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14 May 1959

Albinism in the California Hagfish Eptatretus stoutii

Abstract. The discovery of an albino specimen of the hagfish, *Eptatretus stoutii* (Lockington), is reported, together with general notes regarding collection of this species for research purposes. The extreme abundance of hagfish in the area described refutes the generally accepted notion that they are of infrequent occurrence in southern California waters.

True albinism occurs but rarely among fishes, and it is believed that this is the first record of such a natural freak to be reported among the most primitive of craniate chordates, the hagfish (Fig. 1). There is a report of an albino lamprey (*Petromyzon marinus*), the other division of the class Cyclostomata, which was collected some years ago at the mouth of the Salmon River on Lake Champlain in New York (*1*).

During a routine collection for specimens of *Eptatretus stoutii* (=*Polistotrema stoutii*) on 5 May 1959, using 5-gallon-can traps, I obtained an albino individual in a total collection of some 500 fish. Over the past 2 years I have taken about 5900 hagfish of this species from the same general vicinity (latitude, 32° 31'N; longitude, 117° 18'W). This area is the floor of a submarine canyon, a tributary of the San Diego Trough, where the bottom is green mud and the depth is 210 fathoms. The traps remained on the bottom for 7 hours and they were baited with fish oil and mackerel.

Normally, the body color of this species is pinkish to purple grey, lighter ventrally than dorsally. Of the several thousand hagfish studied, about 20 were piebald (Fig. 2), with certain areas pale pink because of reduced pigmentation.

The skin of the albino is white save for a pinkish cast imparted by the blood. This coloration is most pronounced in the eye regions, the barbels, and the caudal area. The pulsations of the caudal heart are plainly visible beneath the translucent skin.

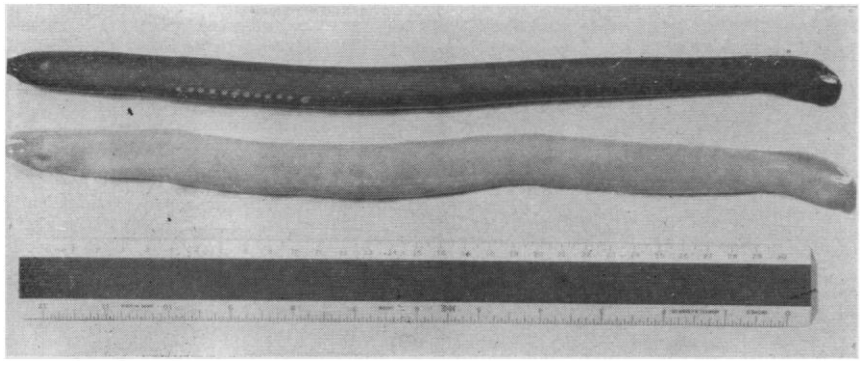

Fig. 1. Living albino *Eptatretus stoutii* with normally colored individual for comparison (anesthetized). Note the slime glands beneath the skin in the albino (especially prominent posterior to the gill openings), not readily evident in the pigmented specimen.

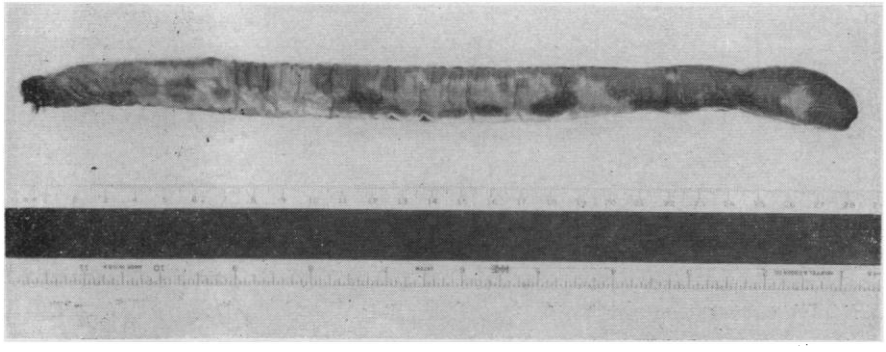

Fig. 2. Piebald specimen of *Eptatretus stoutii* (preserved), collected 7 Nov. 1958.

Measurements of the albino specimen (*2*) were as follows: body length, snout to tip of tail, 38.1 cm; weight, 55 g; external gill openings, 12 left, 12 right. Measurements of the piebald specimen were as follows: body length, 28.3 cm; weight, 36 g; gill openings, 11 left, 11 right.

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References and Notes

1. F. H. Wilson, *Lebanon Valley College Alumni News* (January 1954).
2. This specimen was obtained during the course of research supported by a grant from the San Diego County Heart Association, to which grateful acknowledgment is made.

10 June 1959

Identification of a Growth Inhibitor from Extracts of Dormant Peach Flower Buds

Abstract. A growth inhibitor in dormant peach flower buds was identified as naringenin (5,7,4'trihydroxyflavanone) from infrared and ultraviolet spectra, through determination of melting point, through paper chromatography, and from activity in the bioassay test.

A growth-inhibiting substance has been reported to occur in resting peach flower buds by a number of investigators (*1–3*). This substance has been closely correlated with the emergence of peach buds from rest (*1*); however, its identity is unknown.

In an investigation of the seasonal fluctuation in quantity of growth substances in resting peach flower buds, several attempts were made to obtain a purification step which would separate the inhibiting substance from oils, fats, and waxes present in the plant extract. The inhibitor could not be separated by means of a sodium bicarbonate solution; therefore, the ether or methanol extract was dissolved in 0.1*N* NaOH. The *p*H was adjusted downward, one unit at a time, with 0.1*N* HCl, and after each adjustment of *p*H the aqueous solution was extracted with peroxide-free diethyl ether and the ether extract was assayed for activity. It was noted that the intense straw color at *p*H 9.0 changed to a less intense straw color at *p*H 8.0. It was found that the inhibitor was very soluble in the ether phase at *p*H 8.0. There was a small amount of the inhibitor in the ether phase at *p*H 9.0 and 7.0. This provided a means whereby the inhibitor could be recovered free from fats, oils, and waxes and from many of the acidic substances which still remained in the salt form at this *p*H.

A number of attempts were made to crystallize the inhibitor from resting