

APPENDIX 1**Application**

The destructive histological sampling of Plateosauravus and “Euskelosaurus” specimens at the Iziko SA Museum.

Applicant

Professor Anusuya Chinsamy-Turan on behalf of Masters student Fay-Yaad Toefy and co-supervisor Dr Emil Krupandan.

Curator’s Assessment & Recommendations

This application is for the destructive analysis of South African Dinosaur specimens that, according to Iziko’s database, are either unidentified or identified as *Plateosauravus*, *Euskelosaurus*. The applicant cites an unpublished PhD thesis (Krupandan, 2019) to assert that some of the specimens listed should no longer be regarded as type specimens. Nonetheless, all specimens previously regarded as type specimens should always be regarded as historical type specimens because of the possibility that their taxonomic status will be reassessed in future.


Given the historical type status of these specimens, my recommendations have been carefully considered and I have incorporated advice from both South African and international museum colleagues on best practice for destructive analysis of historical type specimens. A specialist histologist and dinosaur taxonomist were also approached, and their professional opinions were considered in these recommendations. It should be noted that some of these colleagues recommended a far more conservative approach than the one I present here; mainly because the applicant of this proposal has not published their results in a peer reviewed journal and there is debate in the specialist scientific community about their assertion that the type status of some specimens is not valid. It should be noted that as far as possible these recommendations do not include the sampling of unique skeletal elements (i.e. only where two tibia are present, do we support the sampling of one of these elements). Where only one skeletal element exists I took into account the scientific value of sampling this element and concluded in some cases that this validated the destructive analysis. For example, the fragmented rib of sample SAM-PK-3341. However, I do not recommend the sampling of the left humerus of SAM-PK-3350 because although the research potential is significant, the preservation of this specimen is exceptional, and the destruction of taxonomic information cannot be justified – especially given the (contested) holotype status. I have not recommended histological sampling in cases where the fossil material is highly fragmented and difficult to cast (e.g. the pubis of SAM-PK-K382). This is because taxonomic work on these specimens is already hampered by their fragmented condition and sampling will further limit taxonomic study.




The recommendations below are less conservative than those of some of my colleagues. This is because I believe that the scientific value to be gained through sampling the specimens listed in the table below outweighs the destruction of portions of the material. However, this is only the case if the following conditions of sampling are followed precisely.



- 1) All fossils will be cast in full before any sampling takes place. Re-attached casts of only the sampled portion of the specimen will not be allowed.
- 2) Detailed photographs of all fossil material will be taken prior to sampling. Photographs need to be in standard anatomical views and using lighting that is sufficient to record details of the anatomy (i.e. following standards that would be required for inclusion of photographs in an peer reviewed taxonomic publication).

- 3) No coring of any fossil material will be allowed. Fossil bones will be cut in a perpendicular orientation following best practise for histological sampling as indicated in the table below.
- 4) All parts of the fossil need to be returned to Iziko. This includes thin sections as well as the remaining embedded fossil bone resulting from the thin sectioning process. Any small pieces of bone that are now dissociated due to the cutting process also need to be returned so that these can be made available for resampling in future (i.e. isotopic analysis).
- 5) No sampling of unique skeletal elements. One of the repeated elements may be sampled (i.e. one of two tibia).

Table 1: List of specimens and skeletal elements approved for destructive histological analysis. Photographs supplied by the applicant. The approved location for incision is indicated by a white line in each photograph. Coring is not approved.

Specimen number	Skeletal element	Location of sample
SAM-PK-K382	<i>Right partial femur</i>	 <p data-bbox="791 1462 1262 1514">* No coring. *Full cast before sectioning *Incision as indicated in white.</p>

<p>SAM-PK-K382</p>	<p><i>Left Tibia</i></p>	 <p>* No coring. *Full cast before sectioning *Incision as indicated in white.</p>
<p>SAM-PK-K382</p>	<p><i>Unfragmented Fibula</i></p>	 <p>*Full cast before sectioning. *Incision as indicated in white.</p>
<p>SAM-PK-K382</p>	<p><i>Caudal Vertebra 2</i></p>	 <p>*Full cast before sectioning. *Incision as indicated in white.</p>

<p>SAM-PK-3603</p>	<p>Small Right Femur</p>	 <p>* Full cast before sectioning. * No coring. Incision as indicated in white.</p>
<p>SAM-PK-3341</p>	<p>Rib</p>	 <p>*All parts of this rib to be cast in full before sectioning * No coring *Incision as indicated in white</p>

<p>SAM-PK-2780</p>	<p>Distal end of right femur</p>	 <p>*Full cast before sectioning *No coring *Incision as indicated in white</p>
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Claire Browning



25 March 2022

Name of Curator

Signature of Curator

Date

I have reviewed the above request and recommend permission for the sampling of specimens listed in Table 1, with the restrictions are stipulated in text.