MorphoNet: A Solution for Managing Shared Image Data

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software…

**Cumulus 6.0**

- proprietary ([www.canto.com](http://www.canto.com))
- includes XML metabridge for queries by XML applications
- ODBC compliant for alternate storage in Oracle or SQL.
Catalog Contents

- Hierarchical taxonomic categories (collapsible)
- Movable thumbnail images (small, medium and large format)
- Drag and drop 1 or more images from hard drive directly to category folder
Hierarchical (taxonomic) categories

- users can add categories
- administrator privileges
Asset Information

- taxonomy (required; pick.)
- determined by...
- gender (picklist)
- stage (picklist)
- copyright holder
- web access (yes/no)
- source
- type status (picklist)
- magnification
- museum depository (picklist)
- preparation method (picklist)
- voucher code #
- tagma (primary; req.; pick.)
- body part (secondary; pick.)
- structural details (picklist)
- collecting locality
- notes
access to original images at high resolution
Collections

- search functions for all categories (alus no global).
Collections

- images can be moved, sorted and selected
- can be stored as **collections for export to users or internet**
Collections

- [public] collections exported to internet (very rough right now)

objective: make client and internet interface identical!
Cumulus Client Interface
Cumulus Client Interface
Cumulus Client Interface
Goals of MorphoNet

- Provide ‘clients’ with standardized platform for image deposition that is reliable, stable and accessible.

- Provide a single reference database for morphological systematics via the internet

- Provide sufficient metadata and means of annotation for use of images
Some caveats…

• Security
  – Surrounded by multiple firewalls (VPN portal access)
  – Need automated backup

• 10 clients maximum can be logged on at any time

• SPEED! - moved from 10 meg leg (huh?) to 100meg but still on a 6 year old server
  [expectations of 3 GB leg on internet 2 by fall 2005]

• campus wants us on a separate server.

• Canto will not make changes that we need.
Others....
MorphoBank is an initiative supported by the National Science Foundation designed to use the web to manage comparative anatomical data for scientific research and education. The database catalogues images (including films and CT scans) and will soon allow contributors to label anatomical structures on the images. MorphoBank records information on the author of the submission, related publications, critical commentary and species names. For phylogenetic research, MorphoBank displays dynamic phylogenetic matrices of morphological characters with named homology statements.

Containing 23862 images and 3 matrices relating to 1927 species.
Future considerations....

What will be the impacts of JPEG 2000?

• compression without loss of resolution (storage)
• permanent annotation of images by user (need for standardized annotation program [SEQUIN])
• can tag images for taxonomy, voucher deposition, and unique image tag number (register through GBIF?)
• images can be annotated subsequently and updated to original source
• should think of central mirrored depositories with ‘pointers’ from different databases (automatic incorporation of annotations)
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