

A SYSTEMATIC STUDY OF THE MAIN ARTERIES IN THE REGION OF THE HEART—AVES V—SPHENISCIFORMES

PART 2¹

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The writer was fortunate in obtaining a single specimen of the Emperor Penguin, *Aptenodytes forsteri* (No. 106141), from the anatomical collections of the Chicago Natural History Museum, for this study.

In a previous paper (Glenny, 1944), the writer presented the arrangement-pattern of the main arteries of the neck and thorax of five species of Penguins. The arrangement of these same arteries in *Aptenodytes forsteri* is essentially the same as that of *Spheniscus demersus* (Glenny, 1944).

Minor differences may be noted, but these lie within the range of normal vascular variation, and are not to be regarded as being particularly significant as specific characteristics.

OBSERVATIONS

The subclavian artery and its branches are the same as in *Spheniscus demersus*. Both the right ligamentum botalli and the left ligamentum aortae are present in the adult.

Some differences are found in the arteries arising from the common carotid artery. The thyroid arteries arise from the short common carotid arteries posterior to the point of origin of the internal carotid (trunk) artery, superficial artery, and vertebral artery. These three arteries arise together from the common carotid artery. The subscapular artery arises from the superficial cervical artery, shortly after it branches from the common carotid.

The right superficial cervical artery comes to serve as the ascending-oesophageal artery. No major secondary branches were found arising from the superficial cervicals.

CONCLUSIONS

The thoraco-cervical arterial arrangement-pattern in *Aptenodytes forsteri* does not appear to deviate greatly from the general Sphenisciformes pattern.

In effect, the arrangement-pattern presented by *Aptenodytes* might be considered to be a basic ordinal arrangement-pattern, rather than a more highly specialized type which might be expected in a terminal species.

It is within the realm of possibility that *Aptenodytes* has retained the generalized arterial pattern which may have been present in an earlier, now extinct, ancestral form.

Close similarity in the arterial arrangement-patterns in six species of penguins, thus far studied, might lead one to conclude that this group of birds has almost completely run its course of divergences in the arterial pattern, and that, although there are relatively few extinct species, they show a high degree of similarity in structure and arrangement of arteries.

REFERENCE

- Glenny, F. H. 1944. A systematic study of the main arteries in the region of the heart—Aves V—Sphenisciformes. Part I. Ohio Journal of Science, 44 (1): 28-30.

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