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Adsorption of the Ovarian Hormone from Urine.

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In the purification of the ovarian (follicular) hormone, losses are experienced in filtration or dialyzation. Laquer, Hart and de Jongh¹ report adsorption on charcoal, talc and filter paper, but give no quantitative results.

1200 cc. of mixed urine from women in the last 2 weeks of pregnancy was centrifuged and divided into 4 equal portions. To one was added 30 cc. of a 10% acid calcium phosphate solution and to this was added 30 cc. of *N* NaOH. To another, double this quantity of phosphate was added. The 3rd portion was treated with 2.4 g. cellulose pulp. The 4th portion was left untreated. The content of each flask was put under suction to remove dissolved air, the flask filled with CO₂, loosely stoppered, heated, tightly stoppered and cooled, to minimize oxidation. The 3 portions were allowed to stand 20 hours at 10°. The phosphate was removed from the mixture by centrifuging, and was then dissolved in 35 cc. *N* HCl and made up to 300 cc. with water. The cellulose mixture was filtered on a Büchner funnel with a gum-rubber diaphragm over the top. The pulp mat was placed in a paper thimble in a Soxhlet extractor and extracted for 5 hours with ethyl alcohol under reduced pressure. The alcohol was then distilled off, leaving a small amount of watery residue which was diluted to 300 cc. The 6 watery solutions—untreated urine, 2 phosphate solutions and the urine treated by the first, the cellulose extract and the urine recovered by filtration—were extracted with three 60 cc. portions of ethyl ether, free from peroxide. The ether was distilled off and the residue taken up in boiling alco-

¹ Laqueur, E., Hart, P. C., and de Jongh, S. E., *Deutsche Med. Wochschr.*, 1926, lii, 1331.

hol, cooled and centrifuged, and diluted with 1% NaCl solution. The potency was determined by the method of Allen and Doisy.² The weight of the non-volatile residue (a thick yellow oil) was determined and the weight per mouse unit calculated.

The results were as follows:

	Mouse units per liter	mg. per mouse unit
Urine, untreated	200-400	0.05-0.20
Ca ₃ (PO ₄) ₂ adsorbate	100-200	0.13-0.40
Residual urine	100-200	0.06-0.26
Ca ₃ (PO ₄) ₂ , double quantity	200-400	0.08-0.16
Cellulose adsorbate	100-200	0.56-2.83
Residual urine	100-400	0.05-2.52

The results indicate that the hormone may be adsorbed quantitatively by calcium phosphate.

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The Psycho-galvanic Reflex and Polarization-Capacity of the Skin.

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It has been shown by Gildemeister that the physiological change in the skin constituting the psycho-galvanic reflex, is a change in polarization-capacity localized in the sweat glands. Those experimenters who offer other mechanisms of the reflex have worked with inadequate apparatus. We made a study of polarization-capacity, first of metal electrodes and secondly of the surface of red blood corpuscles. In order to distinguish between resistance and polarization-capacity we measured the resistance by means of a new Wheatstone bridge and an alternating current of one and a half million cycles per second. We are able to show that the resistance of the body does not appreciably change during the psycho-galvanic reflex. We devised an apparatus whereby the impedance of the body to direct current and high frequency current could be determined simultaneously, using a condenser to shield the high frequency current from the direct current and a choke coil to shield the direct current from the high frequency current. In an average of 10 simul-

² Allen, E., and Doisy, E. A., *J. Am. Med. Assn.*, 1923, lxxxi, 819.