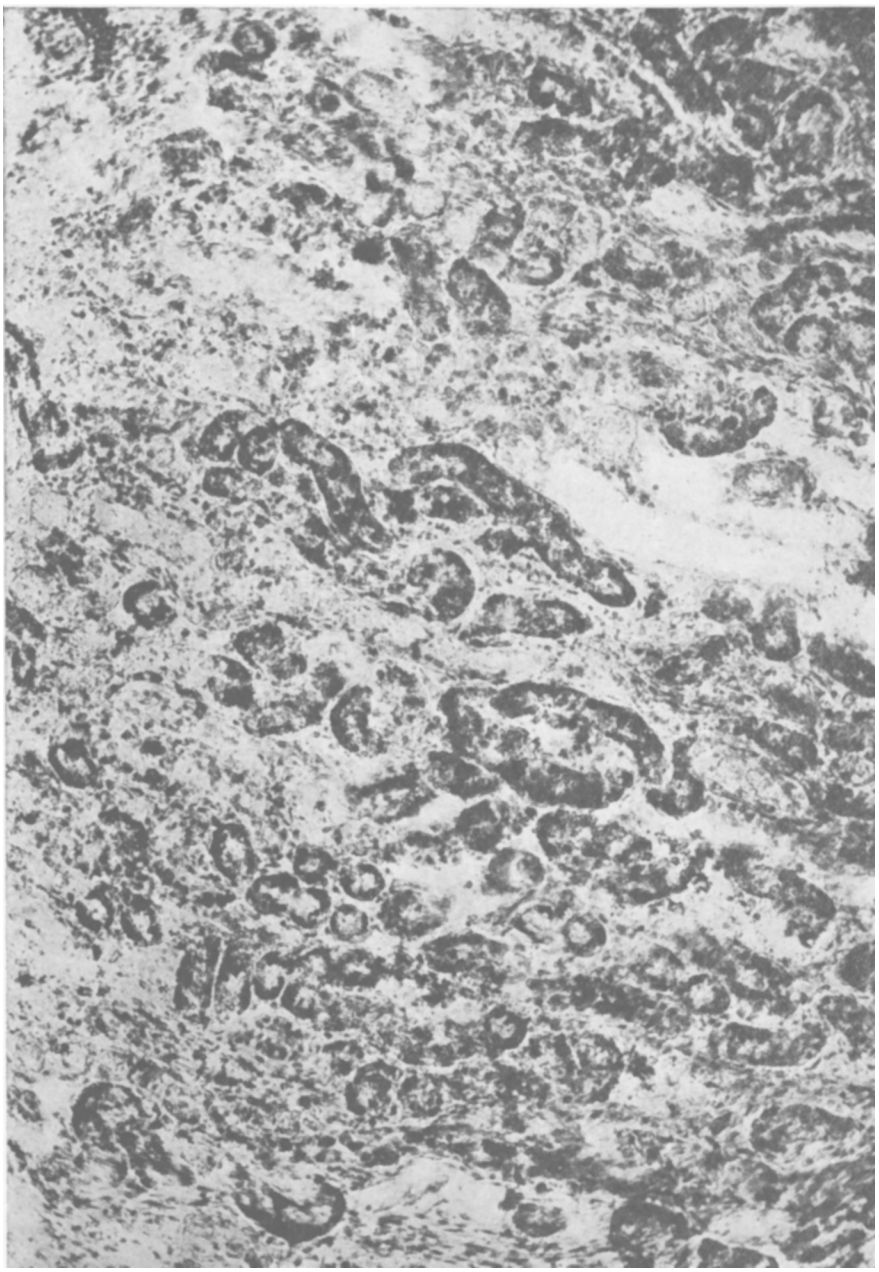

FIG. 2.

Showing fatty degeneration of tubular epithelium in kidney of a rabbit following administration of sodium hydnocarpate. Sudan III. × 156.

During the period of observation no clinically detectable reactions to the drug occurred in any of the rabbits. At the end of this time 2 animals died, one on the day following the last injection and the other 3 days after injection. The remaining 4 animals were killed 5 days following completion of treatment. The chief pathological findings were limited to the liver and kidneys with the exception of the 2 rabbits that died. In one of these there was in addition marked pulmonary edema and in the other diffuse lobular pneumonia with considerable edema of the pulmonary tissues. Free fluid was not present in any of the serous cavities of the 6 animals, nor was there any detectable edema of the skin or subcutaneous tissues.

The liver in each case showed varying degrees of fatty infiltration, especially around the central veins where there was also, in a few instances, evidence of beginning necrosis of the parenchymal cells.

At the time of autopsy no significant gross renal abnormality was noticed. Later study of the fixed specimens in comparison with the fixed kidneys of normal rabbits revealed definite changes in color. In the cortex both on the surface and on section there were irregular pale gray areas. The capsules stripped easily and left a smooth renal surface. The general anatomical markings were unaltered, but it was the impression that the kidneys were slightly smaller than in normal animals.

The microscopic renal changes were striking in all 6 of the animals and are of sufficient interest and importance to warrant this brief description of their nature. The general organization of the cortical and medullary structures remained unaffected. The glomeruli were essentially normal both as to capsule and capillary tufts. The capsular spaces in some instances contained a small amount of homogeneous protein precipitate, but there was no evidence of inflammation. An occasional red blood cell was observed, but these were very few. Adhesions between tuft and capsule were not found. The epithelium of the convoluted tubules in particular showed varying degrees of degeneration (Fig. 1). In many of the tubules there was complete absence of cellular structure and in places the lumen was dilated. The convoluted tubules were filled with casts consisting chiefly of a homogeneous substance and to a less extent of epithelial cells and debris. Where the degenerative process was less advanced desquamation of tubular epithelium was conspicuous. The tubules of Henle and the collecting tubules, although involved in places, were not affected in any comparable degree with the convoluted tubules. In most cases the degenerated changes were not uniformly diffuse, but were limited more or less to irregular areas or

sections of the cortex. No unmistakable sign of inflammation was present in the cortical substance. The arteries and arterioles were normal.

Sections stained with Sudan III revealed heavy fatty infiltration or degeneration of the tubular epithelium (Fig. 2). Lipoids were also seen in the desquamated cells and tubular casts. To a much less degree than in the tubules there was fat staining material in the glomerular tufts. In the case of the animal that died 3 days after the last injection of sodium hydnocarpate numerous minute fat globules were found lying free in the blood vessels. Lipoid degeneration as indicated by the presence of doubly refracting lipoids could not be demonstrated by the polarization method.

In summary it can be said that non-inflammatory, degenerative tubular lesions of the kidney closely similar morphologically to those of nephrosis in man have been produced experimentally through the action of dilute solutions of a soap consisting of the more water soluble sodium salts of the unsaturated fatty acids of hydnocarpus oil. The method is presented as a technique which may be applicable to the study of nephrosis experimentally.

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The Effect of Cortin in Asthenia.*

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We have studied the effect of cortin in the asthenia of many clinical conditions including Addison's disease. These findings have been compared with observations on normal individuals.

In asthenia there is increased susceptibility to fatigue although the dynamic power of the muscle may not decrease materially. Therefore the measurement of asthenia should test the threshold for fatigue rather than the strength of a single contraction. An ergometer can be successfully used to measure the fatigue threshold provided certain precautions are observed. We employed the ordinary type which uses the middle finger to lift a weight. A load is chosen which will cause definite fatigue in 3 to 5 minutes when lifted every 2 seconds. If too heavy the error due to variation from

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