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Effect of Hypophysectomy on the Incisor of the Rat.

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The gross and microscopic anatomy and the rate of eruption of the incisors were studied in 2 groups of rats:

A. Completely hypophysectomized. 16 animals. Age at operation: 34 to 64 days. Age at death: 145 to 459 days. B. Littermate controls. Some were unoperated but most were unsuccessfully subjected to operation. Normal oestrous cycles and normal rate of growth. 9 animals.

Significant alterations were observed only in group A. The incisors of these animals were about two-thirds the size of those of the other groups as judged by planimeter readings of radiographs. In a few of the rats that lived longest after the operation there were seen definite waves on the exposed labial contour of the upper incisors. The rate of eruption was retarded about 7 days after the operation. This retardation was progressive until there was cessation of eruption.

The radiographs of the teeth showed no changes in the size or structure of the molars but indicated very clearly striking disturbances in the form and structure of the rapidly-growing incisors, especially the upper incisors. There were 2 areas to be distinguished in the radiographs and the histologic sections: an anterior zone which comprised about eight or nine tenths of the tooth, and a basal zone which contained the base of the pulp and was the seat of activity of Hertwig's sheath. The tooth substance was practically solid in the anterior zone. The labial contour in the anterior zone was not an arc of a circle but was interrupted by several waves. In the basal zone the labial contour was distorted and presented multiple narrow and deep foldings.

The histologic studies served to confirm and amplify the gross findings. The enamel-epithelium was lacking in the anterior zone and markedly reduced in the basal zone. The enamel was chiefly altered in the basal zone and was often completely absent. The dentin was found almost completely to fill the anterior zone; in the basal zone it showed multiple foldings and was often poorly calcified. The pulp was almost entirely limited to the basal zone and was of reduced vascularity. The cementum was thickened. Regressive changes could also be observed in Hertwig's sheath, the periodontal membrane and the labial alveolar periosteum.

No changes were found in the molars which had usually attained their growth before operation.

Intermediate changes were found in an additional group of 5 rats which were apparently partially hypophysectomized as indicated by retarded growth and infrequent oestrous cycles.

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Studies on Experimental Jejunal Ulcer.

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In this paper we are concerned with the experimental production of jejunal ulcers by the "duodenal drainage" method described by Mann. This consists of resection of the pylorus, closure of the upper end of the duodenum, section of the jejunum just beyond the ligament of Treitz, anastomosis of the proximal loop of the jejunum to the ileum, and an end-to-end anastomosis of the distal loop to the end of the stomach. The only striking difference between the method used here and that of Mann was that a side-to-side gastroenterostomy stoma was made instead of the end-to-end anastomosis that he used. The duodenal secretions along with bile and pancreatic juice were drained into the ileum or jejunum at varying levels instead of close to the caecum as he described.

In a series of 12 dogs, 2 died in 13 and 25 days from complications without ulcer formation. One animal is alive one year after the operation apparently in good health. Nine animals died and a definite ulcer was found in the jejunum. Of these 7 died from peritonitis following perforation of the ulcer and 2 from incidental in-