

THE EFFECTS OF HYPOPHYSECTOMY ON PIGMENTATION IN Squalus acanthias

Robert B. Hiatt and Anne Moore, College of Physicians and Surgeons, Columbia University, New York, N. Y.

Thirty-eight dogfish (Squalus acanthias), both male and female, were hypophysectomized according to the method described above. Striking color changes from black to grey-white began within two hours of hypophysectomy and were complete approximately twelve hours after the operation (Figure 1). Several hypophyseal products and one hypothalamic extract were given to the hypophysectomized fish and the efficiency and duration of recoloration from white to

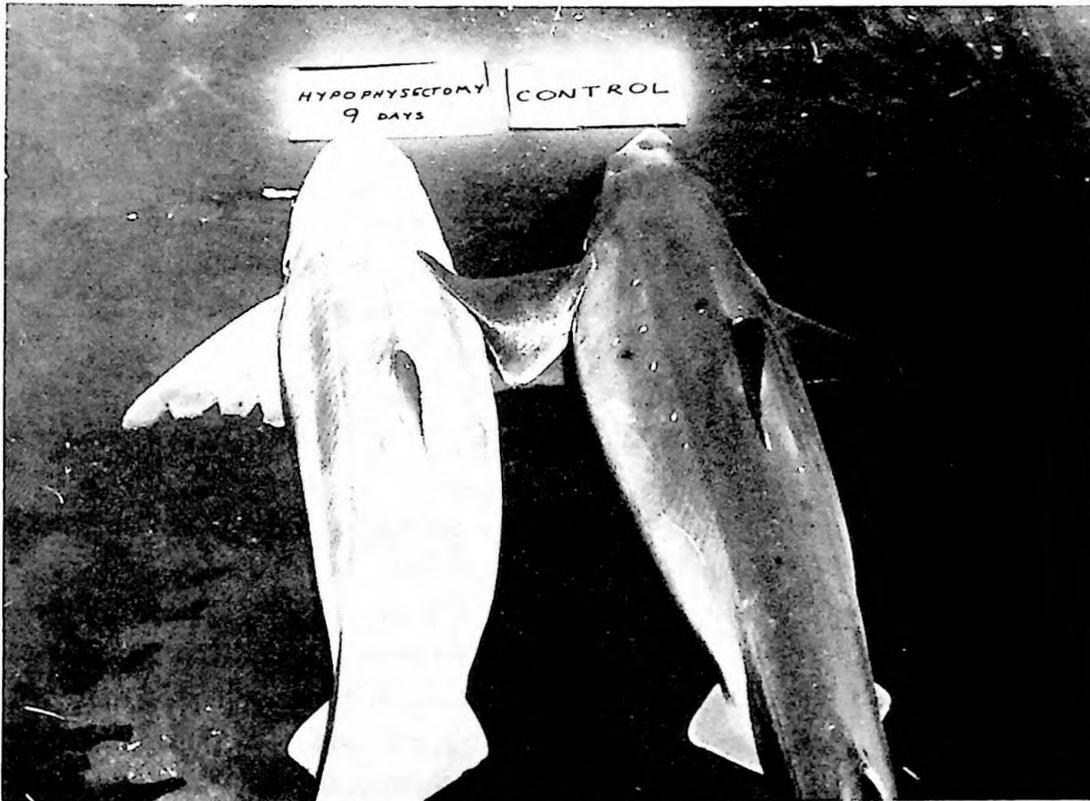


Figure 1

black were observed. The following preparations were given intravenously: porcine ACTH (25 units), crude bovine posterior pituitary acetone extract (3 mg protein), Pitressin (5 units), Squalus pituitary acetone extract (from one gram wet weight pituitary), Squalus hypothalamus acetone extract (from 820 mg wet weight hypothalamus), synthetic oxytocin (5 units), and lysine-8-vasopressin (5 units). All the hypophysectomized dogfish injected turned from white to black except for those given synthetic oxytocin, synthetic lysine-8-vasopressin and hypothalamic acetone extract. Recoloration began within 30 minutes of injection and lasted about 18 hours except for the fish given crude bovine posterior pituitary powder and the fish given ACTH which did not lose their color for over 48 hours. Whether this prolonged effect is due to dosage or potency is not now known. The possibility of using the hypophysectomized dogfish as a sensitive in vivo preparation for bioassay of melanophore stimulating factor is suggested.