

the action of pituitrin on the arteries in general. In the case of the stomach the intravenous injection of pituitrin increases the flow of gastric juice. It has been thought by a number of experimenters that the effect in the mammary gland, the kidney, and the stomach is brought about an action on the cells of these organs. Toxic doses of pituitrin cause hurried respiration, quickened heart's action, and paralysis. These are followed by drowsiness, muscular weakness, and, perhaps, sudden heart failure.

The discovery of Howell that it is the posterior portion that yields the active substances has been confirmed by Schäfer and others. Further investigations have shown that it is the central portion of the posterior body in which there are no epithelial cells that the active principle is found. It thus appears that it is the nervous portion that contains the agents having these active properties. It would seem that the present state of our knowledge may thus be summarized that the active substances are secreted in the intermediate part and thereafter elaborated by the nerve portion of the posterior part of the gland.

In the case of normal animals practically no effects have been observed to result from the feeding of pituitary substance. When the whole of the pituitary body is removed death results; but the life of the animal can be prolonged by implanting the removed gland in the brain. The implanting of the gland in the brain of an animal from the pituitary has not been removed has only the effect of increasing for a short time the urinary flow, as would have followed from the injection of pituitrin. It would appear from many experiments that the view of Professor W. S. Halsted is borne out that the exhibition of the preparations of the gland has but little effect unless there be at the time a deficiency of pituitary action, due to the removal or disease of the gland. Another thing has been observed, namely, that when the gland has been removed and then inserted in the brain it remains there and functionates for a considerable time, but if the gland be implanted in the brain of an animal from which the gland has not been removed, the implanted gland is soon absorbed. Cushing has found that when there is defect of pituitary activity the implanted gland may remain permanently active.

Removal, more or less complete, is followed by a series of remarkable symptoms. In 1886 Victor Horsley performed the operation of removing the gland experimentally. Cushing has also done a good deal of work in the same line. It has been observed that young animals may survive extirpation for several weeks, whereas adult animals live only a few days. When recovery occurs it was found that a part of the anterior portion of the gland had been left. The acute symptoms of removal are tremors, twitchings, slow pulse, fall in body heat, apathy and coma.