

### Effect of Cortico-Adrenal Extract on Leucocytes in Blood of Normal Adult Rabbits.\*

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Rogoff and Stewart,<sup>1</sup> Baumann and Kurland,<sup>2</sup> Britton and Silvette,<sup>3</sup> Swingle, Piffner, Vars, Botts, and Parkins,<sup>4</sup> and Harrop, Weinstein, Soffer, and Trescher,<sup>5</sup> have shown that adrenalectomy in animals produces a marked increase in blood concentration. So great is the dehydration that a false erythemia is seen, the red blood cell count in the blood showing an increase of from 50 to 100%.<sup>4</sup> Extensive changes are also encountered in the leucocytes in the blood as shown by Zwemer and Lyons.<sup>7</sup> Adrenalectomy in their animals resulted in a decrease in the total number of leucocytes in the blood of which the polymorphonuclear neutrophiles were markedly diminished, while the lymphocytes were slightly increased in number. Corey and Britton,<sup>6</sup> studying this problem more intensively, reported a concomitant decrease of about 50% in the white blood cell count in cats following adrenalectomy, with a blood picture resembling agranulocytic angina. The administration of cortico-adrenal extract to their adrenalectomized animals with a granulocytopenic blood picture, brought about a complete restoration of normal cell values in the blood. Wenner and Cone,<sup>8</sup> using extracts of the adrenal cortex in human pyogenic infections, were unable to observe any effect on the white blood cell counts or Schilling indices; the blood picture in their patients improved with the general improvement in the condition of the patients.

The purpose of this investigation was to ascertain the effect of the administration of cortico-adrenal extract, prepared according

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<sup>1</sup> Rogoff, J. M., and Stewart, G. N., *Am. J. Phys.*, 1926, **78**, 711.

<sup>2</sup> Baumann, E. J., and Kurland, S., *J. Biol. Chem.*, 1927, **71**, 281.

<sup>3</sup> Britton, S. W., and Silvette, H., *Am. J. Phys.*, 1931, **96**, 15.

<sup>4</sup> Swingle, W. W., Piffner, J. J., Vars, H. M., Botts, P. A., and Parkins, W. M., *Science*, 1933, **77**, 58.

<sup>5</sup> Harrop, G. A., Weinstein, A., Soffer, L. J., and Trescher, J. H., *J. Exp. Med.*, 1933, **58**, 1.

<sup>6</sup> Corey, E. L., and Britton, S. W., *Am. J. Phys.*, 1932, **102**, 699.

<sup>7</sup> Zwemer, R. L., and Lyons, C., *Am. J. Phys.*, 1928, **86**, 545.

<sup>8</sup> Wenner, W. F., and Cone, A. J., *Arch. Otolaryng.*, 1934, **20**, 178.

to the method of Swingle and Pfiffner, upon the white blood cell count and the differential leucocyte count in normal rabbits. The normal white blood cell counts and differential counts in the rabbits were determined by studying the blood during 3 days prior to the injections of the extracts. The blood was taken from the ear vein at the same hour each morning to rule out, as much as possible, the diurnal variation in the leucocytes in the blood stream.

Twenty-four adult rabbits were studied in this experiment. Of these, 10 received 1 cc. of cortico-adrenal extract daily; 6 received 1 cc. of normal isotonic saline daily; 2 received 1 cc. of cortico-adrenal extract inactivated by heat; and 6 were normal untreated controls. The rabbits were injected intramuscularly for a period of 30 days. During the first 4 days after the beginning of the injections, complete white blood cell counts and differential leucocyte counts were done. From the fourth day to the completion of the experiment, the blood was studied at intervals of 4 days.

The experimental results show no change in the leucocytes in the blood after prolonged cortico-adrenal extract administration to normal adult rabbits. The white blood cell counts and the differential leucocyte counts were well within normal limits during the time of this experiment.

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### Reaction of Ovaries of Mature Female Rats to Injections of Oestrin.\*

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Twenty-five mature female rats received daily injections of 200 rat units of a concentrated oestrus-inducing extract† for 8 to 15 days (a majority were for 12 days). Vaginal smears usually revealed a complete cornification of the vaginae for the first 3 to 5 days of the experiment which did not persist throughout the injection period except in 2 rats. At autopsy it was found that the

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† Progynon-B, described by the manufacturers, Schering Corporation, as a benzoic acid ester of dihydro-follicular hormone. A portion of this material was furnished gratuitously by Schering Corporation, Bloomfield, N. J.