

wings without alluding to the extraordinary development of the shafts of the primaries in the *Campylopteri*. The great dilatation of these feathers would lead one to suppose that they have an influence on the aerial movements of the birds; but, strange to say, this remarkable feature only occurs in the males; the females being entirely destitute of it. It might naturally be supposed that such a modification of so important an organ must be formed with an especial object. What, then, can be the particular use of the broad dilated shafts of these singularly and apparently awkwardly shaped wings? Generally the primaries and secondaries are of a sombre and uniform hue, while the shoulders or wing-coverts, in most instances, are of the same colour as the other parts of the body. There are, however, a few, but a very few exceptions to the rule; and I may mention the *Eulampis jugularis* and *Pterophanes Temminckii* as instances in point: both these birds have luminous wings, and must form very striking objects during flight; and, as I believe colour is seldom given without the intention of its being exhibited, there is doubtless something peculiar in the economy of these birds. The primaries and secondaries are in some instances stiff and rigid, while in others they are soft and yielding; some are broad, others narrow; they are always the same in number; and the first quill is constantly the longest, except in *Aithya polytmus*, where the second exceeds the first in length.

When we turn to the bill, we find this organ to be greatly diversified in form, and that each of these variations appears to be specially adapted for some given purpose; indeed, I have never seen the law of adaptation more beautifully exemplified than in the multiplied forms exhibited in the bills of the members of the various genera of this family of birds. A certain generic character runs through the whole of them: the gape in all cases is very small; and whether the bill be curved or straight, the upper mandible overlaps the under one on both sides, and thus forms an admirable protection for the delicate double-tubed tongue. If we examine the extraordinarily lengthened bill of *Docimastes ensiferus* and the short feeble bill of the *Lesbia Gouldi*, we see the extremes as regards the length of this organ; and we are not less astonished at the functions they are both intended to perform. The bill of the *D. ensifer*, which is more than five inches long, and which contains a tongue capable of being protruded nearly as far beyond its tip, is most admirably fitted for the exploration of the lengthened and pendent corollas of the *Brugmansia*; while the short-billed *Lesbia* cling to the upper portion of those flowers, pierce their bases, and with the delicate feelers at the extremities of the tongue, readily secure the insects which there abound. I have been assured by M. Bourcier that this is really a practice of the bird, and that it frequently resorts to this device for the purpose of gaining its insect food; but I suspect that, besides exploring the stalwart *Brugmansia*, a more delicate flora is the object for which its bill is especially formed. In no part of America are there so many tubular-flowered plants as among the Andes; and the greater number of the Humming-Birds found there have straight and lengthened bills, such as the members of the genera *Helianthea*, *Bourcieria*, *Cæligena*, etc. The arched bills of the *Phaethornithes* are admirably adapted for securing the insects which resort to the leaves of trees, and upon which these birds are said to exist. But how much are we astonished when we examine the bill of *Eutoxeres*! and find this organ curved downwards beyond the extent of a semicircle, a form beautifully adapted for exploring the scale-covered stems of the larger palms.

Let us turn to another genus of this group—*Grypus*. Here the bill is not only armed with a strong hook at the end of the mandibles, but with a row of numerous and thickly set teeth. The *G. navius* is said to frequent the borders of the great forests, and to gain its food from among the interstices of the bark of the palm trees. Both this bird and the *Eutoxeres*, as well as the *Phaethornithes*, are said (and, I believe, with truth) to feed principally upon spiders; and we know that these are the food of the *Grypus*.