The indication that a drug effectively increases the rhythmic function of the heart is the abolition of the cardiac standstill by the formation of new rhythmic centers. Figures 2 and 3 illustrate the effect of 2 chemically related substances, epinephrin and ephedrin. Epinephrin actively increases the impulse-initiating property of the ventricle as evidenced by the formation of a secondary rhythmic center near the auriculo-ventricular node. Ephedrin is entirely ineffective. The effect of epinephrin was studied in 8 subjects and the drug abolished the cardiac standstill in all cases by inducing a ventricular rhythm. It is possible by this method to study accurately the time of onset, duration and intensity of the effect. It was also apparent from the results of varying doses of epinephrin that the rate and site of the ectopic pacemaker may be utilized for quantitative studies. Observations with a large series of drugs are in progress and will be reported in detail.

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Improved Single Injection Method for Rapid Diagnosis of Early Pregnancy from Urine.

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A modification of the Ascheim-Zondek method was reported for the rapid diagnosis of early pregnancy.[1] The luteinizing hormone was concentrated in samples of urine and injected in 2 doses into immature female rats which were autopsied within 36 hours. A total of 265 specimens collected up to that time was diagnosed without error.

During the past 2 years I have attempted to shorten the time required for diagnosis and to use immature female mice as well as rats in performing the test. Notwithstanding the preference expressed in certain quarters for the rabbit as a test animal in the diagnosis of pregnancy by the Friedman[2] technic, this method does not appear to offer any special advantages. If greater accuracy can be obtained by another method and the time required for diag-

[1] Eberson, F., PROC. SOC. EXP. BIOL. AND MED., 1931, **28**, 407; *J. Am. Med. Assn.*, 1931, **96**, 2176.

[2] Friedman, M. H., and Lapham, M. E., *Am. J. Obst. and Gynec.*, 1931, **21**, 405.

nosis be equal to that claimed for the rabbit intravenous technic, the advantages attending the use of small animals become quite obvious.

The procedure shortens the time required for diagnosis to 18-24 hours instead of 36 hours. A smaller quantity of urine is needed and hence the amount of alcohol used in the purification process is reduced to one-third of that required in the older method. A single subcutaneous injection is sufficient. Alkaline urines are acidified slightly with acetic acid before concentrating. Preservatives such as boric acid or ether-tricresol do not interfere with the test.

To 50 cc. of recently voided morning urine are added 4 volumes of 95% ethyl alcohol and the mixture is placed in the ice-chest at a temperature of 4 to 6° C. for several hours, or until the precipitate has settled out. (This can be hastened by centrifuging the material promptly.) The clear supernatant fluid is decanted and the residue admixed with a small volume of alcohol is placed in a centrifuge tube and centrifuged briefly to pack the sediment. To the precipitate, freed from alcohol by decantation and drying in air current, 10 cc. of pure ether are added and the mixture agitated for 10 minutes. The ether is decanted and the sediment allowed to stand a few minutes in an air current to remove all traces of ether. Two cc. of sterile physiological salt solution are next added to the sediment which is thoroughly mixed and extracted. One to 2 hours or longer at the temperature of the ice-chest has been found satisfactory in the case of infrequent gummy residues. Usually a half hour suffices for the ordinary sediment, of which a major portion remains insoluble in the menstruum.

Immature female mice, 3 to 4 weeks old, are injected subcutaneously with ½ cc. of the saline extract. The mice are autopsied 16 to 18 hours later. Two animals are used, although there has been no mortality among the mice prior to autopsy. The macroscopic changes observed in the ovaries and tubes are clearly defined and the diagnosis of pregnancy is based upon the presence of "blood points" or visible corpora hemorrhagica and the typical congestion of ovaries and tubes. Not infrequently specimens of urine from patients in the menopausal age or with tumors in the reproductive tract produce changes which are readily differentiated from the genuine luteinizing reaction. Under such circumstances the ovaries are rarely enlarged or congested to the same degree and do not show hemorrhagic points. Indeed, the tubes are extraordinarily enlarged and edematous rather than congested, and the ovaries are often very small and colorless. This reaction, said to be due to the presence of Prolan A (follicle-ripening hormone), can be inhibited

if desired by heating the hormone extract to 70° C. for 20 to 30 minutes before injection.

A series of 361 consecutive specimens has been studied without an error in diagnosis. The results are briefly summarized without attempting to give detailed clinical data.

TABLE I.
Results in 361 Cases.

	No.	Positive	Negative
Normal pregnancy	129	142	0
Abnormal pregnancy (a)	13		
Non pregnant patients	219	0	219
	361	142	219

(a) Ectopic, 7; tumor, 3; dead fetus, 1; incomplete abortion, 2.

TABLE II.
Normal Pregnancy.

Delay in menstrual period (days)	Number
None	3
0- 7	1
7-14	12
15-21	19
22-28	20
29-35	23
36-42	17
43-49	9
50-56	6
57-63	13
2½ to 8 months gestation	6
	129

TABLE III.
Abnormal Pregnancy.

	No.	Positive		No.	Positive
Ectopic pregnancy (b)	7	7	Dead fetus	1	1
Incomplete abortion	2	2	Tumor complication	3	3
				13	13

(b) 3 in this group had not missed the period due.

The results indicated that the majority of patients were in the early weeks of pregnancy. Approximately 43% fell into the group having either no missed period or a delay ranging from 1 to 4 weeks, and there were 31% with periods 4 to 6 weeks late, making a total of 74%. Three ectopic pregnancies were diagnosed in a group of 6 patients that had not missed a period, and 4 other ectopic cases occurred in a group with periods that had been delayed from 2 to 4 weeks. The large group of non-pregnant patients included 76 or approximately 35% with tumors of the reproductive tract.