

In *Spheniscus demersus*, *Spheniscus magellanicus*, and *Spheniscus minor*, the insertion of the contractores extends farther back than in *Eudyptes*, and reaches a point exactly opposite the tracheal bifurcation. In the two former, as in *Eudyptes chrysocome* from Kerguelen, the two muscles of opposite sides are in contact along the upper surface of the trachea for the posterior half of that tube. Such is not the case in *Spheniscus minor*. In *Spheniscus mendiculus* the insertion of the contractor falls short of the bifurcation by $\frac{1}{2}$ an inch.

In *Pygosceles tæniatus* the contractores are inserted $\frac{3}{4}$ of an inch in front of the bifurcation, and, as in *Spheniscus demersus* and *Spheniscus magellanicus*, the muscles of opposite sides are in contact along the upper surface of the trachea for the posterior three-fourths of the tube.

Lastly, in *Aptenodytes* (Pl. XVIII. figs. 8 and 9), the insertions of the contractores reach a point exactly opposite the bifurcation of the trachea. In this species the muscles are relatively more powerful than in any other, the two muscles being in contact both above and below the trachea, so that they form a muscular sheath which entirely envelopes the posterior two-thirds of that tube.

If now we compare the different genera in respect of the insertion of this muscle, it appears that *Aptenodytes* agrees with *Spheniscus* (with the exception of *Spheniscus mendiculus*), in as much as the contractores extend as far back as the tracheal bifurcation. *Pygosceles*, on the other hand, agrees with *Eudyptes*, in as much as the insertion of the contractores is situated from $\frac{1}{2}$ to $\frac{3}{4}$ of an inch in front of the bifurcation. *Spheniscus mendiculus* agrees with *Eudyptes* rather than with the other species of its own genus, but it is possible that the point of insertion of these muscles in the single specimen examined may not prove constant in other specimens of the same species.

Variations in respect of the Trachea and Bronchi.

The variations in respect of the trachea and bronchi in various species of Penguin from the arrangement above described in *Eudyptes chrysocome* from Tristan are referrible to three points. *Firstly*, the relation of the posterior extremities of the contractores tracheæ to the lower larynx; *secondly*, the number of rings, tracheal and bronchial, which participate in the formation of the syrinx; and *thirdly*, the extent of the septum tracheæ.

With regard to the first of these points, it will have been observed that, as shown above, in certain species, *e.g.*, the various species of *Eudyptes*, in *Pygosceles*, and in *Spheniscus mendiculus*, the contractores tracheæ fall short of the tracheal bifurcation, while in others, such as *Aptenodytes* and the remaining species of *Spheniscus*, the contractores extend as far back as that point. In the former group, therefore, the lower larynx is altogether destitute of muscles, while in the latter it is provided with a single pair, to wit, the posterior extremities of the contractores. That a generic distinction cannot, however, be founded on this fact is shown by the occurrence in *Spheniscus mendi-*