

surface of the olecranon between the inner and outer borders, as far back as the middle tubercle (Pl. VII. fig. 4, in *Arctocephalus australis*); some fibres blend with the other head over the olecranon.

The second division is nearly alike in *Otaria* and *Trichechus*, and its origin differs from that in *Arctocephalus*, for in the former two it *arises* from the back of the humerus, whereas in the latter it only comes from the external border.

The *fourth* or *internal head*¹ lies on the back of the humerus under cover of the external head. It *arises* from the posterior surface of the shaft of the humerus beneath the origin of the middle head, and from the posterior ligament of the elbow-joint. It is of a triangular form, but the base is next the elbow-joint, and the apex below the inner side of the head of the bone. It is *inserted* into the posterior ligament of the elbow-joint; into the sides and tip of the olecranon; and into the quadrilateral surface behind the sigmoid cavity.

In *Arctocephalus gazella* it *arises* from the posterior surface of the shaft of the humerus, from the capsule of the shoulder-joint, from the ligament as in *Phoca*, and is *inserted* into the quadrilateral surface behind the sigmoid cavity of the ulna. In *Otaria* and *Trichechus* its disposition is almost the same. It is the extensor of the forearm.

In *Arctocephalus* the musculo-spiral supplies the dorsi-epitrochlear, long, internal, and external heads, the latter also has a twig from the circumflex nerve.

The FLEXOR OR INNER SURFACE.—In the Phocinæ the following are the muscles—*anconeus internus*, *palmaris longus*, *flexor communis digitorum*, *flexor carpi radialis*, *pronator radii teres*, *flexor carpi ulnaris*, *abductor minimi digiti longus*.

In *Arctocephalus*, instead of one palmar muscle there are three, and the *abductor minimi digiti* is not found. Neither in the Phocinæ nor *Arctocephalus* is there a *pronator quadratus*.

The *Anconeus internus*, called *supinator quadratus* by Lucae, is nearly double the size of the *anconeus externus*. It *arises* from the back of the internal condyle below the supracondyloid foramen, and is *inserted* into the inner side of the olecranon below the long head of the triceps.

In *Arctocephalus gazella* it *arises*, as in *Phoca*, from the posterior part of the internal condyle above the *palmaris longus*, and behind the *pronator radii teres*. It crosses from the internal condyle to the inner lip of the olecranon, and is *inserted* into it opposite the anterior and middle tubercles of the outer surface. The long head of the triceps and the deep palmar have a bed for it in their substance. It is present in *Otaria* and *Trichechus*. It is a short extensor of the elbow-joint, and also steadies it. It is supplied by the ulnar nerve.

The *Palmaris longus* in the Phocinæ is in two parts:—*a*. The first part *arises* from the posterior half of the hollow on the internal surface of the ulna, where the olecranon and the posterior border of this bone meet. It is situated at the origin below the *anconeus internus*, and higher up the shaft than the *flexor carpi ulnaris*. At the junction of the upper and middle thirds of the ulna it divides into two slips, one being anterior, the other posterior. The latter soon splits into two fine tendons, which are *inserted* into the deep fascia over the wrist. The anterior slip is also tendinous, and disappears beneath the palmar fascia; upon the under surface of this it widens and emerges on the opposite side as two fascial slips, which descend to the heads of the 2nd and 3rd metacarpal bones. Here they are attached to the sheaths of the corresponding tendons, and also to the tendons of the *flexor sublimis* for the 2nd and 3rd digits. It is with difficulty

¹ This is Humphry's fourth division; also Lucae's, and in his plate is the *anconeus quartus*.