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 10,000+ 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 SOD-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).

Table 1. Number of Records Collected in the ROL Osteoware System (1994-2011)

<table>
<thead>
<tr>
<th>Data Type</th>
<th>Record Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skeletal Inventory</td>
<td>17,968</td>
</tr>
<tr>
<td>Age and Sex</td>
<td>13,347</td>
</tr>
<tr>
<td>Pathology</td>
<td>19,895</td>
</tr>
<tr>
<td>Sex</td>
<td>15,113</td>
</tr>
<tr>
<td>Dental Inventory</td>
<td>9,545</td>
</tr>
<tr>
<td>Dental Morphology</td>
<td>6,058</td>
</tr>
<tr>
<td>Cranial Normatrix</td>
<td>9,356</td>
</tr>
<tr>
<td>Macromorphology</td>
<td>3,268</td>
</tr>
<tr>
<td>Cranial Deformation</td>
<td>9,545</td>
</tr>
<tr>
<td>Craniometrics</td>
<td>10,975</td>
</tr>
</tbody>
</table>

Organization of the Database

The Osteoware Home Screen is divided into 12 modules for collecting osteological data (Figure 3). 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 module and other functionalities of Osteoware are covered in the posters for this symposium.

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 Orttess, 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 data testers (too numerous to mention) who provided and continue to provide valuable feedback.

References


Osteoware Release

Osteoware will be publicly released at no charge to researchers. Chris Dudley, current director of the ROL, is the PI for grants from the National Center for Preservation and Technology Training and The Smithsonian Web 2.0 Fund. This grant 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 I of the manual (in the next 2 weeks) as detailed under the Timetable.

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.


  • June 2011: Osteoware version 2.0 and Osteoware Software Manual, Volume I: Distributed through the FTP site.

  • August 2011: Website on-line with technical support available.