

AN ANOMALOUS ARTERY IN THE KINGFISHER (CERYLE ALCYON)

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During a recent dissection of two mature specimens of the Belted Kingfisher (*Ceryle alcyon*), an anomalous artery was observed. The specimens which were used were obtained at the State Fish Hatchery No. 10, near Akron, Ohio, in August, 1937.

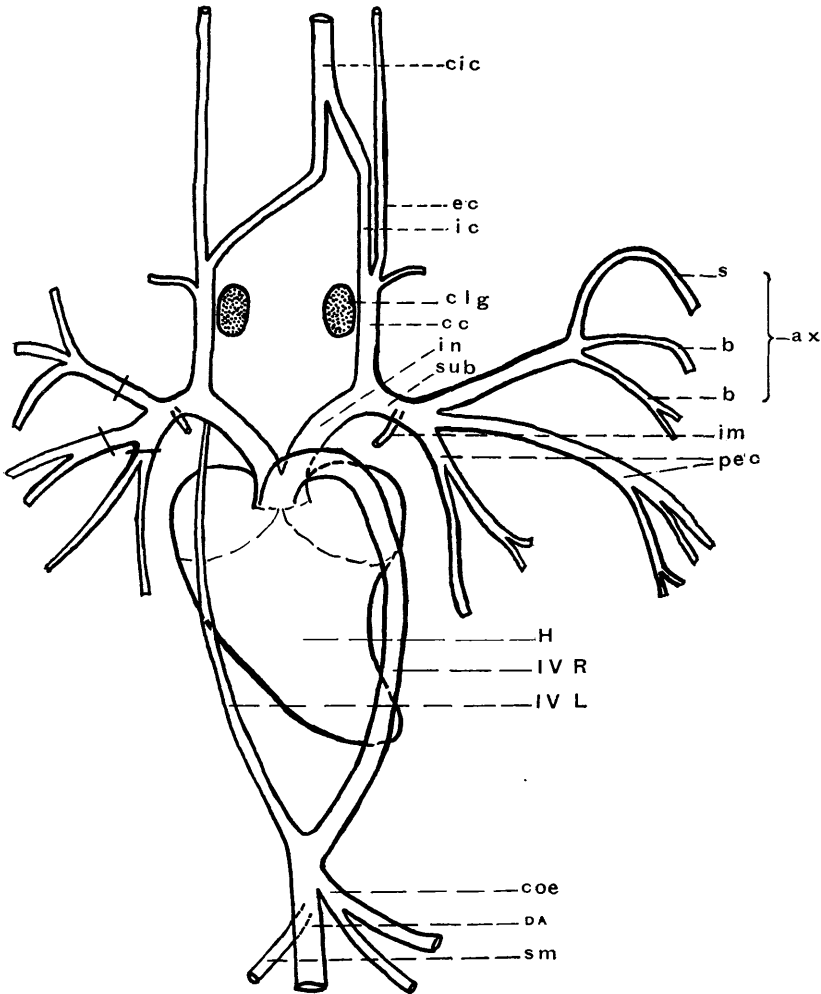
At the posterior end, this vessel arises from the dorsal aorta in the same fashion as the normal 4th right aortic arch (dorsal aorta). It is on the left side of the body just anterior to the coeliac and mesenteric arteries. This left vessel proceeds anteriorly along the sub-vertebral musculature of the thoracic cavity toward the neck where it ends in the muscle fibers and surrounding fascia at the base of the neck just anterior to the left lung. It does not form an anterior ligamentous connection with the right 4th aortic arch or any other major artery at the base of the heart.

Dr. Berry Campbell, of the University of Oklahoma, remarked that there are minute twigs given off all along the course of this vessel. Further he says, "These twigs are not true intercostals, however, and probably in this species . . . the intercostal arteries are branches of a caudal continuation of the vertebral arteries."

There are three primary branches of the aorta giving rise to the right aortic arch and, almost immediately anterior, to the innominate arteries which then give rise to the subclavian arteries. This differs somewhat from Beddard's expected condition (1) which indicated that the dorsal aorta arises from the right innominate artery.

After consideration of the data given above, the burden of proof seems to indicate that this anomalous artery is a persistent embryonic left 4th aortic arch. It is, therefore, one of the few cases of this kind thus far reported in mature specimens. Beddard (1) refers to injection of a similar vessel in *Spizaetus* and *Aceros*, but no further reference has been located.

Due to the meager amount of literature on this subject, the matter was referred to several anatomists at other institutions. Dr. E. G. Butler, of Princeton University; Dr. D. P. Quiring,



Semi-diagrammatic Sketch of the Main Arteries of the Kingfisher (*Ceryle alcyon*) in the Region of the Heart—Dorsal View

EXPLANATION OF ABBREVIATIONS

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| cic—common internal carotid artery | ax—axillary artery |
| ec—external carotid artery | im—internal mammary artery |
| ic—internal carotid artery | pec—pectoral arteries |
| clg—thyroid gland | H—Heart |
| cc—common carotid artery | IV R—Fourth right aortic arch |
| in—innominate artery | IV L—Fourth left aortic arch |
| sub—subclavian artery | coe—coeliac artery |
| s—shoulder branch of axillary artery | DA—dorsal aorta |
| b—brachial arteries | sm—superior mesenteric artery |

and the late Professor T. Wingate Todd, of Western Reserve University; and Dr. Berry Campbell, of the University of Oklahoma concur in the interpretation that this vessel is a persistent 4th left aortic arch. Dr. W. C. Kraatz and Dr. E. P. Jones, of the University of Akron, made early observations on the two specimens and found that it was located in the position of the embryonic left 4th aortic arch.

REFERENCE

- (1) **Beddard, Frank E.** 1898. *The Structure and Classification of Birds.* London, Longmans, Green and Co.
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