



Marine Jurassic gastropods of Argentina.

III. Lower and Middle Tithonian of Picún Leufú and Cerro Lotena

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With 5 figures

GRÜNDEL, J. & PARENT, H. (2000): Marine Jurassic gastropods of Argentina. III. Lower and Middle Tithonian of Picún Leufú and Cerro Lotena. – N. Jb. Geol. Paläont. Mh., **2006**: 503–512; Stuttgart.

Abstract: From the Tithonian of the southern Neuquén-Mendoza Basin five gastropod species are described. Three of them are already known. For *Exelissa arcuatoconcava* GRÜNDEL & PARENT, 2001 a new description is given because the new material is more abundant and complete and better preserved. Three species are described only in open nomenclature.

Zusammenfassung: Aus dem Tithonium des südlichen Neuquén-Mendoza Beckens werden fünf Gastropodenarten beschrieben. Drei dieser Arten sind bereits bekannt. *Exelissa arcuatoconcava* GRÜNDEL & PARENT, 2001 wird neu beschrieben, da das neue Material mehr Exemplare in besserer Erhaltung umfasst, als es bei der Originalbeschreibung vorlag. Drei Arten sind lediglich unter offener Nomenklatur beschrieben.

1. Introduction

The marine gastropods of the Jurassic of Argentina have not received much attention in comparison with bivalves and ammonites. However, gastropods are relatively abundant in the Lower to the Upper Jurassic rocks containing ammonites and bivalves. We started a longtime study of these molluscs and to present the results in a series of papers under the general title “Marine Jurassic gastropods of Argentina”. Two previous papers, GRÜNDEL & PARENT

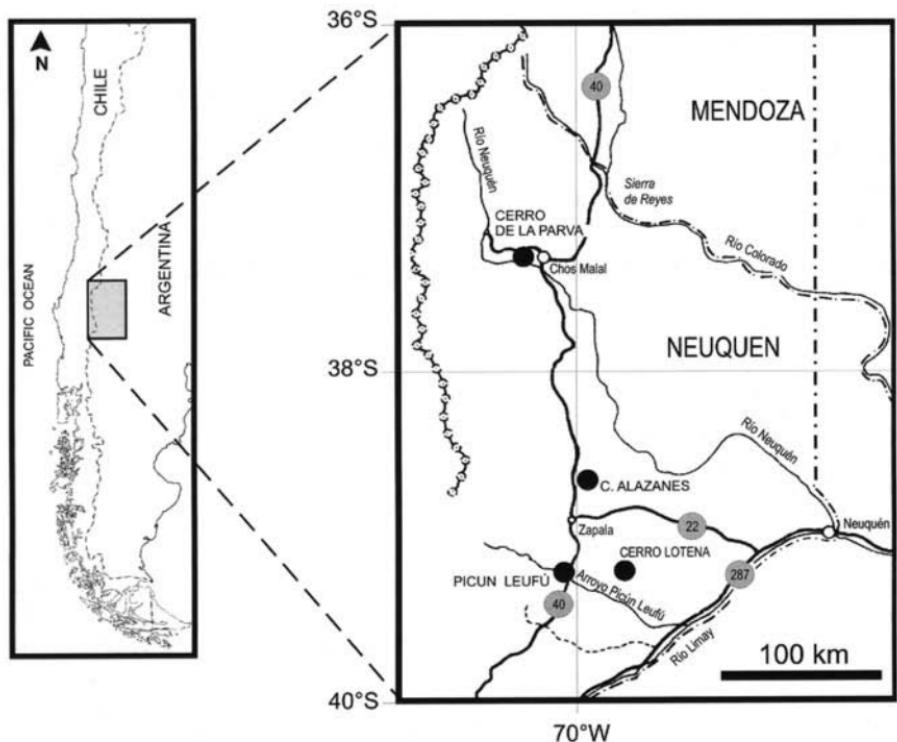


Fig. 1. Reference map of localities of southern sector of the Neuquén-Mendoza Basin mentioned in text.

(2001) and GRÜNDEL et al. (2004), are already published and may be considered the contributions numbers I and II respectively.

In this report we present the description of some new forms and complementary descriptions of others previously known from localities of the southern Neuquén-Mendoza Basin, Picun Leufú (Lowermost Tithonian, lower *Mendozanus* Biozone) and Cerro Lotena (Middle Tithonian, lower *Proximus* Biozone). The studied material is housed at Museo Olsacher (MOZP), Zapala, Neuquén.

	Andean biozones	Picún Leufú	Cerro Lotena	Chacay Melehué (Cerro de la Parva)
Middle Tithonian	<i>Proximus</i>		Gastropods: <i>S. meleahuensis</i> <i>Sulcoactaeon?</i> sp. Ammonites: <i>Pseudohimalayites subpretiosus</i> "Torquatisphinctes" <i>proximus</i> (tr. alfa)	
	<i>Zitteli</i>			Gastropods: <i>S. meleahuensis</i> Ammonites: <i>Pseudolissoceras zitteli</i>
Lower Tithonian	<i>Mendozanus</i>	Gastropods: <i>E. arcuatconcava</i> <i>Dicroloma?</i> sp. Gen et sp. indet. Ammonites: <i>Lithacoceras?</i> n. sp. aff. <i>malarguense</i> <i>Choicensisphinctes</i> cf. <i>windhausenii</i> "Torquatisphinctes" cf. <i>mendozanus</i> "Neochetoceras" sp.		Ammonites: "Lithacoceras" sp. <i>Choicensisphinctes</i> sp.

Fig. 2. Summary of stratigraphic and geographic distribution of described gastropods and associated ammonites. Taxonomy and stratigraphy for Picún Leufú after PARENT et al. (in print).

Stratigraphic framework

The material from the lower *Mendozanus* Biozone of Picún Leufú (Fig. 1) comes from the same locality and horizon as the material described in GRÜNDEL & PARENT (2001).

The Tithonian rocks with an abundant ammonite fauna of Cerro Lotena, southern Neuquén-Mendoza Basin (Fig. 2), were known since early in past century. Some beds yield gastropods mainly associated with age-diagnostic

ammonites. The specimens were obtained from the rock matrix of specimens of *Pseudhimalayites subpretiosus* (UHLIG, 1878) and “*Torquatisphinctes*” *proximus* (STEUER, 1867) transient alfa (sensu PARENT 2003) of the lower *Proximus* (or upper *Zittelii*) Biozone, Andean Middle Tithonian.

3. Systematic Paleontology

Subclass	Caenogastropoda COX, 1959
Order	Cerithimorpha GOLIKOV & STAROBOGATOV, 1975
Superfamily	Cerithioidea FLEMING, 1822
Family	Cryptaulacidae GRÜNDEL, 1976
Genus	<i>Exelissa</i> PIETTE, 1860

Exelissa arcuatoconcava GRÜNDEL & PARENT, 2001

Fig. 3A-D

2001 *Exelissa?* *arcuatoconcava* nov. sp. – GRÜNDEL & PARENT, p. 15, fig. 3A-D.

Material: Approximately 20 mostly juvenile specimens.

Description: The new material is better preserved as the material from the original description. One adult specimen without protoconch is 8 mm high. The protoconch consists of several whorls and is 0.4 mm high. The last two whorls are bicarinate (two strong spiral ribs). The sculpture of the teleoconch whorls consists at first of 3, later of 5-6 broad spiral ribs. The furrows between the ribs are narrower than the ribs. The axial ribs (8-9 on a whorl) are distinctly opisthocline and weakly opisthocyrt. On the adult whorl they are strongest in their adapical part with a node on their adapical end. The base is convex, without axial ribs but with further 4-5 broad spiral ribs. The adult whorl is narrower than the preceding whorl and the suture is descending.

Remarks: *E. arcuatoconcava* has a protoconch like *Cryptaulax*, and the last adult whorl is narrower than the preceding whorl – features typical for *Exelissa*.

Occurrence: Picún Leufú. Lowermost Tithonian, lower *Mendozanus* Biozone.

Order	Ptenoglossa GRAY, 1853
Superfamily	Zygopleuroidea WENZ, 1940
?Family	Zygopleuridae WENZ, 1940

Gen. et sp. indet.

Fig. 4A-B

Material: One incomplete specimen (MOZP 7318/1).

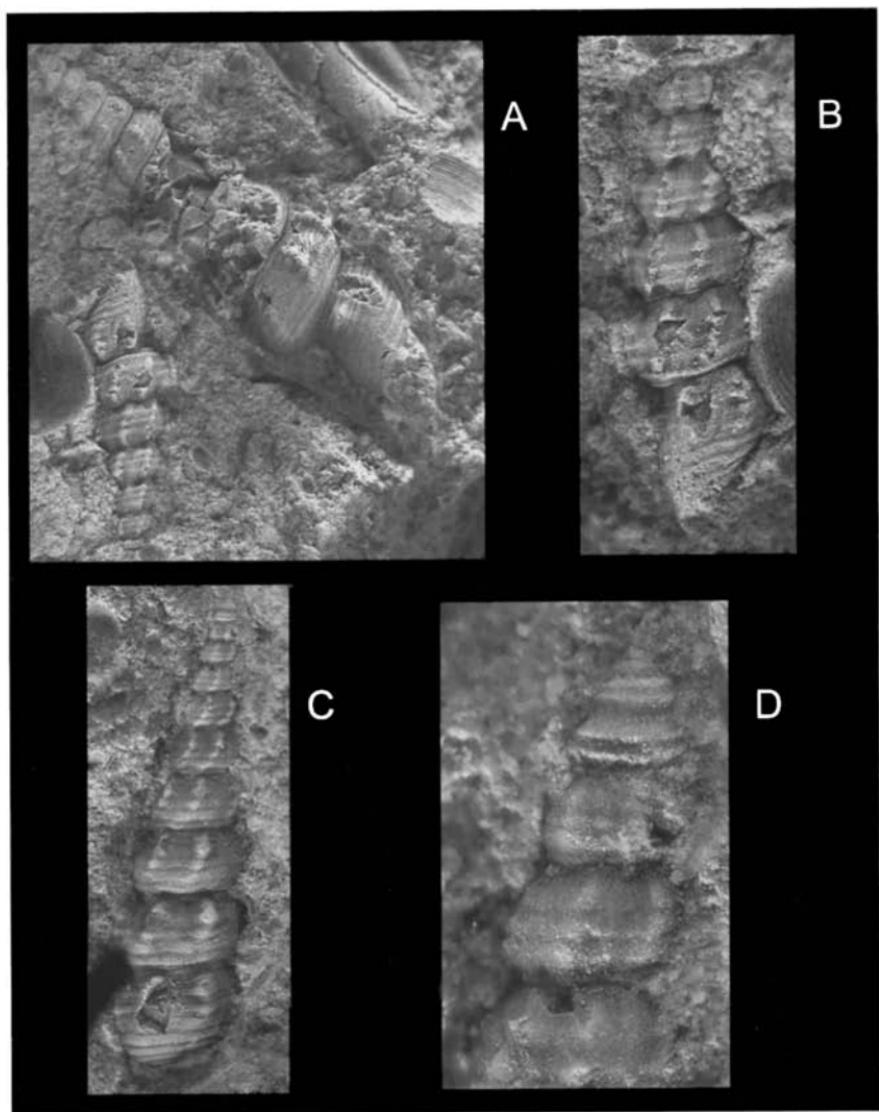


Fig. 3. A-D – *Exelissa arcuatoconcava* GRÜNDL & PARENT, 2001 (MOZP 7269/11), Picún Leufú, Neuquén, Argentina; Lowermost Tithonian, lower *Mendozanus* Biozone. **A** – Detail of two specimens, the larger one is 8.5 mm high. **B** – The smaller specimen shown in A (height 4.2 mm) enlarged. **C-D** – A third specimen in side view (height 6.5 mm) and the top of this shell (height of protoconch 0.4 mm).

Description: The fragment is 8 mm high. The protoconch is lacking. The whorls have a keel situated somewhat above the abapical suture. A weak spiral rib is visible below the adapical suture. Each whorl shows about 10 straight and opisthocone axial ribs. They are weak in the adapical part of the whorl and very strong in the abapical part with distinct nodes on the keel. The nodes on the adapical spiral rib are small. The incomplete base is weakly convex. On the border to the flank, a spiral rib is developed. The axial ribs end on this rib. At least two further ribs are visible on the base.

Remarks: Within the Zygopleuroidea the shape and especially the sculpture of the protoconch are important for taxonomy at generic level and above (NÜTZEL 1998). Because of its protoconch is still unknown, the taxonomic position of the described species is uncertain.

Occurrence: Picún Leufú. Lowermost Tithonian, lower *Mendozanus* Biozone.

Order	Littorinimorpha GOLIKOV & STAROBOGATOV, 1975
Superfamily	Stromboidea RAFINESQUE, 1815
Family	Aporrhaidae GRAY, 1850
Genus	<i>Dicroloma</i> GABB, 1850

Dicroloma? sp.

Fig. 4F-G

2001 *Dicroloma?* sp. – GRÜNDEL & PARENT, p. 15, fig. 3E-G.

Material: Three specimens (MOZP 7315).

Occurrence: Picún Leufú. Lowermost Tithonian, lower *Mendozanus* Biozone.

Fig. 4. A-B – Gen. et sp. indet. (MOZP 7318/1), Picún Leufú, Neuquén, Argentina; Lowermost Tithonian, lower *Mendozanus* Biozone. Specimen in side and basal views (height 7.5 mm, width 3.5 mm). **C-E** – *Sinuarbullina melehuensis* GRÜNDEL & PARENT, 2001 (MOZP 7224/1), Cerro Lotena, Neuquén, Argentina; Middle Tithonian, lower *Proximus* Biozone. Shell in side view, height 3.4 mm (**C**), detail of the shell (**D**), height 0.9 mm and top of the shell in side view, height of the detail 0.9 mm (**E**). **F-G** – *Dicroloma?* sp. (MOZP 7315), Picún Leufú, Neuquén, Argentina; Lowermost Tithonian, lower *Mendozanus* Biozone. **F** – Specimen in side view, height 12 mm; **G** – Another specimen in side view, height 14 mm.

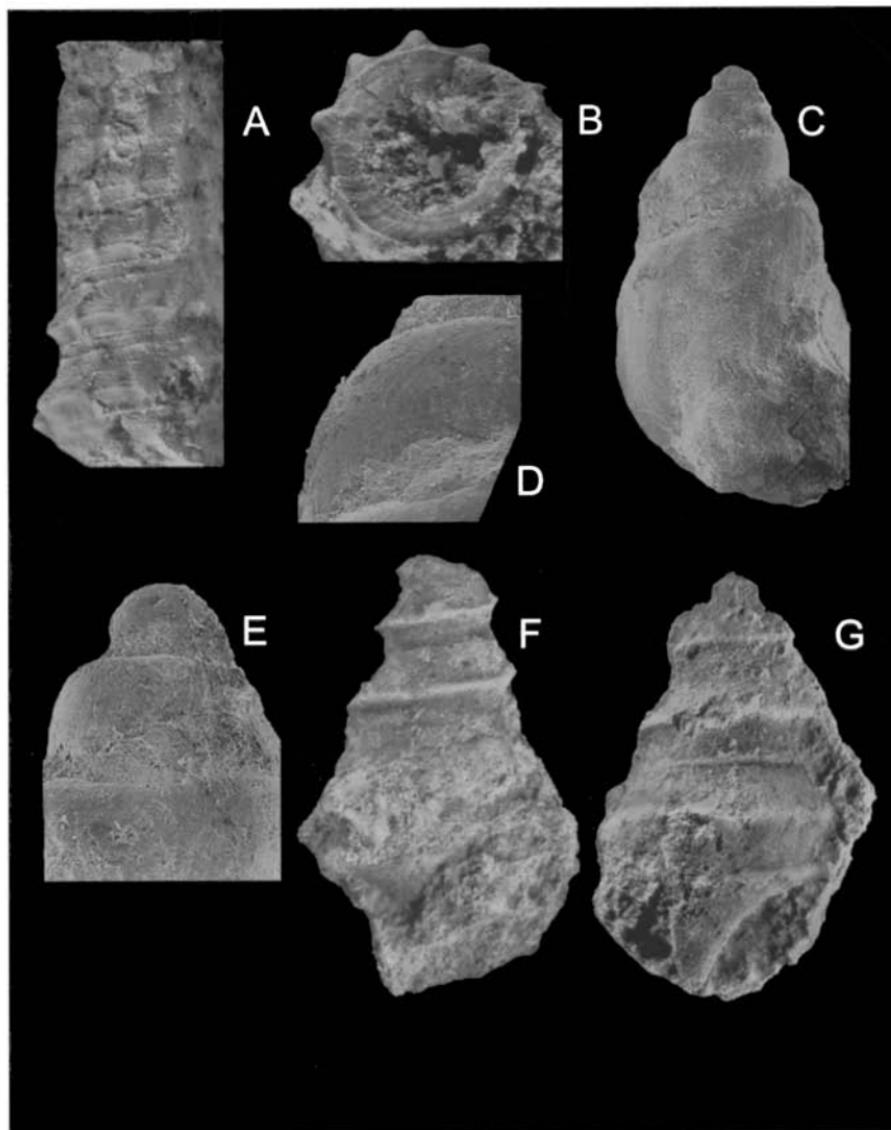


Fig. 4 (Legend see p. 508)

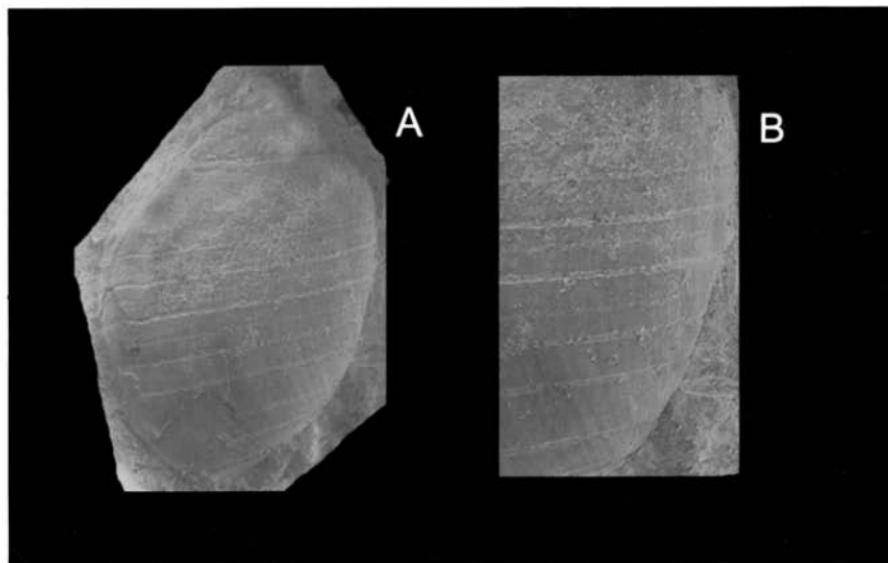


Fig. 5. A-B – *Sulcoactaeon?* sp. (MOZP 7227/1), Cerro Lotena, Neuquén, Argentina; Middle Tithonian, lower *Proximus* Biozone. Shell in side view (height 3.7 mm) (A) and detail of the last whorl (height 2.4 mm) (B).

Subclass	Heterostropha FISCHER, 1885
Order	Opisthobranchia MILNE-EDWARDS, 1848
Superfamily	Cylindrobullinoidea WENZ, 1947
Family	Cylindrobullinidae WENZ, 1947
Genus	<i>Sinuarbullina</i> GRÜNDEL, 1997

Sinuarbullina melehuensis GRÜNDEL & PARENT, 2001

Fig. 4C-E

2001 *Sinuarbullina melehuensis* nov. sp. – GRÜNDEL & PARENT, p. 16, fig. 3H-N.

Material: One specimen (MOZP 7224/1).

Remarks: The poorly preserved specimen is 3 mm high. The recognizable features are identical with those of the type material.

Occurrence: Cerro Lotena. Middle Tithonian, lower *Proximus* Biozone.

Family Bullinidae RUDMAN, 1972
Genus *Sulcoactaeon* COSSMANN, 1895

Sulcoactaeon? sp.

Fig. 5A-B

Material: One specimen (MOZP 7227/1).

Description: The specimen is 3.7 mm high. The shell is relatively broad. The protoconch is incomplete. The last whorl is large with convex flanks and an indistinct ramp. The surface is covered with 14 narrow spiral furrows. The distances between the furrows are broader than the furrows. The growth lines run prosocyrta from the adapical suture to the centre of the base.

Differences: In *Sulcoactaeon legayi* COSSMANN, 1895 (Oxfordian), spiral furrows are largely restricted to the base and only two furrows are present on the middle of the last whorl. *Sulcoactaeon leblanci* LORIOL, 1874 sensu COSSMANN (1895) (late Tithonian) exhibits more (17-20) spiral furrows on the last whorl.

Remarks: The species is probably new, but the single specimen is too poorly preserved for the foundation of a new taxon.

Occurrence: Cerro Lotena. Middle Tithonian, lower *Proximus* Biozone.

Acknowledgements

We thank Dr. A. NÜTZEL (University of Erlangen) for making the photographs of *Exelissa arcuatoconcava* and also Prof. Dr. K. BANDEL (University of Hamburg) and Dr. A. NÜTZEL for reviewing the manuscript.

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Manuscript received: March 20th, 2006.

Revised version accepted: May 2nd, 2006.

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