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Cieneguiticeras, a new genus of Tithonian oppeliids (Ammonoidea, Late Jurassic)☆

Cieneguiticeras, un nouveau genre d'Oppeliidés du Tithonien (Ammonoidea, Jurassique supérieur)

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Abstract

The new genus *Cieneguiticeras*, assigned to the family Oppeliidae, is described on the basis of Andean lower-middle Tithonian ammonites from Arroyo Cieneguita, west-central part of the Neuquén-Mendoza Basin, Argentina. The macroconchs are closely homoeomorphic with *Neochetoceras* Spath and the microconchs have a 'glochiceratid'-type morphology. The stratigraphic range of *Cieneguiticeras* nov. gen. includes the lower and middle Tithonian by means of a succession of two or three species which are interpreted as members of a phyletic lineage. Ammonites from the Tithonian of Cuba, Mexico and France are more or less confidently included in this new genus.

Keywords: Ammonoidea; Oppeliidae; *Cieneguiticeras* nov. gen.; Tithonian; Neuquén-Mendoza Basin; Argentina

Résumé

Le nouveau genre *Cieneguiticeras*, attribué à la famille Oppeliidae, est décrit à partir d'ammonites andines du Tithonien inférieur et moyen d'Arroyo Cieneguita, partie centre-ouest du Bassin de Neuquén-Mendoza, Argentine. Les macroconques sont étroitement homéomorphes de *Neochetoceras* Spath et les microconques montrent une morphologie de type « glochicératide ». L'extension stratigraphique de *Cieneguiticeras* nov. gen. couvre le Tithonien inférieur et moyen grâce à la succession de deux ou trois espèces formant une même lignée phylétique. Des ammonites du Tithonien de Cuba, du Mexique et de France sont incluses avec plus ou moins de confiance dans ce nouveau genre.

Mots clés : Ammonoidea ; Oppeliidae ; *Cieneguiticeras* nov. gen. ; Tithonien ; Basin de Neuquèn-Mendoza ; Argentine

1. Introduction

Among the large amount of Andean Tithonian ammonites described for the first time by A. Steuer in his foundational monograph (Steuer, 1897, later translated and published as Steuer, 1921), there is a group of oppeliids which have been poorly recorded afterwards and diversely interpreted. This group comprises *Oppelia perlaevis* Steuer, 1897, *Oppelia perglabra* Steuer, 1897, *Haploceras falculatum* Steuer, 1897, and *Oppelia nimbata* (Oppel, 1863 in Steuer, 1897). All the specimens included by Steuer in these species come from a single outcrop in the left margin of the Arroyo Cieneguita, Mendoza Province (Fig. 1 (A)). The spelling of the name of this locality has suffered some alterations from the originally used one by Steuer (1897: 144) "Arroyo de la Cieneguita"; in this paper, we retain the original spelling condensed as Arroyo Cieneguita.

New collections in this and several other localities of the Neuquén-Mendoza Basin (NMB) have shown that these ammonites are rather abundant in the lower and middle

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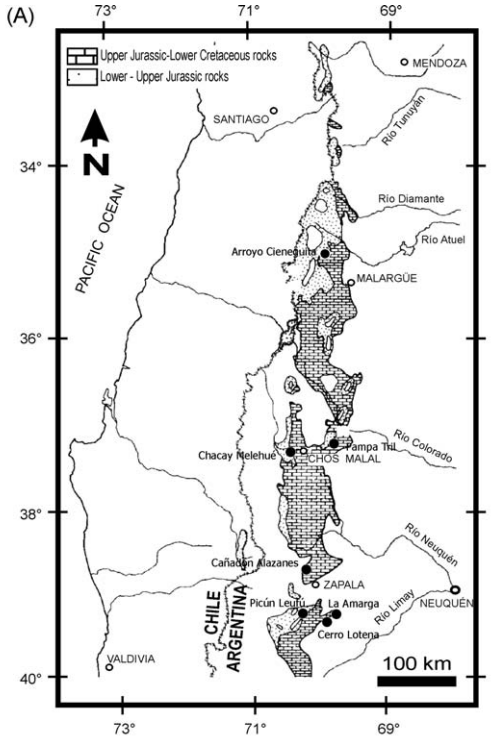

(B)

Andean chronostratigraphic zonation		Arroyo Cieneguita. Levels of Steuer (1897, transl. 1921)	Stratigraphic distribution of the species of Cieneguiticeras n. gen.
Upper Tithonian	Koeneni		
	Alternans	II	*Cieneguiticeras* cf. *falculatum*
Middle Tithonian	Internispinosum		
	Proximus		*Cieneguiticeras falculatum*
	Zitteli	I	
Lower Tithonian	Mendozanus		*Cieneguiticeras perlaevis*

Fig. 1. **A.** Map showing the localities cited in the text and the marine Mesozoic outcrops of the Neuquén-Mendoza Basin (modified from Yrigoyen, 1979); **B**. Approximate stratigraphic distribution of the species of *Cieneguiticeras* nov. gen. in Arroyo Cieneguita referred to the levels Cieneguita-I and II of Steuer (1897, 1921) in the framework of the Andean chronostratigraphic zonation of the Tithonian. The stratigraphic range of the levels Cieneguita-I and II are based on Parent (2003) and discussion in text. The Andean zonation is based on Leanza (1980, 1981) and Parent et al. (2007); dotted lines indicate approximate or non-standard boundaries.

Tithonian. Most frequently, they have been overlooked or misinterpreted as *Pseudolissoceras zitteli* (Burckhardt, 1903). In the collections of the Museo Olsacher, Zapala, there are several specimens which have not been classified.

In this report, we present the results of the restudy of the material described by Steuer (1897, 1921) supported by new collections at Arroyo Cieneguita. These results indicate that these ammonites belong to a new oppeliid genus which is widely present in the lower and middle Tithonian of the NMB.

2. Systematic paleontology

The studied material, other than that described by Steuer (1897), was collected by the authors and housed at the Laboratorio de Paleontologia (Universidad Nacional de Rosario: LPB; collections of the Museo de Ciencias Naturales A. Moyano, Mendoza: MCNAM-PI) and Staatliches Museum für Naturkunde Stuttgart, Germany (SNMS). Photographs of type specimens described by Steuer (1897) were kindly provided by Mike Reich (Geoscience Center of the Georg-August-University Göttingen, Museum: GZG). Casts of specimens from Le Pouzin were kindly loaned by Abel Prieur (Paleontological collections, UMR-CNRS 5125, University Claude-Bernard Lyon 1).

Body chamber is abbreviated with Bc and phragmocone with Ph; macroconch (female): [M], microconch (male): [m]. Measurements are indicated as follows (Table 1): diameter (D), diameter at the last adult septum (D_{ls}), adult diameter at peristome (D_p), umbilical width (U), whorl width (W), whorl height (H_1), and whorl ventral height (H_2), all given in millimeters length of body chamber (L_{Bc}) in degrees; number of primary (P) and ventral (V) ribs per half whorl (this form of counting ribs per half whorl is more sensitive for reflecting changes in ribbing density, and less exigent with quality of material, providing more complete sets of measurements which allow to consider incomplete specimens giving more complete sets of measurements).

Superfamily HAPLOCERATOIDEA Zittel, 1884
Family OPPELIIDAE Douvillé, 1890
Subfamily TARAMELLICERATINAE Spath, 1928
Genus ***Cieneguiticeras*** nov. gen.

Derivation of the name: After Arroyo Cieneguita, the type locality of the type species.

Type species: *Haploceras falculatum* Steuer, 1897.

Included species: *Cieneguiticeras* nov. gen. comprises two or three succeeding species recorded from the Tithonian of Arroyo Cieneguita: *C. perlaevis* (Steuer, 1897) [M and m] (Fig. 2), *C. falculatum* (Steuer, 1897) [M and m] (Figs. 3–5 (A–E)) and *C.* cf. *falculatum* (Steuer, 1897) (Fig. 5 (F)). Out of Arroyo Cieneguita the genus has been recorded in La Amarga, Cerro Lotena, Picún Leufú, Cañadón de los Alazanes, Pampa Tril, and Chacay Melehué (Fig. 1 (A)). Specimens from Tethyan localities of Cuba, Mexico, France and Yemen which can be at least tentatively included in *Cieneguiticeras* nov. gen. for morphological reasons are discussed below.

Diagnosis: Macroconch: Subplatycone inner whorls; outer whorls and body chamber suboxycone, involute, ventrally rounded. Inner whorls smooth or faintly ribbed on the uppermost part of the flank; outer whorls of phragmocone covered by undivided falcoid primary ribs, faint to very weak on lower half of flank, concave and widely spaced on the upper third; adult body chamber smooth and moderately uncoiled, about a half to three quarters whorl long. Microconch: adult about a third to a fourth part of the macroconch's size; inner whorls indistinguishable, body chamber slender platycone, uncoiled in variable degree, half a whorl long. End of phragmocone and body chamber covered by weak falcoid primary ribs reinforced on the mid flank, forming a row of lingulate structures which reach the peristome. Lappets moderately long and narrow.