

are also in the same direction; the difference is only a quantitative one and it is slight. Several years ago one of us (M.) reported before this society that pituitrin acts strikingly different from adrenalin upon the pupil of rabbits on the side in which the superior cervical ganglion has been previously removed. We have recently studied the subject from various angles and wish to demonstrate the obtained results on these three rabbits. In two of these animals the superior cervical ganglion has been removed on one side several days ago; the third rabbit is a normal one. The demonstration shows the following facts. (1) The intravenous injection of pituitrin in a normal animal produces a considerable constriction of the pupil, while adrenalin produces a moderate dilatation of short duration. (2) The intravenous injection of adrenalin causes a maximal dilatation of long duration of the pupil on the side in which the ganglion was removed, while injection of pituitrin causes rather a constriction. (3) When adrenalin and pituitrin are injected simultaneously into a rabbit in which a ganglion is removed the corresponding pupil dilates, but the dilatation is much less than that of the pupil of a ganglionectomized animal which received adrenalin alone.

Two facts stand out clearly: First, the effect of adrenalin upon the pupil is dilatation, while that of pituitrin is constriction; second, with regard to their action upon the pupil pituitrin *counteracts* to a degree the dilating effect of adrenalin.

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Prolonged constriction of the bloodvessels by subcutaneous injection of adrenalin into the ear of a rabbit. A demonstration.

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Intravenous injection of adrenin causes a rise of blood pressure which is due to a constriction of the bloodvessels. The rise lasts only several minutes. The shortness of the duration of this rise is explained by the escape of the injected adrenin from the circu-

lation into the surrounding tissues where it becomes destroyed by the alkalinity of the tissue fluid. Subcutaneous injection of adrenin produces only a slight effect upon the blood pressure. As is well known the bloodvessels of the rabbit's ears are easily visible. We have observed that a subcutaneous injection of adrenin into the lower part of one of the rabbit's ears causes a striking and long lasting constriction of the bloodvessels of the corresponding ear. It is this phenomenon which we wish to demonstrate. If the injection is given in the proximity of the central artery, the constriction of the bloodvessels of the entire ear sets in two or three minutes after the injection. If it is given at some distance from the central artery, the pallor develops slowly. In either case the vessels remain more or less strikingly constricted for many hours, sometimes even seven hours. Injection of a different solution, saline, for instance, does not exert such an effect. It is evident that in the case of the ear the adrenin is not destroyed rapidly by the tissues surrounding the bloodvessels.

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Colostrum blood-serum therapy.

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My observations on natural antibodies and healing substances in milk¹ led me to study the transmission of antitoxines in colostrum. Some buck kids were fed from birth until they were about one month old on the colostrum milk which their mothers gave after delivery. The blood-serum of these young goats was utilized for this study.

The ingestion of the colostrum of goats by man has disagreeable results. The greatest amount of the immunizing substances both natural and artificial which pass from the nursing mother to the blood-serum of the infant, however, is transmitted by the colo-

¹ "The Utilization of 'Reactor' Milk in Tubercle-Medicine," *Proc. Soc. Experimental Biology and Medicine*, 1915, xiii, pp. 35-37.