

Of these, one (the external facial vein of Neugebauer¹) passes backwards parallel with the zygoma, and crosses the superficial surface of the digastric muscle to unite behind the articulation of the lower jaw bone with the second branch. The second vein (the occipital of Neugebauer) arises among the muscles of the neck, close to the occiput. It passes downwards along the posterior border of the digastric muscle to unite with the first branch. The large vein thus formed is joined by a third branch, which carries off the blood from the deep muscles in the occipital region, after which it unites in the basilar region with the deep veins of the head to form the commencement of the jugular vein.

The venous trunk formed by the union of the superficial veins unites immediately behind the os quadratum with the deep branch (the internal facial of Neugebauer) of the jugular vein. The deep branches of the two jugulars of opposite sides unite across the middle line to form a venous arch, the convexity of which is directed forwards. This arch rests against the palatal surface of the pterygoid muscles, and receives numerous small branches from the base of the skull and from the palatal region. Each extremity of the arch is prolonged backwards to unite with the common trunk formed by the superficial veins of the head, and the two together form the commencement of the jugular vein. From the point of origin the jugular vein passes backwards along the neck, in company with the vagus nerve and subcutaneous cervical artery and under cover of the panniculus carnosus muscle as far as the root of the neck. Here it enters the thorax, and crossing the dorsal surface of the subclavian artery, unites with the subclavian to form the innominate vein. In consequence of the transposition of the trachea and œsophagus to the right of the middle line, the jugular vein of the right side is likewise displaced from the front of the vertebral column, and lies altogether to its right side and in contact with the posterior surface of the œsophagus. At the root of the neck, however, like these structures, the jugular vein regains its normal relation to the cervical column. Each jugular vein receives numerous branches from the trachea, œsophagus, and panniculus carnosus muscle. One of larger size than the others arises among the extensor muscles of the neck, and joins the jugular vein about the middle in length of the cervical region.

The Humeral Vein.

The veins of the wing in the Penguins do not accompany, nor do they correspond with, the arteries. They are for the most part of small size, and pass from both surfaces of the wing towards its posterior margin, where they terminate in a single trunk of large size. This, the basilic vein of Neugebauer (Pl. XI. fig. 4), commences close to the tip of the wing and passes upwards, lying in close relation to the posterior border of that organ as high as the axilla. Having reached the axilla, it passes between the serratus

¹ *Systema venosum Avium*, Nova Acta Acad. Nat. Curios, tom. xxi.