

lost sight of, and, lying as it does in the substance of the abdominal muscles, unless specially looked for, is apt to be omitted in the enumeration of the ribs.

The first vertebral rib in *Eudyptes chrysocome* measures only one inch in length. It is, however, provided with a well-developed head, neck and tubercle, by means of which it articulates with the body and transverse process of the first dorsal vertebra. Its inferior extremity terminates in a sharp point, which lies embedded in the substance of the scalene muscle. This rib has no connection with the sternum, being destitute of any sternal segment. It is also destitute of an uncinat process.

The second vertebral rib is also destitute of a sternal segment, and consequently does not articulate with the sternum. It is about three times as long as the first rib, from which it differs, inasmuch as it develops an uncinat process.

The following ribs as far as the seventh are much flattened, and each bears a large uncinat process. The eighth and ninth ribs, again, more nearly resemble the first and second, inasmuch as they lose the flattened form, become almost cylindrical, and are much more slender than those which precede them. The eighth is provided with an uncinat process, which is wanting in the case of the ninth rib. The tenth rib, as already observed, is rudimental, and does not articulate with the vertebral column as do all the others, its proximal extremity being attached by ligament to the middle in length of the posterior border of the ninth vertebral rib. The tenth rib is, moreover, devoid of an uncinat process. All the vertebral ribs, with the exception of the first and second, possess sternal segments. The tubercles of the eighth and ninth vertebral ribs come into relation with the lower surface of the iliac bone, close to its anterior margin or crest.

*The uncinat processes* are of exceptionally large size, and much flattened. They are elongated-quadrilateral in form, and project backwards and upwards. They are met with in every vertebral rib, with the exception of the first and the last two. In the case of the anterior ribs they are attached to the junction of the middle and lower thirds of the bone, but occupy a higher position with reference to the posterior ribs, being attached in these to about the middle of their length or even opposite the junction of the upper and middle thirds of their vertebral segments. They are of largest size about the middle of the costal series. As is well known, in all the Penguins the uncinat processes are connected with the ribs by means of distinct synovial articulations, and never become anchylosed with them as in the majority of birds.

*The sternal ribs* are eight in number on each side, and belong to the vertebral segments posterior to the second. They increase in length from the first to the sixth, all of which articulate with special facets on the lateral margin of the sternum. The seventh sternal rib (belonging to the ninth vertebral segment), is much more slender than those which precede. It differs from these inasmuch as it does not reach the border of the sternum, but falling short of that bone is attached by ligament to the sternal segment next in front, about a quarter of an inch from the margin of the sternum. The eighth