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New Wenlock-Pridoli (Silurian) acanthodian fishes from Lithuania.

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Five new monotypic acanthodian genera and five new species are described from the Silurian (Wenlock to Pridoli) of Lithuania. Two new genera and species, *Vesperalia perplexa* and *Fecundosquama basiglobosa*, belong to climatiiform and three, *Arenaceacanthus arcuatacanalis* , *Bracteatacanthus assiduus*, and *Rohonilepis breviornatus*, to ischnacanthiform acanthodians. Vesperalia perplexa has high-crowned scales with ridges that cross the entire surface or frequently fade mid-crown and after a smooth area continue on the posterior edge. Stranggewebe in the crowns of *V. perplexa* scales has large oriented lacunae and a well-developed system of main vascular canals. *Fecundosquama basiglobosa* scales have an undeveloped neck, a crown with only marginal sculptural incisions and have an unusually large deep base. Simple bone-like mesodentine in the crowns of *F. basiglobosa* scales lacks principal vascular canals. *Arenaceacanthus arcuatacanalis* has diagnostic scales with anterior ridges that fade out at one-third of crown length, and crowns composed of simple acellular meso- and durodentine with the original arcuate radial vascular canals over the base. *Bracteatacanthus assiduus* scale crowns have short ridges of asymmetric profile and an antero-median sulcus, whereas scales of *Rohonilepis breviornatus* have sharp symmetric subradial crown ridges sloping towards the base. Scale crowns of *B. assiduus* and *R. breviornatus* are composed of dentine and durodentine, but the former is distinguished by a second area of multibranched radial vascular canals positioned high in the neck.

Key words: Acanthodii, Climatiiformes, Ischnacanthiformes, morphology, histology, Silurian, Lithuania.

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