The experiments to determine the antidiuretic activity yielded similarly inconclusive results.

The experiments to measure the melanophore hormone gave evidence of marked activity from the posterior lobe but not from saccus vasculosus.

The impression one gains from the results obtained is that there are present very small quantities of so-called posterior lobe principles, but with the small amounts of material available (glands from 35-40 dogfish) one cannot get enough of the active principles extracted to yield definite results. In spite of the difficulty of collecting larger amounts of material, it would seem necessary to have larger quantities in order to arrive at a more definite conclusion regarding the distribution of the so-called posterior principles.

Extracts from the sculpin hypophysis (glands from 25-30 sculpins) on the other hand, showed definitely the presence of the pressor and antidiuretic principle of the posterior lobe. They had very little, if any, oxytocic activity. Comparison doses ten times greater by weight than doses of standard beef pituitary gave no results.

FURTHER STUDIES ON THE HYPOPHYSIS CEREBRI OF CERTAIN SELACHIANS BY MEANS OF TISSUE CULTURES

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This study is a continuation of the one begun in 1934 (Lewis and MacNeal) on the growth in vitro of the hypophysis cerebri of the dogfish and the skate. In these later experiments a more exact separation of the different lobes of the gland was attained in preparing the tissue for explanation, and a more satisfactory culture medium arrived at by the addition of sterile sodium chloride to chicken plasma in amounts necessary to render the salt concentration of the plasma equivalent to 1.8 per cent sodium chloride.

In these cultures it was found that growth of the epithelium from the pars distalis and the pars medialis took place, within 1 to 2 days. On the other hand, the epithelial growth from the pars intermedia was much slower, usually beginning 4 to 7 days after explanation. A few cells with long branched processes made their appearance from the pars neuralis in the course of a week. The growth of the saccus vasculosus was quite irregular; in many instances the cultures of this tissue failed to exhibit any growth even in autoplasma. The growths continued for many days, usually attaining a maximum within 10 to 14 days. The cells of the different tissues retained their specific granules in the cultures. Extracts prepared from growths of the pars distalis and the pars intermedia brought about a darkening of the sun-bleached frogs into which they were injected, indicating that the melanophore-expanding substance remained active in the cultures.