TAXONOMIC RELATIONSHIPS AMONG THE AMERICAN REDSTARTS

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IN recent years certain bird taxonomists have indulged in what might be described as a veritable orgy of genus-lumping. Small genera, particularly monotypic genera, *must*, it seems, be somehow combined with one another, or shoehorned into larger genera (see, for example, the footnote on *Uropsila*, Paynter, 1960:430). To some extent this is a healthy trend, as many bird families are undeniably oversplit. Much of the recent lumping, however, has a fundamental shortcoming; the authors make little or no effort to re-evaluate the composition of the currently accepted genera before simply emptying the contents of two bureau drawers into one. It is possible, indeed probable, that some of our genera as they now stand are composite and artificial, not reflecting actual relationships. The answer to such problems is not simple lumping, but rather redefinition of genera, with the generic lines drawn in different places.

An excellent example is provided by the case history of the North American forest thrushes. Ridgway (1907:19, 35) pointed out many years ago the close relationship between the thrushes generally placed in the two genera *Hylocichla* and *Catharus*. Ripley (1952), in a paper which advocated merging a number of genera of thrushes, formally proposed the lumping of *Hylocichla* and *Catharus* under the latter name, but without any analytical study of the species currently placed in these two genera. This proposition had already been made in several unpublished theses dealing with regional avifaunas (Loetscher, 1941:664; Phillips, 1946:309; Parkes, 1952:384), also as a straight lumping of the two genera. After Ripley's paper appeared, several other authors, still without any additional study, jumped on the bandwagon and used *Catharus* for the five North American species. It remained for Dilger (1956*a*, 1956*b*) to illustrate the dangers of uncritical lumping by showing conclusively that "*Hylocichla*" as used by all previous authors was a composite assemblage, containing four species congeneric with *Catharus* and a superficially similar species (*mustelina*) barely separable from *Turdus*. The possibility of a parallel case in the family Parulidae will be suggested in the present paper.

Many taxonomists are of the opinion that too many genera of wood warblers are admitted in current check-lists. This viewpoint was strongly expressed by Griscom (1957*a*:11), who stated, in reference to the large number of monotypic genera now recognized in the Parulidae, that "something relatively radical should clearly be done." He attempted to rectify this situation himself (Griscom, 1957*b*), reducing the number of genera of

Parulidae by eleven, although only five of the lumped genera were monotypic. An additional six monotypic genera apparently defined all his attempts to combine them in some fashion.

One of Griscom's generic combinations included the birds to which Americans have long misapplied the name "redstart" (which, like "robin" and "oriole," properly belongs to an Old World group). These are currently divided between the two genera *Setophaga* (two species) and *Myioborus* (nine species). Griscom reverted to an earlier classification by combining these two groups (under the older name *Setophaga*), pointing out quite correctly that the only characters hitherto used to separate them have been relatively insignificant differences of proportion (Ridgway, 1902:722, 730). I should like to propose here that in the redstarts, as in the forest thrushes, simple lumping may not best reflect the true relationships.

It appears to me that the genus *Setophaga* as now understood is a composite. I believe that the American Redstart, *S. ruticilla* (type species of the genus), is not only generically distinct from *Myioborus* (*contra* Griscom), but not even particularly closely related to the latter group of species. On the other hand, the Painted Redstart, *picta*, always placed in *Setophaga* with the northern bird, might better be included in *Myioborus*, from which it differs chiefly in having a white area on the wing. Presently available evidence for such a recombination includes the following points:

(1) Sexual dimorphism in plumage color is striking in the American Redstart, absent in the Painted Redstart and in *Myioborus*.

(2) The sooty juvenal plumage of the Painted Redstart resembles the homologous plumages of *Myioborus* much more closely than it does the juvenal plumage of the American Redstart. In addition, the juvenal plumage of the latter species is of exceptionally short duration; in a captive individual the first prebasic ("post-juvenal") molt was well under way at 22 days of age (Petrides, 1943). Specimens illustrating this molt are very rare in collections, although the American Redstart is an abundant species. On the other hand, as well illustrated by museum skins, young Painted Redstarts and *Myioborus* are fully grown before the first body feathers of the first basic plumage appear.

(3) The definitive plumage pattern of the Painted Redstart is very similar to that of some species of *Myioborus*; the American Redstart has in common only the large amount of black in the male (Fig. 1).

(4) Both sexes of the Painted Redstart and of *Myioborus* attain their definitive plumage immediately following the juvenal plumage, whereas males of the American Redstart do not assume their definitive plumage until the second year.

(5) The Painted Redstart is a Central American species that barely reaches

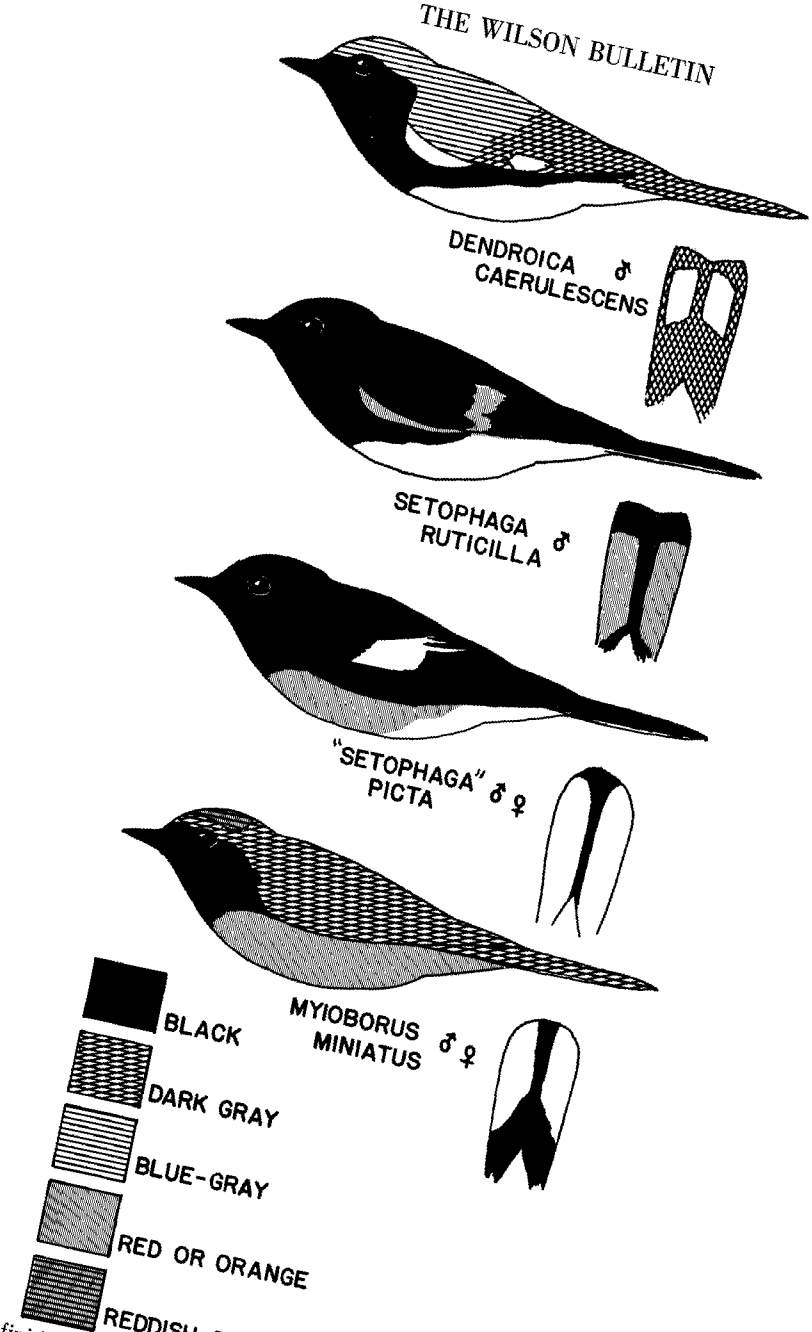

FIG. 1. Definitive plumage patterns of some male wood warblers (diagrammatic). Drawing by William C. Dilger.

southwestern United States, conforming in general distribution with *Myioborus*; the distribution of *Setophaga ruticilla* is decidedly northern.

(6) The American Redstart always nests in trees or bushes, usually 10 to 20 feet up, varying between several inches and about 70 feet. On the other hand, only one exceptional nest of the Painted Redstart has been reported as off the ground, the situations and materials ordinarily chosen by this species being precisely like those described for *Myioborus* (Bent, 1953; Skutch, 1954).

(7) The "advertising" song of the American Redstart is short and wheezy, much like those of some species of *Dendroica*; that of the Painted Redstart is described as loud, ringing, wonderfully rich and mellow, the sort of adjectives also applied to the songs of *Myioborus* (see Skutch, in Bent, 1953:687).

It is true that some of the differences between the American and Painted Redstarts cited above are those usually to be found in northern versus tropical wood warblers in general; in particular, the ground-nesting habit and lack of sexual dimorphism are typical of (but not universal in) tropical Parulidae. However, the total evidence thus far listed certainly suggests that the Painted Redstart is more closely related to *Myioborus* than to *Setophaga ruticilla*. If the differences exhibited by the American Redstart are to be brushed off as secondary developments by a northern representative of a tropical group, it would represent a unique distributional situation in the Parulidae. Other genera that include both northern and tropical species (*Vermivora, Dendroica*) are predominately northern in distribution, with relatively few tropical representatives. An apparent exception is *Geothlypis*, but in that genus the northern representative *trichas* differs little from the tropical forms, which all display the "northern" character of sexual dimorphism. The genus *Parula* includes only a single widely distributed superspecies consisting of two or three species, the northern form closely resembling the tropical species.

The resemblances between the American Redstart and the Painted Redstart are predominantly in those characters directly associated with the flycatching habit (for instance, broad bill and elongated rictal bristles), and can be attributed to convergence. The American Redstart would thus represent an independently evolved flycatching-adapted offshoot of a group of wood warblers other than that which gave rise to *Myioborus* and the Painted Redstart. It is my opinion that *Setophaga ruticilla* finds its closest living relatives in the predominantly North American genus *Dendroica*. Its nest and its vocalizations are strongly reminiscent of those of such species of *Dendroica* as the Yellow Warbler, *D. petechia*. The color and pattern of both the juvenal and definitive plumages of *ruticilla* find near counterparts in *Dendroica*. I call

particular attention to the resemblance of both sexes of *Setophaga ruticilla* to the Black-throated Blue Warbler, *Dendroica caerulescens*. Saturation to black of the dorsal pigmentation of males of the latter species (already suggested in the race *cairnsi*) plus the addition of orange to the white spots on tail, wings, and sides of breast, would produce a passable redstart pattern (Fig. 1). I certainly do not wish to imply that I believe the American Redstart to be an offshoot of the Black-throated Blue Warbler, but merely to show that the plumage pattern of the former, at first glance so distinctive, is not incompatible with a *Dendroica* or *Dendroica*-like ancestry.

In summary, then, I suggest that the genus *Setophaga* as presently understood is an artificial one, the resemblance between the two species being due to convergence. One species, the Painted Redstart, is probably best placed in *Myioborus*; the American Redstart may be allowed to stand in a monotypic genus, but placed near *Dendroica*.

These conjectures, of course, are not represented as being the last word. However, since some of the ideas incorporated in the present paper were presented at the symposium on Parulidae organized by George M. Sutton at the 1959 meeting of the Wilson Ornithological Society, other workers have begun to turn up evidence bearing on redstart relationships. I am indebted to Stephen W. Eaton for calling my attention to the findings of Osterhaus (1960), who compared the pelvic skeletal appendages of five genera of wood warblers. She found virtually no difference between those of *Setophaga ruticilla* and *Dendroica virens*, although these two species differ in feeding habits. Of perhaps even greater significance, the agonistic behavior of the American Redstart has been found to be strikingly similar to at least one species of *Dendroica*, the Chestnut-sided Warbler (*D. pensylvanica*) (Millicent S. Ficken, pers. comm.). I shall certainly not be surprised if additional studies, based on a variety of anatomical, behavioral, distributional and other data, confirm the relationships suggested here.

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