in experimentally infected *M. rhesus* monkeys. Serum was tested at intervals prior to the appearance of the earliest signs of paralysis or symptoms, and up to the third day of paralysis, with negative results. Further studies are in progress along this line of investigation and in connection with the development of quantitative procedures.

The correlation of immune body content and protective property of serums is also being studied *in vitro* and *in vivo* in monkeys, and serums from all possible sources are in the course of investigation.

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A Rapid Method for the Diagnosis of Early Pregnancy from Urine.

FREDERICK EBERSON.

From the Clinical and Research Laboratories, Mount Zion Hospital, San Francisco, and the Department of Medicine, University of California Medical School, San Francisco.

The method is based upon a simple procedure for concentrating the anterior pituitary hormone[1] in the urine and injecting 2 or 3 small doses subcutaneously into immature female rats, 18-21 days old. The animals, including untreated normal controls, are autopsied on the second or third day at the latest and the diagnosis made from the gross changes in the reproductive organs. Serial sections are prepared from the ovaries, tubes, and uterus for confirmation of the macroscopic findings. The procedure shortens the time required for diagnosis to 36-48 hours instead of the usual 4-5 or more days.

Eight ounces of morning urine, preferably not over 8 hours old, are used in the test. Older specimens have been found satisfactory, however, and the results not vitiated by the addition of a preservative or by the reaction of the urine. A preservative such as ether tricresol (4 drops to each 100 cc. of urine) may be necessary in forwarding specimens from a distance.

Two and one-half volumes of 95% alcohol are added to the

[1] Erdheim, J., and Stume, E., *Beitr. z. Path. Anat. u. z. allg. Path.*, 1909, **46**, 1. Evans, H. M., and Long, *Anat. Rec.*, 1921, **21**, 62. Smith, P. E., and Engle, E. T., *Am. J. Anat.*, 1927, **40**, 159; *Am. J. Physiol.*, 1927, **80**, 114. Evans, H. M., and Simpson, M. E., *J. Am. Med. Assn.*, 1928, **91**, 1337. Allen, W. M., *Am. J. Physiol.*, 1930, **92**, 127, 612. Doisy, E. A., PROC. SOC. EXP. BIOL. AND MED., 1928, **25**, 806; *Am. J. Physiol.*, 1929, **90**, 329; *J. Biol. Chem.*, 1930, **86**, 499.

urine and the mixture placed in the ice chest at a temperature of 2-4°C. for several hours or over night to allow the precipitate to settle out. This step may be hastened by centrifuging the mixture as soon as the precipitate has separated. The precipitate is suspended in 3-4 cc. of physiological salt solution, shaken thoroughly with an equal volume of ether, centrifuged to remove the ether and the extraction repeated 2 or 3 times. The saline solution after centrifuging and containing the specific hormone freed from the estrus-producing or ovarian hormones is now ready for injection into rats.

Interpretation of the test is based upon the positive findings of enlarged ovaries with visible corpora hemorrhagica or protruding follicles and "blood points".[2] The ovarian and tubal blood vessels and the uterus are definitely hypertrophied and congested. The gross picture varies with the stage of pregnancy. Microscopically the diagnostic criteria are the enlarged hemorrhagic follicles containing corpora lutea. The degree of luteinization may vary from slight invasion at the periphery to a complete filling of the entire structure. In the absence or presence of macroscopic changes the microscopic findings must always determine the diagnosis. A positive diagnosis rests on the finding of at least one corpus luteum.

The specific microscopic changes may be progressive or retrogressive and depend upon the advancing stages of pregnancy or upon its termination by abortion, miscarriage, or death of the fetus. It is noteworthy that detection of the death of the fetus is thus possible notwithstanding the fact that positive findings in autopsied rats may occur as late as 7 days after the death of a fetus *in utero*. The microscopic transitional picture in the corpora lutea is characterized by retrograde changes that are different from the specific luteinization, and assume an appearance approaching the negative stage. This observation as well as the other tinctorial and structural changes noted in the follicular cells are indicative of very early changes that are specific and especially valuable in circumstances that preclude diagnosis from the macroscopic findings alone.

A series of 175 consecutive cases has thus far been studied without an error in diagnosis. Subsequent histories and follow-up including post-operative findings have confirmed the diagnoses. A

[2] Zondek, B., *Arch. f. Gynaek.*, 1927, **132**, 76; *Klin. Wchnschr.*, 1928, **7**, 1404, 1929, **8**, 2229; *Naturwissensch.*, 1928, **16**, 1088; *Z. f. Geburtsch. u. Gynaek.*, 1928, **94**, 190; *Deutsch. med. Wchnschr.*, 1930, **56**, 295; *Arch. Gynaek.*, 1927, **130**, 1. Ascheim, S., and Zondek, B., *Arch. f. Gynaek.*, 1927, **132**, 179; *Klin. Wchnschr.*, 1928, **7**, 8; *Z. f. Geburtsch. u. Gynaek.*, 1928, **94**, 203; *Z. f. artzl. Fortbild.*, 1929, **26**, 5; *Zentralbl. f. Gynaek.*, 1929, **53**, 15; *Klin. Wchnschr.*, 1927, **28**; 1928, **30**, 1404.

number of patients had not yet missed a menstrual period at the time the test was made and a large group was represented by those who were in the first 4 to 6 weeks of pregnancy. The clinical material embraced all the usual problems in the differential diagnosis of pregnancy. These were represented by glandular insufficiency, functional amenorrheas, menopausal symptoms, uterine fibroid with or without pregnancy, complete or incomplete abortion, miscarriage, ectopic gestation, hysteria, dead fetus, and the like.

The test has proved 100% accurate in this study despite the rapid method and it differentiates pregnancy from conditions that simulate it. In medicolegal cases the test has been found valuable and equally important in cases demanding therapeutic abortion or in circumstances requiring prompt diagnosis or the exclusion of pregnancy.

No mortality has occurred among the rats in the course of injections.

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Incidence of "Normal" Persons Possessing Demonstrable Antibodies for Poliomyelitis Virus in Their Serum.*

E. W. SCHULTZ AND L. P. GEBHARDT.
From the Department of Bacteriology and Experimental Pathology, Stanford University, California.

Recent observations by Aycock and Kramer[1] and by Shaughnessy, Harmon and Gordon[2] on the incidence of normal persons possessing poliomyelitis antibodies in their blood serum are of considerable interest not only from the standpoint of the epidemiology of this disease, but also from that of its serum therapy. The observations of Shaughnessy and his associates indicate that the titer of these antibodies in the serum of certain "normal" adults may not only equal, but appreciably exceed that of the average poliomyelitis convalescent. These important observations have prompted us to make a similar survey in this region.

The Aycock strain of the virus is being used in our studies. This strain produces poliomyelitis in rhesus monkeys with great regularity, the first symptoms of the disease appearing generally between

* These studies were supported by the Mary Hooper Somers Medical Research Fund.

[1] Aycock and Kramer, *J. Prev. Med.*, 1930, **4**, 189, 201.

[2] Shaughnessy, Harmon and Gordon, *J. Prev. Med.*, 1930, **4**, 463.