3. Fishes

In fishes with the development of gills, each aortic arch becomes divided into two portions — an afferent branchial artery and an efferent branchial artery. The afferent vessel carry deoxygenated blood from ventral aorta to the gills while the efferent vessel carry oxygenated blood from the gills to the radices aorta. The afferent and efferent vessels are connected by capillary loop in the gills. When the blood passes through this capillary loop it loses its CO_2 and takes up O_2 and thus it becomes changed from venous to arterial blood.

The greatest number occurs in certain primitive elasmobranchs (sharks). Heptanchus (primitive shark) has 7 pairs of aortic arches. and Hexanches has 6 pairs of aortic arches. Scoliodon (dog-fish) contains 5 pairs of aortic arches and teleost fishes (bony fishes) contains only four pairs of aortic arches.