Supplementary Materials 1: Methods for DNA extraction and amplification for museum specimen of *Hadramphus pittospori*

The *Hadramphus pittospori* museum specimen was soaked overnight in lysis buffer according to the methods of Gilbert *et al.* [1]. The lysis buffer consisted of: 2% sodium dodecyl sulphate (SDS), 0.45 M EDTA, pH 8.0, 40 mM dithiotreitol (DTT), 100 mM Tris buffer pH 8.0, 100 mM NaCl and 250 ug/ml proteinase K. Due to the large size of *H. pittospori*, we use a 50 mL Falcon tube for the extraction and we added 15 mL of lysis buffer to the tube. A QIAmp Investigator Kit (Auckland, catalogue # 56504) was used following the steps listed for tissue extraction (Spin-Column Protocol). We included a negative control for the extraction.

For each PCR, we amplified a fragment of COI three times in three separate PCR reactions. Each PCR product sequencing reaction was conducted independently on different days. To minimise the risk of contamination, the museum extraction and PCR were performed in a separate laboratory that did not otherwise process animal DNA. No laboratory equipment, consumables, reagents, or personal protective equipment were transferred from the laboratory. To further ensure no contamination, all historical DNA work was conducted prior to entry into any modern DNA laboratory which processed animal DNA. No re-entry was made into the ancient DNA laboratory if the modern laboratory had been entered that day.

References

1. Gilbert, M.T.; Moore, W.; Melchior, L.; Worobey, M. DNA extraction from dry museum beetles without conferring external morphological damage. *PLoS ONE* **2007**, *2*, e272.