

# The Osteoware Symposium

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### History of Osteoware

Osteoware is a computerized database for storing and managing data collected from human skeletal remains. The need for such a system became critical at the National Museum of Natural History, Smithsonian Institution with the passage of the National Museum of the American Indian Act in 1989. Like NAGPRA (from which the Smithsonian is specifically exempted), the NMAI Act mandates the repatriation of remains and objects to culturally affiliated Native American groups, thus, there was a need to inventory and document remains from 19,000+ catalogue numbers at the Smithsonian. Efforts were begun after the establishment of the Repatriation Osteology Lab (ROL) to create a computerized database to manage the massive amounts of data that were being generated by the documentation process of the remains.

- Standard Osteological Database (SOD): The first ROL data entry program was implemented in 1994. It was developed as a joint project between the ROL, Smithsonian Institution and the Arkansas Archaeological Survey, U of Arkansas with funding from the NSF. The DOS-based system with text screens does not run on Windows systems and thus is not compatible with most researchers needs today.

- In 1994, Verano and Urcid published a laboratory protocol based on the "Chicago Skeletal Recordation Committee" guidelines. The protocols were those used in SOD (Figure 3).

- In 1998, Steve Ousley (currently of Mercyhurst College, PA) became director of the ROL and programmed the first Windows-based data entry program for the lab. It has been refined and revised into the current Osteoware system.

- Data collection protocols in Osteoware were based on Buikstra and Ubelaker's (1994) *Standards for Data Collection from Human Skeletal Remains*, however, some revisions have been made based on the experience and input of numerous contractors and employees of the ROL.

- Osteoware has proven stability and has been successfully used to collect a tremendous number of data records at the Smithsonian (Table 1, Figures 3).



Figure 1. Collection Storage at the Smithsonian. On the right are the old storage units at the NWI building on the National Mall. The photo on the right shows the new storage units at the Museum Support Center (MSC) in Suitland, MD.

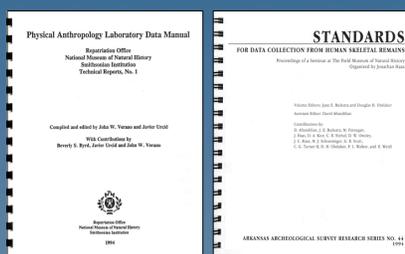


Figure 2. Covers of the Verano & Urcid manual (basis of SOD) and the Buikstra and Ubelaker (basis of Osteoware) Protocol Manuals for collecting osteological data.

Table 1. Number of Records Collected in the ROL Osteoware Database (1994 to Present)

Data Type	Record Count
Skeletal Inventory	17,868
Age and Sex	13,347
Pathology	49,985
Taphonomy	15,113
Postcranial Metrics	4,838
Dental Inventory	9,545
Dental Morphology	6,038
Cranial Nonmetrics	9,336
Macromorphoscopies	3,268
Cranial Deformation	1,331
Craniometrics	10,975



Figure 3. ROL Staff checking association of crania and mandibles prior to Documentation.

### Organization of the Database

The Osteoware Home Screen is divided into 12 modules for collecting osteological data (Figure 4). The module buttons are color coded:

Yellow = documentation required  
 Purple = documentation is complete  
 Orange = not applicable  
 White = No Deformation (applies to the Cranial Deformation button only).

Auxiliary documentation and data management tools include buttons for photo requests, x-ray requests, and adding individuals. Details and demonstrations of the modules and other functionalities of Osteoware are covered in the posters for this symposium.

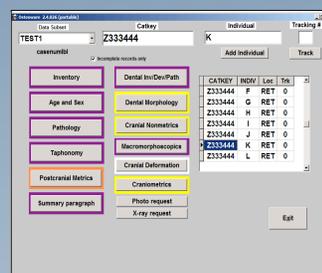


Figure 4. Osteoware Home Screen

### Osteoware Release

Osteoware will be publicly released at no charge to researchers. Chris Dudar, current director of the ROL, is the P.I. for grants from the **National Center for Preservation and Technology Training** and **The Smithsonian Web 2.0 Fund**. The grants will fund a website for Osteoware distribution and technical support.

A user manual is nearing completion and it will also be distributed through the website. Volume I will cover the basics of using Osteoware, eleven of the osteology data modules, and ancillary documentation. Volume II will cover the Pathology module (Figure 5). We anticipate release of a version of Osteoware consistent with all procedures outlined in the manual by June 2011 and website distribution by August 2011.

Users who would like to try Osteoware before release of the final version can now download the beta version and Part II of the manual (in the next 2 weeks) as detailed under the Timetable.

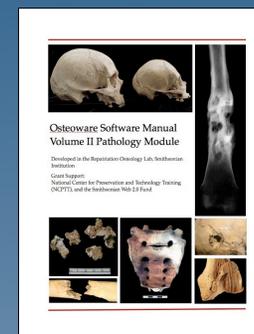


Figure 45. Cover of the Osteoware Software Manual Volume II Pathology Module

### Timetable

- Now available: *Beta version of Osteoware*
- Navigate to the FTP site Dr. Steve Ousley, Osteoware Programmer: <http://math.mercyhurst.edu/~sousley/Software/Osteoware/>
- Download and read the Osteoware Beta Installation before installing the program.
- April 25th, 2011. *Osteoware Software Manual, Volume II: Pathology Module*. Distributed through the FTP site.
- June 2011: *Osteoware Version 1.0* and *Osteoware Software Manual, Volume I*. Distributed through the FTP site.
- August 2011: Website on-line with technical support available.

### Acknowledgements

The presenters in the symposium and authors of the Osteoware software and manuals would like to thank all former employees and contractors of the ROL, Smithsonian Institution for their contributions.

Don Ortner, Smithsonian Institution was especially generous with his time in answering questions posed by various authors on specific points of paleopathology.

Jane Buikstra provided support, advice, and encouragement, pushing the team to get the public release project completed.

And a final thanks to all the beta testers (too numerous to mention) who provided and continue to provide valuable feedback.

### References

- Buikstra, J.E. and Ubelaker, D.H. eds. 1994. *Standards for Data Collection From the Human Skeletal Remains*. Arkansas Archaeological Survey Research Series No. 44. Arkansas Archaeological Survey: Fayetteville.
- Verano, J.W. and Urcid, J. eds. 1994. *Physical Anthropology Laboratory Data Manual*. Repatriation Office, National Museum of Natural History, Smithsonian Institution Technical Reports, No. 3.