

Experiments with extracts of parathyroid glands.

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In the light of Collip's report at the meetings of the Federation of Societies for Experimental Biology at Washington, D. C., December 1924, it has been deemed advisable to report our experimental work on the extracts of the parathyroid gland.

The parathyroid glands of the ox were used for all preparations of the extracts. Several methods of preparation were tried with varying degrees of success. Our first preparations were found to contain certain toxic substances which produced sterile abscesses at the sites of subcutaneous injection, similar to those produced by impure insulin extracts. This toxic material was later removed, thereby increasing the potency of the extract. The methods of preparation and purification will be reported later.

Our results are in close agreement with those reported by Collip.¹ At present we have three dogs which have had the thyroid and parathyroid glands removed for periods of 3 to 6 weeks. These dogs showed severe tetany in less than 48 hours, following the removal of the thyro-parathyroid apparatus. The tetany was relieved in 2-4 hours after the injections of the extract, relief depending on the size of the dose and the severity of the attack.

Each of the animals received 1-2 pounds of hamburger steak and ground beef hearts, per day. As soon as an attack of tetany was relieved by an injection of the extract, the animal manifested a great desire for food. It was noted that, after the control of the tetany by the extract, the subsequent attacks were less frequent in spite of the fact that the animals were kept on a meat diet.

The chemical and physical changes produced in the blood of the normal and parathyroidectomized dogs by the injection of the extracts, as reported by Collip, have been confirmed. The most profound changes observed were the increases in viscosity, phosphates, calcium and non-protein nitrogen. The maximal effects were manifested in 4-10 hours.

¹ Collip, J. B., *Am. J. Physiol.*, 1925, lxxii, 182.

The symptoms of atonia, depression, diarrhea and dyspnea are readily induced by large doses of this extract.

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Effect of controlled conditions of illumination upon malignancy of transplantable neoplasm.

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Periodic variations in the malignancy of a transplantable neoplasm of the rabbit, which have been studied during the last four years, have been correlated with certain meteorological conditions and especially with the actual hours of sunshine. It has been found that periods of maximum and minimum sunlight corresponding with summer and winter were periods of relatively low malignancy; while the periods of greatest malignancy occurred at times of abrupt and rapid changes in the hours of sunshine corresponding roughly with spring and autumn.^{1, 2} The influence of these factors has been interpreted as operating upon or affecting animal economy, while susceptibility or resistance to disease is considered as a function of the animal organism. This conception is supported by analogous variations in experimental syphilis of the rabbit, and the observation that in normal rabbits rhythmic changes in the mass relationship of practically all organs of the body have been found which have a definite relationship to seasonal changes and prevailing meteorological conditions.³ While a variety of factors are probably involved in the production of these fluctuations, there appears to be a close relationship with sunlight and, in particular, first with the amount

¹ Brown, W. H., Pearce, L., and Van Allen, C. M., *PROC. SOC. EXP. BIOL. AND MED.*, 1924, xxi, 371.

² Brown, W. H., Pearce, L., and Van Allen, C. M., *Tr. A. Am. Phys.*, 1924, xxxix, 466.

³ Brown, W. H., Pearce, L., and Van Allen, C. M., *PROC. SOC. EXP. BIOL. AND MED.*, 1924, xxi, 373.