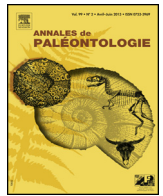




Disponible en ligne sur
ScienceDirect
www.sciencedirect.com

Elsevier Masson France
EM|consulte
www.em-consulte.com



Original article

Oldest record of Thinocoridae (Aves, Charadriiformes) from South America



Le plus ancien thinocoridé (Aves, Charadriiformes) d'Amérique du Sud

Federico L. Agnolin^{a,b,*}, Rodrigo L. Tomassini^c, Víctor H. Contreras^d

^a Laboratorio de Anatomía Comparada y Evolución de los Vertebrados, Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Avenida Ángel Gallardo 470, 1405BDB Buenos Aires, Argentina

^b Fundación de Historia Natural "Félix de Azara", Departamento de Ciencias Naturales y Antropología, CEBBAD – Universidad Maimónides, Hidalgo 775 7° piso, 1405BDB Buenos Aires, Argentina

^c INGEOSUR-CONICET, Departamento de Geología, Universidad Nacional del Sur, San Juan 670, 8000 Bahía Blanca, Buenos Aires, Argentina

^d Instituto de Geología Emiliano P. Aparicio y Cátedra de Paleontología (Departamento Geología), Facultad de Ciencias Exactas, Físicas y Naturales, Universidad Nacional de San Juan, Avda. Ignacio de la Roza y Meglioli, 5400 Rivadavia San Juan, Argentina

ARTICLE INFO

Article history:

Received 25 August 2015

Accepted 20 November 2015

Available online 24 December 2015

Keywords:

Birds
 Thinocoridae
 South America
 Miocene

Mots clés :

Oiseaux
 Thinocoridae
 Amérique du Sud
 Miocène

ABSTRACT

Here we describe an isolated distal end of tarsometatarsus coming from the late Miocene levels of the Loma de Las Tapias Formation (San Juan Province, Argentina). The specimen was identified as a Thinocoridae, and constitutes the oldest record for the clade. It also represents the only Tertiary finding for the family from South America and one of the scarce avian remains reported from central Argentina. This record provides new information on the palaeobiogeography of the clade.

© 2015 Elsevier Masson SAS. All rights reserved.

RÉSUMÉ

Nous décrivons ici une extrémité distale isolée de tarsométatarses provenant du Miocène terminal de la Formation Loma de Las Tapias (Province de San Juan, Argentine). Le spécimen a été identifié comme un Thinocoridae, et constitue le plus ancien enregistrement de cette famille en Amérique du Sud. Il représente aussi la seule occurrence de thinocoridé dans le Tertiaire d'Amérique du Sud et l'un des rares restes d'oiseaux rapportés du centre de l'Argentine. Cette découverte fournit des informations sur la paléobiogéographie des représentants fossiles de ce clade.

© 2015 Elsevier Masson SAS. Tous droits réservés.

1. Introduction

The family Thinocoridae is a small clade of two genera and four living species, commonly known as seedsnipes (Sibley

et al., 1968; Remsen et al., 2014). The thinocorids are exclusively South American in distribution, especially in the Andean and Patagonian regions (Fjeldså, 1996). They inhabit a variety of harsh environments, including grasslands, steppes, deserts and alpine habitats (Olrog, 1963). Are unique among charadriiforms in being strictly vegetarian, having a strongly modified crop and entire digestive apparatus, adapted for vegetal consumption (Korzun et al., 2009).

These birds are particularly interesting because are usually considered as an example of isolated and endemic evolution of birds in the South American continent. In some aspects of their morphology and behaviour resemble different avian clades,

* Corresponding author. Laboratorio de Anatomía Comparada y Evolución de los Vertebrados, Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Avenida Ángel Gallardo 470, 1405BDB Buenos Aires, Argentina.

E-mail addresses: fedeagnolin@yahoo.com.ar (F.L. Agnolin), rodrigo.tomassini@yahoo.com.ar (R.L. Tomassini), vcontre@unsj-cuim.edu.ar (V.H. Contreras).

including Galliformes, Charadriiformes, Columbiformes, and Gruiformes (Maclean, 1969; Sibley and Ahlquist, 1990; Fjeldså, 1996; Korzun et al., 2009).

Probably because of its low diversity and ecological requirements, thinocorids have a near non-existent fossil record. The oldest known remains come from the early–middle Pleistocene of the Pampean region of Argentina (De Mendoza et al., 2015), whereas sparse remains belonging to *Thinocorus* are known from the late Pleistocene of the Argentine Pampas (Tonni et al., 1998) and Perú (Campbell, 1979).

Because the fossil thinocorid records previously described are represented by only a couple of isolated bones, the finding and report of any thinocorid remain is worth to mention. On this basis, we here report the distal end of a tarsometatarsus of a Thinocoridae from the late Miocene levels (Chasicooan Stage/Age) of the Loma de Las Tapias Formation, outcropping at Loma de Las Tapias locality (San Juan Province, Argentina). This record represents an important addition to the knowledge of the Southern Cone extinct avifaunas.

Institutional abbreviations. INGEO-PV, Instituto de Geología Emiliano P. Aparicio, Universidad Nacional de San Juan (San Juan, San Juan Province, Argentina).

2. Geographical and stratigraphic context

The fossiliferous locality of Loma de Las Tapias (31° 28' S, 68° 40' W) is located approximately 20 km northwest of San Juan city (San Juan Province, Argentina) (Fig. 1). The specimen studied was recovered in the upper portion of the Limolita La Colmena Member of the Loma de Las Tapias Formation (Fig. 2). The bearing level mainly includes light-yellowish siltstones interbedded with reddish mudstones, though grayish fine to medium grained sandstones

are also present, and presents fine parallel lamination and desiccation cracks. Numerous vertebrate remains, principally mammals, were recovered from this member (Contreras and Baraldo, 2010). These deposits correspond to an alluvial plain environment associated with braided rivers (Bercowski et al., 1987; Rodríguez, 2004). On the basis of the faunal assemblage, radiometric datings and magnetostratigraphic studies, the bearing level was assigned to the late Miocene. From a biostratigraphic point of view, it corresponds to the Chasicooan Stage/Age (Bercowski et al., 1986; Contreras et al., 2001; Contreras and Baraldo, 2010).

3. Materials and methods

The specimen analyzed in this work (INGEO-PV 032) was previously included in a faunal list of the Loma de Las Tapias Formation by Contreras and Baraldo (2010). These authors identified the material as an indeterminate charadriiform.

Because of its peculiar morphology and uniqueness, the taxonomy and phylogenetic position of Thinocoridae was a matter of discussion by a large number of authors in the past (Lesson, 1831; Nitzsch and Burmeister, 1840; Gray, 1849; Lowe, 1922; Verheyen, 1958; Sibley et al., 1968). In spite of that, since the influential paper of Olson and Steadman (1981) recent authors agree in that Thinocoridae constitutes the sister group of the charadriiform Australian clade Pedionomidae (Sibley and Ahlquist, 1990; Paton et al., 2003; Thomas et al., 2004; Paton and Baker, 2006; Baker et al., 2007; Gibson and Baker, 2012; De Pietri et al., 2015), a criterion that is followed here. Both clades form part of the suborder Scolopaci, which is one of the three major clades of Charadriiformes (Ericson et al., 2003; Paton et al., 2003; Baker et al., 2007). The Scolopaci contains five family-level taxa, namely Rostratulidae, Jacanidae,

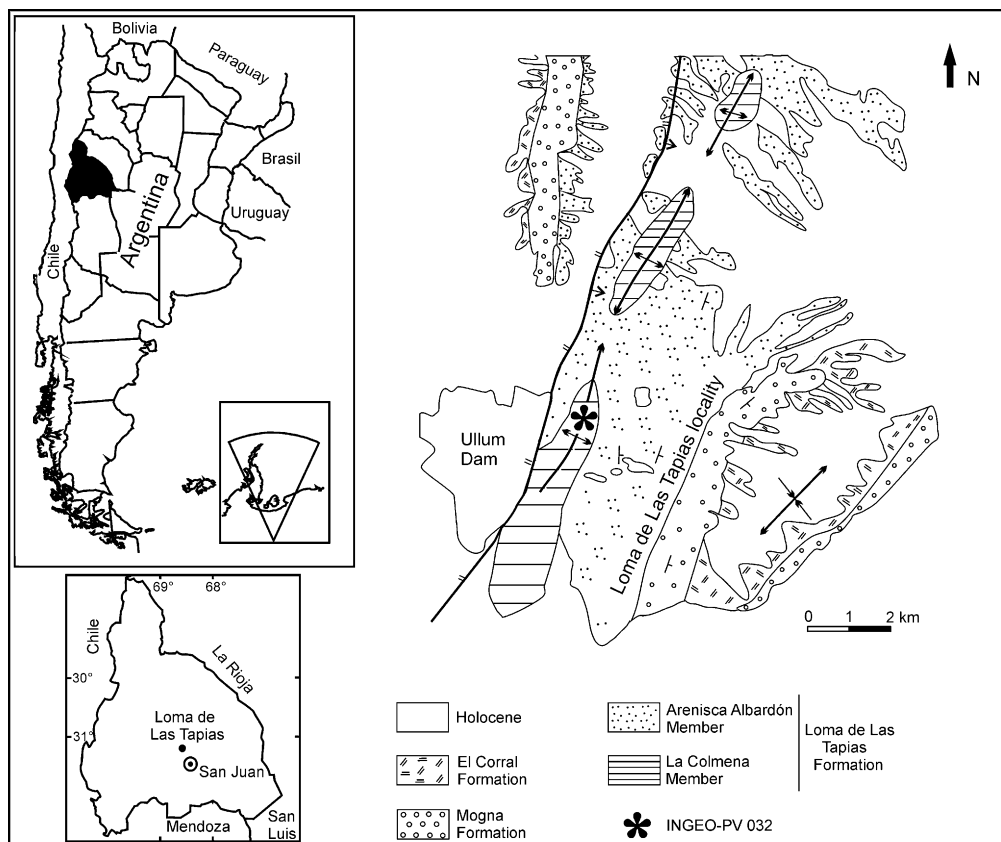


Fig. 1. Location map showing the Loma de Las Tapias locality (asterisk), San Juan Province, Argentina [planned for page width].
Carte de localisation du site de Loma de Las Tapias (astérisque), Province de San Juan, Argentine.

Download English Version:

<https://daneshyari.com/en/article/4745251>

Download Persian Version:

<https://daneshyari.com/article/4745251>

[Daneshyari.com](https://daneshyari.com)