

NOTES ON THE CUBITAL COVERTS IN THE BIRDS OF PARADISE  
AND BOWER BIRDS.

BY  
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In a very interesting paper recently published \* Mr. Goodchild makes out that there is an essential difference in the arrangement of the cubital coverts of the *Paradisidae* as compared with the rest of the *Passeres*, and classes the wings of the former, so far as this feature is concerned, under the heading of "the Cypseline Style," that is, the arrangement as found in Hummingbirds and Swifts, *Cypseliformes*, consisting in the absence of median coverts.

Here is what he says in relation to the subject (p. 322):

In the *Paradisidae* every individual I have examined showed the whole of the feathers above the major coverts lying with distal overlap, and with, generally, much the same arrangement as in the *Cypseliformes*. The number of rows, however, is considerably increased in the group under notice.

And a little further on:

These [the *Passeres*] generally possess, in addition to the marginals seen in the *Cypseliformes*, one row of minor coverts, with distal overlap, see figure of Skylark (Fig. 4), and one row of medians, whose overlap is generally *proximal* throughout nearly the whole of this large group. The *Corvidae* (see Fig. 5) differ slightly from the normal type, inasmuch as a few of their anterior medians overlap distally. In this respect they make an approach, superficially, to the *Paradisidae*, as they are commonly believed to do in some other respects.

Before proceeding further I will state that an examination of a number of species of *Paradisinae* in the U. S. National Museum has led to an entirely different result, inasmuch as I find at least three of the middle median coverts to have proximal overlap, consequently to be normally passerine and not cypseliform. In most species it is extremely difficult to make out the correct position of these feathers (at least in museum skins) inasmuch as their webs have but little cohesion and consequently they become easily disarranged. In a few, however, in which the margins of the feathers are differently colored, or of a metallic gloss, the true arrangement may be very plainly seen. Take, for instance, a full grown male of *Schlegelia wilsoni* (U. S. Nat. Mus. No. 113848), and it needs but a glance to convince us that of the series overlaying the greater coverts, viz, the medians, three of the anterior

\* The Cubital Coverts of the Enornithae in Relation to Taxonomy. < Proc. Roy. Phys. Soc., Edinburgh, x. pt. ii (session 1889-'90), pp. 317-333 + pl. xv.

ones overlap distally while six posterior ones overlap *proximally*, and, moreover, that there is above them a well differentiated series of minor coverts (as distinguished from the marginals) the overlap of which is distal; in other words: The arrangement is absolutely in every particular as described by Mr. Goodechild for the *Corvidæ*. If any one will take the trouble to examine Mr. Goodchild's own figure representing the cubitals of a Bird of Paradise (Fig. 3), he will find that in the row of medians there are two feathers with *proximal* overlap, thus differing materially from his description.

It is plain from the above that the *Paradisæinæ* proper form no exception from the genuine passerine arrangement of the cubitals.

Mr. Goodchild makes out another exception,\* however, for later on he states that the Bower Birds (which I regard as a subfamily of the *Paradisæidæ*) have a picarian arrangement of the minor coverts: "In these more than one row of minor coverts occur, each with proximal overlap." He even goes so far as to admit as a possibility that subsequent research may prove that the birds in question rightly belong to the Picarians and not to the Passeres at all (not to speak of his classing the Bower Birds with the *Cotingidæ* among the *Mesomyodi*).

With a splendid male of *Ptilonorhynchus violaceus* (U. S. Nat. Mus. No. 121196) before me, I must again disagree with Mr. Goodchild's conclusions. The firm structure of these feathers, coupled with the metallic gloss of the margins, makes it easy for us to observe that a few of the anterior medians have distal overlap, while at least eight of the same series overlap proximally, and that the first row of minors overlap distally as in a well regulated passerine bird they ought to do.

There can, therefore, be but little doubt that the Bower Birds in these respects conform with the Paradise Birds and with the *Corvidæ*. Mr. Goodchild's "Tabular View," on page 331, is thus fortunately purged of a feature which might be urged as a reason against the view held by him of the great value of the cubital arrangement for classificatory purposes, a view which I am happy to say that I have held ever since I gave ornithological classification any thought, but of which I became somewhat doubtful when I saw the *Paradisæidæ* separated from the other Passeres and included in a group with the Hummingbirds, Swifts, and Trogons.

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\*This exception is not noted in the scheme on p. 331.