

Metadata put into practice

Applications for preservation and
retrieval purposes, using the
Qualified Dublin Core
metadata schema

Agenda

- Overview & Introduction – Ina Smith
- Metadata, Metadata Schemas & Metadata Standards – Amelia Breytenbach
- Digitisation for preservation and access: a technical perspective – Ria Groenewald
- Conclusion



What is a digital repository?

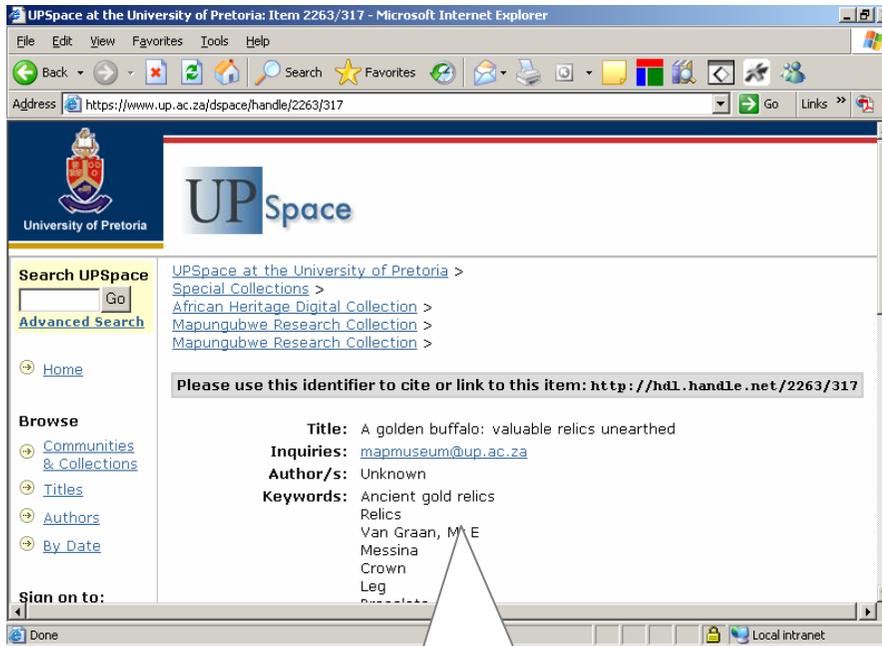
"...a university-based institutional repository is a **set of services** that a university offers to the members of its community for the **management and dissemination** of digital materials created by the institution and its community members. It is most essentially an **organizational commitment** to the stewardship of these digital materials, including **long-term preservation** where appropriate, as well as **organization** and **access** or **distribution**." (Lynch 2003)

About UPSpace

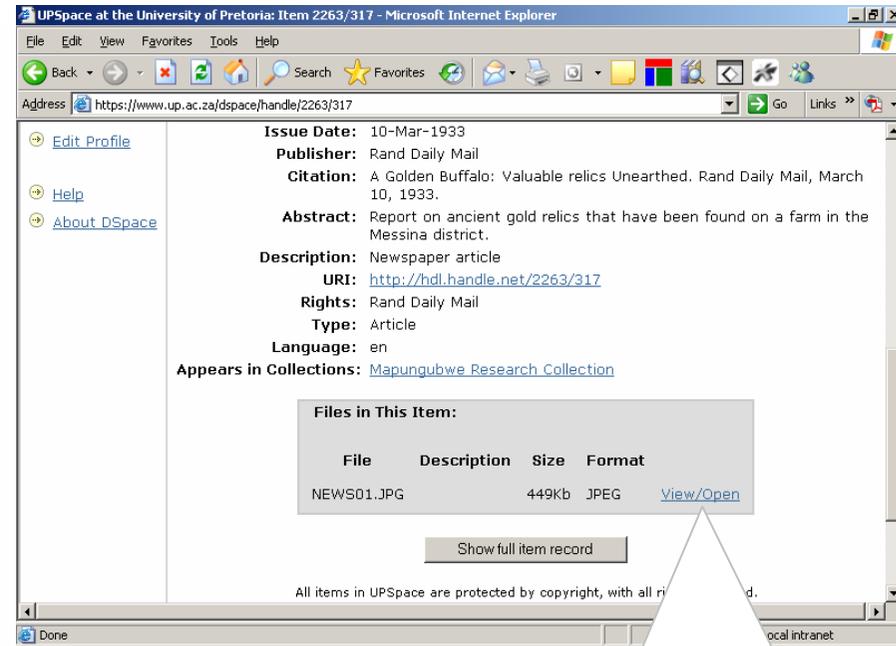
- Digital research repository of the University of Pretoria
- Contains full text research material produced by UP researchers
- Manage and disseminate research material/output at UP
- Archival & preservation focus
- Provide open access to research material



Each item consists of ...



Metadata



Bitstream(s)/File(s)
Also multiple
bitstreams

REPORT ON THE GEOLOGY OF THE MAPUNGUBWE AREA

Adam Bumby
Dept of Earth Sciences
University of Pretoria

Introduction

The area under investigation during this report is situated immediately south of the borders between South Africa, Botswana and Zimbabwe, at the confluence of the Limpopo and Shashe Rivers. The area is contained within the farms Greefswald 37MS, Stindal 30MS, Cerberus 38MS and La Reve 39MS, and forms part of the proposed Vhembe-Dongola National Park. The area has long been known as a site of considerable archaeological interest, in view of the stone-age San and Khoe-khoe rock paintings and engravings, and the sites of iron-age occupation at K2 in the 10th century and at Mapungubwe hill in the 13th century. Since 1930, a considerable amount of archaeological research has been undertaken, and has precipitated the need for a broader understanding of the cultural landscape. In order to partially fulfil this need, the area was subjected to a geological investigation during parts of November and December 2001. A geological map of the area was also produced, which accompanies this report. Whilst some aspects of this report focus on the relationship between geology and archaeology, it is also intended as a more general discussion of the geological phenomenon in the Mapungubwe area.

General stratigraphy of the area

The geology of the Mapungubwe area can be considered to comprise two layers of strata, which together can be termed the *Clarens Formation*, which form part of the upper Karoo Supergroup. The lower-most layer is known as the *Red Rock Member* of the Clarens Formation. Resting above this, the upper layer is termed the *Tshipise Member* of the Clarens Formation. These strata were deposited during the mid-Jurassic (about 175 million years ago).

Both the Red Rock and Tshipise Members of the Clarens Formations are sedimentary rocks (i.e. they are sedimentary deposits which have been lithified [turned to rock]). Different sedimentary processes (such as deposition by rivers, lakes, seas, deserts etc.)

Re-dating of Chinese celadon shards excavated on Mapungubwe Hill, a 13th century Iron Age site in South Africa, using Raman spectroscopy, XRF and XRD

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Chinese celadon shards of the Longquan type, believed to date from the Southern Song dynasty (1127–1279 AD), were excavated in 1934 on Mapungubwe Hill, a 13th century Iron Age site in the Limpopo valley, South Africa. We studied the shards with Raman spectroscopy, x-ray fluorescence (XRF) spectroscopy and x-ray diffraction (XRD). The Raman polymerization Index (I_p), calculated from the spectra of the glaze of the shards, indicated a higher firing temperature than expected for the relatively calcium-rich Longquan glazes of the Southern Song dynasty. XRF analysis of the glaze and XRD measurements of the bulk of the shards supported this view and date the shards to possibly the Yuan (1279–1368 AD) or even early Ming (1368–1644 AD) dynasties. These results have an impact on the chronology of the history of the region and therefore call for further research of a comparative nature of other Chinese celadon shards excavated on archaeological sites in Africa, in addition to additional carbon dates of Mapungubwe hill. Copyright © 2005 John Wiley & Sons, Ltd.

KEYWORDS: XRF; XRD; celadon; glaze

INTRODUCTION

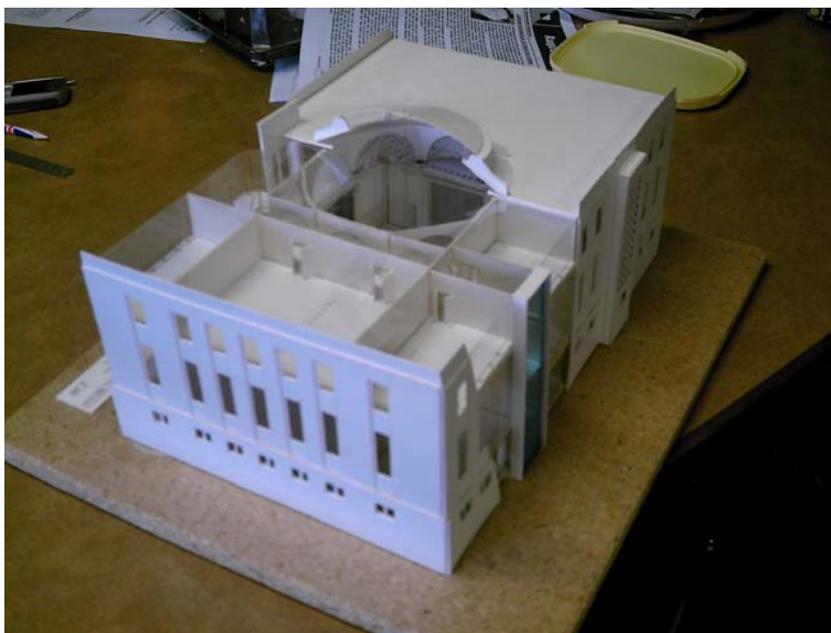
The *Illustrated London News* reported on 8 April 1933, 'a remarkable discovery in the Transvaal: a grave of unknown origin, containing much gold-work, found on the summit of a natural rock stronghold in a wild region.'¹

This discovery turned the myths and legends surrounding the sacred hill Mapungubwe (TsiVenda for 'the hill of the jackal') into factual history. An ancient legend, suggesting certain death upon ascending the hill, helped to protect the last resting place of the rulers of a prehistoric African trade kingdom (ca 1000–1200 AD) for more than seven centuries. Furthermore, the occurrence of malaria and measles by made the Limpopo valley the wildest and most desolate part of the Transvaal and helped to protect the site from looting, which occurred at most other Iron Age sites in southern Africa.² The discovery in 1933 of intact gold-bearing graves by prospectors was therefore a remarkable find of great archaeological

and historical significance and marked the beginning of a 70-year archaeological project, which has recently resulted in the founding of the Mapungubwe Museum, University of Pretoria.

Two fragments of Chinese porcellaneous ware were excavated in 1934, during the first archaeological expedition to Mapungubwe, in the occupation layers on the hilltop, one at 4 ft and the other at 1 ft from the surface. They were classified in the same year by the British Museum as celadon from the late Southern Song dynasty (1127–1279 AD).³ In 1991, another shard, belonging to the same vessel, was found at the main entrance to Mapungubwe hill.² The shards and thousands of imported glass beads, which were also excavated at the site, connect Mapungubwe to the extensive maritime trade network, established already in the 1st century AD, which linked East Africa with the monsoon-based commercial systems of the Indian Ocean (Fig. 1). African raw materials such as gold, rhinoceros horn, ivory, ambergris, frankincense and myrrh were exchanged for cotton, porcelain and glass trade beads.⁴

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Amelia Breytenbach
Ria Groenewald

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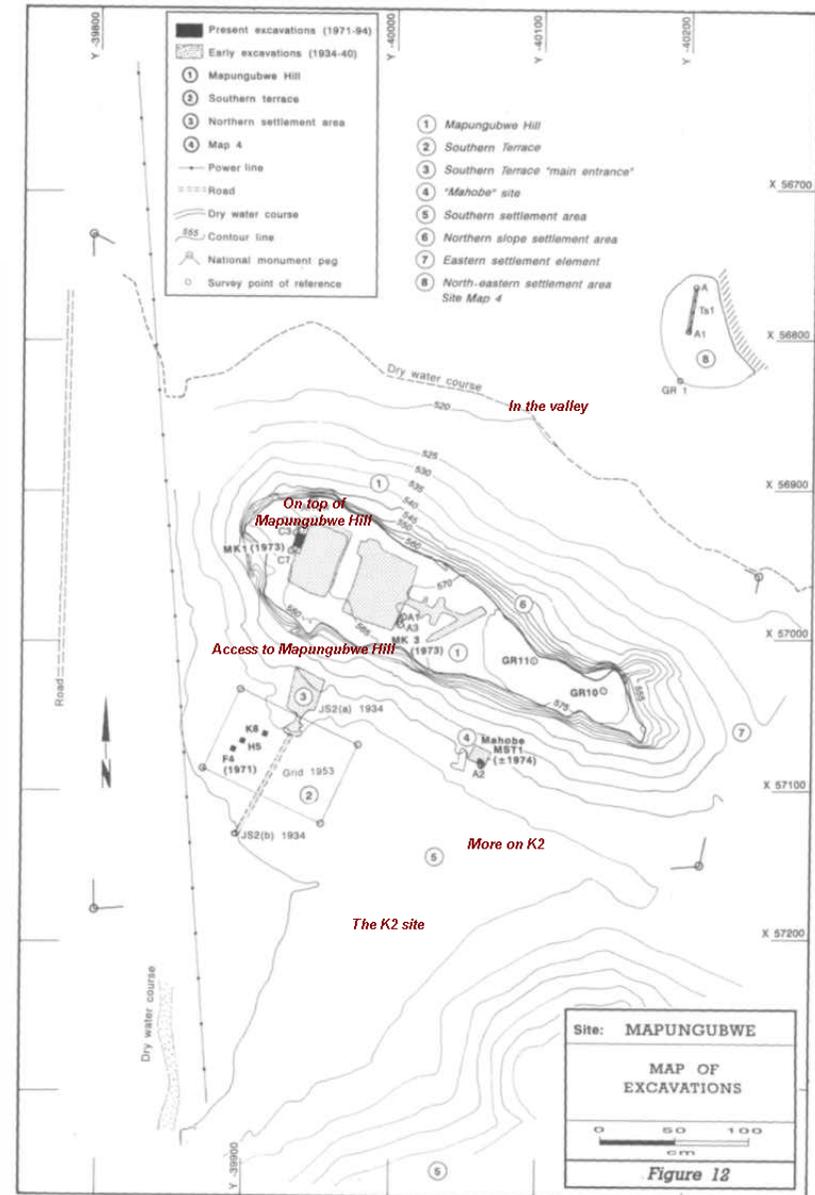
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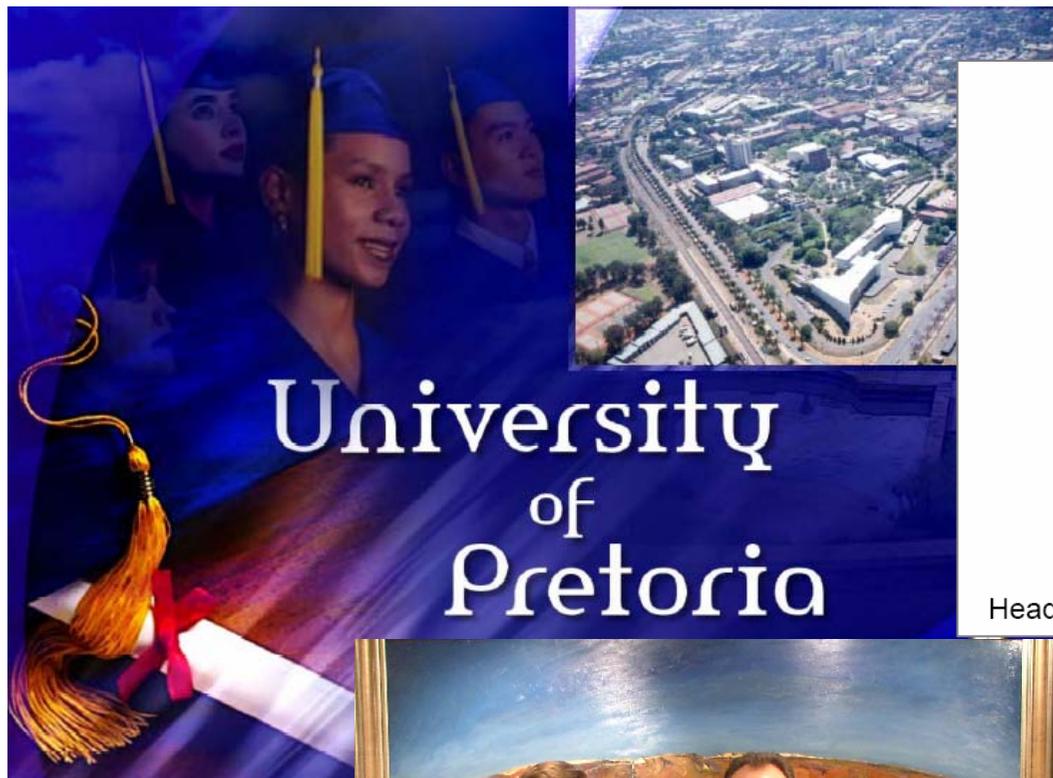


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Figure 1.4²⁶¹
 The summit of Mapungubwe Hill in 1972. Here Gardner's large scale excavation can be seen near the western end of the hill, viewed from the south. Excavation Mk 1 was done in 1973 in the western wall of Gardner's excavation, to the left (cf. Figure 3.53).





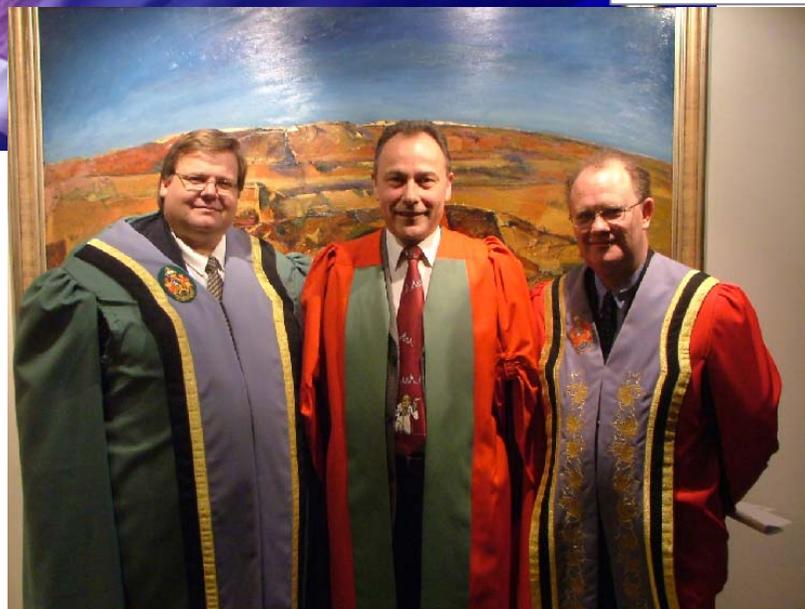
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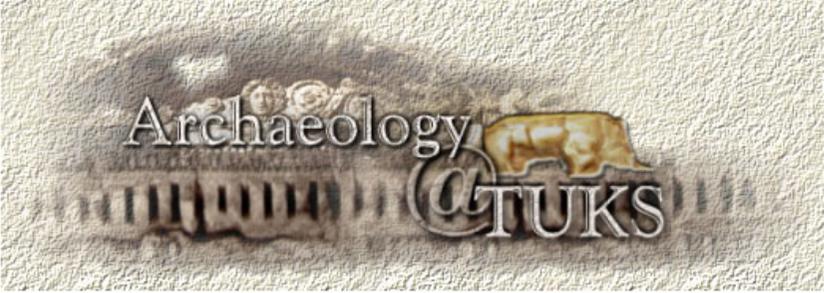
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Archaeology: VR - Microsoft Internet Explorer

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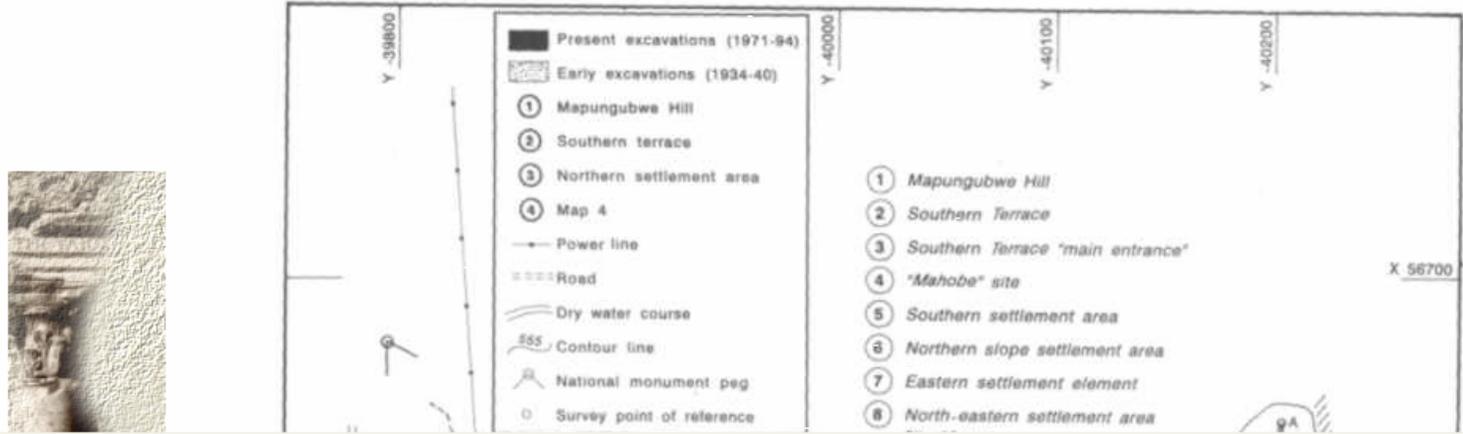
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Below is a map of Mapungubwe. You may visit some of these sites.

Move your mouse over the map, and feel free to explore!



Legend:

- Present excavations (1971-84)
- Early excavations (1934-40)
- 1 Mapungubwe Hill
- 2 Southern terrace
- 3 Northern settlement area
- 4 Map 4
- Power line
- Road
- Dry water course
- Contour line
- National monument peg
- Survey point of reference

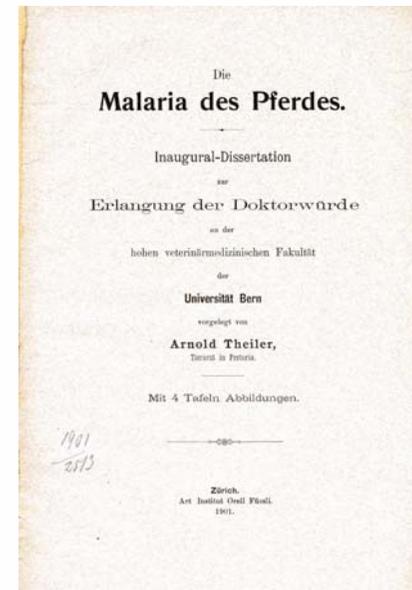
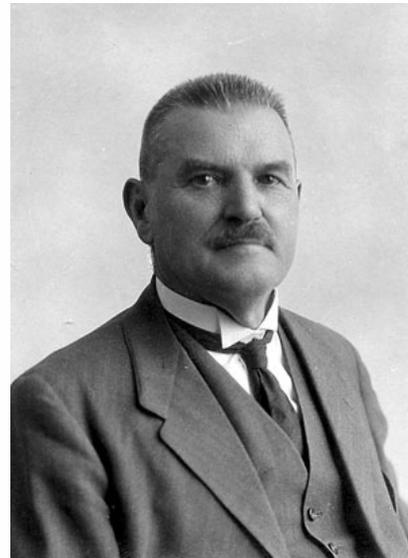
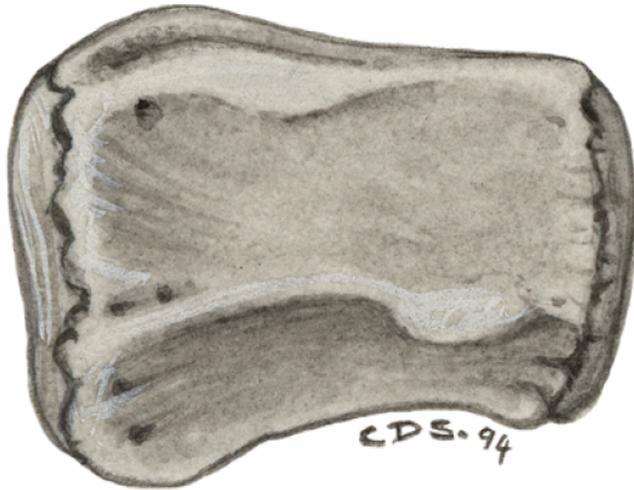
Map labels:

- 1 Mapungubwe Hill
- 2 Southern Terrace
- 3 Southern Terrace "main entrance"
- 4 "Mahobe" site
- 5 Southern settlement area
- 6 Northern slope settlement area
- 7 Eastern settlement element
- 8 North-eastern settlement area

Coordinates: Y -39800, Y -40000, Y -40100, Y -40200, X 56700

Internet

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Department Anatomy and Physiology



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[Professor Kirsten](#) is lecturer and head of the [Department of Agricultural Economics, Extension & Rural Development](#) at the [University of Pretoria](#), South Africa.

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R. D. M. 10/3/01
A GOLDEN
BUFFALO
10/3/01
Valuable Relics
Unearthed

From Our Own Correspondent
 Louis Trichardt, Thursday.

A discovery of ancient gold relics has been made by Mr. E. van Graan on a farm in the Messina district. According to the information received it is presumed that only a portion of the ornaments have so far been unearthed. The articles found were a crown, leg bracelets, necklaces and half a model of a buffalo, all made of pure gold. When the discovery was made Mr. Van Graan had assistance with him, and there is an indication of the ground having been disturbed during his absence to report his find. Investigations are being made to trace the persons suspected of having returned to the grave, as the other half of the buffalo model cannot be found, and other articles could have been removed without the discoverer's knowledge. Police, together with Mr. Van Graan, are now guarding the place, and further prospecting will be resumed as soon as the archaeologists have made their reports on the finds. The discoveries so far are valued at about £600.

R. D. M. 11/3/01
DISCOVERY OF GOLD
ORNAMENTS
11/3/01
CLAIMED BY PRETORIA
UNIVERSITY

From Our Own Correspondent
 Louis Trichardt, Friday.

Authorities of the University of Pretoria, who have been excavating in the Louis Trichardt district, have recovered most of the ornaments buried there. Many of the articles are in small pieces and reconstruction will be difficult and even impossible in some cases. The Pretoria representative of the "Rand Daily Mail" learns that the value of the metal has been exaggerated. The University of Pretoria does not think that any of the articles, which were on the property, are being deliberately withheld, but a warning is issued that as all discoveries are the sole property of the University, selling any of the articles or even harbouring any, may incur serious penalties. As already stated in the "Rand Daily Mail" the articles recovered and at present being examined, cover a wide field. Many gold beads have been found in addition to other gold ornaments as well as interesting pots and bangles. In some cases the gold is very refined, even purer than gold refined at properly equipped refineries.

Tuks education boffin resigns

Professor Jonathan Jansen, dean of the faculty of education at the University of Pretoria, has resigned. Jansen was appointed professor and dean of the faculty of education at Tuks in 2001 after working at the University of Durban-Westville. His term as dean was renewed in 2005 and he served as a member of the

developing it into one of the foremost faculties in the country," said university spokesperson Stella du Plessis. In August last year, Jansen was seconded as administrator to the Durban University of Technology (DUT) on a full-time basis. Minister of Education Naledi Pandor had indicated that she would like to extend Jansen's secondment to DUT for a further period. - **Sholain Govender**



Jonathan Jansen

...e a signif-
 ...education
 ...Pretoria,

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Benefits for clients (researchers)

- Central archive of research
- Increase visibility, usage, impact
- Read more widely, cited more frequently
- Encourages dialogue between researchers
- Highly retrievable via Google, Google Scholar
- Searches metadata & full text
- Persistent URL's
- User friendly and convenient to use
- Usage statistics



Benefits for clients (information specialists)

- Easy to access
- Stay updated with regard to research conducted
- Encourages collaboration between faculty & AIS
- AIS positioning within faculties & UP
- Develop new skills
- Support researchers

Why involve cataloguers? (1)

- “Cataloguers have a role to play as **mediators** and **creators** of an increasingly diverse landscape of descriptive methods” ([Source](#))
- “As digital endeavors become more and more global, the cataloguer’s **experience** in **language**, **diacritics**, and **standard making** become more and more valuable” ([Source](#))
- Bring **expert knowledge & special skills** of cataloguing process and standards to the table
- **Transfer skills** into new areas ([Source](#))
- Understanding and importance of, and construction of, **taxonomies** and **controlled vocabularies** ([Source](#))

Why involve cataloguers? (2)

- Analytical and detail-oriented nature
- Philosophical, if not technical, **understanding** of the importance of **balancing** the need for standards with the demands for interoperability ([Source](#))
- **Control?** Digital arena is constantly changing – rules are never settled and apparently no stability
- Used to **changes** ...

Benefits for Cataloguers

- New skills
- Increased visibility and expertise
- Demonstrate the relevancy of cataloguers in digital age
- Connect more closely with broader range of library-wide goals
- Networking
- You have a great deal to offer!

Metadata Librarian Position:
Ohio State Univ Libraries

Metadata Librarian Position:
Texas Tech Univ Library

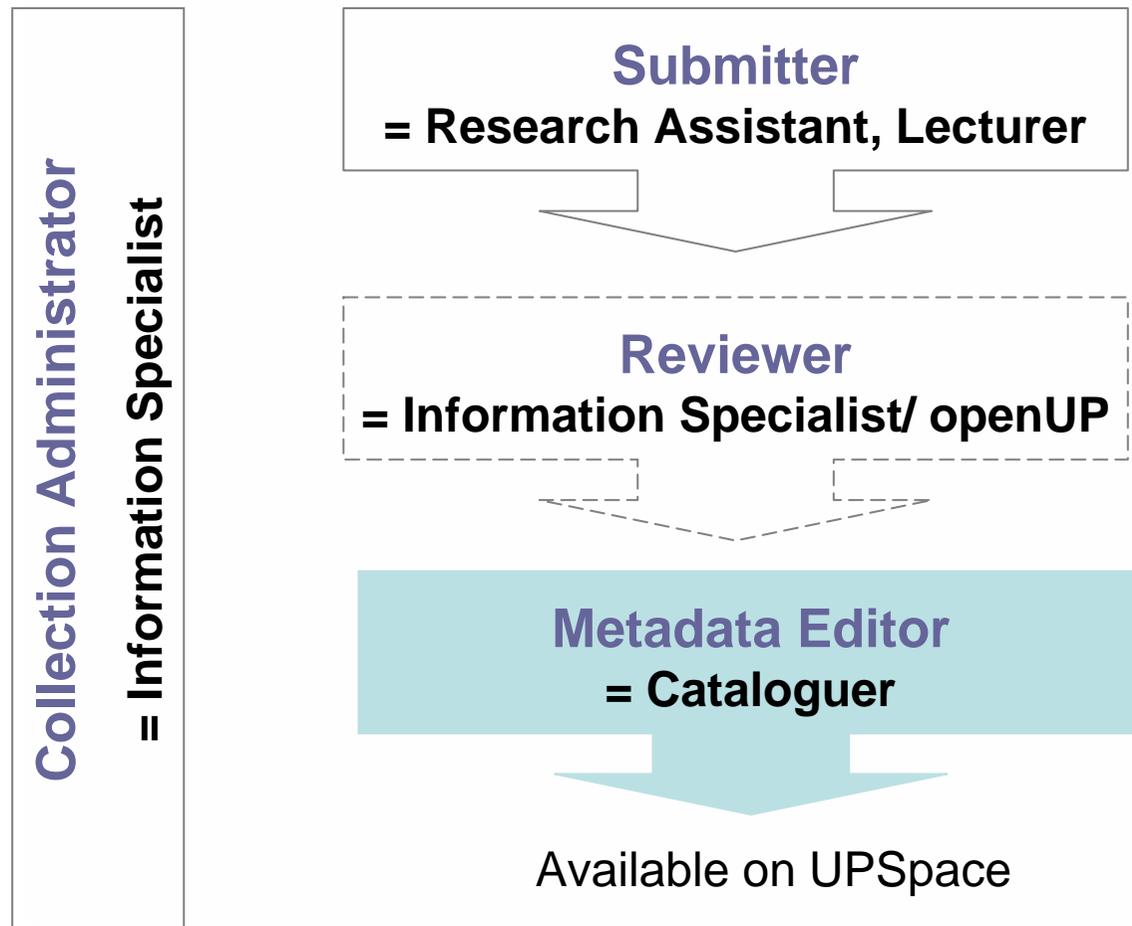


Where to start?

- Best training is by doing ([Source](#))
- Choose one metadata standard and decide to become an expert e.g. Qualified Dublin Core



Workflow in UPSpace Collection



Role of Metadata Editor

1. Edit metadata of all submissions to collection
2. Review files/ bitstreams
3. On “Approval”, item becomes part of UPSpace
4. Items can also be rejected (metadata editor should have a clear understanding of the scope of the collection) – reason provided
5. Add LCSH in DC Registry of item
6. Can edit metadata in DC Registry at any stage
7. Add quality e.g. more fields, remove duplicate items, check spelling, add description, verify correct form of names used, add more keywords, abstracts



Other responsibilities ...

- Communicate with Collection Administrator, Submitters, other role players
 - Discussion groups, meetings, e-mails
- Provide input during initial creation of collection
- Knowledge of subject vocabulary – apply consistently (LCSH & free terms)
- Keep thesaurus of free terms – link on collection home page
- Commitment to complete tasks in “Task pool”
- Know your Collections
- Quality control of collections in general
- Feedback, support to “Submitters”

Other responsibilities ... (2)

- Knowledge and application of metadata documentation
- Also see <http://www.dspace.up.ac.za/metadata.htm>
- Member of Listserves e.g.: upspace@kendy.up.ac.za & metadatagroup@kendy.up.ac.za
- Knowledge of referencing techniques:
<http://www.ais.up.ac.za/referencing>



“There are **numerous benefits** to be gained by cataloguers entering the digital library world.

First, it is an **obvious way to show the relevance** of technical services skills in the digital age ...

It will help us to **connect more closely** with a broader range of library-wide goals. It will help us **build bridges** and make connections ...

Finally, most important to the library and our users: **our skills, insight, and expertise are needed....”**

(DeZelar-Tiedman 2004)

"If we don't change, we don't grow. If we don't grow, we aren't really living."

Gail Sheehy



Bibliography

- [Cataloger's and the Creation of Metadata Systems](#)
- [Crashing the party: catalogers as digital librarians](#)
- [National Library of Australia: Metadata – an overview](#)
- [University of Queensland: An Introduction to Metadata](#)