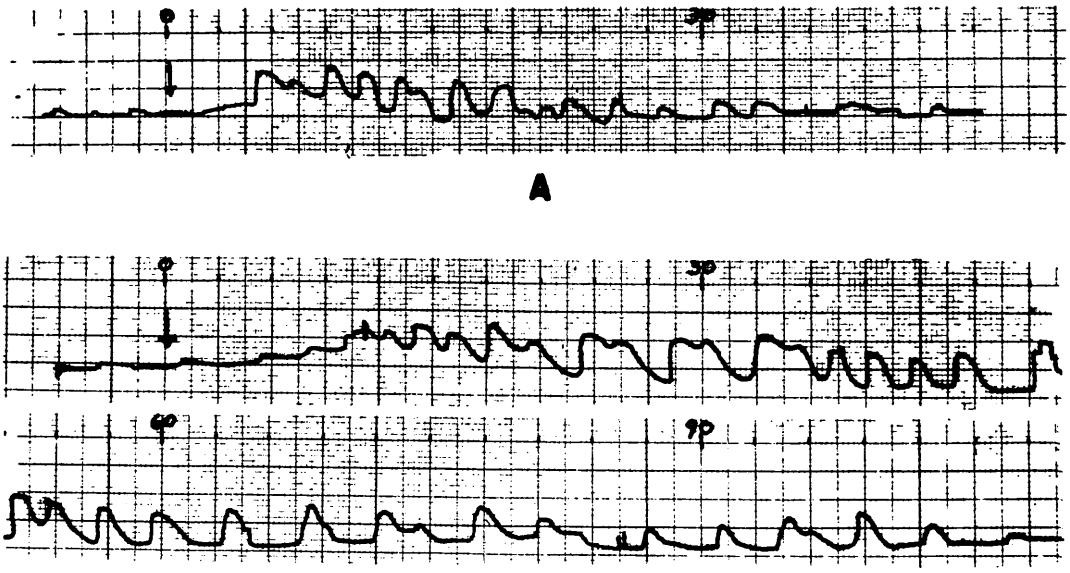

FIG. 1.

Tracings of tocograph records made on the same patient at term, not in labor, showing (A) the uterine response to 2 units of Pitocin and (B) the response one hour later to 7 units of Pitocin tannate in oil. Time in 3-minute intervals.

drops per minute, the obstetrician may control the character and amplitude of contractions quite adequately. The latter technic deserves further trial in selected cases of marked uterine inertia.

Conclusions. Pitocin tannate in oil, in comparison with Pitocin, requires 3 to 4 times the dosage to elicit a comparable response; the latent period after injection is twice as long; the duration of action 3 to 4 times as long. The preparation may be used when a longer acting oxytocic is desirable but possesses the same inherent dangers of ordinary posterior pituitary hormone.

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Differentiation Between *Brucella melitensis* and *Brucella abortus* by Precipitin Reaction.

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The precipitin reaction has been used in an attempt to develop a simple and rapid method by which strains of *Brucella melitensis* can be differentiated from those of *Brucella abortus*. Strains utilized for the immunization of rabbits were *B. melitensis* 428 and *B. abortus* 456 obtained from the National Institute of Health at Washington, and *B. suis* 1529, isolated by Huddleson in 1931 from the supramammary gland of a hog.

The organisms were grown for 48 hours on freshly prepared tryptose agar slants and the growth suspended in 0.9% saline, the opacity adjusted to match barium sulphate standard No. 3. One-tenth of a cc of this living suspension was then injected into the ear vein of

rabbits every other day until 4 injections had been given. On successive days following the last injection, trial bleedings were made from the ear vein and precipitin reactions carried out with formamide extracts of homologous organisms. If after 10 days precipitins were not demonstrable, another series of injections was started, followed by daily bleedings. Such a procedure was continued until precipitins appeared in the blood, their presence being indicated by a definite ring at the interphase between the serum and the extract and appearing in about 10 to 15 minutes. Immediately thereafter, the animal was bled and the blood collected into sterile paraffined test tubes; the serum was then used for the tests. Emphasis must be laid on the fact that the animal has to be bled as soon as the presence of precipitin in the blood is detected.

The preparation of the extract followed Fuller's[1] method for the extraction of polysaccharides from hemolytic streptococci. In this case, however, the organisms were grown for 48 hours on tryptose phosphate agar slants and the amount of growth, that could be scraped off at one time with a loop 1.5 mm in diameter, used for the extraction.

With a fine capillary pipette, 2 or 3 drops of the immune serum were placed in a shell vial 25 x 8 mm and carefully overlaid with an equal volume of the extract to be tested. The tube, set aside at room temperature, was watched continuously during half an hour for the appearance of a precipitate at the interphase. Only the limited number of strains in our collection were tested.*

Each extract was tested against *mellitensis, suis,* and *abortus* immune sera. All of the *abortus* and *suis* extracts promptly produced a definite ring with both *abortus* and *suis* sera, yet they did not produce a precipitate with the *melitensis* serum even in thirty minutes.

The *melitensis* extracts produced a precipitate readily with the *melitensis* serum. Three of these failed to precipitate in 30 minutes, when tested against *abortus* and *suis* sera, but one (*B. melitensis* 662) did. When originally tested and, when the usual amount of growth for the preparation of the extract was utilized, strain 662 gave a faint delayed reaction with *melitensis, suis* and *abortus* sera. However, when a larger amount of growth was used, a ring was readily obtained with the three antisera. Such results suggested the presence in this particular strain of a smaller amount of the specific polysaccharide than is usually present in the typical *melitensis* cell. It must be remembered that intermediate strains, containing about the same proportion of *abortus* and *melitensis* polysaccharides, may exist, hence for immunization it is important to use the proper strain, typical in all respects. It is obvious that if a strain like 662 is used, a precipitating serum obtained will be useless in the differentiation of organisms of the Brucella group.

Dried and finely powdered organisms, kept in a desiccator for 2 years, were found suitable for the preparation of extracts and for the immunization of animals. Extracts prepared from six-months-old cultures on tryptose agar also produced good precipitates with their corresponding antisera.

The method herein described is simple and rapid and the results are clear-cut. It is useful in the study of the classification and of the antigenic structure of the Brucella group of organisms.

[1] Fuller, A. T., *Brit. J. Exp. Path.*, 1938, **19**, 1930.

* *B. abortus* strain 456, obtained from the National Institute of Health in Washington, and No. 1265 isolated by Huddleson from an aborted bovine fetus in 1940. *B. suis* strains 1670 and 1529, isolated by Huddleson from human blood in 1939 and from the supramammary gland of a hog in 1931, respectively, and a *suis* strain obtained from the National Institute of Health. *B. melitensis* strains 2456, 2466, and 662, isolated by Huddleson from human blood in 1939, 1940, and 1930, respectively, and strain 428 obtained from the National Institute of Health of Washington.