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Basal Metabolism after KI with Acid Extract of Anterior Pituitary Glands, Pituitary Tablets and with Thyroid.*

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Studies were made upon the effects of combinations of KI with acid extracts from anterior pituitary glands of cattle, with (Armour) anterior pituitary tablets and with thyroid substance. A large number of determinations were made upon 48 guinea pigs at biweekly intervals, using the Haldane open circuit respiratory colorimeter. Subcutaneous injections of amytal were given the animals in order to eliminate movement while the determinations were being made.

In the first set of experiments, 9 animals were given daily intraperitoneal injections of 1 cc. of fresh acid extract of cattle anterior pituitary gland. Nine others were given similar injections and in addition were given 0.05 gm. KI pills by mouth daily. The acid extract injections produced a marked rise in basal metabolism in all the 9 guinea pigs. The basal rate usually reached a maximum of approximately 60% above the normal average within the first 12 days, after which there was usually a gradual decline. The animals which were given the acid extract from fresh cattle glands in combination with KI failed to show any marked rise in the metabolic rate, the average being slightly above that of normal guinea pigs.

In the second set of experiments 9 guinea pigs were given Armour anterior pituitary 5 grain tablets daily over a period of 24 days. There was a fairly constant rise in metabolic rate in all 9 guinea pigs. This reaches a level ranging between 30 and 50% above the normal within 8 to 12 days. After this initial rise there is a fall ranging to 10 to 30% above the normal, after which there is again a gradual and steady rise so that at the end of the 24-day period, the average rate is approximately 70% above the normal. Nine guinea pigs which were given the same dosage of Armour anterior pituitary tablets as above and were given in addition 0.05 gm. KI pills by mouth daily. In this series the average metabolism curve is very similar to the one obtained when the Armour

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tablets were given alone. There were variations both above and below the average curve obtained in the series which had received the Armour tablets alone, but the majority of the determinations as well as the average curve are somewhat higher in the series in which the KI was administered in combination with the Armour anterior pituitary tablets.

Twelve guinea pigs were used in a series of experiments in which thyroid substance was administered alone in doses of 0.05 grain (Armour thyroid substance) and in combination with KI 0.05 gm. Both drugs were administered daily by mouth. The average curve of the metabolic rates in the set of 6 guinea pigs in which the thyroid substance was given alone is very similar to that obtained when Armour anterior pituitary tablets were administered. There is a fairly sudden rise within the first 8 to 12 days which ranges from 35% to 50% above the normal. This rise is followed by a fall which occurs in all the animals and ranges from 30% to 100%. After this there is a gradual and steady rise so that at the end of the 28 day period in which the animals were observed, the basal metabolic rate reaches a level approximately 50% above the normal rate. The animals which had received KI in combination with the thyroid substance showed in general a similar average curve of the metabolic rate to that obtained in those which had received the thyroid substance alone. There were variations in the determinations in the former series both above and below those in the latter series but the majority of the determinations as well as the average curve in the guinea pigs which had received thyroid substance with KI were slightly higher, especially in the latter periods, than in those which had received the thyroid substance alone.

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Does Castration in Guinea Fowls Produce Sexual Differentiation in Plumage and Changes in Head Furnishings?

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In guinea fowl there are no sex differences in shape, pigmentation and pattern of plumage, and but slight difference in development of head furnishings (comb and wattles are a little larger in cocks). In