

line. The lowest tracheal ring is quite simple anteriorly, and posteriorly it sends forwards a pessuliform process, anchylosed in front with the second bronchial rings. Two pairs of the bronchial semi-rings (3, 4) are ossified at their posterior extremities, but not fused in any way. The penultimate tracheal and preceding rings are, as in *Fulmarus*, &c., ossified posteriorly in their median (narrowest) portion only to bear the tracheal septum. This, however, is not (*vide* fig. 18, *a*) a complete septum, but is incomplete, the incurved posterior ends of the rings not reaching the anterior wall of the trachea by some little way. Its vertical extent is small, ceasing about .85 inch above the bronchi.

The peculiar genus *Bulweria* is, perhaps, as far as regards tracheal structure, nearer the small Storm-Petrels (*Procellaria* and *Cymochorea*) than any other group, judging at least from my examination of the syrinx of *Bulweria macgillivrayi*. In this specimen¹ the rings are asymmetrical,—there being only three, instead of four, bronchial rings between the pessular ring and that which bears the muscle on the left side, apparently owing to the suppression of the second bronchial ring, as may be seen in the figures (figs. 22, 23),—and irregularly developed, tending thus to hide the typical form. The last

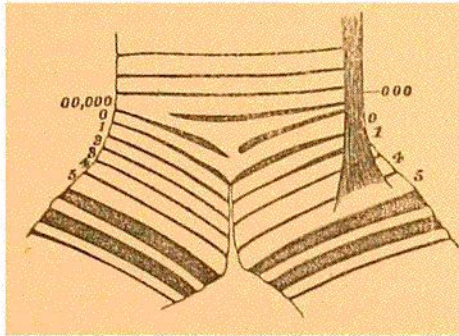


FIG. 22.—Syrinx of *Bulweria macgillivrayi*, from before.

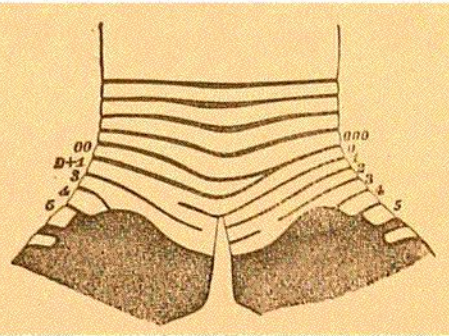


FIG. 23.—The same, from behind.

three tracheal rings are, anteriorly, more or less united, there being a pessular bar developed on the inferior margin of the last ring. Posteriorly, the ante-penultimate of these is quite free and complete; the next is incomplete posteriorly, whilst the last is complete on the right side, but anchyloses on the left with the first bronchial laterally. The third bronchial rings on each side are complete, thus encircling the bronchi. The fourth is free and incomplete.

Puffinus (as represented by *Puffinus brevicauda*) presents a simple form of syrinx (figs. 24, 25), the two first bronchial rings being complete anteriorly, the succeeding two being only semi-rings. The two last tracheal are united with the two first bronchial behind, sending off a pessular process, which anteriorly, as usual, is continuous with the third semi-rings. In younger birds (fig. 26) the various rings concerned remain more distinct, the pessular bar, it is pretty clear, being largely formed by the third

¹ Some of the peculiarities here described may be due to its being a youngish bird. I have, unfortunately, as yet been unable to examine the syrinx of *Bulweria columbina*, which might throw some additional light on the subject of the affinities of this genus.