

from the posterior or sternal portion. This separation is more distinct in *Spheniscus demersus* than in any other species. The same arrangement, according to Gervais, obtains in the Gallinacæ and Tinamidæ. The enormous size of the pectoralis medius in comparison with that of the pectoralis major in the Penguins has been noted by every anatomist who has dissected any member of the group.

#### 4. *Pectoralis minor*.

- Le petit pectoral*, Vicq d'Azyr, 1772, p. 625, No. 3.  
*Le petit pectoral*, Cuvier, 1805, vol. i. p. 278, No. 3.  
 Described by Merrem, p. 152, No. 3.  
*Der kleinste Brustmuskel*, Wiedemann, p. 83.  
*Der kleinste Brustmuskel*, Tiedemann, p. 307, No. 3.  
*Pectoralis minimus*, Heusinger, p. 103, No. 3.  
*Troisième pectoral*, Meckel, vol. vi. p. 38, No. 12.  
*Der dritte Brustmuskel*, Schoepss, p. 113, No. 16.  
*Coraco-brachialis*, Reid, p. 141.  
*Coraco-brachialis longus*, Selenka, p. 114, No. 40.  
*Coraco-brachial*, Gervais and Alix, p. 23.

*Attachments*.—The pectoralis minor arises from about half an inch of the lateral margin of the sternum, just posterior to the coraco-sternal articulation, as well as, but to a greater extent, from an aponeurotic septum between the pectoralis medius and minor, which septum is attached to the external margin of the shaft of the coracoid bone. The fibres form an oval belly, from which a tendon passes forwards and upwards, to be inserted into the outer margin of the tricipital fossa of the humerus, close to the posterior margin of the tendon of insertion of the pectoralis medius.

*Action*.—This muscle depresses the wing at the shoulder joint, so as to approximate it to the side of the body. The muscle, therefore, comes into play in producing the effective or propulsive stroke of the wing. Moreover, in consequence of the passage of its tendon upwards below the neck of the humerus, the muscle is enabled to rotate the entire wing around the axis of the humerus in such a manner as to direct the concavity of the wing forwards and downwards. In this respect the pectoralis minor is the antagonist of the pectoralis major, which rotates the wing in the opposite direction. These two muscles are the principal agents in bringing about the screw-like motions of the wing at the shoulder joint, which are observable in the living bird.

*Relations*.—The muscle is concealed by the pectoralis major, and lies in contact with the outer border of the pectoralis medius. Its upper surface rests against the axillary vessels and nerves as they pass out of the thorax.

*Nerve supply*.—A twig from the nerve which supplies the pectoralis major.

*Remarks*.—Selenka is of opinion that this muscle, named by him the coraco-brachialis longus, is identical with muscle No. 17 of Schoepss. This does not appear to