

and anus, as well as from the cartilaginous extremity of the pubic bone. The muscle passes forwards, and is *inserted* into the whole length of the inner border of the posterior sternal notch.

The external slip is continuous at its origin with that of the internal portion of the muscle, and is attached by means of a flattened tendon to the posterior half of the free border of the pubic bone, as well as to its cartilaginous extremity. The muscle passes forwards, and is *inserted* by means of distinct digitations into the outer surfaces of the third, fourth, fifth, and sixth sternal ribs, close to the articulations of these with the breast bone.

Action.—The rectus abdominis, in contracting, diminishes the capacity of the abdominal cavity.

Relations.—Both portions of the muscle are concealed by the external oblique, and rest upon a large air sac which intervenes between the rectus and transversalis abdominis. The inner slip towards its insertion overlaps to some extent the inner border of the external portion of the muscle.

Nerve supply.—Branches from the lower intercostal nerves.

Variations.—In *Aptenodytes longirostris* the insertion of the external portion of the muscle extends from the second to the seventh sternal ribs inclusive. In *Pygosceles taniatus* and *Eudyptes chrysolophus* it is inserted into the fourth, fifth, sixth, and seventh sternal ribs.

COMPARATIVE REMARKS.

The most striking peculiarity of the muscular system of the trunk of the Penguin lies in the great development of the extensor muscles of the neck. Associated with this is the peculiar disposition of the biventer cervicis, a disposition which is found elsewhere only in the Ostrich among birds. This muscle arises as far back as the crest of the iliac bone, and passing forwards is inserted into the occiput, without presenting any trace of the tendinous intersection from the presence of which in the majority of birds this muscle has received its name. The great strength of the extensor muscles in question is doubtless correlated with the peculiar flexures of the vertebral column, which in every member of the group Spheniscidæ are more pronounced than in any other birds.

These flexures are developed to such an extent, that, as already pointed out in the description of the vertebral column, the lower cervical vertebræ are actually in contact with the furculum, and thus the trachea and œsophagus, instead of passing along the middle line of the neck, are thereby laterally displaced, and pass into the thorax, lying altogether to the right of the vertebral column. Associated with this anterior cervical curvature, there falls to be noticed the compensatory curves of the vertebral column, both above and below,—curves the movements of which are necessarily controlled by stronger muscles than are possessed by other birds in which these cervical flexures are less