Summary. The circulation time was measured with the cyanide method during hyperpyrexia induced by the radiotherm. Seventeen observations were made on 6 patients. In every case the circulation time diminished as the body temperature rose, being roughly proportional to the body temperature.

Conclusion. During hyperpyrexia, induced by radiothermy, there is an acceleration of the velocity of blood flow.

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Differences in Response of Female Macacus Monkey to Extracts of Anterior Pituitary and of Human Pregnancy Urine.*†

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Extracts either of the anterior pituitary or derivatives of human pregnancy urine cause follicular growth followed by rapid luteinization in the rodent's ovary. The present report emphasizes the difference in biological response between these 2 substances after a study of a considerable series of Macacus monkeys.

Ovaries of 31 experimental monkeys, ranging in body weight from 1800 to 5100 gm., have been studied. These animals were treated with anterior pituitary implants, with water soluble fraction of the pyridine extract of sheep anterior pituitary (Fevold, Hisaw and Leonard), with an extract of pregnancy urine (Zondek's method), and with Antuitrin S, also a pregnancy urine derivative. Animals were treated for 4 to 30 days, injections being made in most cases twice daily, subcutaneously or intravenously.

Hisaw and his associates[1] reported the effects of the pyridine extracts of the anterior lobe in causing follicular growth and changes in the sexual skin of monkeys. The action of pyridine extract on the ovary of the monkey in the present series (ovaries of 13 animals studied microscopically) may cause either the small cystic condition, similar to the effects obtained by implants (Allen, Hartman) or a rather uniform growth of all follicles depending on

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† The dried sheep pituitaries and the Antuitrin S were supplied by Parke, Davis and Company, through the interest and courtesy of Dr. O. P. Kamm.

[1] Hisaw, Fevold and Leonard, PROC. SOC. EXP. BIOL. AND MED., 1931, **29**, 204.

method of administration, state of the ovary at the time of treatment, total dosage and length of treatment. We have found, as Hisaw, *et al.*, had reported, that a prompt response of the sex skin occurs after this extract (reddening, turgor and a progressive pachydermatous folding characteristic of the monkey entering a normal adolescence). There are no failures in this external change when a potent follicle-stimulating extract is used.

In contrast to these findings is the complete absence of this type of response after treatment with derivatives of pregnancy urine. These extracts have all been found to have adequate potency when tested on immature rats. Ether-washed urine concentrate (1:60) equivalent to 2.6 liters of pooled whole pregnancy urine given first subcutaneously, later intravenously, for 32 days in a 2900 gm. animal (My 109) caused no change in the sex skin, no reddening nor any oedema or pachydermatous folding characteristic of the change following oestrin, implants or anterior lobe extract. Another animal (My 111) 3150 gm., received 8000 R. U. Antuitrin S (Rx095149A 200 RU/cc.) intravenously over a period of 22 days with no external change indicative of an increased follicular activity. *There is no change of the sex skin of any monkey with the gonadokinetic principles derived from human pregnancy urine,* regardless of total dosage, length of treatment, method of injection, or age or condition of the animal. Allen has shown that this change in the sex skin in an immature monkey can be induced with as little as 80 rat units of oestrin. There is therefore little or no oestrin produced as a result of this type of treatment.

Ovaries of 10 animals have been studied microscopically following treatment with such preparations. Follicular growth is not morphologically apparent. The medium sized and large follicles appear unchanged, although secretory activity may be checked. The small follicles with a small antrum are greatly changed into a variety of pseudocorpora atretica, by hyaline degeneration in which cell bodies are no longer determinable, but in which dense fibrous elements, distinctly hyalinized, often enclose a cytolized ovum. These structures may be seen in control ovaries of immature or adult animals, but are not numerous. The ovaries of animals treated with gland extract are increased in volume and weight from 4 to 10 times, while those treated with pregnancy urine derivatives remain uniform with the controls.

While the aqueous fraction of pyridine extract of the anterior pituitary activates the follicle, producing in 6 days the characteristic changes of the sex skin, 3 different preparations of pregnancy

urine did not do so, even with large dosages and prolonged treatment. The only ovarian response is an increase in the number of corpora atretica of the small follicles only, and in the degree of hyalinization. The biological action of substances from these 2 sources is not the same when tested on the female Macacus monkey. These differences are more pronounced in the female than as seen in the male monkey (Engle), and add to the increasing mass of data that extracts of anterior pituitary and of human pregnancy urine are biologically different.

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Metabolic Differences Between Two Transmission Lines of Mouse Leukemia.*

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The experiments of Warburg[1] on the metabolic differences between tumors and normal tissues have stimulated similar investigations in leukemia. Although considerable data have accumulated relative to the metabolism of the cells in leukemia, many of the conclusions have been contradictory.

The following investigation has been undertaken as part of the program conducted in these laboratories in which the genetics, pathology and cytology of transmissible leukemia of mice have been reported by MacDowell, Richter and Potter.[2] The genetically controlled material developed in their studies is particularly suitable for metabolic experiments. The oxygen consumption and both aerobic and anaerobic glycolysis of normal lymph nodes and leuke-

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[1] Warburg, O., *Biochem. Z.*, 1924, **152**, 51.

[2] Richter, M. N., and MacDowell, E. C., *J. Exp. Med.*, 1930, **51**, 659. MacDowell, E. C., and Richter, M. N., *J. Cancer Research*, 1930, **14**, 434. Richter, M. N., and MacDowell, E. C., *J. Exp. Med.*, 1930, **15**, 823. MacDowell, E. C., and Richter, M. N., PROC. SOC. EXP. BIOL. AND MED., 1931, **28**, 1012. MacDowell, E. C., and Richter, M. N., *Biol. Zentral.*, 1932, **52**, 266. Potter, J. S., and Richter, M. N., *Proc. Nat. Ac. Sc.*, 1932, **18**, 298. Potter, J. S., and Richter, M. N., *Arch. Path.*, 1933, in press.