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Effect of Injections of Urine from Pregnant Women on Ovary of the Rabbit.

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In the opinion of Marshall, the fact that the rabbit does not ovulate spontaneously, but only after coitus, and then at a definite time (10 hours) afterwards, "points to the conclusion that the follicles discharge in response to a stimulus conveyed to the ovary by its nerves."[1] That the ovarian nerves are not indispensable is clear from the demonstration that ovulation may occur in the transplanted ovary.[2] Some humoral mechanism, therefore, may be safely assumed. The question arises, however, of the importance of this humoral mechanism. Is it, or is it not, a significant factor in the whole series of processes involved in ovulation in the normal rabbit? If it is of great significance, one should be able to provoke ovulation in the rabbit without coitus by injection of those substances which were responsible for the occurrence of ovulation in the transplants.

Stimulated by the recent work of Smith and Engle,[3] who were able to induce super-ovulation in the rat by the daily transplantation of fresh hypophyses, a series of rabbits were subjected to such transplantations, following exactly the technique of Smith and Engle. To date, it has been impossible to provoke ovulation in the rabbit by the transplantation of as many as 15 fresh rat hypophyses. Seeking for a more economical and more convenient source of the hormone of the anterior lobe, I was led to the use of urine from pregnant women by the reports of Zondek and Ascheim[4] in which it is stated that in such urine is found a substance whose biological effects closely simulate those of the anterior lobe of the hypophysis. In a series of female rabbits, in which a previous exploratory laparotomy had shown the presence of normal follicles and the absence of corpora lutea, the intraperitoneal injection of 12 cc. of urine from a pregnant woman, twice daily for 4 days, resulted in the appearance of fresh corpora lutea in the ovaries of each of the 7 rabbits so treated. Similar treatment of 9 rabbits with the urine of non-pregnant women was without effect.

[1] Marshall, "The Physiology of Reproduction," Longmans, Green and Co., London, 1922, 561.

[2] Friedman, M. H., "On the Mechanism of Ovulation in the Rabbit," in press.

[3] Engle and Smith, *Am. J. Anat.*, 1927, xl, 159.

[4] Zondek and Ascheim, *Klin. Woch.*, 1927, vi, 248.

Histological study of these corpora lutea, however, show conclusively that ovulation did not occur, and that the corpora lutea produced by the injection of urine from pregnant women are the result of lutein transformation of corpora hemorrhagica with retained ova. Nevertheless, the clear differentiation between the effects of urine of pregnant women, and the urine of non-pregnant women, and the ease with which these effects can be seen by purely gross examination, justifies further study on a statistical basis to determine whether or not this procedure will be of clinical use in the diagnosis of pregnancy.

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Some Pharmacological Reactions of Benzothiazole.

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Benzothiazole was prepared according to the method of Bogert and Stull,[1] by condensing o-amino thiophenol hydrochloride with formaldehyde. The constant boiling point of 231° C. corresponded with that given in the literature.

Owing to the fact that many compounds containing reduced or divalent sulfur are physiologically active, it seemed worth while to test the pharmacological action of this base. Accordingly, experiments of 2 types were performed; namely, cutaneous and intravenous tests.

In the cutaneous tests, a minute droplet of the oil was placed on the unbroken skin of the forearms of women and of men. Forty per cent of the number tested (43) developed a local dermatitis: the redness, swelling, and violent itching involving an area of at least 2 sq. cm. In the attempt to correlate these positive findings with various factors, it was observed that blondes seemed to be more susceptible than brunettes, but that sex apparently played no part. Two remarkable phenomena were noted; namely, delayed reactions, and increased hypersensitivity with repeated application. In most of the cases, the reaction appeared in from 2 to 18 days after the oil had been applied (average 9½ days), and in many it reappeared after

[1] Dissertation of Stull, 1925.