

Comments on the rusty Spotted Towhee

The rusty Spotted Towhee appeared in the yard of a private home on Windward Hill, Oakland, CA during the first week of February 2010, and continued to visit that yard at least through the end of April. Read expert opinion about this bird:

Jon Greenlaw, author of the Birds of North America account for Spotted Towhee, commented "So you have found a rusty Spotted Towhee! It does appear to be that species. The bird is indeed "astonishing." Yet, a report of a "chocolate" Eastern Towhee (all or most feathers reddish-brown) is in the literature, and the American Museum of Natural History has a specimen of another individual that I collected in which the reddish feathering is not as extensive. Until your bird came along, similar aberrant plumage coloring was not known in the Spotted Towhee (but it is not unexpected).

You have heard of leucistic (more white or whitish feathers in otherwise dark plumage) birds and melanistic (more black than normal) ones, I presume. Your bird is an example of "erythrism." All these aberrant plumage changes involve one version or another of the widespread pigment known as melanin. True melanins produce black and gray tones, and another version ('phaeomelanin') yields colors that we call yellowish-brown, fulvous, rusty, chestnut, rufous, tawny, reddish-brown (or the color that you see). Special cells that form early in development produce melanins. I am guessing, but I suspect that what you see may be a genetic or a developmental issue that occurs relatively rarely in towhees. For some reason, rufous-sided towhees seem to be prone to exhibiting this sort of plumage "error."

WD Loughman – geneticist – says: "I find myself speculating this bird could be the avian equivalent of a tricolor (aka calico) cat. Those animals carry two **different** coat color alleles (genes) on one or the other of a pair of chromosomes. One allele is inactivated during development, but randomly, to produce the characteristic patchy black & orange coat. White is color's absence; produced another way. Tricolor cats usually are female, and often smaller than male cats.

So random inactivation of feather-color genes could at once explain the bird's coloration, predict it is female and explain its relatively small size. (But **NB**: Sex determination in birds is **similar** to that in mammals; **not** the same.)"