

from each other—the one from the base of the second and the other from the base of the first metatarsal bone. Dr. Murie names these muscles the double (or deep) interossei.

*The dorsal layer.*—The only elements of this layer which have retained their individuality are—

1. The abductor hallucis ( $d^1$ ).
2. The abductor ossis metatarsi minimi digiti ( $d^{6'}$ ).
3. The abductor minimi digiti ( $d^6$ ).
4. The third dorsal interosseous muscle ( $d^4$ ).

The abductor hallucis ( $d^1$ ) arises from a sesamoid bone which glides upon the tibial side of the internal cuneiform. It is simply a strong rounded tendinous cord with a few muscular fibres at its proximal end, and it is inserted into the inner side of the base of the first phalanx of the hallux. Dr. Murie gives a different description of this muscle. He says:—"The presence of a muscle answering to one of these (*i.e.*, abductor hallucis) in the foot of the Walrus, manifests a commencing change on the adaptation of the pes as an instrument of clutch as well as support. The muscle in question has a long narrow belly, arising by a tendon from the extra bone outside the cuneiform, and is fleshy three-fourths of the length of the hallucial metacarpal (metatarsal?), being inserted by tendon and fascia into and over the metacarpo-phalangeal joint. Both in the Sea-lion and Seal, tendinous fascia takes the place of this muscle; but it is noteworthy that in *Ursus americanus* its representative is found." The almost completely fibrous condition of the muscle in my specimen associates it with the Seal, and may be accounted for by the youth of the animal.

The abductor ossis metatarsi minimi digiti ( $d^{6'}$ ) exhibits the usual attachments.

The abductor minimi digiti ( $d^6$ ) arises from the fascia covering the outer surface of the abductor ossis metatarsi minimi digiti, and is inserted into the outer side of the base of the first phalanx of the minimus.

The third dorsal interosseus is the only member of this group present as a distinct muscle. Not a trace of the remaining three dorsal interossei is to be observed, but as the outer head of the flexor brevis annularis and the inner head of the flexor brevis medii pass for a considerable distance upwards between the metatarsal bones, it is reasonable to suppose that they contain the fibres of the fourth and second members of this group. With regard to the first dorsal interosseus not even this clue, slight as it is, exists, for the inner head of the flexor brevis indicis is plantar in position.

In addition to the above intrinsic muscles two extra fleshy slips are found taking origin from the tarsal bones. The homology of these is somewhat difficult to determine. One ( $d^6 \times$ ) arises from the under surface of the anterior border of the os calcis, and ends in a tendon which is inserted into the fibrous textures upon the plantar surface of the base