Twenty second meeting.

Rockefeller Institute for Medical Research. April 17, 1907. President Flexner in the chair.

64 (207)

Wounds of the pregnant uterus.

By **LEO LOEB.**

[*From the Laboratory of Experimental Pathology, University of Pennsylvania.*]

In continuation of former experiments to determine the influence of functional conditions upon processes of cell growth and cell necrosis in the ovaries, investigations of a similar character were undertaken on the pregnant uterus of the guinea pig. As is well known, the pregnant uterus responds to the stimulation of the fertilized ovum by the production of decidual tissue. It was thought possible that in the beginning of pregnancy the uterus might respond also to other stimuli such as wounds, in a way different from the ordinary uterus. Experiments were carried out in twenty six guinea pigs at different stages of pregnancy. Wounds were made in various directions in the uterus, or part of the wall of the uterus was inverted so that the mucous membrane was turned outside. It was found that at a certain stage of pregnancy, namely from the fourth to the sixth day, nodules of decidual tissue were formed at places where the continuity of the uterus had been interrupted or where the mucous membrane had been inverted. Serial sections of these nodules show that they consist of typical decidual tissue which does not include a developing ovum. The number of these nodules was either larger than the number of corpora lutea present in the ovaries which had been cut into serial sections or in other cases corpora lutea were present on only one side of the animal while the decidual nodules were present in both horns of the uterus. Under those conditions it is not likely that the formation of the decidual nodules was caused by the direct stimulation of an ovum, but it is more likely that, at the period of pregnancy, when the development of

decidual tissue begins to take place normally, other stimuli are also able to call forth the production of decidual nodules. At the present stage of the investigation I do not, however, wish to deny positively that a brief contact of the ovum with a wound of the uterus or with the inverted mucous membrane of the uterus is necessary for the production of decidual nodules. Between the third and fourth week after impregnation such nodules become necrotic. They resemble small tumors which originate under chemical stimulation, and are of a transitory character because the stimulus is transitory. They might be called benign deciduomata and be classed among that variety of new growths which I designated as transitory tumors and of which the corpus luteum might serve as a prototype. Among the animals experimented upon in the first three days of pregnancy, only once a deciduoma was found.

These experiments may also be of interest in so far as they seem to show that under ordinary conditions it is not possible to produce an abdominal pregnancy in the guinea pig by various injuries of the uterus; although it may be assumed that under the conditions of the methods of experimentation adopted by me, the ovum had, in many cases, easy access to the abdominal cavity. In no instance did the peritoneal cavity show any change in the course of these experiments. We may, therefore, assume that the entrance of the ovum into the abdominal cavity is usually not sufficient to produce an abdominal pregnancy.

65 (208)

The effect of light on the staining of cells.

By **LEO LOEB.**

[*From the Laboratory of Experimental Pathology, University of Pennsylvania.*]

Former studies of the structural changes in blood cells, especially of the behavior of cell granules under the influence of different external conditions, made it desirable to investigate the behavior of cells in different staining solutions, especially in solutions of vital stains. In the course of various investigations, it was found that solutions not only of eosin but also of other stains, as neutral red, affect the cells very differently in light and in dark. That eosin and other fluorescent substances are much more poison-