deuterium, present in the sample used. When we recall that there are 2 known isotopes of hydrogen—namely, deuterium and tritium —and that 3 varieties of oxygen, differing slightly in their atomic weight, have been established, the subject appears to be even more complex than we at first suspected.*

8554 C

Assays of Hypertrophied Prostatic Tissue and of Urine for Estrogenic Substances.

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A high content of oestrin has been reported in normal ovarian tissues[1] and in tumors of the ovary,[2] breast,[3] and uterus.[4] Estrogenic substances have been demonstrated in the blood and urine, and in some cases a fairly high yield has been reported from male urine.

High yields of anterior-pituitary-like hormone have been obtained from urine in cases of teratoma of the testis,[5] chorio-epithelioma and hydatidiform mole,[5, 6] but Smith and Smith[7] have reported low levels of oestrin in such cases.

There have also been reports of atypical growth of prostatic

*Since this paper was written there has appeared in these PROCEEDINGS (1936, **33**, 266) an article by Fox and Craig concerning the effect of deuterium on the hydrolysis of starch. This biological reaction was found to correspond qualitatively with those described in the foregoing paper.

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4 Lewis, D., and Geschickter, C. F., *J. A. M. A.*, 1935, **104**, 45.

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6 Geschickter, C. F., Lewis, D., and Hartman, C. G., *Am. J. Cancer*, 1934, **21**, 828.

7 Smith, G. van S., and Smith, O. W., PROC. SOC. EXP. BIOL. AND MED., 1935, **32**, 847.

tissues in rodents[8, 9, 10] and monkeys[11, 12] following injections of estrogenic substances, and some of the female organs, rudimentary in the male, have been induced to hypertrophy by injections of oestrin.[13]

The present study reports uniformly negative results from assays of hypertrophied prostatic tissues removed at operation from patients 60 to 80 years of age. Seven hypertrophied prostates, histologically hyperplastic but without evidence of malignancy, ranging from 9 to 28 gm., and also 23 samples of urine from 12 patients before and after prostatectomy, ranging in quantity from 1 to 15 liters, have given uniformly negative results in more than 100 tests. The methods used for extraction and assay of oestrin from tissue and from urine were those in current use for the detection of small amounts of this active substance.

These results indicate that oestrogenic substances were not present in significant quantities in either the urine or hypertrophied prostatic tissue examined.

8555 C

Enzymic Digestion of Lactalbumin Versus Casein *in Vitro*.*

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Since the experimental evidence concerning the nutritive value of lactalbumin is conflicting, an intensive study has been initiated in this laboratory to investigate the biological value of this protein from the standpoint of digestion, metabolism, and growth. Casein (being a protein of indisputable excellent biological value) was used as a standard of comparison.

In this report a summary is given of the results of tryptic-ereptic digestion of lactalbumin versus casein *in vitro*. The casein was

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