Rock Beauty crown pattern, grackle scythebill, and Butter Hamlet double spot anomalies, and their possible genetic significance

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Three anomalies are described: a scythebill in Greater Antillean Grackle, Quiscalus niger (Boddaert) (Passeriformes: Emberizidae), a crown color pattern in Rock Beauty, Holacanthus tricolor (Bloch) (Perciformes: Pomacanthidae), and a double-spot color pattern in Butter Hamlet, Hypoplectrusunicolor (Walbaum) (Perciformes: Pomacanthidae). Bill anomalies are generally thought to be genetic in origin and genetic changes in bill shape can occur rapidly in a population. The scythebill anomaly demonstrates how quickly a drastic bill modification may occur. The crown color pattern anomaly is similar to distinctive markings found in other members of this genus [Queen Angelfish, H. ciliaris (Linnaeus) and hybrid Townsend Angelfish H. ciliaris X H. bermudensis Goode] in the tropical western Atlantic. It suggests how quickly this pattern could have originated in the other species, and/or some propensity of this pattern in the genus. The distinct double-spot color pattern anomaly suggests how quickly new color patterns can originate in genus Hypoplectrus. This is important because species in this genus are distinguished almost solely on the basis of color pattern and speciation may be occurring rapidly. Anomalies should be recorded because they may give us some hints at the genetic origin of species characters and some could represent potentially inheritable characters. We suggest these potentially inheritable characters could be recognized and described when they first arise in an individual and before they become inherited by a population. Following these potentially inheritable characters could help to explain how such characters enter into a population. This approach to the study of inherited characters could fill a void in our knowledge of evolution and speciation.

Key Words: anomalies, crown color pattern, scythebill, double-spot color pattern, Rock Beauty, Greater Antillean Grackle, Butter Hamlet, Caribbean