Morphology of *Dacryoconarida* and landmarking of *Placoparia* and "odontochilinid" trilobites

Paleobiological working paper

Jakub Vodička¹, Lukáš Laibl^{1,2}, Petr Budil³, Oldřich Fatka¹,
Jan Toman⁴

1: Institute of Geology and Palaeontology, Faculty of Sciences, Charles University

2: Institute of Geology of the Czech Academy of Sciences

3: Czech Geological Survey

4: Department of Philosophy and History of Sciences, Faculty of Sciences, Charles University

Fig. 1

Third stg.
(adult)

Second stg.
(juvenile)

First stg.
(embryonal)

Fig. 2

Fig. 3

Dacryoconarida

Fig. 1

Generalized morphology of Dacryoconarida, α represents apical angle. After Bouček, 1964.

Fig. 2

Ontogeny. Three phases of shell growing on *Nowakia*. After Bouček, 1964.

Fig. 3

Generalized morphology of three dacryoconarid genera emphasizing surface structures. After Gessa & Lécuyer, 1998.

A: *Nowakia*, rings and ribs. B: *Guerichina*, rings. C: *Styliolina*, smooth surface.

***Placoparia* landmarks**

Cephalon

- 1 - anterior point of cephalon
- 2 - anterior point of glabella
- 3 - medial part of occipital furrow
- 4 - occipital node
- 5 - medial end of occipital ring
- 6 - maximal posterior curvature of anterior glabellar flexure
- 7 - maximal posterior curvature of anterior marginal flexure
- 8 - intersection of third glabellar furrow and axial furrow
- 9 - adaxial end of third glabellar furrow
- 10 - lateral extreme of third glabellar lobe
- 11 - intersection of second glabellar furrow and axial furrow
- 12 - adaxial end of second glabellar furrow
- 13 - lateral extreme of second glabellar lobe
- 14 - intersection of first glabellar furrow and axial furrow
- 15 - adaxial end of first glabellar furrow
- 16 - intersection of occipital furrow and axial furrow
- 17 - intersection of posterior margin of occipital ring and axial furrow
- 18 - medial extreme of anterior fixigenal ridge
- 19 - abaxial end of fixigenal furrow
- 20 - postero-medial edge of fixigenal field
- 21 - postero-lateral edge of fixigenal field
- 22 - lateral extreme of the cephalon

***Odontochile* landmarks**

Cephahlon

- 1 - anterior point of cephalon
- 2 - anterior point of preglabellar field
- 3 - anterior point of glabella
- 4 - medial cephalic impression
- 5 - medial part of occipital furrow
- 6 - posterior end of occipital ring
- 7 - lateral extreme of glabella
- 8 - intersection of third glabellar furrow and axial furrow
- 9 - adaxial end of third glabellar furrow
- 10 - adaxial end of second glabellar furrow
- 11 - abaxial end of second glabellar furrow
- 12 - adaxial end of first glabellar furrow
- 13 - abaxial end of first glabellar furrow
- 14 - intersection of occipital furrow and axial furrow
- 15 - intersection of posterior margin of occipital ring and axial furrow
- 16 - anterior point of palpebral lobe
- 17 - lateral extreme of palpebral lobe
- 18 - posterior end of palpebral lobe
- 19 - intersection of eye socket and posterior branch of facial suture
- 20 - intersection of lateral cephalic margin and posterior branch of facial suture
- 21 - posterior tip of genal spine

Pygidium

- 22 - anterior point of pygidium
- 23 - posterior point of pygidial axis
- 24 - posterior point of pygidial spine
- 25 - intersection of anterior margin of first pygidial axial ring and axial furrow
- 26 - lateral extreme of pygidium

References

- Bouček, B.** 1964. *The tentaculites of Bohemia: Their morphology, taxonomy, ecology, phylogeny and biostratigraphy*. Prague: Czechoslovak Academy of Sciences.
- Gessa S., Lécuyer CH.** 1998. Evolutionary dynamics of Pragian Dacryoconarida (Lower Devonian, Tentaculitoidea): evidence from paleontological data and $\delta^{13}\text{C}$ of marine carbonates from Czech Republic. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* **138**: 69-83.