

The Digital Archaeological Record – an Analytic Data Repository for Archaeology

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Digital Antiquity
Digital Humanities · Stanford
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Mission of Digital Antiquity

Devoted to enhancing preservation of and access to the digital records of archaeological investigations:

- enhance the **management** of archaeological resources;
- provide for the long-term **preservation** of irreplaceable archaeological records and broader, easier **access**;
- enable public interpretation and research that **creates and communicates knowledge** of the ancient and historic period human past.

History

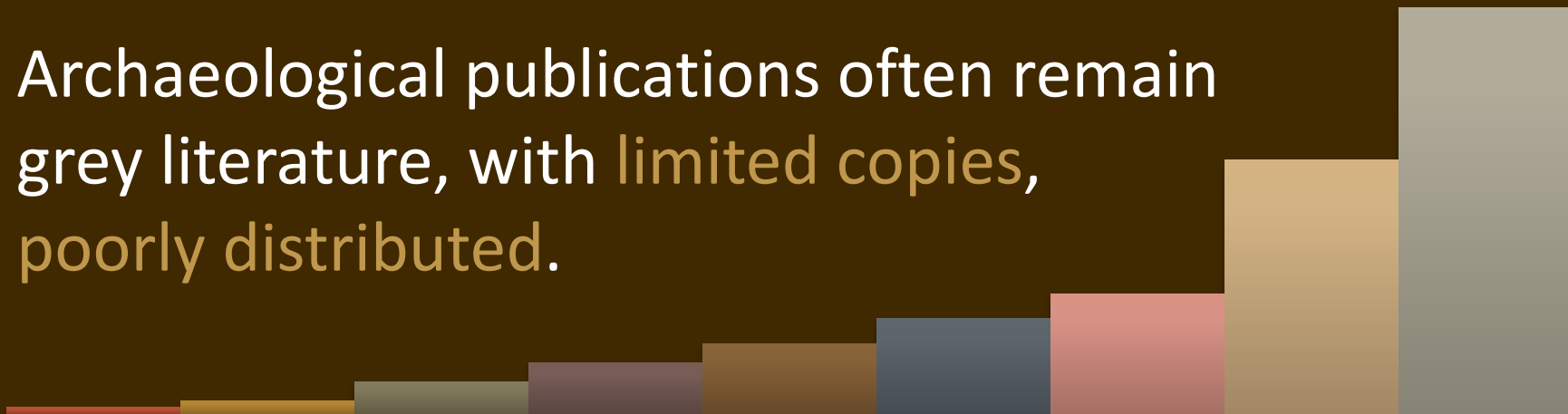
- Multi-institutional effort
 - Arizona State U, U of Arkansas, Pennsylvania State U, SRI Foundation, Washington State U., U York (ADS)
- Start-up funding-Andrew W. Mellon Foundation
- Independent Board of Directors
- Broad-based Science Board
- A relatively small staff relying substantially on automated procedures
- Incubated as a University center at ASU

The Andrew W. Mellon Foundation



Challenges

- Excavation **irreversibly changes** a site – the process cannot be repeated.
- In the US, data often resides in physical archives, preserved on the **shelf** next to artifacts.
- Archaeological publications often remain grey literature, with **limited copies, poorly distributed.**



Introducing tDAR

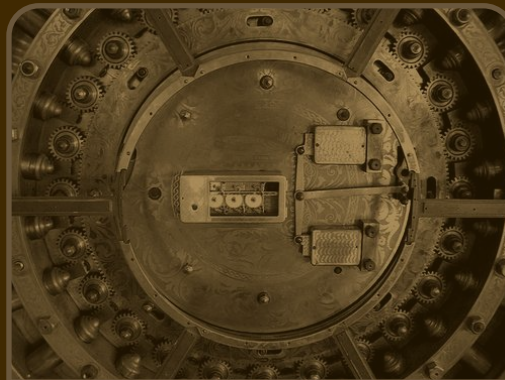
To address these challenges, Digital Antiquity
created:

the Digital Archaeological Record (tDAR)

About tDAR?



Information
Access Tool



Preservation
Repository



Research
and Practice



What's in tDAR

The results of archaeological excavations:

- **Documents** – Books, Chapters, Articles, Reports, and grey literature
- **Images** – artifact images, site photos, maps, etc.
- **Sensory Data** – 3-D scans
- **Data Sets** – the quantitative work-product of archaeological excavations

Records in tDAR

The Crow Canyon Archaeological

project: [Crow Canyon Archaeological](#)

[Scott Ortman](#) (Author) [Erin L. Baxter](#) (Author)
[David Satterwhite](#) (Author) [Jonathan D. Till](#) (Author)

Laboratory manual used during the excavation at Crow Canyon
Supporting information is available at the Crow Canyon Archaeological Project

Basic Information

Document type: Other
Number of pages: 265
Resource language: English
Year: 2005
tDAR ID: 6110

Uploaded Files

Original file: [laboratorymanual.pdf](#) 11.34mb

Keywords

Site name keywords: Sand Canyon Pueblo, Y
Site type keywords: Domestic Structure or Architectural Complex, Settlements
Culture keywords: Ancestral Puebloan
Material keywords: Fauna
Investigation types: Data Recovery / Excavation

Spatial Coverage



Midden Investigations at Steinbogi (SBO)

project: [North Atlantic Biocultural Organization \(NABO\)](#)

[Megan T. Hicks](#) (Author)

Basic Information

Document type: Journal Article
Journal name: Nabo
Number of pages: 8
Resource language: English
Year: 2002
tDAR ID: 3365

Uploaded Files

Original file: [steinbogimiddeninvestigations2002.pdf](#) 268.07kb (downloaded 0 times)

Spatial Coverage



lita from the air

project: [Inglefield Land Archaeology Project](#)

Alluvial fan in Foulke Fjord looking north. lita (Etah) located on the west side of the river.

Basic Information

Copy located at: Bowdoin College, the Peary-MacMillan Arctic Museum
Resource language: English
Year: 2006
Copy located at: Bowdoin College, the Peary-MacMillan Arctic Museum
tDAR ID: 5885

Uploaded Files

Note: this resource is restricted from general view; however, you have been granted access to it.
Original file: [june26-06-07.jpg](#) 2.01mb (downloaded 0 times)

Keywords

Site name keywords: lita
Site type keywords: Domestic Structure or Architectural Complex, Settlements
Culture keywords: Palaeoeskimo, Historic Inughuit, Thule
Investigation types: Reconnaissance / Survey, Data Recovery / Excavation

Individual & Institutional Roles

[John Darwent](#) (Field Director)

Data Entry

Editing Dataset Metadata (3739)

Basic Information

Project* Alexandria, Virginia Hist

Status Active

Title* Alexandria fauna database

Language English

Year Created

Abstract / Description*

Alexandria fauna database.

Upload

Dataset Choose File No file chosen

Valid file types include:

☐ This item contains sensitive information. NOTE: by checking this box, you will not be able to view this item below.

CURRENT FILE

Existing file: qrybonecatalogueeditedk

Investigation Type(s)

☐ Inherit values from parent project "No Associated Project"

- ☐ Archaeological Overview
- ☐ Consultation
- ☐ Research Design / Data Recovery Project
- ☐ Records Search / Inventory Checking
- ☐ Environment Research
- ☐ Bioarchaeological Research
- ☐ Ethnohistoric Research
- ☐ Site Stewardship Monitoring
- ☐ Systematic Survey
- ☐ Data Recovery / Excavation

About Your Site(s)

☐ Inherit values from parent project "No Associated Project"

Site Name

[add another site name](#)

Site Type

- ☐ Domestic Structure
- ☐ Resource Extraction
- ☐ Funerary and Burial
- ☐ Non-Domestic Structure
- ☐ Archaeological Feature
- ☐ Rock Art
- ☐ Water-related

Other

[add another uncontrolled term](#)

Material Type(s)

☐ Inherit values from parent project "No Associated Project"

- ☐ Ceramic
- ☐ Fauna
- ☐ Ground Stone
- ☐ Macrobotanical
- ☐ Pollen
- ☐ Chipped Stone
- ☐ Fire Cracked
- ☐ Building Material
- ☐ Metal
- ☐ Shell

Cultural Term(s)

☐ Inherit values from parent project "No Associated Project"

Culture

- ☐ Pre-Clovis
- ☒ PaleoIndian
- ☐ Archaic
- ☐ Hopewell
- ☒ Woodland
- ☐ Plains Village
- ☐ Mississippian
- ☐ Ancestral Puebloan
- ☐ Hohokam
- ☐ Mogollon
- ☐ Patayan
- ☐ Fremont
- ☒ Historic

Other

[add another cultural term](#)

Temporal Coverage

☐ Inherit values from parent project "No Associated Project"

Temporal Terms

[add another temporal keyword](#)

Coverage Dates

Date Type

Start Year

End Year

Description

[add another](#)

General Keyword(s)

☐ Inherit values from parent project "No Associated Project"

Keyword

[add another keyword](#)

Spatial Terms

☐ Inherit values from parent project "No Associated Project"

Geographic Term

[add another geographic term](#)



Documenting Your Dataset

Side coding sheet for fauna through 2008

project: [Crow Canyon Archaeological](#)

[Jonathan Driver](#) (Creator)

Coding sheet used by Jonathan Driver for Center projects through 2008.

Basic Information

Year: 2005

tDAR ID: 6129

Category: Fauna

Subcategory: Side

Uploaded Files

Original file: [ccac-side-codes.xlsx](#)

Coding Rules

Code	Term
I	Irrelevant
L	Left
R	Right
U	Unknown

This Coding Sheet is used by the

1. 6157 - Sand Canyon Local
2. 6156 - Woods Canyon Pueblo
3. 6126 - Yellow Jacket Pueblo

Fauna Element (Updated) - Default Ontology

project: [Fauna Ontology Drafts - NSF & NEH/JISC TAG Fau](#)

Added fish elements & vomer & distinguished fbasiooccipital, Quadrat

Basic Information

Year: Creation year not set.

tDAR ID: 5863

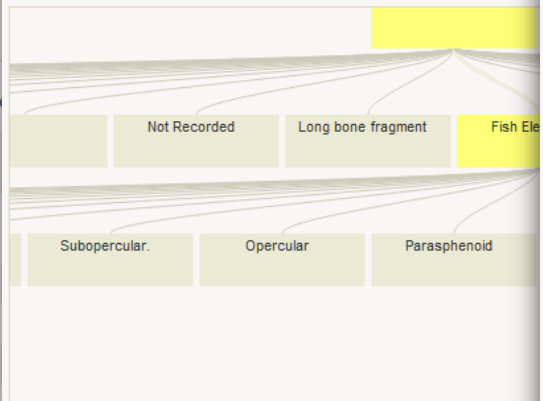
Uploaded Files

Original file: [fauna-element-updated---default-ontology-draft.owl](#)

Category: Fauna

Subcategory: Element

Ontology



click and drag to pan across the ontology, darker nodes contain more

Parsed Ontology Nodes

Label

Humerus

Sternum

Column: BELEMENT

Column Type:

Categorize the data to simplify integration:

Category:

Subcategory:

Please describe the data in this column, how it was collected, tools used, screen size, etc.

Translate your data using a Coding Sheet or map it to an Ontology:

Ontology:

[\(create new ontology\)](#)

Column: BELEMENTID

Column Type:

Categorize the data to simplify integration:

Category:

Please describe the data in this column, how it was collected, tools used, screen size, etc.

Translate your data using a Coding Sheet or map it to an Ontology:

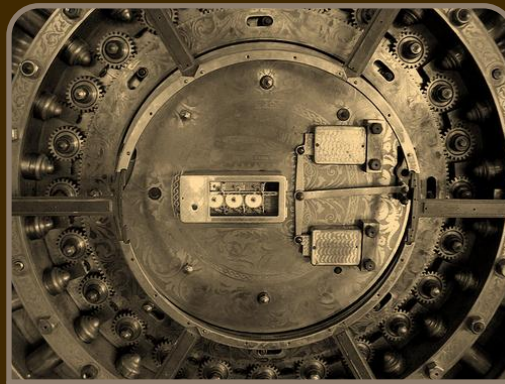
Coding Sheet:

[\(create new coding sheet\)](#)

What is tDAR?



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Access Tool



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Repository



Research
and Practice



Preservation & Stewardship



Regularly Check Files

Migrate File Formats as they Become Obsolete

Plan for Obsolete Technology

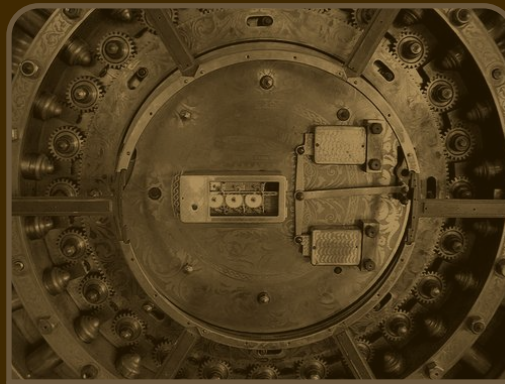
Maintain Files in Open & Preferable Formats

Rich Descriptive Metadata Stored with Object

What is tDAR?



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Research & Practice

- New tools to help compare and integrate multiple data sets
- Developing resources for communities of practice in archaeology
- Updating *Guides to Good Practice in Collecting, Documenting, and Preserving Digital Archaeological Data* with ADS

Tools

- Comparative Analysis & Data Integration.
- Tools to:
 - Document data sets
 - Map data sets to user-generated or shared ontologies
 - Integrate & compare preserved datasets

Data Values can be mapped to Ontologies

Select Column: 2. Taxon -> Fauna Taxon - TAG (UK) Updated - Default Ontology Draft

Data values from Taxon	Ontology values from Fauna Taxon - TAG (UK) Updated - Default Ontology Draft
alewife	Clupeidae (herrings menhadens sardines shads sprats)
american pigeon	Columbidae (Columbid)
amphibian	-- Suggested Values --
barn owl	Sus domesticus (Pig)
bird	-- All Values --
blackbird	- OSTEICHTHYES (bony fishes)
blue crab	- Chondrostei (Paddlefishes sturgeons)
bluefish	- Acipenseriformes (paddlefishes spoonfishes sturgeons)
box turtle	- Acipenser sturio (Baltic sturgeon European sturgeon)
cardinal	- Gadid Size (Cod Sized)
cat	- Neopterygii (neopterygians)
catfish	- Clupeomorpha
chicken	Passeriformes (Passeriforme)
cow	Felis catus (Cat)
cow/horse size	Ostariophysi
croaker	Gallus gallus (Chicken)
crow	Bos taurus (Cattle)
crustacean	Large mammal (vertebra and ribs) (cattle horse red deer-sized)
deer	Perciformes (perch-like fishes)
dog	Corvidae (Corvid)
dove	OTHER ANIMAL
drum	Cervus elaphus Dama dama (Red deer Fallow deer)
duck	Canis familiaris (Dog)
duck/domestic	Columbidae (Columbid)
duck/unknown	Perciformes (perch-like fishes)
fish	Anatini (Anatin)
goose	Anas platyrhynchos (Mallard Domestic duck)
grackle	Anatini (Anatin)
	OSTEICHTHYES (bony fishes)
	Goose (Goose)
	Passeriformes (Passeriforme)

Select Data Tables to Use

Data Integration: Select Tables

Step 1: Select Datasets to Integrate or Display

Dataset	Table
<input type="checkbox"/> Upper Little Colorado Prehistory Project Faunal Database	e_501_llspfaun (show/hide columns)
<input type="checkbox"/> Newbridge Site and Carlin Site Fauna Database	e_696_box01_11 (show/hide columns)
<input type="checkbox"/> Koster Site Fauna Dataset	dataset_2755_koster1a_koster1a (show/hide columns)
<input type="checkbox"/> HARP Fauna Database	dataset_1630_heshfaun_heshfaun (show/hide columns)
<input type="checkbox"/> Spitalfields Project Faunal Database - Total Number of Bones Per Period	e_3558_total_number_of_bones_per (show/hide columns)
<input checked="" type="checkbox"/> Spitalfields faunal main information datasheet with contextual data	e_3606_sheet1 (show/hide columns)
<input checked="" type="checkbox"/> Alexandria fauna dataset	e_3617_qrybone (show/hide columns)

Next: select columns

Integration Workspace

Create your Integration Table:

Column 1

Drag variables from below into this column to setup your integration

Click to add a new Column to the integration table

Select Variables

☐ Display Variable ☒ Integration Variable with mapped Ontology ☐ Measurement Variable ☐ Count Variable

▼ SPITALFIELDS FAUNAL MAIN INFORMATION DATASHEET WITH CONTEXTUAL DATA

Age - Fauna Age - Default Ontology Draft	Weight (lbs)	Bone Common name - Fauna Element (Updated) - Default Ontology Draft	Bone ID	Carcas	Context
Context Notes	FUS DIS - Fauna Fusion - Default Ontology Draft	FUS PROX - Fauna Fusion - Default Ontology Draft	No	No. Modifications recorded	No. measurements taken
No.teeth with tooth wear	Notes	Part Common	Period	Period text	Prop
Sex - Fauna Sex - Default Ontology Draft	Side - Fauna Side - Default Ontology Draft	Site code	Site-bone	Site-context	Species Common name - Fauna Taxon - TAG (UK) Updated - Default Ontology Draft

▼ ALEXANDRIA FAUNA DATASET

Artifact Type	BAGE - Fauna Age - Default Ontology Draft	BAGEID	BCLASS	BCLASSID	BCONDBURN
BCONDCUT	BCONDGNAW	BCONDITION	BCUT	BDIET	BELEMENT - Fauna Element (Updated) - Default Ontology Draft

Build your Integration Table

Create your Integration Table:

Column 1 - display

Age - Fauna Age - Default Ontology Draft

BAGE - Fauna Age - Default Ontology Draft

Click to add a new Column to the integration table

Select Variables

☐ Display Variable ☒ Integration Variable with mapped Ontology ☐ Measurement Variable ☐ Count Variable

SPITALFIELDS FAUNAL MAIN INFORMATION DATASHEET WITH CONTEXTUAL DATA

Age - Fauna Age - Default Ontology Draft	Weight (lbs)	Bone Common name - Fauna Element (Updated) - Default Ontology Draft	Bone ID	Carcas
Context Notes	FUS DIS - Fauna Fusion - Default Ontology Draft	FUS PROX - Fauna Fusion - Default Ontology Draft	No	No. Modifications recorded
No. teeth with tooth wear	Notes	Part Common	Period	Period text
Sex - Fauna Sex - Default Ontology Draft	Side - Fauna Side - Default Ontology Draft	Site code	Site-bone	Site-context

ALEXANDRIA FAUNA DATASET

Artifact Type	BAGEID	BCLASS	BCLAS	
BCOND CUT	BCONDGN AW	BCONDITION	BCUT	BDIET
BELEMENTID	BFUNCGRP	BNAME	BNAMEID	BOXNO
BELEMENTID	BELEMENTID	BNAME	BNAMEID	BOXNO
BELEMENTID	BELEMENTID	BNAME	BNAMEID	BOXNO

Create your Integration Table:

Column 1 - display

Age

Column 2 - display

Bone Common name - Fauna Element (Updated) - Default Ontology Draft

Click to add a new Column to the integration table

Select Variables

☐ Display Variable ☒ Integration Variable with mapped Ontology ☐ Measurement Variable ☐ Count Variable

SPITALFIELDS FAUNAL MAIN INFORMATION DATASHEET WITH CONTEXTUAL DATA

Age - Fauna Age - Default Ontology Draft	Bone Weight (lbs)	Bone Common name - Fauna Element (Updated) - Default Ontology Draft	Bone ID	Carcas	Context
Context Notes	FUS DIS - Fauna Fusion - Default Ontology Draft	FUS PROX - Fauna Fusion - Default Ontology Draft	No	No. Modifications recorded	No. measurements taken
No. teeth with tooth wear	Notes	Part Common	Period	Period text	Prop
Sex - Fauna Sex - Default Ontology Draft	Side - Fauna Side - Default Ontology Draft	Site code	Site-bone	Site-context	Species Common name - Fauna Taxon - TAG (UK) Updated - Default Ontology Draft

ALEXANDRIA FAUNA DATASET

Artifact Type	BAGE - Fauna Age - Default Ontology Draft	BAGEID	BCLASS	BCLASID	BCLASID
BCOND CUT	BCONDGN AW	BCONDITION	BCUT	BDIET	
BELEMENTID	BFUNCGRP	BNAME	BNAMEID	BOXNO	BPATROL
BELEMENTID	BELEMENTID	BNAME	BNAMEID	BOXNO	BPATROL
BELEMENTID	BELEMENTID	BNAME	BNAMEID	BOXNO	BPATROL

Final Layout

Create your Integration Table:

Column 1 - display	Column 2 - integration	Column 3 - display
Age	Bone Common name	Bone Weight (lbs) X
	BELEMENT	

Click to add a new Column to the integration table

Select Variables

<input type="checkbox"/> Display Variable	<input checked="" type="checkbox"/> Integration Variable with mapped Ontology	<input type="checkbox"/> Measurement Variable	<input type="checkbox"/> Count Variable
---	---	---	---

▼ SPITALFIELDS FAUNAL MAIN INFORMATION DATASHEET WITH CONTEXTUAL DATA

Age - Fauna Age - Default Ontology Draft	Bone Weight (lbs)	Bone Common name - Fauna Element (Updated) - Default Ontology Draft	Bone ID	Carcas	Context
Context Notes	FUS DIS - Fauna Fusion - Default Ontology Draft	FUS PROX - Fauna Fusion - Default Ontology Draft	No	No. Modifications recorded	No. measurements taken
No.teeth with tooth wear	Notes	Part Common	Period	Period text	Prop
Sex - Fauna Sex - Default Ontology Draft	Side - Fauna Side - Default Ontology Draft	Site code	Site-bone	Site-context	Species Common name - Fauna Taxon - TAG (UK) Updated - Default Ontology Draft

▼ ALEXANDRIA FAUNA DATASET

Artifact Type	BAGE - Fauna Age - Default Ontology Draft	BAGEID	BCLASS	BCLASSID	BCONDBURN
BCONDCUT	BCONDGNAW	BCONDITION	BCUT	BDIET	BELEMENT - Fauna Element (Updated) - Default Ontology Draft

Use an Ontology to Normalize the Output

Filter Ontology Values

You can filter data values for the datasets listed below. Only checked values mapped to an ontology will be reported below. Select checkboxes next to the values that you would like to be included or aggregated to that level. Checkboxes are automatically checked if values are present in ALL datatables.

Indented unchecked values are aggregated to the next higher level that is checked. Unchecked values at the top (leftmost) level are ignored, along with any unchecked subdivision categories. Values that occur in each dataset are indicated with blue checks, absent values are indicated with red x's.

Ontology labels from Fauna Element (Updated) - Default Ontology Draft (Select All Clear All)	Bone Common name (Spitalfields faunal main information datasheet with contextual data)	BELEMENT (Alexandria fauna dataset)
<input checked="" type="checkbox"/> Humerus	✓	✓
<input type="checkbox"/> Sternum	✓	✓
<input type="checkbox"/> Femur	✓	✓
<input type="checkbox"/> Pelvis (all clear)	✓	✓
<input type="checkbox"/> Acetabulum	✗	✓
<input type="checkbox"/> Ilium	✗	✓
<input type="checkbox"/> Ischium	✗	✓
<input type="checkbox"/> Pubis	✗	✓
<input checked="" type="checkbox"/> Tarsal (all clear)	✓	✓
<input type="checkbox"/> 1st cuneiform (1st tarsal)	✗	✓
<input type="checkbox"/> 2nd and 3rd cuneiform (2nd and 3rd tarsal)	✗	✗
<input type="checkbox"/> 2nd cuneiform (2nd tarsal)	✗	✗
<input type="checkbox"/> 3rd cuneiform (3rd tarsal)	✗	✗
<input checked="" type="checkbox"/> Astragalus	✓	✓
<input type="checkbox"/> Calcaneus	✓	✓
<input type="checkbox"/> Cuboid (4th tarsal)	✓	✓
<input type="checkbox"/> Lateral malleolus	✓	✗
<input type="checkbox"/> Navicular (Central)	✓	✓
<input type="checkbox"/> Navicular (Central) and cuboid (4th tarsal)	✗	✓
<input type="checkbox"/> Bird elements (all clear)	✗	✗
<input type="checkbox"/> Beak	✗	✓
<input type="checkbox"/> Coracoid	✓	✓
<input type="checkbox"/> Eggshell	✗	✗
<input type="checkbox"/> Furculum	✓	✓
<input type="checkbox"/> Jugal	✗	✗

Results

Data Integration: Filtered results

The integrated data results are displayed below.

[DOWNLOAD all results as an Excel file.](#)

Table	Bone BELEMENT	Common name, Mapped ontology value for Bone Common name, BELEMENT	Age Bone Weight (lbs)
Spitalfields faunal main information datasheet with contextual data	CALCANEUM	Tarsal	A .2
Spitalfields faunal main information datasheet with contextual data	CALCANEUM	Tarsal	A .2
Spitalfields faunal main information datasheet with contextual data	HUMERUS	Humerus	.3
Spitalfields faunal main information datasheet with contextual data	HUMERUS	Humerus	J .2
Spitalfields faunal main information datasheet with contextual data	HUMERUS	Humerus	.4
Spitalfields faunal main information datasheet with contextual data	HUMERUS	Humerus	.1
Spitalfields faunal main information datasheet with contextual data	HUMERUS	Humerus	.2
Spitalfields faunal main information datasheet with contextual data	HUMERUS	Humerus	A .2
Alexandria Faunal Database	Calcaneum	Tarsal	.2
Alexandria Faunal Database	HUMERUS	Humerus	.1
Alexandria Faunal Database	astragalus	Astragalus	.2
Alexandria Faunal Database	Calcaneum??	Tarsal	SA .3
Spitalfields faunal main information datasheet with contextual data	CALCANEUM	Tarsal	SA .2
Spitalfields faunal main information datasheet with contextual data	HUMERUS	Humerus	.5
Spitalfields faunal main information datasheet with contextual data	HUMERUS	Humerus	.3
Spitalfields faunal main information datasheet with contextual data	HUMERUS	Humerus	A .2
Spitalfields faunal main information			

Acknowledgments

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- Digital Antiquity Board of Directors



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The Andrew W. Mellon Foundation

JISC



ARCHAEOLOGY
DATA SERVICE

Questions?

<http://www.digitalantiquity.org>

<http://www.tdar.org>