Zoology Part XVIII: Report on the SPEENISCIDÆ. Anatomy of the. By Professor Morrison Watson. Bound in Volume 7,1883.

ischium. It passes obliquely downwards and forwards, and after being joined by the second head above the knee joint, is *inserted* by means of a flattened tendon into the anterior internal tibial crest, in front of the tendon of insertion of the semi-tendinosus. The second head is fan-shaped, and *arises* from the lateral surface of the abdominal wall, where it is attached to the aponeurosis of the abdominal muscles. The fibres converge as they pass outwards, and uniting with those of the pubic head, are *inserted* along with them into the anterior internal tibial crest. The two heads together thus arise from a semicircular origin, which extends from front to back of the limb, and the fibres form, so to speak, a sheath for the reception of the posterior muscles of the thigh.

Relations.—The pubic head is concealed externally by the semi-tendinosus and cruro-coccygeus. Its anterior border is in contact with the posterior border of the adductor magnus. The abdominal head is quite superficial at its origin.

Action.—The semi-membranosus co-operates with the biceps and semi-tendinosus in flexing the knee and extending the hip joint.

Nerve supply.—A branch from the sciatic supplies the posterior or pubic head of origin. The source of supply of the second or abdominal head of origin I failed to determine.

Variations.—In one specimen of *Eudyptes chrysolophus* I found the pelvic head of origin of the semi-membranosus transferred to the last coccygeal vertebra. In others, however, the muscle presented the arrangement above described. Such was also the case in the specimen dissected by MM. Gervais and Alix. In *Spheniscus magellanicus* the pelvic head of origin is attached to the whole breadth of the posterior border of the pelvis. In *Spheniscus minor* it is limited to the lower half of that border. In both these species, therefore, the attachment of the semi-membranosus to the ischium is more extensive than in *Eudyptes chrysocome.*

Remarks.—This muscle in the Penguins differs, so far as my own observations go, from the corresponding structure in every other bird in the possession of a second or abdominal head of origin. Nor can I find in the literature at my disposal any reference on the part of anatomists to a similar arrangement elsewhere. If farther research should fail to discover a similar arrangement in other species, then the possession by the semi-membranosus muscle of a second or abdominal head of origin must be regarded as one of the characteristic features in the anatomy of the group, seeing that it occurs in every species of Penguin which I have examined.

Meckel does not refer to the presence in the Penguins of an additional head of origin to this muscle.

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