

14th day. 3. The presence of the luteinizing reaction has hitherto been associated with pregnancy and chorionepithelioma.

8043 P

Antibody Production by the Rabbit Against an Ectoparasite.

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The itch mite, *Psoroptes communis* var. *cuniculi*, is a common ectoparasite upon the rabbit, large numbers being found upon the skin surface deep within the fold of the outer ear. The skin where the mites occur becomes necrotic and is sloughed off. If a small piece of the slough be examined with a low-power microscope, many mites can be seen crawling over it.

It has occurred to the writer that repeated skin puncture by such numbers of ectoparasites, each injecting in the form of its saliva a small quantity of protein peculiar to the parasite, should lead to the production of specific antibody against the attacking species. We have endeavored to determine if this be true by testing for the presence of precipitin in 10 adult rabbits, 5 known to be infested with the parasites, these being observed in each case under the microscope, and 5 others apparently free of such infestation, neither the parasites nor their characteristic effects being detected upon careful search.

The antigen—an extract of the mite—was prepared in the following manner. Pieces of the sloughed skin were removed with forceps from the infested ears and placed in a Petri dish. As we observed them with a low-power dissecting binocular, the mites could be seen to leave the skin and crawl about over the glass plate. They were picked up, best in groups of several, on the point of a dissecting needle and transferred to a small mortar. After about 300 mites were thus transferred, they were mashed with a pestle and triturated for 10 minutes with 1½ cc. of Coca's solution. The mixture was then centrifugated at high speed and the *very slightly* opalescent supernatant fluid decanted. This fluid was used as the antigen.

In the precipitin tests, which were carried out in small-bore tubes, 0.1 cc. of the antigen was layered over an equal volume of the clear

serum of each rabbit studied. The tubes were incubated for one hour at 37°C. and read for "rings" at the interface of the fluids. The fluids were then mixed, incubated a second hour at 37°C., placed in the cold for 24 hours, and examined for precipitate.

It was found in these tests that only those animals which harbored the mites possessed demonstrable serum precipitin against an extract of the mite protoplasm. The serum of the uninfested rabbits gave no reaction with the mite extract. It is indicated, therefore, that infestation with this ectoparasite gives rise to a specific antibody in the blood of the infested rabbit.

In the light of this finding, it seems possible that the sloughing of the affected skin is essentially an Arthus reaction, resulting when the specific antigen of the mite saliva is introduced into the sensitized animal as the parasites bite in many places over a limited area. It is generally believed that the slough is a dried deposit of serum exuded from the area injured by the mites.

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Electrical Stimulation of a Nerve Muscle Preparation Without Contact.

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A method has been devised by which it is possible to stimulate a nerve-muscle preparation from a frog without contact between the tissue and the electrode.

The essential principle of the method is the placing of the nerve in the vicinity of, but insulated from, an induction coil. The coil is supplied with energy by an oscillator and suitable amplifier. The preparation is arranged in connection with a kymograph in the usual manner.

Two different exciting coils have been employed thus far. Each is wound with insulated copper wire upon a bakelite bobbin and in each the windings are infiltrated with bee's wax. Each is entirely enclosed in a bakelite case. The body of each contains a lumen, running horizontally through its center from end to end, large enough to admit the sciatic nerve of a frog. In the smaller of the