lent amount of the extract is offered as evidence that satisfactory total recovery of active material is obtained by this method. Injection of 100 cc. urine equivalents of the extracts results in no toxic effects. The extracts are apparently free from follicular hormone since they are without effect on the uteri of immature castrate female rats of the same age.

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Basophilic Activation of Neurohypophysis and its Bearing on Certain Diseases Characterized by Hypertension.*

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Of the 3 cellular elements composing the pituitary body, the basophilic cells are normally fewest in number and their function least well understood. A peculiar disease, apparently due to a functionally active adenoma of these elements, has recently been described[1] and a further example of this disorder has been thoroughly examined after death.[2] In this case, the unenlarged pituitary body in addition to the basophilic adenoma of the pars anterior shows a heavy invasion of the posterior lobe by basophilic elements from the pars intermedia.

One of the characteristic symptoms of this disease is a high blood-pressure, and the posterior lobe of glands from such fatal cases of eclampsia and of essential hypertension as I have since had the opportunity to study, have shown the same type of massive basophilic infiltration.

The active hormone of the posterior lobe is unquestionably derived from the pars intermedia whose fully ripened elements are indistinguishable from the basophils of the pars anterior. The ripened cytoplasm of the inwandering cellular elements becomes transformed into the secretory product (the hyaline bodies of Herring) which can be traced in favorably fixed tissues up the pituitary stalk to the region of the tuberal nuclei. The open meshwork of the tuberal tissue and the invariably broken-up appearance of the

* Abstract of report before the National Academy of Science, April 25, 1933.

[1] *Bull. Johns Hopkins Hosp.*, 1932, **50**, 137.

[2] *Arch. Int. Med.*, 1933, **51**, 487.

cuticular ependyma, lining the infundibular tip of the third ventricle, strongly suggest the passage of a secretory product into the ventricular cavity.

It is well known that from the supraoptic and tuberal nuclei an abundance of unmyelinated fibers pass down the pituitary stalk to arborize richly in pars nervosa and pars intermedia. Karplus and Peczenik[3] have recently shown that stimulation of the tuber causes a posterior-pituitary substance to appear in the cerebrospinal fluid.

Under normal circumstances, histological evidences of posterior lobe activity are inconspicuous, and the massive basophilic invasion described above is consequently interpreted as nothing more than an exaggeration of the normal secretory process. It provides a reasonable explanation of certain of the striking symptoms which accompany not only basophilic adenomas but also the symptomatically related states of eclampsia and essential hypertension.

Hofbauer[4] was apparently the first to suggest that the toxemias of pregnancy might be due to posterior-pituitary activation. This hypothesis was strongly supported when Anselmino and his coworkers[5] demonstrated an excess of a posterior-pituitary-like substance (both antidiuretic and haemodynamic) in the blood of patients with hypertensive forms of eclampsia.

Should the present observations regarding posterior lobe basophilia be confirmed, not only eclampsia but other hypertensive disorders, for which there has heretofore been no wholly satisfactory pathological explanation, may prove to be states which are closely related.

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[3] *Pflüger's Arch.*, 1933, **232**, 402.

[4] *Zentralbl. f. Gynäk.*, 1918, **42**, 745.

[5] *Edinburgh M. J.*, 1932, **39**, 376.