

less. One or two days before the onset of œstrus some of the follicles rapidly enlarge to the full diameter of 7 to 10 mm., and the enclosed ova pass through the preliminary stages of maturation. Ovulation occurs on the second of the three days of œstrus; the ova are three days en route through the Fallopian tube and pass into the uterus on the fourth day. If not fertilized they degenerate in utero about the seventh or eighth day after ovulation. The corpora lutea, as already described, reach full histological complexity about the seventh day, by which time

When the pig's ova are fertilized, the embryos gain attachment to the uterine wall between the tenth and fifteenth day after ovulation. It is a most important fact, therefore, that the corpus luteum persists until the fourteenth or fifteenth day, for this finding harmonizes with the current hypothesis that the corpus luteum exercises an effect upon the uterus, preparing it for implantation. The duration of the corpus luteum is quite variable in different species, but in none has it been found less than the time required for attachment of the embryos. Another sup-

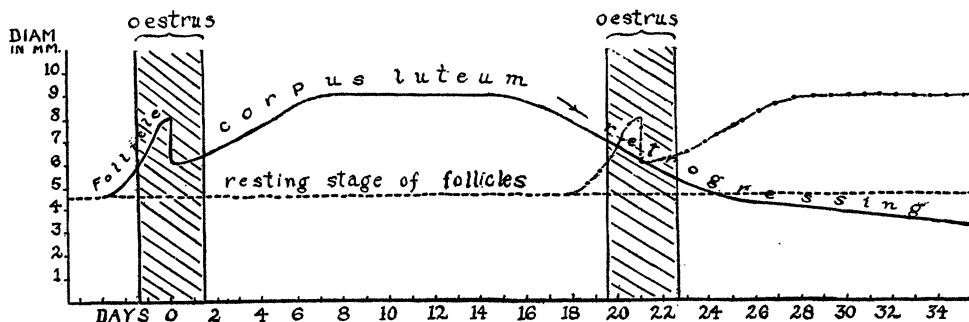


FIG. 1.

Diagram representing the ovarian cycle of the nonpregnant sow.

they have attained a diameter of 9 mm. The new specimens show that they remain in a state of full development, without obvious further change, until the fourteenth or fifteenth day after discharge of the follicles, and then begin a retrogression which is initiated by a sudden disintegration of the granulosa lutein cells, which have formed the chief bulk of the organ. In a few days more the corpora consist only of connective tissue containing in its meshes a few lipoid-laden cells; and by the time of the next ovulation they have diminished in size to a diameter of 6 mm. During the second interœstral interval after their formation they shrink still further, until at the age of 40 days they are but 2 or 2.5 mm. in diameter. After this they are not readily distinguishable from other ovarian tissues in the gross, and microscopically are so far degenerated that one does not feel able to separate them from atretic follicles.

position with regard to the function of the corpus luteum, that it serves, while present, to restrain the growth of follicles, is also borne out by our observations, as far as they go, for it will be noticed that a new group of follicles passes beyond the resting dimension only after the degeneration of the last corpora is under way.

A full account of these studies will form part of a monograph on cyclic changes in the ovaries and uterus of the pig, now in preparation.

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THE NATIONAL ACADEMY OF SCIENCES

THE annual meeting of the National Academy of Sciences was held at the Natural History Building, U. S. National Museum, in Washington on April 25, 26 and 27, 1921.

The preliminary program of scientific sessions open to the public follows.

MONDAY, APRIL 25

Afternoon Session

Ultimate rational units (illustrated): GILBERT N. LEWIS.

The quantum law and the Doppler effect: WILLIAM DUANE.

Preliminary measurements of the effect of high pressures on the thermal conductivities of liquids (illustrated): P. W. BRIDGMAN.

The stratification of suspended particles (illustrated): C. E. MENDENHALL and MAX MASON.

Transmission characteristics of the submarine cable (illustrated): J. R. CARSON and J. J. GILBERT (introduced by J. J. Carty and F. B. Jewett).

Radiation from transmission lines: J. R. CARSON (introduced by J. J. Carty and F. B. Jewett).

Application of the principle of similitude to the hydraulic problem of the surge chamber (illustrated): W. F. DURAND.

Theories of osmotic pressure; Comments on the Borelius space-lattice theory of the metallic state: E. H. HALL.

Metamorphism in meteorites (illustrated): G. P. MERRILL (introduced by Whitman Cross).

The Island of Tagula (New Guinea), its satellites and coral reefs; The shallow seas of Australasia: W. M. DAVIS.

On the radiation of energy from coils in wireless telegraphy; On the vibrations of gun-barrels; On the problem of steering an automobile around a corner: A. G. WEBSTER.

Evening Session

Address by His Serene Highness Albert I., Prince of Monaco, Agassiz medalist, Auditorium U. S. National Museum. Reception to the Prince, Galleries, U. S. National Museum.

TUESDAY, APRIL 26

Morning Session

A model of the solar gravitational field: EDWARD KASNER.

On the problem of three or more bodies: GEORGE D. BIRKHOFF.

Quaternions and their generalizations: L. E. DICKSON.

Investigations in algebra and number theory: L. E. DICKSON.

On the approximate solutions in integers of a set of linear equations: H. F. BLICHFELDT.

A provisional theory of new stars: H. N. RUSSELL.

The compilation of star catalogues by means of a

doublet camera (illustrated): F. SCHLESINGER.

The National Research Council: VERNON KELLOGG.

The order of the stars (illustrated): W. S. ADAMS.

Cooking with solar heat on Mt. Wilson (illustrated): C. G. ABBOT.

The evolution of matter: F. W. CLARKE.

The differences between variable series: FRANZ BOAS.

Life of James Hall, of Albany, geologist and paleontologist, 1811-1890 (by title): J. M. CLARKE.

Afternoon Session

The classification of animals: AUSTIN H. CLARK.

*Attempts to acclimatize *Aphelinus mali* in France, South Africa, New Zealand and Uruguay* (illustrated): L. O. HOWARD.

Note on structure of the trilobite (illustrated): C. D. WALCOTT.

Origin and history of the Ursidae or bears in the Western Hemisphere, with particular reference to the bearing of this question on problems of geographical history (illustrated): J. C. MERRIAM.

The evolution, phylogeny and classification of the Proboscidea (illustrated): H. F. OSBORN.

Experiments in epidemiology: SIMON FLEXNER.

Effect of administering various simple metabolites upon the heat production of the dog (illustrated): GRAHAM LUSK.

The physical and chemical behavior of proteins (illustrated): JACQUES LOEB.

*The skin temperature of *Pachyderms** (illustrated): FRANCIS G. BENEDICT, EDWARD L. FOX and MARION L. BAKER.

The temperature factor in phytopathology (illustrated): L. R. JONES.

Results of feeding experiments with mixtures of food stuffs in unusual proportions (illustrated): T. B. OSBORNE and L. B. MENDEL.

Population (illustrated): C. B. DAVENPORT.

Measuring higher grades of intelligence: E. L. THORNDIKE.

A study of specific forces of mortality: RAYMOND PEARL and CHARMIAN HOWELL.

C. G. ABBOT,
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