

of the entire anatomy of *Eudyptes chrysolophus*, as compared with that of *Eudyptes chrysocome*, leads me to the conclusion that in the former we are dealing with one of those extreme and exceptional varieties between which and distinct species it is almost impossible to draw a hard and fast line of demarcation. The most reliable test of distinct species is to be found in the fertility of the offspring derived from the union of two parents. But at present we, unfortunately, have no information as to whether *Eudyptes chrysocome* and *Eudyptes chrysolophus* interbreed with one another so as to produce fertile offspring. The facts, however, related by Murray¹ and Moseley² with regard to these birds show that while in some localities these two birds have distinct rookeries, at others their nests are intermixed, and thus afford facilities for intermarriage. I am, therefore, inclined to regard *Eudyptes chrysolophus* as the most aberrant variety of *Eudyptes chrysocome*, and one which is apparently about to cross the boundary line and to become a distinct species.

Coming now to the consideration of the genus *Spheniscus*, we find that the generic characteristics of this group are to be found in the form of the skull as a whole, in the great development of the transverse temporal crest, and in the coalescence of its upper end with the cerebellar portion of the skull, all of which features serve to distinguish the skull of *Spheniscus* on the one hand from that of *Aptenodytes* on the other; in the presence of a deep fossa on the lateral surface of the skull, which fossa is bounded posteriorly by the transverse temporal crest; in the relatively great breadth of the central as compared with that of the lateral bars of the upper jaw; in the fact that the central bar completely fills up the interval between the lateral bars; in the small size of the anterior narial apertures, and in the transference of their posterior extremities to a point altogether in front of the lachrymo-nasal fossæ;³ in the breadth of the supra-orbital grooves, which are broader than in *Aptenodytes*, but narrower than in *Eudyptes*; in the great size and backward obliquity of the post-orbital processes; in the relatively slight curvature of the zygomatic arch, which at once distinguishes the skull of *Spheniscus* both from that of *Eudyptes* and of *Aptenodytes*; in the form of the rami of the lower jaw bone, which are more slender than in *Eudyptes* but less so than in *Aptenodytes*; in the form of the scapula; in the presence of a complete coracoidal foramen, in which respect *Spheniscus* agrees with *Eudyptes* but differs from *Aptenodytes*; in the relatively greater length of the metatarsus, which at once distinguishes *Spheniscus* from both the other genera; in the more complete separation of the individual metatarsal bones from one another than in either of the other genera; in the form of the tongue, which is intermediate in form between that of *Aptenodytes* and of *Eudyptes*; in the form of the proventricular gland, which may be either crescentic in

¹ Challenger Report, Zoology, part viii. p. 128.

² Challenger Report, Zoology, part viii. p. 127.

³ *Eudyptes minor* forms an exception to this arrangement.