

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

rounding fluid. In the backward or effective stroke, on the other hand, a broad surface is presented to the water, and instead of the wing being carried backwards, the body of the bird is propelled forwards. In accordance with the requirements of the animal, moreover, the movements permissible between the separate segments of the limbs are much more limited than in other birds—so much so that movements of pure flexion and extension in the joints beyond the shoulder can scarcely be said to be possible. These articulations, however, admit of a very considerable amount of *rotation*, and consequently instead of the limb being converted into an absolutely rigid paddle or oar, the rotation in question converts the wing into a screw-like blade, the curvatures of which are constantly varying in accordance with the amount of rotation which the forms of the different joints permit.

Upon carefully watching a living specimen of *Aptenodytes* which some time since formed a portion of the menagerie of the Zoological Society, I observed that the wing of the Penguin is never used in the manner of a rigid *oar*, which would imply the *simultaneous* movement of both wings in the same direction in order to propel the bird. On the contrary, the wings are often, and indeed I may say usually, brought into use *alternately*, much in the same manner as the pectoral fins of a fish, and in every movement of the wing, screw-like curvatures, which are due to the rotation of the different segments of the limb upon one another, are strongly developed. In fact, a constant screwing and unscrewing of the separate alar segments upon one