globular dentin. This observation suggests the probability of a relation of disturbed adrenal function to the calcium disturbances associated with the development of rickets.

The results obtained in our experiments afford interesting information on calcification processes of enamel and dentin. In a small number of animals the enamel-forming cells (ganoblasts) showed intracellular globules which stained deeply with haematoxylin.

Occurrence of globular predentin in adrenalectomized rats, as in animals that were subjected to the action of parathyroid extract, confirms the observation that adrenal insufficiency is associated with disturbances in calcium metabolism.[3] It also lends support to the suggestion of a functional interrelationship between the adrenal and parathyroid glands. Indeed, it seems possible that the disturbances in calcium metabolism, which lead to the changes in the dentin, in adrenalectomized animals, may be the result of functional disturbances in the parathyroid glands. Although evidence favors the probability that the adrenal cortex is primarily involved, the possible relation of the medulla has not been excluded in these experiments.

The foregoing summarizes our observations on a series of 45 bilaterally adrenalectomized rats. Details of the experiments will be included in another paper, to be published elsewhere in the near future.

I. SCHOUR
J. M. ROGOFF

LIGHT AND REPRODUCTION IN GAME BIRDS[1]

GROUSE, quail and pheasants were irradiated in open air cages for six hours after sunset from December 14, 1935, to January 16, 1936, at the Experimental Game Farm of the New York State Conservation Department. A 50-watt Mazda lamp suspended over each experimental cage gave an illumination of 10 foot-candles in the center of the floor.

Due to the cost of the birds, few could be sacrificed, but the following results showed undoubted effects.

Pheasants: Hatched on August 8, 1935. In five control females weights of ovary varied from 72 to 160 milligrams. In the single experimental animal, ovary weighed 176 milligrams, an increase of 31 per cent. over control average. In five male controls, weights of testes were from 70 to 164 milligrams. In one experimental bird, the weight of the testes was 702 milligrams, an increase of 463 per cent.

Quail: Hatched in spring, 1935. In three female controls, ovary weighed 48 to 57 milligrams, with an average of 52 milligrams. One experimental female yielded an ovary weighing 210 milligrams, an increase of 307 per cent. In three male controls, weights of testes were from 13 to 23 milligrams with an average of 18 milligrams. One experimental bird gave testes weighing 313 milligrams, an increase of 1,740 per cent.

Grouse: Hatched in spring, 1935. Single female control gave an ovary weighing 157 milligrams, and an experimental female gave an ovary of 263 milligrams, an increase of 68 per cent. A single male control gave testes weighing 27 milligrams, while an experimental bird yielded testes weighing 600 milligrams, an increase of 2,080 per cent.

Although the number of experimental birds is small, the great differences between the size of the gonads in control and irradiated pheasants, quail and grouse show that light has a profound stimulating effect upon the reproductive organs. Sections of the testes of the irradiated males revealed fully formed sperm associated with enlarged tubules, but not a single sperm or spermatid was seen in the control testes. The females in all cases did not respond to the same degree as the males. However, hormonic stimulation of the ovaries of the irradiated females was observed by the enormous increase in the size of the oviducts.

LEONARD B. CLARK
SAMUEL L. LEONARD
GARDINER BUMP

DEPARTMENT OF BIOLOGY,
UNION COLLEGE,
AND
EXPERIMENTAL GAME FARM,
NEW YORK STATE
CONSERVATION DEPARTMENT,
DELMAR, N. Y.

ANOPHELES EXPERIMENTALLY INFECTED WITH MALARIA PLASMODIA

DURING a recent study of anopheline mosquitoes caught in dwellings on the military reservation at Fort Sherman, Canal Zone, the author found a specimen of *A. punctimacula* which was naturally infected with malaria plasmodia, the stomach showing five oocysts, all of which contained sporozoites. Since this observation, which was reported at the 1935 meeting of the American Society of Tropical Medicine,[1] experiments have been conducted with a view to determining the relative importance of *A. punctimacula* as a malaria vector.

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2 J. M. Rogoff, SCIENCE, 80: 319, 1934.

3 J. M. Rogoff and G. N. Stewart, *Am. Jour. Physiol.*, 86: 25, 1928.

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1 J. S. Simmons, "*Anopheles* (*Anopheles*) *punctimacula* Naturally Infected with Malaria Plasmodia." Read by W. H. W. Komp at the meeting of American Society of Tropical Medicine, St. Louis, Mo., November 20–22, 1935. To be published in the March issue of the *American Journal of Tropical Medicine.*