XVI. FATE OF LEUCOCYTES IN THE PLACENTAL CIRCULATION. I. WHAT PREVENTS LEUCOCYTES OF THE MATERNAL CIRCULATION FOM MIGRATING INTO THE FETAL CORCULATION? II. THE ROLE OF THE SYNCYTIAL LAYER OF THE CHORIONIC VILLI. III. IMPORTANCE OF THIS INVESTIGATON RELATIVE TO INHERITANCE OF DISEASE OR IMMUNITY FROM DISEASE

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A. The question arises whether or not leucocytes wander from the maternal blood sinuses in the placenta thrugh the chorionic villi into the fetal circulation. Experiments were carried on with a series of white rats on the twelfth day of gestation. A colloidal carbon solution was injected into the tail vein of the rat. In half an hour the animal was killed, the abdomen opened, the uterus removed and transferred to Bouin's fluid or Zenker's fluid in toto. Paraffin section .5 micra in thickness, stained with the routine hematoxylon eosin stain, showed numerous polymorphs, containing carbon granules, in the maternal sinuses but none have been found on the fetal side of the circulation of in process of transmigration.

B. The syncytial layer seems to form a definite barrier as there were several instances encountered in which a number of carbon-granule bearing leucocytes were in immediate contact with this layer apparently unable to pass beyound.

Additional experiments are now in progress, partly for the purpose of confirming the above results and also to show under what circumstances, if any, leucocytes may wander from the maternal into the fetal circulation.