

over the gills from time to time during the 5-10 minutes required for the operation.

Dogfish pituitaries were separated into their four component parts: rostral, central, neurointermedial and ventral lobes, and frozen for bioassay. These will be bioassayed with the hypophysectomized red eft (red-colored land stage of the newt, *Diemictylus viridescens*) and weaver finch (Witschi) techniques for prolactin and luteinizing hormones respectively. A few preliminary tests with the hypophysectomized red eft encouraged the expectation that prolactin is present in the rostral lobe, but no trace of it has so far been found in the other lobes.

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### **Ecology and Behavior of the Hermit Crab, *Pagurus acadianus***

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A field survey was conducted on *Pagurus acadianus* in an area roughly 300 meters square along the west shore of the laboratory cove at intervals from July 10 to August 25. During this period 191 animals were captured, marked and released. The mean number of crabs occupying the area on any one day was estimated at 14 individuals. During the period of the study only 10 recaptures of marked animals were recorded, and this data plus a study of the dispersal rate of the crabs indicates that the population was a highly mobile one lacking territorial patterns of behavior. Over 60% of the population inhabited the shells of *Buccinum undatum* while the remainder, consisting mostly of small individuals, were found in the shells of *Thais lapillus*.

Behavioral studies indicate that *P. acadianus* has a strong preference for its home shell. Crabs removed from their shells and given a choice situation involving the original shell and other shells varying according to size, color and species were able to select their home shells for re-entrance in 91% of the trials within the limits set by the particular testing procedure. The identification of the home shell is not visual. Shell selection in nature probably depends on the size of the crab and a shell weight/shell volume index. Automatic operations recording of crab activity in the laboratory failed to show any definite pattern involving circadian rhythms. All data obtained from the above studies are currently being subjected to statistical analysis.

### **Studies on the Endocrinology of the Skate Pituitary**

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The present studies were directed towards extending the limited information available relative to the functional characteristics of the