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## **Famennian ptyctodontid placoderms: diversity and morphology**

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180 years ago, Louis Agassiz established for the first known ptyctodontid *Chelyophorus* from the Orel Region of European Russia based on isolate dermal plates. In 1860, Eichwald studied a new collection from same region including the articulated skull roof with orbital and occipital ossifications of the endocranium, and postcranial elements in addition to several isolated plates. The new specimens of the skull roof and, the CT images of Eichwald's specimens allow the redescription of *C. verneuili*. The skull of *Chelyophorus* is characterized by short and broad preorbital plates surrounding a small pineal plate; narrow central and paranuchal plates; a probably large nuchal plate; small, rounded postorbital plates and elongated marginal plates; with transversal pit line and supraorbital sensory-line canal present on the preorbital plates; and posterior sensory-line canal present on the central and paranuchal plates. Recently a second ptyctodont *Neruchella eichwaldi* was described from the Famennian Lebedyanian Regional Stage of the Orel Region by the author based on the complete skull roof. The *Neruchella* skull possesses a large, elongated pineal plate; large preorbital plates; large central plates with straight contact along the skull midline; large postorbital plates; short paranuchal plates; the X-shaped connection of posterior pitlines and supraorbital canals on the contact of central plates due to the lack of a nuchal plate. The endocrania in the Famennian ptyctodontids *Chelyophorus* and *Neruchella* have large paired orbital and occipital ossifications with well-developed glenoid condyles. These two Famennian ptyctodontids demonstrate two completely different structures of the head shields and are very distinct from all other known ptyctodontids.

**Keywords:** Famennian; 'placoderms'; ptyctodontids