

HYBRIDISM.

In order to introduce the subject a brief synopsis must be given of the suppositions advanced by some of our most eminent ornithologists to account for this interesting condition: Although Baird had apparently solved the question satisfactorily away back in '58, other causes were suggested or assigned from time to time, almost up to the present date. Although suggesting that it might be due to environment or climatic influences, Maynard seemed convinced that it was but the insensible gradation of one to the other, *C. cafer* being but a more highly colored race; Ridgway appeared to have considered it the remnant of a generalized form from which the eastern and western representatives had sprung; an opinion shared by Newton at the present time. Coues was undecided as to whether it was a hybrid or transitional form. Hargitt, though leaning toward the theory of hybridization, suggests that it might be a sign of reversion to a remote ancestral plumage.

While hybridism has appeared the only solution to American ornithologists in recent years, it was not until '92 that seemingly overwhelming proof of the fact was presented by Dr. Allen in a paper entitled *The North American Species of the Genus Colaptes with Special Reference to the Relationship of C. auratus and C. cafer*. He finds a complete blending "along the line of juncture of the two species from Southeastern Texas northward along the western edge of the Plains into British America, and then westward in British America to the Pacific Coast in Southern Alaska." Mixed blood is of quite recent introduction in California, apparently, probably within the last thirty years. It is now quite common, particularly in the central and northern Pacific slope counties. While many are migrants from the north a number are residents or breeders. I have examined males taken in San Bernardino and Santa Cruz—April 27, '83, and Sept. 3, '95—which undoubtedly

belong to the latter class. A beautiful specimen, taken at Palo Alto, Nov. 26, '96, resembles Audubon's *C. ayresi*, with a half concealed red crescent, tipped with grey, and the orange-ochraceous wings and tail of *auratus*; head, throat, fore breast and malar stripes of *cafer*; and intermediate back. Cross-breeding is not confined strictly to the Red-shafted; the Northwestern form *C. c. saturatior* also blends with the Yellow-shafted, as exhibited in a pair collected at Puyallup, Washington. The male taken April 3, '96, has a small patch of red on either side of the occiput, strongly suggesting an incipient nuchal crescent, several creamy-white feathers contrasting with the vinaceous of the rest of the breast, and the fourth rectrices are yellowish. This is probably a young bird, hatched the previous summer, as quite a few of the feathers in its forehead are red. It is only recently that *auratus* has come in contact with the Gilded Flicker, *C. chrysoides*, if at all. A supposed hybrid is described in the *Osprey*, Vol. III., p. 13, a bird taken in Arizona, showing red on the nape. No instance of the actual pairing and interbreeding of the pure Yellow-shafted with the Red-shafted Flicker has ever been published, but a writer in the *Auk*—Vol. II., p. 284—mentions having witnessed the courting of a true *auratus* and a hybrid in Southeastern Dakota; and Chas. T. Morrison—*O. and O.*, Vol. XIV., p. 146—found the hybrid mated with the *cafer* in the Big Horn range, and secured the eggs and parent birds. Rev. William Osburn writes me that he has been informed that the hybrid mates with *cafer*, nesting and producing young. Comparing and contrasting the plumage of the two species, the pattern of coloration is the same, with the exception of the nape, yet excluding the crescentic breast patch of black, there is a complete dissimilitude in coloration. The prevailing color is yellow on one and red on the other, even to the tint on the rump; and the grey head and brownish throat of one are transposed on the other. Hybrids and mongrels present a bewildering number of regular and irregular combinations. Red in the malar or nape is the first to appear as well as the last to disappear. This color about the head being characteristic of the Woodpecker family, is in line with the Darwinian principle of hybrids, showing a tendency to revert to the ancestral stock.

In the event of the western representatives becoming

absorbed, which, strange as it may seem, is a not impossible happening, it appears to me that it would not be replaced by a richer colored bird, such as the Palo Alto specimen for instance, combined with the more advantageous hardiness and aggressiveness of the eastern and northern bird, as suggested by a recent writer (Rhoads in *Science*, Vol. XX., p. 325), but rather, conforming to the general rule that complete hybrids are seldom fertile, a constant infusion of pure *auratus* blood would cause the *cafer* characteristics to become less and less evident until obliterated entirely. The very close affinity of the North American types in which the divergence in colors is the greatest, tempts me to propound the following question: Is it less than improbable that the original *Colaptes* stock has been dichromatic, the yellow phase evolutionizing into one group of which *auratus* is an example, and the red phase into another group of which *cafer* is a representative and *chrysoides* standing for the intermediate? The Red-shafted is less prone to wander; a few specimens have been taken in Iowa, Nebraska and Kansas. A hitherto unpublished record from Forest City, Winnebago county, Iowa, by J. Eugene Law is the easternmost perfectly authentic record I have seen. Mr. Law assures me that it is an unquestionably pure *cafer*, shot and brought to him by some of his scholars on Sept. 19, '90. The specimens taken in Van Buren county, Iowa, in March, '78, by William Savage, proves to be a well-defined hybrid.