

phalanges. The third toe is the longest, the fourth is longer than the second, and the first resembles that of the majority of swimming birds in being rudimental. The first phalanx of the first toe is extremely short, but exceeds in length that of its metatarsal bone. In the other toes, the first or basal phalanx and the penultimate phalanx are of equal length. The other phalanges are somewhat shorter. The phalanges diminish in thickness from base to apex of the toe. The basal or proximal end of each presents a double cup-shaped cavity for articulation with the distal extremity of a metatarsal bone or neighbouring phalanx as the case may be. Their distal extremities, on the other hand, present two condyloid eminences separated by a vertical groove. The lower surfaces of the phalanges are flattened, while their dorsal surfaces are almost cylindrical. The terminal phalanx of each toe is laterally compressed and adapted to the basal concavity of the nail.

The following are the measurements of the toes of different species in inches:—

SPECIES.	Length of second toe.	Length of third toe.	Length of fourth toe.
<i>Eudyptes chrysocome</i> , from Tristan, . . . . .	$1\frac{3}{4}$	$2\frac{1}{4}$	$2\frac{3}{8}$
<i>Eudyptes chrysocome</i> , from the Falklands, . . . . .	2	$2\frac{1}{2}$	$2\frac{1}{4}$
<i>Eudyptes chrysocome</i> , from Kerguelen, . . . . .	2	$2\frac{1}{2}$	$2\frac{1}{4}$
<i>Eudyptes chrysolophus</i> , . . . . .	2	$2\frac{1}{2}$	$2\frac{1}{4}$
<i>Spheniscus demersus</i> , . . . . .	$1\frac{3}{4}$	$2\frac{3}{4}$	$2\frac{1}{2}$
<i>Spheniscus magellanicus</i> , . . . . .	$1\frac{3}{4}$	$2\frac{1}{2}$	$2\frac{1}{2}$
<i>Spheniscus mendiculus</i> , . . . . .	$1\frac{1}{2}$	$2\frac{1}{4}$	2
<i>Spheniscus minor</i> , . . . . .	$1\frac{1}{4}$	$1\frac{3}{4}$	$1\frac{1}{2}$
<i>Pygosceles taniatus</i> , . . . . .	2	3	$2\frac{3}{4}$
<i>Aptenodytes longirostris</i> , . . . . .	$2\frac{1}{2}$	$3\frac{1}{4}$	3

#### COMPARATIVE REMARKS.

The bones of the leg in the Penguins differ as a whole but little from those of the birds which most closely resemble them, except in the form of the patella, and in that of the tarso-metatarsus. In respect of form and size the patella resembles to some extent that of the Grebes and Divers, but differs with regard to the great development of the groove for the reception of the tendon of the "ambiens" muscle. It is in the form of the metatarsus that we find the most characteristic feature in the osteology of the limb of the Penguins. The strongly-pronounced separation, even in the adult, of the three greater metatarsal bones is, so far as I am aware, quite peculiar to the group of Spheniscidæ.