

The Molts and Plumages of the Bobolink

The confusion concerning the Bobolink in eastern North America is similar to what happened with Williamson's Sapsucker in the West, more or less a century later. In the sapsucker's case, a female collected in 1851 was described first, as the "Black-breasted Woodpecker" (*Picus thyroides*), by Cassin (1852), followed by a male collected in 1855 as the "Williamson's Woodpecker" (*P. williamsoni*), by Newberry (1857). It was not until 18 years later that Henshaw (1875) observed a nesting pair and cleared up the matter. Forced by the "rule" of nomenclatorial priority, the scientific species name went to the female, yet somehow the standard English name went to the male. Sheesh.

Why the confusion? The experience of early European naturalists was

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to place things in boxes, based on what was known. In the case of the Williamson's Sapsucker, such a drastic difference in plumage between males and fe-

males was outside the known box: No other Holarctic woodpecker—and maybe no other woodpecker in the world—displays male and female plumages so dissimilar. Even nestlings and juveniles of Williamson's Sapsuckers show the sex-specific colors of their parents, a rare plumage pattern in birds. It would have thus taken some exceptional outside-the-box thinking to have recognized the involvement of only one species of sapsucker based simply on the first few collected specimens.

What about the Bobolink is outside the box? It's not just that males and females differ in plumage appearance. We only have to look to a familiar Icterid associate, the Red-winged Blackbird, to find equal plumage divergence between females and males. Sex-specific size differences are also found in both species, adding to the magnitude of Catesby's (1729) *lapsus*, but not explaining the species conundrum. Rather, adult Bobolinks differ from Red-winged Blackbirds, and are unique among North American passerines, in having two complete molts per year, a *complete definitive prebasic molt* on the North American summer grounds and a *complete definitive prealternate molt* on the South American winter grounds. This is part of the answer, but only part.

In thinking about the natural history of the Bobolink, it is useful to draw comparisons with, of all things, the quite unrelated **Williamson's Sapsucker** (male, left; female right). Both the sapsucker and the Bobolink were for a while considered to be *two* species. Hindsight is 20/20, but figuring out the biology of these birds (and a great many others) required early ornithologists to think outside the box. Clark County, Idaho; May 29–30, 2014. Photos by © Mia McPherson.





You're playing *Jeop-birdy*, and the answer is: "Franklin's Gull and Bobolink." Question: "What are the only two ABA Area breeders with two complete annual molts?" On a serious note, our appreciation of birds is greatly enhanced by understanding the fascinating commonalities and convergences among phylogenetically distant species. In this case, the uniquely similar molt strategies of the unrelated Franklin's Gull and Bobolink likely reflect shared ecologies; both species are long-distance migrants which experience two summers per year and which flourish in habitats with great solar exposure. *Beaverhead County, Montana; June 2011. Photo by © Mia McPherson.*

When teaching molt classes, I've been known to wake up my audience with a quiz: *What two North American species have two complete definitive molts per year?* Hint: they are not exactly related, phylogenetically. Typically nobody gets the answer, unless they are masochistically taking the course for a second time.

Answer: Bobolink and—wait for it—Franklin's Gull! The better part of the exercise is to then ask what attributes these two species share, ecologically, that result in two complete molts per year. On this point, the class does better, eventually getting to the two primary factors: trans-equatorial migration and inhabiting open environments.

But it's not the migration distance *per se*. The primary enemy of feathers is solar exposure. Resident birds are exposed to the sun for an average 12 hours per day each year, but most migrants "follow the sun," resulting in more exposure. This is especially true of those that breed and winter at high latitudes on either side of the Equator, respectively; they may experience around 15–16 hours of sun per day. The excess sun-induced wear results in the need for such migrants to replace more feathers more often. An additional trans-equatorial factor is that these migrants enjoy two summers' worth of foraging time and enhanced food resources per year, which presumably helps with the added feather production.

A primary reason for the confusion by Catesby and others is that

male Bobolinks molt out of their striking alternate plumage in summer, thereby resembling the humble but equally exquisite females and first-fall birds during autumn migration. Naturalists in the European tradition knew few if any landbirds that undergo such a complete sex-specific appearance change through molt. This plumage sequence was outside their box, and they erroneously concluded that two species were involved.

Now wait a second. Males of other North American landbirds change radically to look like females and young birds in fall. Blackpoll and Bay-breasted warblers quickly come to mind. Why didn't these species, described in 1772 and 1810, respectively, also suffer through species-level confusion? Maybe they did! The possibility of multiple early species descriptions of "confusing fall" wood-warblers is a topic for another day. Suffice it to say that drab fall warblers were not on the 18th-century radar as centrally as the Bobolink, which "laid waste to the rice fields" and was "esteemed...the greatest delicacy of all other birds." In my view, there is a second reason for the Bobolink's tangled taxonomic story: Those early European immigrants attempting to interpret bird plumages were, by necessity, more of the economist than of the naturalist persuasion.

References

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