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The Crystalline Ovarian Follicular Hormone.

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Due to the low concentration of estrus-producing material in ovaries, we abandoned their use several years ago in favor of the much cheaper and more concentrated source, namely, the urine of pregnant women and mares. However, with the isolation of so many different estrogenic compounds, it seemed desirable to determine the nature of the active substance in the ovary. Starting last year seriously to work on this problem we soon obtained the hormone in a crystalline condition but owing to the very low concentration in hog ovaries, have not secured enough to complete our work.

Preliminary assays of the crystalline follicular hormone give the following data: (1) ovariectomized mice by the Marrian-Parkes procedure, 200,000 units and by the Butenandt procedure, 70,000 units per mg.; (2) ovariectomized rats by our usual procedure, 16,000 units per mg.; (3) immature rats by the Curtis-Doisy procedure, 5,000 units per mg. In our laboratory these results are from 4 to 8 times the values that we obtain for theelin, but with the immature rat the potency is equal to that of theelol. The assays for dihydro-theelin and for the follicular hormone by the respective methods give similar values.

Although we have not yet accumulated sufficient material for complete analysis, our results indicate the identity of the hormone with dihydro-theelin. The m-bromobenzoate of the hormone was prepared, and after 3 crystallizations had a melting point of 154°-155°. After 4 crystallizations the m-bromobenzoate prepared from a sample of pure dihydro-theelin melted at 155°-156°, and the dihydro-theelin obtained from it by saponification with dilute alcoholic alkali melted at 171°-172° after one crystallization. By saponification of the m-bromobenzoate of the hormone in the same manner the crystalline hormone was recovered and found to melt at 170°-171°. All melting points are uncorrected but were taken with a Bureau of Standards long stem thermometer.