

DEEP DISSECTIONS OF THE VEINS OF THE BOVINE HEAD: UNPUBLISHED WORK BY PROF. J. M. W. LE ROUX (1926–1991)

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Since his retirement in 1986 as Dean of the Faculty of Veterinary Science at Onderstepoort, Jan le Roux was picking up the threads of his doctoral studies on the veins of the bovine head. He injected 28 heads with latex and before he and his wife, Sjaan, left Pretoria to settle in Montagu, he regularly worked in the department of Anatomy. For him dissecting was an art, as illustrated by the fine collection of demonstration dissections in the Jan le Roux Study Hall linking the two dissection halls. The 6 specimens he was working on at the time, went with him to Montagu. The biomedical artist in the Anatomy Department, Christine Seegers, had completed 7 drawings of his dissections at the time of his death on 11 March 1991. When he knew that he would not recover from the cancer which had spread from his lungs to the brain, he ordered the municipality to fetch the specimens and to destroy them. This was typical of Jan le Roux—he did not want Sjaan to be saddled with this burden.

We who worked with Jan le Roux for years, felt that it would be sad indeed if these beautifully illustrated dissections were not published. Descriptions of the external and internal jugular veins are found in textbooks but illustrations of the deep branches are confined to drawings from his Doctor Med. Vet. dissertation (Hannover 1959) which were included in

Nickel, Schummer & Seiferle's (1983) authoritative text book on the anatomy of domestic animals while Ghoshal, Koch & Popesko (1981) made a concerted effort to illustrate the veins of the head in their textbook on the venous drainage of the domestic animals. Apart from the above, only two further publications contain illustrations of the deep veins of this region in the bovine viz. Baier (1929) on the venous plexuses at the entrance of the oesophagus in domestic animals and a schematic drawing in a publication by Smuts (1977) on the extraosseous veins of the cervical vertebrae of the ox.

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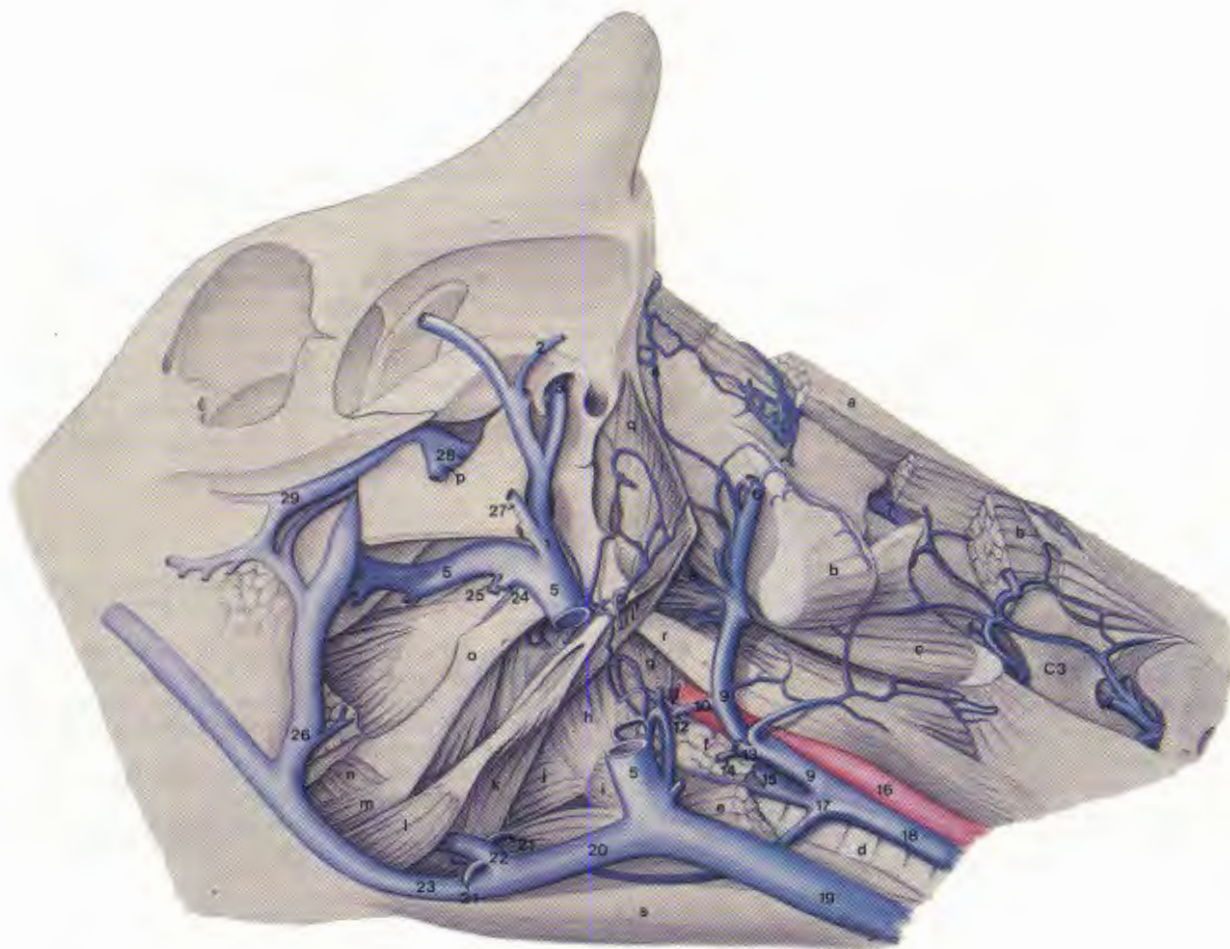


FIG. 1 Left lateral view. Superficial muscles and mandible removed.

1 V. temporalis superficialis; 2 V. auricularis rostralis; 3 V. emissaria foraminis retroarticularis; 4 R. occipitalis; 5 V. maxillaris; 6 R. anastomoticus cum V. occipitalis (from V. vertebralis); 7 V. vertebralis; 8 V. foraminis jugularis; 9 V. occipitalis; 10 common trunk for V. thyroidea cranialis and V. pharyngea ascendens; 11 V. pharyngea ascendens; 12 V. thyroidea cranialis; 13 branch to mandibular gland; 14 anastomotic branch to V. jugularis externa; 15 R. esophageus; 16 A. carotis communis; 17 V. thyroidea media; 18 V. jugularis interna; 19 V. jugularis externa; 20 V. linguofacialis; 21 Rr. pterygoidei; 22 V. lingualis; 23 V. facialis; 24 V. alveolaris inferior; 25 branch to pterygoid plexus; 26 V. buccalis; 27 V. transversa faciei; 28 Plexus massetericus; 29 V. profunda faciei

a M. rectus capitis dorsalis major; b M. obliquus capitis caudalis; c M. intertransversalis; d trachea; e M. omohyoideus (stump); f Gl. thyroidea; g M. cricopharyngeus; h M. thyropharyngeus; i M. sternothyroideus; j M. thyrohyoideus; k M. stylohyoideus; l l' rostral and caudal bellies of M. digastricus; m M. styloglossus; n M. hyoglossus; o Stylohyoideum; p Incisura mandibulae; q M. occipitohyoideus; r M. longus capitis; s M. sternohyoideus; C3 third cervical vertebra

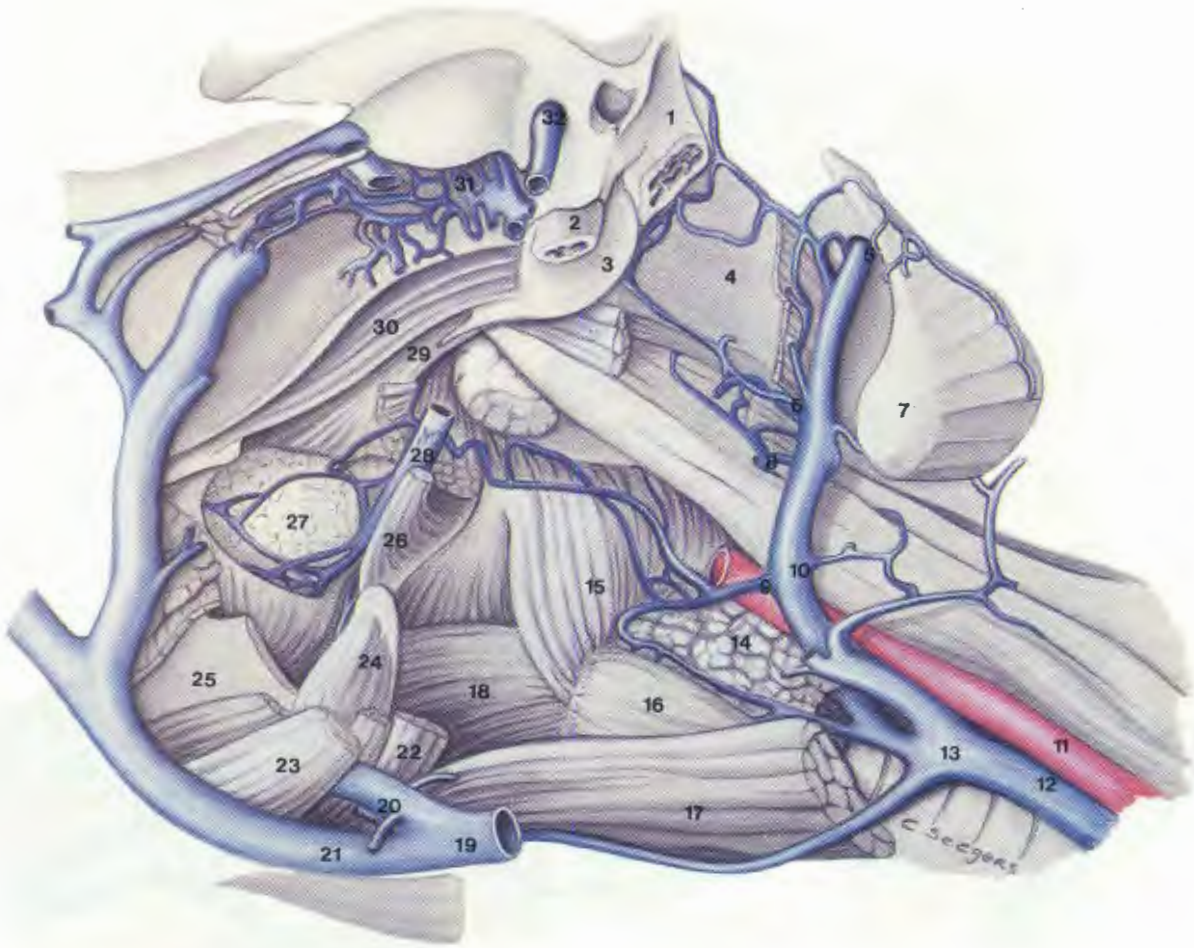


FIG. 2 Left lateral view. Deep dissection with hyoid bone and mandible removed.

1 Proc. paracondylaris (base); 2 articulation of stylohyoid; 3 Bulla tympanica; 4 atlantooccipital joint capsule; 5 R. anastomoticus cum V. occipitalis (from V. vertebralis); 6 branches to joint capsule, anastomosing with venous plexus medial to bulla; 7 Ala atlantis; 8 branch to Mm. rectus capitis lateralis and longus capitis; 9 common trunk for V. thyroidea cranialis and V. pharyngea ascendens; 10 V. occipitalis; 11 A. carotis communis; 12 V. jugularis interna; 13 V. thyroidea media; 14 Gl. thyroidea; 15 M. thyropharyngeus; 16 M. sternopharyngeus; 17 M. sternohyoideus; 18 M. thyrohyoideus; 19 V. linguofacialis; 20 V. lingualis; 21 V. facialis; 22 M. stylohyoideus (ventral stump); 23 M. digastricus (rostral belly); 24 M. ceratohyoideus; 25 Stylohyoideum; 26 M. stylopharyngeus (stump); 27 tonsil; 28 V. pharyngea (from pterygoid plexus); 29 M. levator veli palatini; 30 M. tensor veli palatini; 31 Pl. pterygoideus; 32 V. emissaria for. retroarticularis

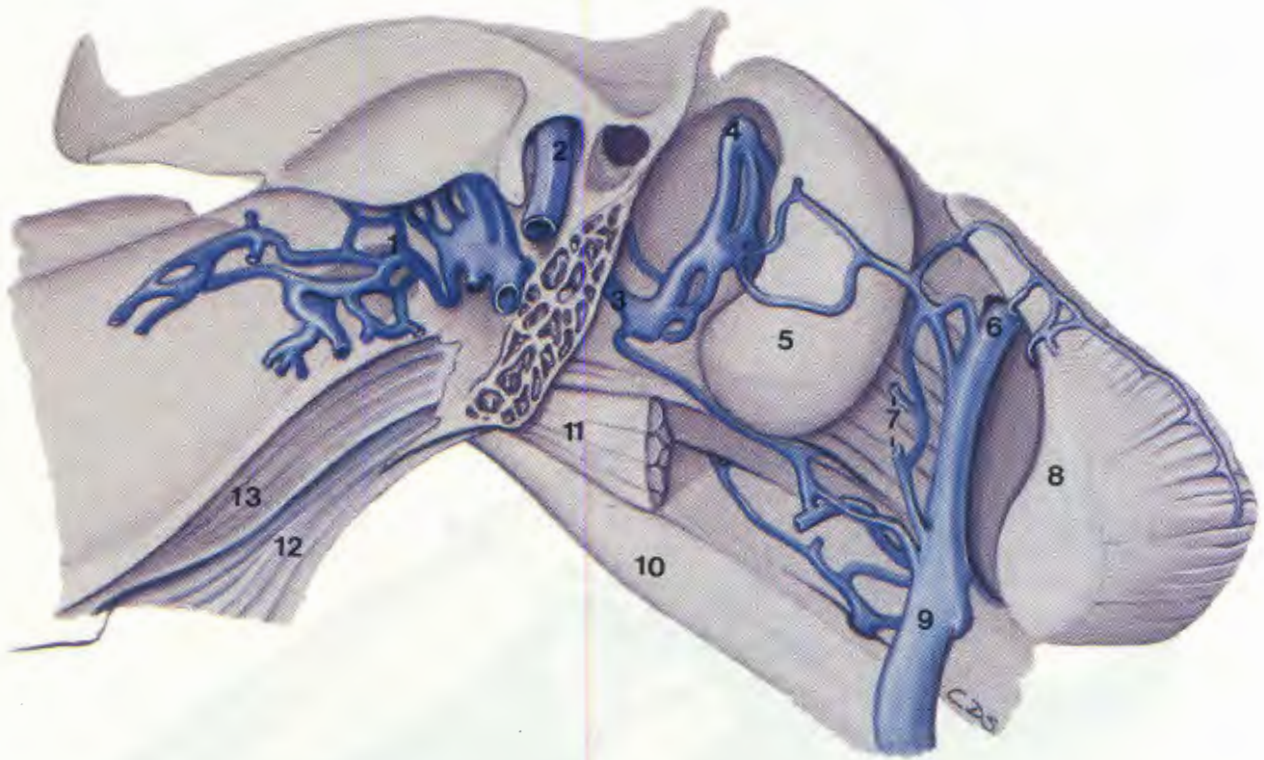


FIG. 5 Deep dissection of ventral condylar and atlantal fossae.

1 Pl. pterygoideus; 2 V. emissaria for. retroarticularis; 3 V. emissaria for. jugularis; 4 V. emissaria can. nervi hypoglossi; 5 Condylus occipitalis; 6 R. anastom. cum v. occipitali; 7 branches to joint capsule; 8 Ala atlantis; 9 V. occipitalis; 10 M. longus capitis; 11 M. rectus capitis ventralis; 12 M. levator veli palatini; 13 M. tensor veli palatini

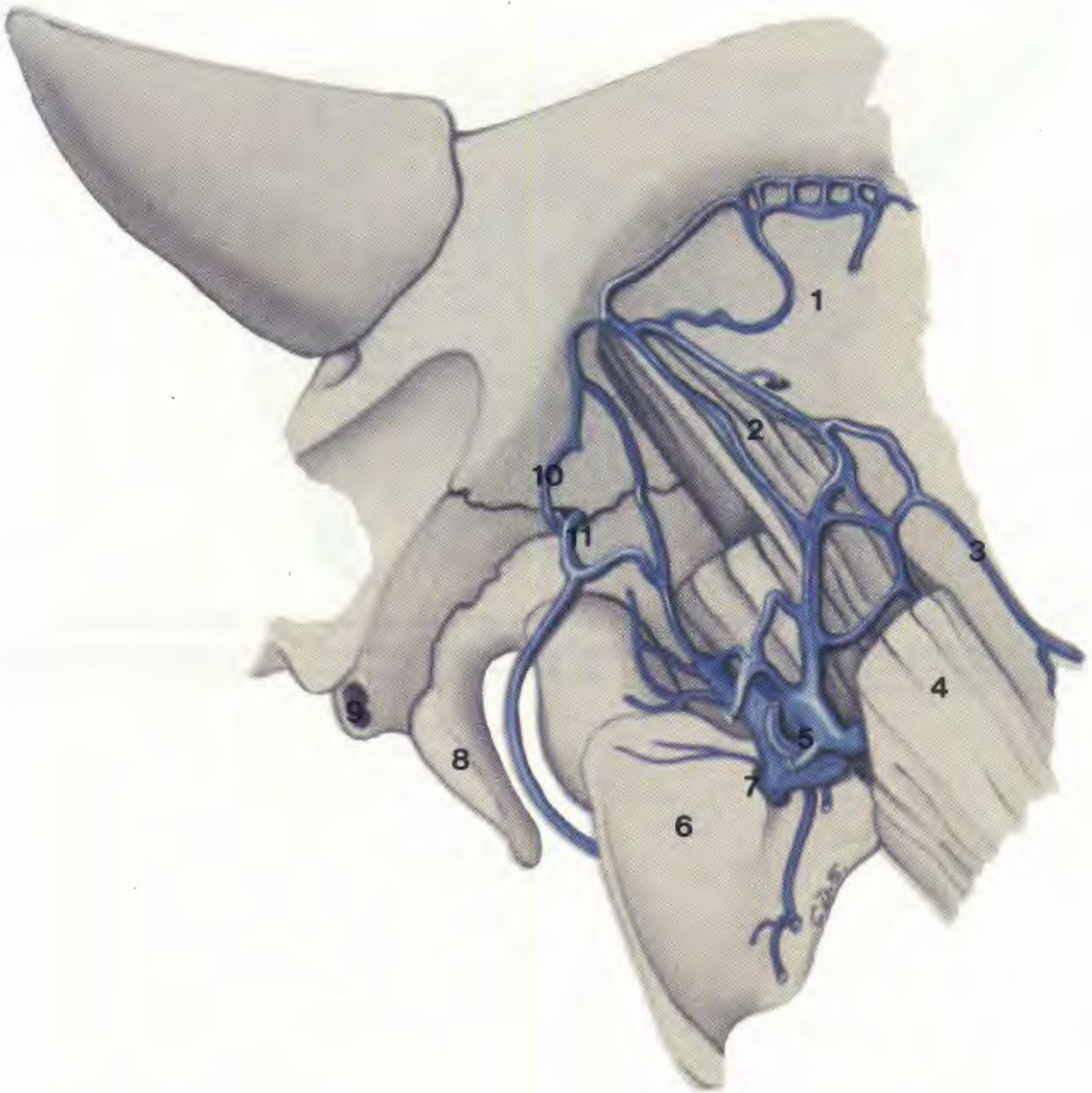


FIG. 6 Deep dissection of nuchal region.

1 occipital bone (squamous part); 2 M. rectus capitis dorsalis minor; 3 anastomosis with V. cervicalis profunda; 4 M. rectus capitis dorsalis major; 5 plexus formed at lateral vertebral foramen; 6 Ala atlantis; 7 For. alare; 8 Proc. paracondylaris; 9 Meatus acusticus externus; 10 R. occipitalis; 11 V. emissaria mastoidea

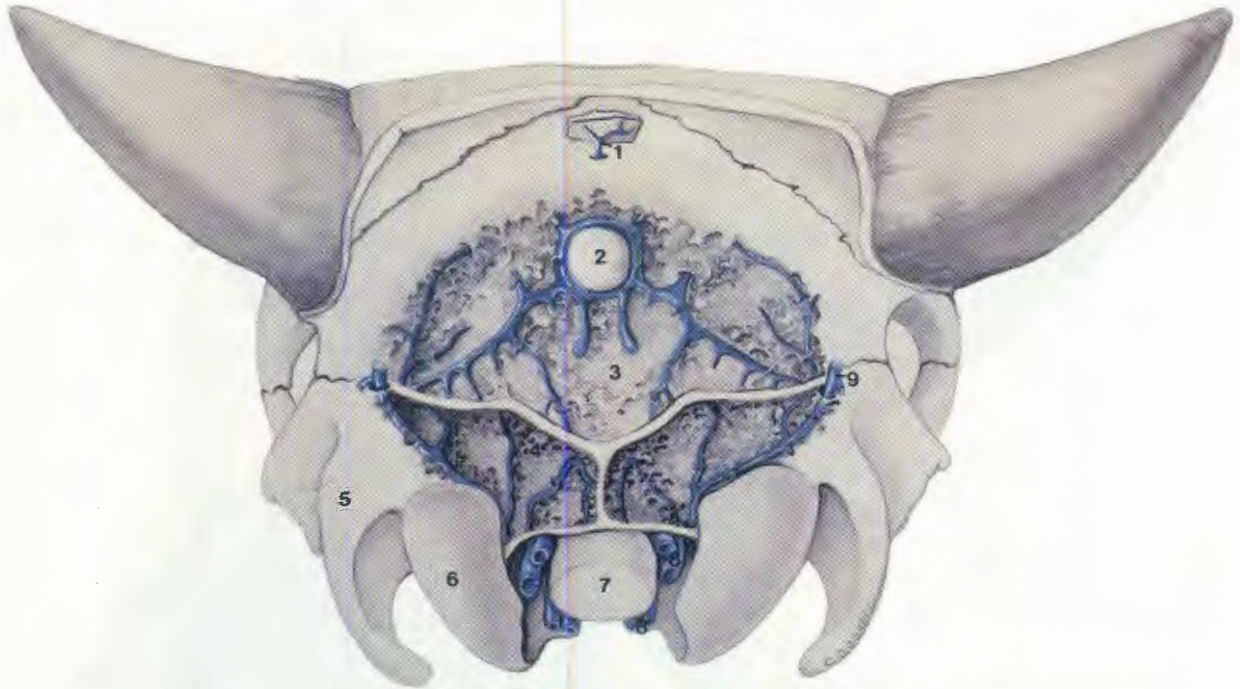


FIG. 7 Caudal view. Diploic veins in occipital bone. Latex injected specimen after treatment with 10 % HCl to dissolve bone.

1 vein at intercornual protuberance joins diploic veins; 2 Protuberantia occipitalis externa with veins emerging around it; 3 squamous part of occipital bone; 4 lateral part of occipital bone; 5 Proc. paracondylaris; 6 Condylus occipitalis; 7 spinal cord; 8 Pl. vertebralis interna ventralis; 9 V. emissaria mastoidea