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Vertebral, rib, and osteoderm morphology and histology of Middle Triassic diapsid *Eusaurosphargis*

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Bone histology and microanatomy of neck and dorsal vertebrae, a dorsal rib, and osteoderms from different body regions of *Eusaurosphargis* aff. *dalsassoi* from Winterswijk, The Netherlands, are studied by petrographic thin sections and micro-computed tomographic (μCT) data. Osteohistology in the axial elements differs from that of marine reptiles and corroborates a terrestrial or semiaquatic life style for *Eusaurosphargis* aff. *dalsassoi*. Not only the outer shape and overall microanatomy of the osteoderms, but also the association and attachment of the osteoderms to the underlying endoskeletal element (i.e., cervical vertebra, rib, appendicular element) vary depending on body region. Furthermore, chondroid bone is identified in the osteoderms of *Eusaurosphargis* aff. *dalsassoi* , which is the oldest evidence of this tissue in osteoderms of an extinct tetrapod. For comparison, μCT data of two neural arches tentatively identifiable as pertaining to the enigmatic Middle Triassic *Saurosphargis voltzi* (the holotype and only specimen of this taxon is considered lost) could be included. They share with *Eusaurosphargis* aff. *dalsassoi* the elongated transverse processes and a general similar microstructure, but also present an anteroposteriorly broadened bony sheath of the transverse process in ventral view, which is absent in *Eusaurosphargis* aff. *dalsassoi*.

Key words: Eureptilia, Triassic, Winterswijk, Muschelkalk, osteoderms, palaeohistology, chondroid bone.

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