Animal Mummies:
The inside and outside story

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MONUMENT MEN

ANCIENT EGYPTIAN ANIMAL BIO BANK

MANCHESTER MUSEUM

MANCHESTER 1824 The University of Manchester

Sketchfab

3DFLOW

Why Animal Mummies?

- Animal mummies were made in religious cult centres in Egypt during various dynastic periods.
- Used animals pertaining to specific deities (falcons, crocodiles, bulls, snakes)
- During Ptolemaic period, animal mummy production became heavily industrialised and millions were made every year.
- Common in many museum collections but often disparate and completely without context/ provenance
- As objects, they are portable, attractive and recognisable as animals
- Often collected by travellers/collectors/early archaeologists
- Modern ethical considerations prevent physical ‘mummy unwrapping’
- Animal mummies are ideal subjects for non-invasive biomedical and digital approaches to study in Egyptology

Digital Unwrapping

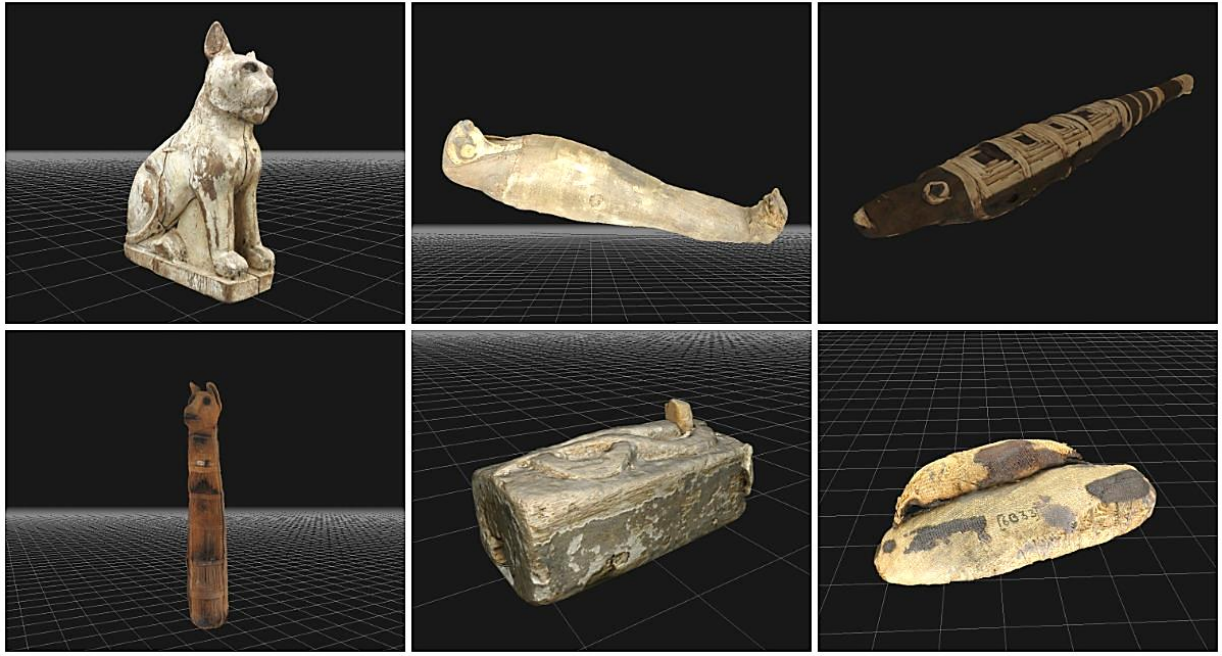
- CT imaging provides a non-invasive method to view and render the contents of animal mummies, but often lacks valuable surface recording detail
- Surface recording is best achieved possible using techniques such as laser, structured light scanning and/or photogrammetry
- Laser scanning and structured light require relatively expensive equipment
- Photogrammetry is the most accessible surface recording tool for volunteers and untrained museum staff
- Has yielded positive results using simple digital cameras (including mobile phones) and free software

Ptolemaic Cat Coffin – Saqqara, Egypt
Manchester Museum Collection
CT Volume Render (MIMICS)

Experimental Methodology

- Aimed to keep it as simple and forgiving as possible
- Using easily sourceable and ‘hacked’ equipment
- Varied shooting conditions/equipment to test results and establish an accessible methodology – could a local/small museum do this with no budget/experience?
- Using turntable method, using an LED lightbox or a light diffusion tent

The Pilot Six



Top: Cat coffin, gilded falcon, juvenile crocodile

Bottom: Skittle-shaped cat mummy, snake coffin, shrew mummy

Volume Render (MIMICS)

Photogrammetry (3DF Zephyr)

Processing Stages

Sparse Cloud

Dense Cloud

Mesh Generation

Textured Mesh Generation

- Pilot study subjects are now publicly available online via: sketchfab.com/egyptbiobank
- Annotation images and audio descriptions (coming soon) will provide insights into the mummies and provide additional context into each subject.
- Now working on combining CT volume renders with external photogrammetry scans to create unwrappable models using Sketchfab API viewer

Thanks for listening!

@monument_men

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