

Two new petalodont teeth (Chondrichthyes, Upper Carboniferous) from the Karavanke Mountains, Slovenia

Dva nova zgornjekarbonska petalodontna zoba (Chondrichthyes) iz Karavank Slovenije

Anton Ramovš

Katedra za geologijo in paleontologijo,
Univerza v Ljubljani, Aškerčeva 2, 1000 Ljubljana,
Slovenija

Key words: petalodonts, Chondrichthyes, Upper Carboniferous, Karavanke Mountains, Slovenia

Ključne besede: petalodonti, Chondrichthyes, zgornji karbon, Karavanke, Slovenija

Abstract

A new tooth of *Petalodus ohioensis* Safford, 1853 (Petalodontida) from the Upper Carboniferous, Upper Gzelian, of the Karavanke Mountains is the third record of *Petalodus* from Slovenia and only the third occurrence in the Alps. A petalodont tooth of uncertain identity is the fourth tooth from the Upper Carboniferous of the Karavanke Mountains.

Kratka vsebina

Novi najdeni zob vrste *Petalodus ohioensis* Safford, 1853 (Petalodontida) iz zgornjega karbona (zgornji gzelij) Karavank je tretja najdba te vrste v Sloveniji in šele tretje najdišče v Alpah. Petalodontni zob še nejasne sistematske uvrstitve pa je četrti zob iz karavanskega zgornjega karbona.

Introduction

Two complete teeth of *Petalodus ohioensis* Safford, 1853, from the Upper Carboniferous of the Karavanke Mountains, collected from a water-supply ditch in Javorniški Rovt, were described (Ramovš, 1997). Two new petalodontid teeth from the Upper Carboniferous have been found.

A deformed petalodontid tooth was discovered by Jože Bedič of Jesenice. The locality is a black fossiliferous limestone above the cart-track from Planina pod Golico to Smučarski dom Črni vrh. Longitude of the locality is 27° 33' E, and latitude 46° 30' N.

Milan Peternel of Jesenice discovered a petalodontid tooth in a large block of black fossiliferous limestone lying in a small brook southeast of the village of Planina

pod Golico, north of the town Jesenice. Longitude of the locality is $27^{\circ} 77' E$, and latitude $46^{\circ} 78' N$.

Limestone from both localities contains spiriferid brachiopods. Crinoid columnals are abundant as are sponges (*Ablysiphonella alpina*). An uncommon fusulinid is *Dai-xina alpina alpina*, which ranges from limestones to the Upper Gzelian. Calcareous algae are represented by *Anthracoporella spectabilis*. In the locality with tooth (Fig. 2), nautiloid cephalopod *Metacoceras* vel *Mosquoceras* sp. has been found.

Description

Class **Chondichthyes** Huxley, 1990

Order **Petalodontida** Zangerl, 1981

Genus *Petalodus* Owen, 1840

Type Species *Chomatodus acuminatus* Agassiz, 1838

Petalodus ohioensis Safford, 1853

(misprinted as *Getalodus ohioensis* by Safford, 1853)

Fig. 1

The specimen is a slightly deformed tooth and exposed in labial view. Total tooth length is approximately 43.8 mm. The tooth crown is transversally elongate, slightly

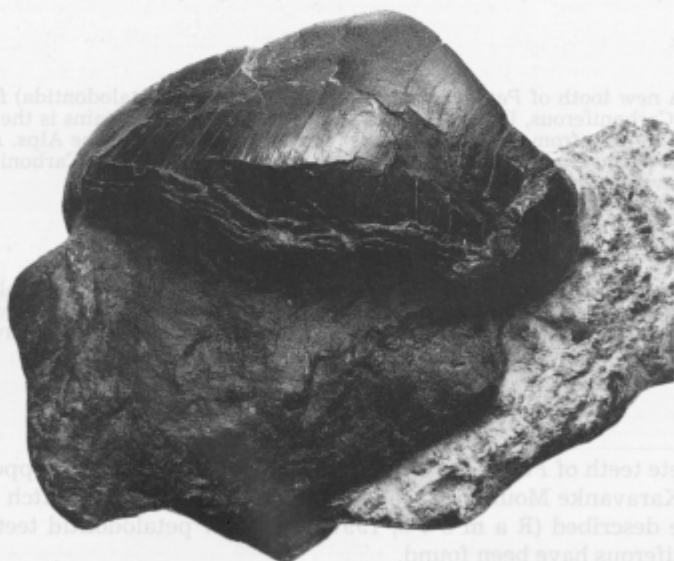


Fig. 1. *Petalodus ohioensis* Safford, 1853; labial aspect. Upper Carboniferous, above the cart-track from Planina pod Golico to Planinski dom Črni vrh. Jesenice Museum No. 1141. Total tooth length: approximately 43.8 mm

Sl. 1. *Petalodus ohioensis* Safford, 1853; labialna stran. Zgornji karbon, nad kolovozom s Planine pod Golico k Smučarskemu domu Črni vrh. Jeseniški muzej, št. 1141. Celotna zobna dolžina je približno 43.8 mm

asymmetrical, triangular in shape with rounded lateral extremities. Labial crown height is 19.3 mm; crown width is 39.1 mm.

Basally, the crown is bordered by a band of imbricated ridges, which form a slightly convex-shaped basal flexure in the middle part of the band.

The deformed tooth base is transversely oval, widest in the upper portion, tapers distally to a semicircular lower portion. Length of the base is about 25 mm; width is 39 mm.

The H/W ratio of this tooth suggests that it is from the mediolateral portion of the dentition.

Order Petalodontida Zangerl, 1981

Petalodont of uncertain identity

Fig. 2

This specimen is a well-preserved tooth, revealing only labial aspect. It is vertically elongated. Total length: 35.8 mm, labial crown height: 15.8 mm; crown width: about 26 mm.

The tooth crown is transversely elongate (26 mm : 15.8 mm), convex in labial aspect, very slightly asymmetrical and triangular in shape tapering to a point at the lateral margins.

Labially, the crown is bordered at the base by a deep furrow, the band of imbricated basolabial ridges is absent.

The tooth base (total length: 21.5 mm; maximum width: 26.6 mm) is long, widest in the upper portion, and tapers distally to a rounded (semi-circular) edge. The H/W ratio suggests a medial tooth. It is high-crowned and symmetrical.

Conclusion

A new petalodont tooth from Upper Gzhelian limestone of the Karavanke Mountains of Slovenia is referred to *Petalodus ohioensis* Safford, 1853. This is the second record of chondrichthyan teeth from the Upper Carboniferous of Slovenia and only the third record of *P. ohioensis* from Southern Europe. Dalla Vecchia (1987) described a tooth of *P. ohioensis* from Upper Carboniferous rocks of the Carnian Alps. Ramovš (1997) described two teeth of *P. ohioensis* from Upper Carboniferous rocks of the Karavanke Mountains, locality Javorniški Rovt, longitude is 31° E, and latitude 45° N. This new occurrence further extends the geographic distribution of this common Upper Carboniferous species, long known from northern Europe and North America.

The second petalodont tooth from Upper Gzhelian limestone of the Karavanke Mountains of Slovenia that lacks imbricated basal crown ridges is of uncertain identity.

Acknowledgements

My warmest thanks are extended to Michael C. Hansen of the Ohio Geological Survey for suggestion on petalodont of uncertain identity and critical reading of the

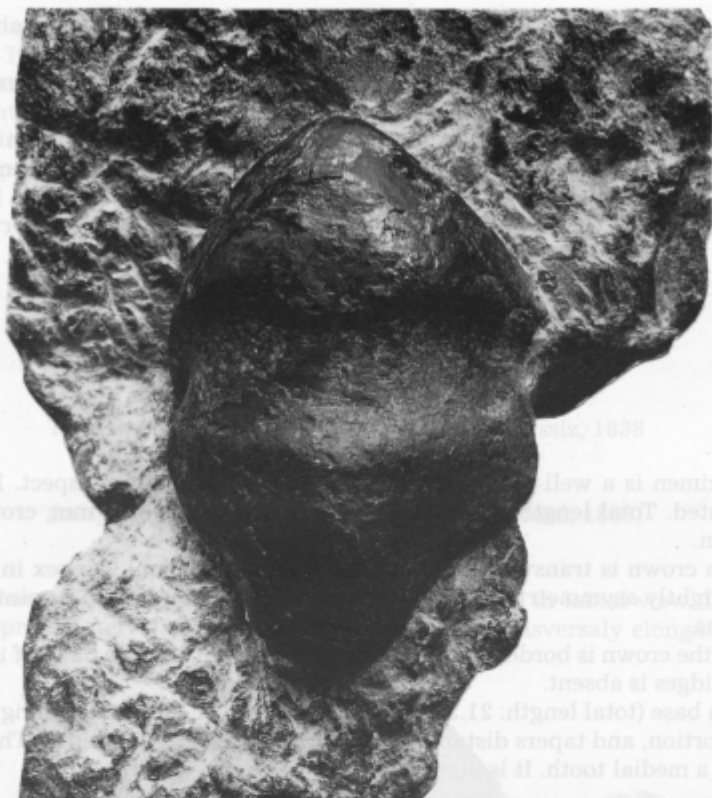


Fig. 2. Petalodont of uncertain identity; labial aspect. Upper Carboniferous, a large block lying in a small brook southeast of the village of Planina pod Golico. Personal property: Milan Peternel, Jesenice. Total length: 35.8 mm

Sl. 2. Petalodont še nejasne sistematske uvrstitve; labialna stran. Zgornji karbon, velik apnenčev blok v potoku južnovzhodno od Planine pod Golico. Last: Milan Peternel, Jesenice. Celotna dolžina zoba je 35.8 mm

Photographs by Jože Bedič, Jesenice

manuscript. My thanks are extended to Jože Bedič for useful information on the new petalodont localities and photographs.

References

- Dalla Vecchia, F. M. 1887: First record of a petalodont (*Petalodus ohioensis* Safford 1853) from the Alps. - *Gortania* 9, 47-56, Udine.
- Ramovš, A. 1997: *Petalodus ohioensis* (Chondrichthyes, Upper Carboniferous) from the Karavanke Mountains, Slovenia. - *N. Jb. Geol. Paläont. Mh.* 1997, H. 2, 109-113, Stuttgart.