

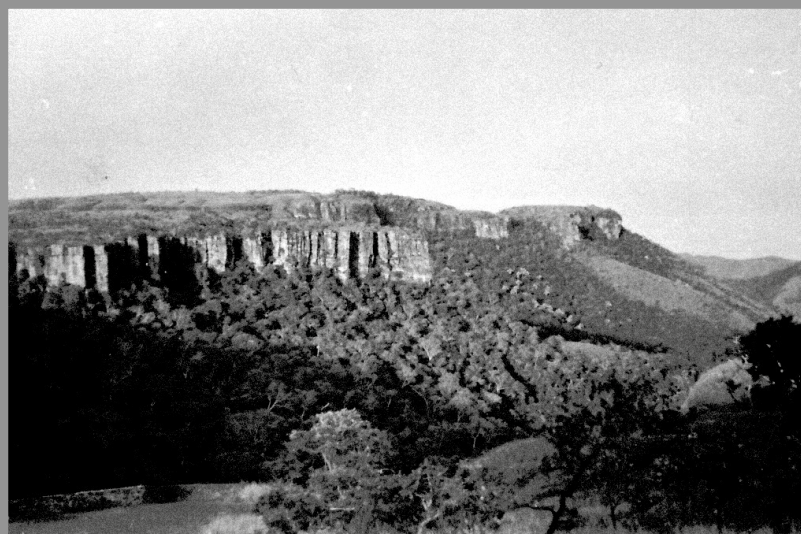
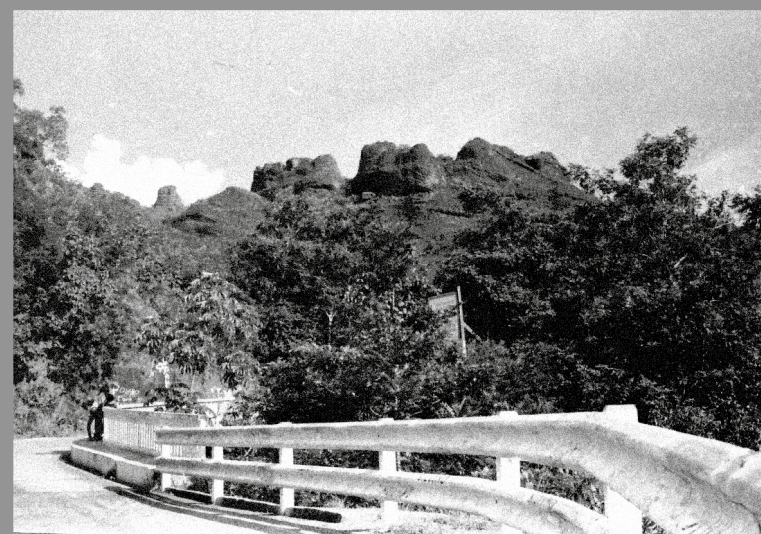
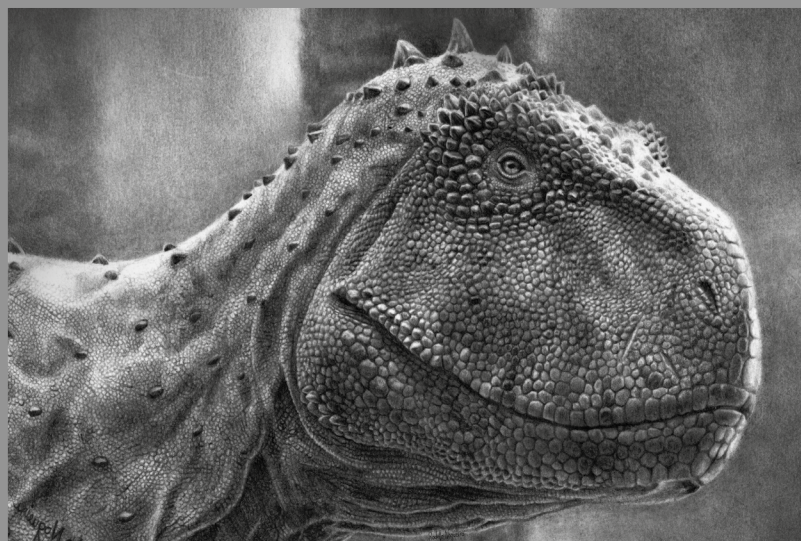
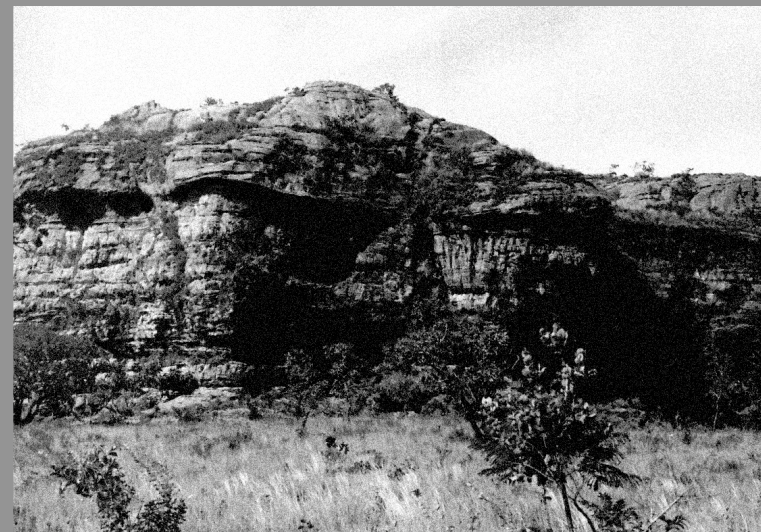


# Paleodest

*Paleontologia em Destaque*

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**CAPA:** Fotografias de Raquel Quadros (Acervo do Palma - Laboratório de Paleontologia da UFMT).

Ilustração de Rodolfo Nogueira: dinossauro *Pycnonemosaurus nevesi* Kellner & Campos, 2002.



# **Resumos do XXVII Congresso Brasileiro de Paleontologia**

**Cuiabá, MT – 02 a 06 maio**

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## A DILEMMA ON THE QUATERNARY CONSERVATION PALEOBIOLOGY LEGACY

MATIAS DO NASCIMENTO RITTER<sup>1</sup>, CRISTIANINI TRESCASTRO BERGUE<sup>1</sup>, FELIPE CARON<sup>1</sup>, FERNANDO ERTHAL<sup>2</sup>, HEITOR ROBERTO DIAS FRANCISCHINI<sup>2</sup>, SABRINA COELHO RODRIGUES<sup>3</sup>, RENATO PEREIRA LOPES<sup>4</sup>, FABRIZIO SCARABINO<sup>5</sup>

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Sympatric marine biological remains and their counterpart live assemblages are commonly lying on modern shelves around the world. These ubiquitous components, biodiversity (the variety of living nature), and geodiversity (non-living geological nature) are somewhat a mirror of each other that allows them to be numerically compared as baselines of past environmental conditions. These organisms, after death, as part of the geodiversity component, still interact with their counterpart biodiversity, acting as baselines for sclerobionts, for example. Despite the recent Conservation Paleobiology efforts, the law protection of these sympatric live-dead components is not guaranteed so far. In Brazil, for example, a fossil is only legally considered when it is older than 11.7 kyrs or remains of an extinct species. Most of the live-dead studies, for example, are possible because the biological remains are time-averaged, most of them of the Holocene age, lying on this legal black hole. The first problem is how can we assure for what temporal momentum within a bio or a geosystem those remains belong to? Or which law should be applied to them (biological or geological laws)? Without dating, all shelly remains we are not able to assign it. Although theoretically possible, dating is still limited for ichnological materials. These concerns have several implications when both paleontologists and neontologists are dealing with Quaternary sediments, especially those sediments that are contiguous between past and modern environments. In our study, based on more than 500 individually dated biological remains, we demonstrated that in shallow marine sediments, the probability of a shell being a fossil (legally speaking) is roughly 16 %, while in deeper areas these values increase up to six-fold. The identical pattern is also probably true for dry Mollusca zoological collections, museums, or even other sympatric biological remains, proving that the geochronological fossil definition is a duality mismatch to both the zoologic and paleontological world. A suitable example are the calcareous microfossils (e.g., foraminifers and ostracods) where the small size favors temporal mixing due to reworking and transport. In consequence, assemblages might be composed both by fossil and recent specimens, whose visual differentiation is not always possible. Thus, most of the focus of Conservation Paleobiology baselines — biological remains that are beyond the human scale of direct observation — lacks legal support. In a human-dominated world, where the extinction rates are roughly near to well-known past biotic crises, the enhancing number of biological remains that would not be described as living organisms must be legally protected. [CNPq 422766/2018-6]