

vertically on the outer side of the deltoid ridge, which was not the case in *Macrorhinus*. In *Arctocephalus gazella* the humerus was 156 mm. long. The epiphysis of the head was conjoined with that of the greater tuberosity, but that for the lesser tuberosity was distinct. The epiphysis for the inner condyle was distinct from that for the radio-ulnar articular surface. Neither species possessed a supracondyloid foramen.

The *radius* and *ulna* had the characteristic general shape and relative position customary in the seals. The radius had a strong ridge on its anterior border for the pronator teres, its lower end was grooved on the dorsal aspect for the extensor tendons, and immediately below the neck was a low bicipital tuberosity. The olecranon and upper half of the shaft of the ulna were distinctly grooved both on the dorsal and palmar surfaces; that on the dorsal surface was divided into two unequal parts by a longitudinal ridge which commenced in a tubercle at the free edge of the olecranon. Another tubercle was situated at the anterior end of the same border of the olecranon, and a third at the posterior end. To these parts the triceps and dorsi-epitrochlear muscles were attached. The interosseous interval was narrow. The radius articulated at its lower end with the ulna, scapholunar, and cuneiform; the ulna with the radius, cuneiform, and pisiform. The radius in the adult male was 182 mm. long, the ulna 224 mm. In *Arctocephalus gazella* they were similar in shape but smaller; the radius was 152 mm., the ulna 191 mm. long, and the epiphyses were not ankylosed.

*Manus.*—There were seven carpal bones. The *scapholunar* was large and transversely elongated; it articulated with the radius, cuneiform, and the four bones of the distal row. The *cuneiform* was elongated in the dorsi-palmar diameter and articulated with the radius, ulna, pisiform, scapholunar, unciform, and 5th metacarpal. The *pisiform* was elongated for 21 mm., and projected inwards from the lower end of the ulna, with which and the cuneiform it articulated. The *trapezium*, though much smaller than the scapholunar, was next to it in size; it articulated with it and with the trapezoid and 1st and 2nd metacarpals. The *trapezoid* was wedged in between the trapezium and magnum, and articulated with them and with the scapholunar and 2nd metacarpal. The *os magnum* was a comparatively small bone: it articulated with the 3rd metacarpal, trapezoid, unciform, and scapholunar. The *unciform*, as in the other seals described, did not reach the inner border of the carpus, owing to the articulation of the 5th metacarpal with the cuneiform; it articulated with the 4th and 5th metacarpal, cuneiform, scapholunar, and magnum. All the carpalia were rough on the palmar and dorsal surfaces for the attachment of ligaments, and only the scapholunar had a process, and that a low one, projecting from the inner side of its palmar surface.

There were five *digits*, which diminished in length from the pollex to the minimus. The three segments of the pollex measured collectively 241 mm., they were not only longer than the corresponding bones of the other digits but they were broader and stronger. The metacarpal of the pollex, 110 mm. long, was flattened at its carpal end,