Thus we see that, taking into consideration both color of pigment and physiological response to extracts of certain organs, there are at least eight pigmentary types in Crago.

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UPON THE PRESENCE OF MORE THAN ONE CHROMATOPHOROTROPIC SUBSTANCE IN BOTH SINUS GLANDS AND COMMISSURAL GANGLIA

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After removal of eyestalks and cautery of the stubs to prevent bleeding, Crago gradually, over an hour or so, takes on an intermediate shade and a mottled appearance. This persists for many days If now, the eyestubs are stimulated by touching them lightly with a heated cautery needle, the animals usually pass through a cycle of color change resembling that produced by an injection of sea-water extract of commissural ganglia. This latter response consists of a transitory darkening of the telson and uropods and a general blanching of the remainder of the body. Occasionally, however, a case is seen in which the whole body will darken following such eyestub stimulation. If, on the other hand, stimulation is produced electrically through use of an induction coil the percentage of animals showing the darkening reaction is greatly increased. These results suggest that Crago possess outside of the eyestalks humoral gents adequate to permit the whole gamut of change in shade of body.

Extraction of dried commissures with 100 per cent ethyl alcohol and then the alcohol insoluble residue extracted with sea-water yielded two fractions with different chromatophorotropic properties. The alcohol soluble fraction possessed a very strong body blanching action but no telson and uropod darkening activity. The alcohol insoluble fraction showed relatively less strong body blanching action but had a telson and uropod darkening action. It is not yet possible to differentiate between whether two independent principles are present, or whether a tail-darkening (perhaps also body darkening in the absence of a second antagonistic substance) is gradually converted into a more stable body blanching principle. We have some reason to suspect the latter.

Alcohol extracts of eyestalks of Crago show that the eyestalk principle, which antagonizes the activity of the "tail"-darkening commissural ganglion principle, is relatively insoluble in 100% ethyl alcohol.