



#### EDITORIAL NOTE

## Cultural objects at risk - the responsibility of reviewers and editors

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Over the years, there has been a growing concern worldwide regarding the trafficking of cultural objects, which are not limited to art or ethnographic material. Wars, unfavorable economic conditions or simply the non-observance of local laws have impoverished several countries of their scientific and cultural heritage, a problem that has been receiving increasing attention (e.g., Brodie & Sabrine 2017, Cisneros et al. 2022).

As is common knowledge, Brazil has also been affected by this problem. As a country recognized for its rich and diverse culture, reports of cultural heritage that left the territory without due legal process accumulate. For this reason, the International Council of Museums (ICOM) has published its twentieth Red List of cultural objects at risk of illegal export or theft, focusing on Brazilian specimens. Surprisingly this list, in addition to including traditional objects such as archaeological, art and religious artifacts, rare books, ethnographic material from indigenous communities, also added, for the first time, paleontological items (ICOM 2023).

The issue of fossils in Brazil is complex and there are several regulations that may apply in relation to collecting and possession of paleontological specimens (e.g., Sociedade Brasileira de Paleontologia 2019). The main legal piece that regulates this matter is a Decree-Law of 1942 (Brasil 1942) which, in essence, establishes that all fossils belong to the nation and that their collecting is subject to the authorization and supervision of a governmental body (currently the Agência Nacional de Mineração). In addition, this Decree-Law determines that national museums, universities, and similar institutions are exempt from this authorization and inspection but must report their activities to this government entity.

Nonetheless, there are many studies of Brazilian fossils where the specimens, including holotypes, are abroad. In particular, material from the Araripe Basin has been illegally removed from the country, occasionally with documentation issued in a dubious manner (e.g., Vogel 2020). Such facts worry researchers (e.g., Pinheiro et al. 2021), who struggle to improve local conditions to safeguard important specimens in the country and in the place where they were found.

Perhaps one of the most interesting recent cases, which can be considered a turning point in the issue of the illegal removal of paleontological objects from Brazil, is the case of the "Ubirajara" dinosaur. When the legal issue of depositing this specimen at the Staatliches Museum für Naturkunde Karlsruhe (Germany) was questioned and proved to be wrong (e.g., Vogel 2020), the article was withdrawn from publication (Cretaceous Research 2021), an unprecedented act. Since then, several

researchers have sought Brazilian scientists and institutions to return fossils that left the country inappropriately (see Kellner 2023).

Against these initiatives, there are those who started to defend the sale of fossils (e.g., Febrageo 2022). Among the most common arguments is that fossils can be officially sold in Brazil by a mining company that has legally obtained the rights to exploit a mineral deposit containing paleontological material. This notion, however, is misconceived, as these companies sell mineral products that they extract as mineral substances and not as fossils *per se*, even if those mineral substances contain fossils. That is, no mining company sells dinosaurs to serve as landfills, or to be used as agricultural or industrialized products! Trying to make the equivalence of mineral deposits containing fossils with fossils is a mistake. Likewise, the notion that the current legal framework, admittedly not adequate, prevents the eventual distribution of paleontological material to schools is flawed. It is not necessary to encourage the sale of fossils so that museums, universities, and related institutions can donate specimens for educational purposes. Presently such donations are made on a regular basis without any impediment or legal complication.

On the other hand, it cannot be denied that there are several types of fossils whose origin is related to mineral substances that are important to society, such as limestone that is used in the production of cement. This means that, unless mining in sedimentary areas with the potential for fossils is prohibited (which is not on the discussion table anywhere in the world), it is inevitable that paleontological specimens will be eventually crushed and lost. Also, arguments that all fossils have the same importance do not correspond to reality. If that were the case, paleontologists all over the world would not make the selection of what they will or will not collect in the field. Besides being questionable whether all the fossils found should be collected (another “can of worms”), the fact is, it would be unrealistic to think that the resources to collect, store and preserve all fossils are available.

The best way to proceed with fossils, including if they should be regarded as cultural or mineral objects is a difficult and complex discussion. The fact is that they can be both, depending on their use. But most importantly is to recognize that they must be understood as scientific specimens of great value that provide relevant and often unique data to elucidate different aspects of our planet’s history. All what scientists around the globe want is to protect fossils that are important to understand the origin, evolution, and diversification of life. There are a variety of arrangements that countries have established for the issue of paleontological material, from ignoring the problem or restricting any type of commercialization as much as possible, to completely releasing the sale of fossils. However, it must be emphasized that even in countries where paleontological objects can be acquired under certain conditions, as in the United States, the local paleontological community is not happy! Seeing some specimens of scientific value leaving the country or falling into private hands, hindering public access, is definitely at odds with the development of science! Furthermore, item prices have skyrocketed, making it impossible for museums and scientific institutions to compete with millionaires.

Still speaking in terms of Brazil, it is important to highlight that, due to the efforts of several scientists and institutions, including the Brazilian Society of Paleontology (SBP), several advances have been made in the recovery of fossils that were illegally removed. There are different ways to promote good science without depriving a country of its cultural and scientific heritage (e.g., Kellner 2023). This, incidentally, also applies within the national territory. There must be awareness of the

importance of relevant specimens remaining in their place of origin where they can become a fantastic agent to awaken the population's attention in order to preserve the scientific and cultural heritage. Paleontological specimens in particular can attract visitors to a museum in the region and promote economic development, as well as become objects of pride for people for their cultural heritage. Therefore, special attention should be given to building as many museums as possible across the country, which will be beneficial not only at the local level, but also for the development of science and the democratization of scientific knowledge. At the same time, there is a need for more resources to carry out fieldwork aimed at discovering and collecting new specimens in these areas.

Finally, although the Annals of the Brazilian Academy of Sciences (AABC) do not publish many papers on items that can be considered as part of a country's cultural heritage in the field of archaeology (e.g., Vargas et al. 2022), we publish many articles on paleontology that have contributed considerably to the bibliometric indexes of this journal (Kellner 2022). Therefore, we must pay close attention to the origin and legal aspects of studies on specimens that can be considered cultural heritage of a country. If scientific journals start to refuse papers on illegally obtained items, the problem of illicit trafficking in cultural goods will certainly decrease, at least in the scientific arena. Therefore, it is important to detect problems before publication or at least be able to deal with them once discovered, as the editorial board of *Cretaceous Research* has done. This transparency and caution are increasingly necessary nowadays and one more (of the many) attribution of reviewers and editors.

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