

Action.—The muscle extends and adducts the toe towards the middle line of the foot.

Nerve supply.—A branch from the anterior tibial nerve.

Remarks.—Meckel (vol. vi. p. 111) remarks upon the peculiarity of the insertion of this muscle into the *inner* side of the base of the first phalanx. As a rule, in other birds it is inserted into the *outer* side of the base of that phalanx. In the latter, therefore, it is an *abductor*, whilst in all the Penguins it is an *adductor* of the toe towards the middle line of the foot.

15. *Abductor digiti externi*.

Adducteurs des doigts (one of), Vicq d'Azyr, 1774, p. 517, No. 2.

Der Abzieher der äusseren Zehe, Wiedemann, p. 106.

Der Abzieher der äussern Zehe, Tiedemann, p. 346, No. 10.

Plantaire du quatrième doigt, Gervais and Alix, p. 38.

Attachments.—This muscle *arises* from the upper half of the plantar surface of the fourth metatarsal bone. It passes downwards, and is *inserted* into the outer side of the base of the first phalanx of the fourth or outer toe.

Action.—This muscle flexes and abducts the outer toe from the middle line of the foot.

Nerve supply (?)

COMPARATIVE REMARKS.

MM. Gervais and Alix sum up the myological characteristics of the leg of the Penguin as follows:¹—

“The arrangement” (of the muscles of the leg) “is less characteristic” (than is that of the wing). “We perceive in it that which characterises the palmipedes in general.

“We note the size and strength of the ambiens muscle coincident with the atrophy of the pectineal apophyses, as also the depth of the patellar groove in which the tendon of the ambiens glides; the strength of the sartorius which takes an attachment to the dorsal vertebræ; the strength of the tensor fasciæ latæ (rectus femoris), developed to a similar extent in the Grebes, which, however, do not possess the ambiens; the feeble development of the gluteus maximus (tensor fasciæ femoris), which constitutes a difference between *Eudyptes* and Grebe, in the latter of which of all birds the gluteus maximus (tensor fasciæ femoris) attains the largest dimensions, at the same time that it approximates *Eudyptes* to the Swan and to the raptorial birds; the great size of the quadratus femoris (obturator externus); the presence of two distinct heads of the femoro-coccygeus (cruro-coccygeus and adductor longus), which separates *Eudyptes* from the Grebe, in the

¹ In translating the following summary, I have inserted in brackets the names used in the text to designate the various muscles referred to by MM. Gervais and Alix.