

The crucial ligaments of the knee joint are two in number. The anterior is attached below to the anterior horn of the single semilunar cartilage, and above to the intercondyloid depression of the lower end of the femur. The posterior crucial ligament is continuous below with the posterior horn of the semilunar cartilage, and above, it, like the anterior crucial ligament, is inserted into the intercondyloid femoral notch.

The ankle joint is surrounded by a strong capsular ligament, which is attached to the contiguous extremities of the bones which enter into its formation. Posteriorly and laterally this capsule is strengthened by special ligaments. Posteriorly a stout quadrilateral plate of fibro-cartilage is attached below to the posterior border of the upper extremity of the tarso-metatarsal bone, while above it presents a free border. This plate is perforated for the transmission of the tendons of the long flexor muscles of the toes. The capsule of the joint is farther strengthened by lateral ligaments, which, however, are not so well defined as are the corresponding structures of the knee joint.

In the interior of the ankle joint there is a single semilunar cartilage which intervenes between the upper extremity of the outer metatarsal bone and the external of the two lower tibial condyles. This cartilage moves freely on both bones, and is continuous in front with the anterior crucial ligament, and behind with the fibro-cartilaginous plate which completes the joint posteriorly.

The crucial ligaments are two in number. Both are attached above to the intercondyloid notch on the lower end of the tibia. The anterior or external is inserted below into the base of the outer metatarsal bone, while the posterior or internal is inserted into the anterior border of the upper end of the tarso-metatarsal bone. Both of these ligaments are drawn tense when the foot is extended upon the tibia.

The metatarso-phalangeal joints are each provided with a capsular ligament, which is strengthened laterally and superiorly by special ligamentous bands. The plantar surface of each is defended by a plate of fibro-cartilage, over which glide the tendons of the long flexor muscles of the toes.

The interphalangeal articulations are similarly arranged, except that superior ligamentous bands are absent.

The metatarsal bone of the hallux is attached to that of the second toe by a few ligamentous fibres. The separate elements of the hallux are connected together by delicate capsular ligaments.

III.—MYOLOGY.

(Plates VIII., IX., X.)

The muscular anatomy of one or other species of the Spheniscidæ has been previously described, either in whole or in part, by Schoepss, Reid, Gervais and Alix, and isolated references to the myology of the group occur in the standard works of such writers upon