



## ***Barrosasaurus casamiquelai* gen. et sp. nov., a new titanosaur (Dinosauria, Sauropoda) from the Anacleto Formation (Late Cretaceous: early Campanian) of Sierra Barrosa (Neuquén, Argentina)**

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### **Abstract**

A new Late Cretaceous titanosaurian sauropod from the Sierra Barrosa locality (Anacleto Formation, Late Cretaceous, early Campanian) of Neuquén Province, Argentina, *Barrosasaurus casamiquelai* **gen. et sp. nov.**, is described. The holotype of this species consists of three large and incomplete, although well-preserved, dorsal vertebrae (one probably the third, the next the seventh or eighth, and the last the ninth or tenth). The arrangement of neural arch laminae in the dorsal vertebrae of this titanosaur differs from that present in other genera in the following ways: the spinoprezygapophyseal laminae are well developed in the third vertebra, and relictual in the seventh or eighth vertebra; two spinodiapophyseal laminae are present in the seventh or eighth and in the ninth or tenth vertebrae, the anterior spinodiapophyseal lamina being more strongly developed than the posterior spinodiapophyseal lamina in the ninth or tenth vertebra. These characters, among others, allow the recognition of this individual as a new species of Titanosauria, which increases knowledge of the diversity of titanosaurs in the Late Cretaceous of Patagonia.

**Key words:** Sauropoda, Titanosauria, new species, Sierra Barrosa, Neuquén, Patagonia, Argentina, Upper Cretaceous, Anacleto Formation

### **Introduction**

The record of sauropod dinosaurs from the Anacleto Formation (Neuquén Group, Upper Cretaceous, lower Campanian), which crops out widely in both Río Negro and Neuquén provinces of Patagonia, Argentina (Ramos 1981; Coria *et al.* 2000, Dingus *et al.* 2000), currently comprises the species *Laplatasaurus araukanicus* Huene, 1929, *Pellegrinisaurus powelli* Salgado, 1996, and *Neuquensaurus australis* (Lydekker, 1893). This record also includes the beautifully preserved titanosaur embryos from the exceptional locality of Auca Mahuevo, in the north of Neuquén province (Chiappe *et al.* 1998, 2001). Although isolated and fragmentary material of titanosaurian sauropods is common in the Anacleto Formation, examples of associated and well-preserved remains belonging to a single individual are rare.

In the locality of Sierra Barrosa (Fig. 1) the Neuquén Group, including the Portezuelo, Plottier, Bajo de la Carpa and Anacleto formations, crops out extensively. Abundant terrestrial vertebrates, including saurischian dinosaurs, crocodiles and turtles, have been recovered from multiple stratigraphic levels (Coria *et al.* 2000, 2001, 2004; Coria & Currie 2002). Here, we describe a new species of Titanosauria, *Barrosasaurus casamiquelai* **gen. et sp. nov.**, from the Sierra Barrosa locality. The remains of this new taxon were collected from a single horizon, and were deeply embedded in reddish fluvial sandstones, positioned close to one another (Fig. 2). We therefore infer that they belong to a single individual. They exhibit an exceptional state of preservation that makes possible the examination of the delicate laminar architecture of the dorsal neural