

*Relations.*—The muscle is in part concealed on the outer side by the cruro-coccygeus, which lies parallel with and separates it from the origin of the semi-tendinosus. Its inner surface is in contact with the abdominal viscera.

*Nerve supply.*—Branches from the anterior divisions of the coccygeal nerves.

*Remarks.*—I have experienced considerable difficulty with regard to the synonymy of this muscle. This arises from the fact that in the majority of birds there are more than one abductor of the tail, and the descriptions of the various anatomists quoted are not so precise as one could wish. I have attempted to come to a correct decision as to the synonyms, but that I entertain doubts with regard to certain of these is indicated by the insertion of points of interrogation after them.

### (e) MUSCLES INSERTED INTO THE RIBS.

#### 1. *Diaphragm.*

*Attachments.*—The diaphragm is a thin fleshy plate, which *arises* by means of six distinct digitations from the inner or thoracic surfaces of the second to the seventh vertebral ribs inclusive, close to the articulations of these with the corresponding sternal segments. The fibres pass upwards, and are *inserted* into the lower or cardiac surface of the lung of the same side.

*Action.*—This muscle acting upon the lung assists in the expansion of that organ.

*Nerve supply* (?)

*Variations.*—In *Spheniscus mendiculus* the origin of the diaphragm is confined to four ribs, namely, to the second, third, fourth, and fifth. In *Spheniscus demersus*, on the other hand, the muscle is larger than in other species, and is attached to all the vertebral ribs, with the exception of the first.

#### 2. *Triangularis sterni.*

*Der innere oder dreieckige Brustmuskel*, Tiedemann, p. 300, No. 4.

*Der Erheber der Rippenfortsätze*, Merrem.

*Triangulaire du sternum*, Cuvier, vol. i. p. 219.

*Muscle No. 4*, Meckel, vol. vi. p. 17.

*Triangularis sterni*, Selenka, vol. vi. p. 104, No. 29.

*Triangulaire du sternum*, Gervais and Alix, p. 16.

*Attachments.*—This muscle *arises* by means of a stout tendon from the thoracic surface of the costal process of the sternum. Its fibres pass horizontally backwards, and are *inserted* by means of distinct muscular slips into the inner surfaces of the first four sternal ribs. The most anterior slip is attached to its rib at some distance from the sternum, while the succeeding slips approach successively nearer to that bone.