

papillary muscle supplies additional tendinous cords to the left cusp of the valve only. The cusps lie one on either side of the auriculo-ventricular orifice, which, on the left side of the heart does not exceed one-third of the diameter of the corresponding orifice of the right side. The aortic orifice is provided as in other birds with three semi-lunar valves.

Variations.—Except in *Spheniscus demersus*, in which I found that the two valves, which in other species meet both in front of and behind the orifices of the right superior and inferior venæ cavæ, are only continuous with one another in front of, and not behind these orifices, I have observed no variations in the hearts of the various Penguins examined. The following table gives the dimensions of the heart of different species in inches.

SPECIES.	Length of heart from base to apex.	Greatest breadth of heart at base.
<i>Eudyptes chrysocome</i> , from Tristan,	2¼	2
<i>Eudyptes chrysocome</i> , from the Falklands,	2¼	2
<i>Eudyptes chrysocome</i> , from Kerguelen,	2¼	2
<i>Eudyptes chrysolophus</i> ,	3	2½
<i>Spheniscus demersus</i> ,	2¼	1¾
<i>Spheniscus magellanicus</i> ,	2½	2¼
<i>Spheniscus mendiculus</i> ,	1½	1¼
<i>Spheniscus minor</i> ,	1½	1½
<i>Pygosceles tenuatus</i> ,	3	4
<i>Aptenodytes longirostris</i> ,	3½	3

ARTERIAL SYSTEM.

THE PULMONARY ARTERY.

The *pulmonary artery* (Pl. XI. fig. 1), after leaving the right ventricle, divides into two main trunks, one for each lung. Each of these trunks as it passes outwards lies above the corresponding superior vena cava, and below the bronchus. Each divides into two subordinate branches, which enter the lung substance separately. The pulmonary artery is situated ventrad of the other constituents of the root of the lung.