Phenote: Curation Software for Evolutionary Phenotypes

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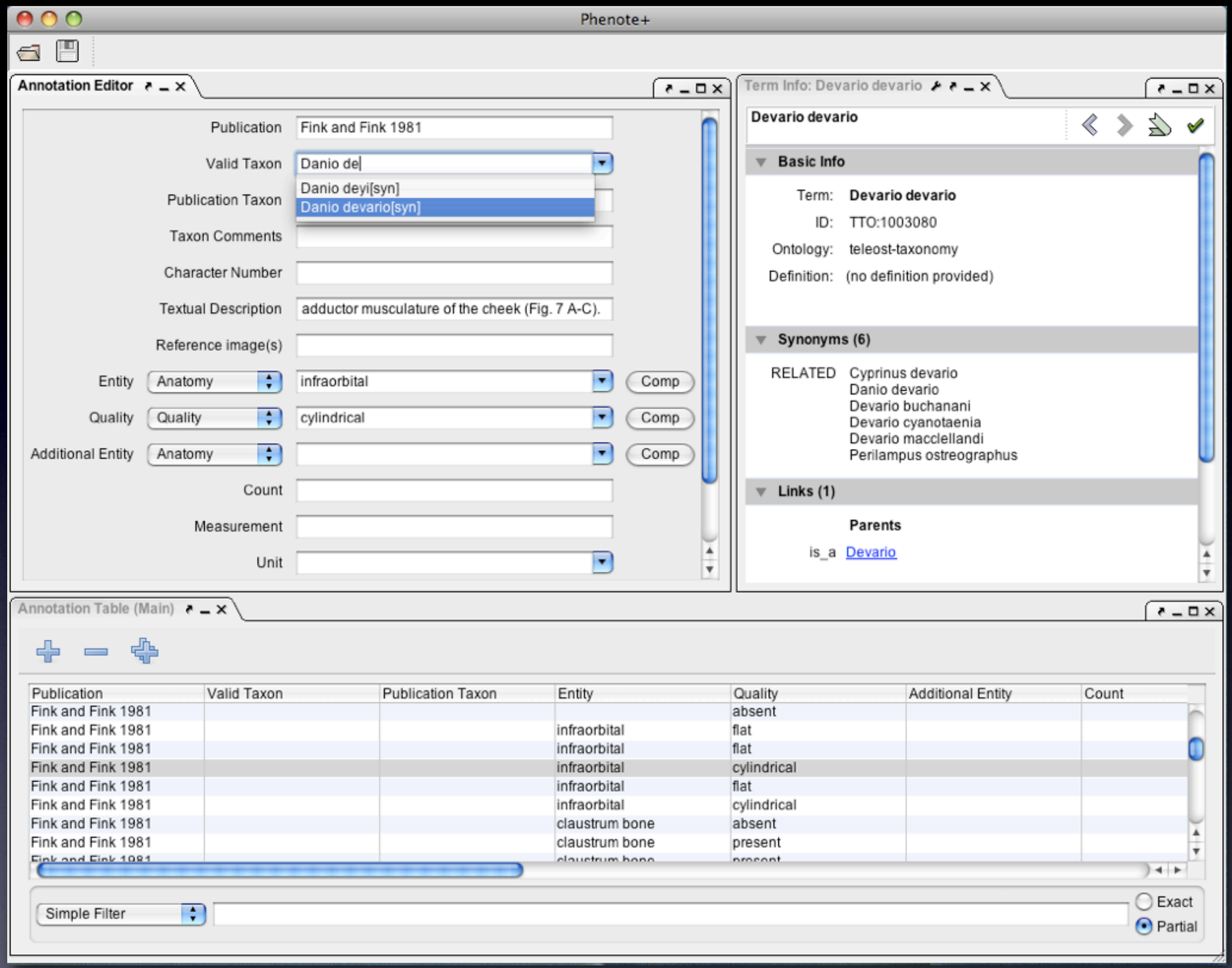
Phenote

- Developed for annotating genetic mutant phenotypes using ontologies
- NCBO & BBOP (lead developer, Mark Gibson)
- Used by curators at ZFIN, Flybase, Dictybase, Wormbase, others

Phenote features

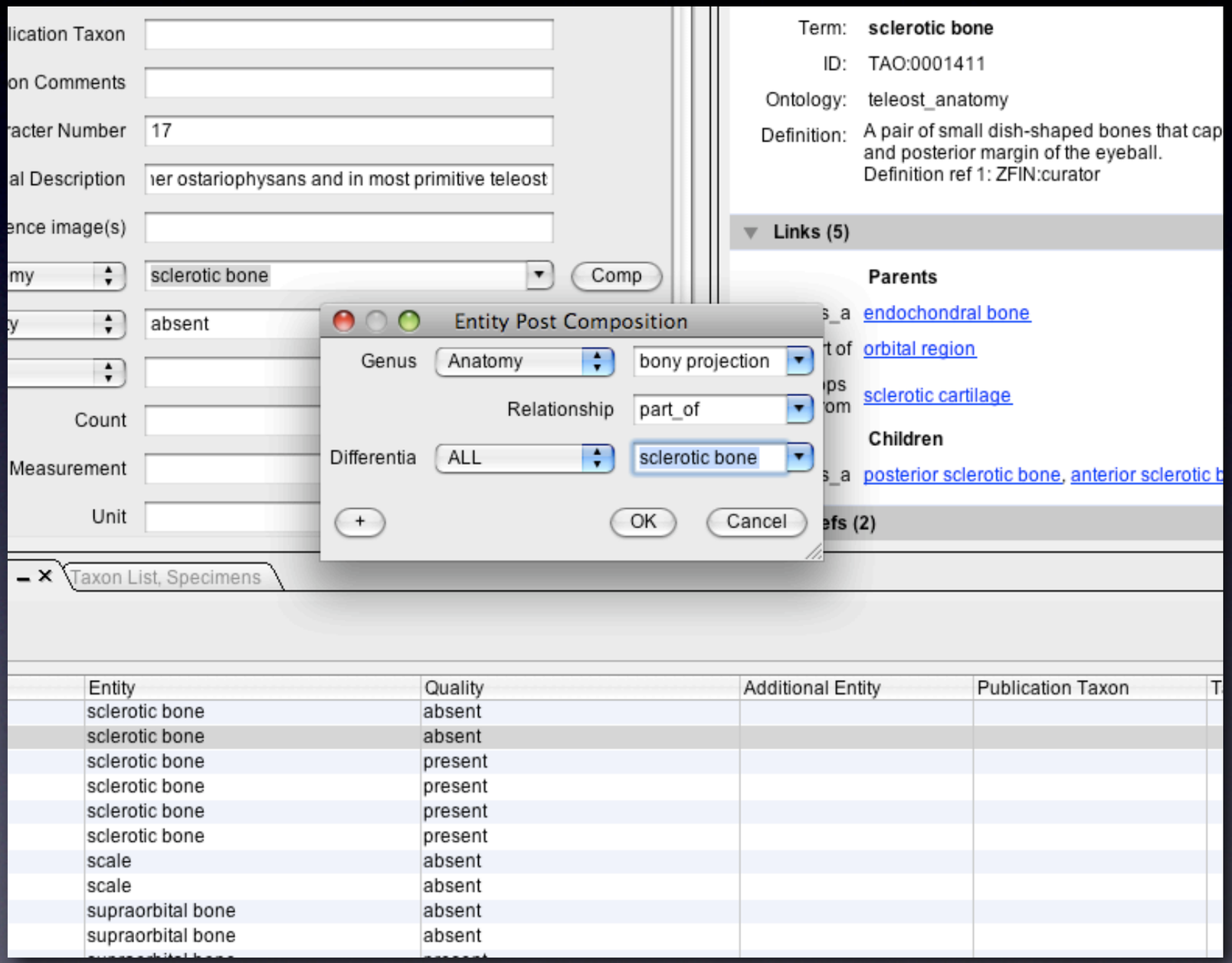
- Simple table interface
- Loads any OBO format ontology - checks for updates
- Configure input fields for specific ontology
- Type-ahead term search in input fields
- Ontology navigation panel and term info panel
- Cross-platform Java desktop application



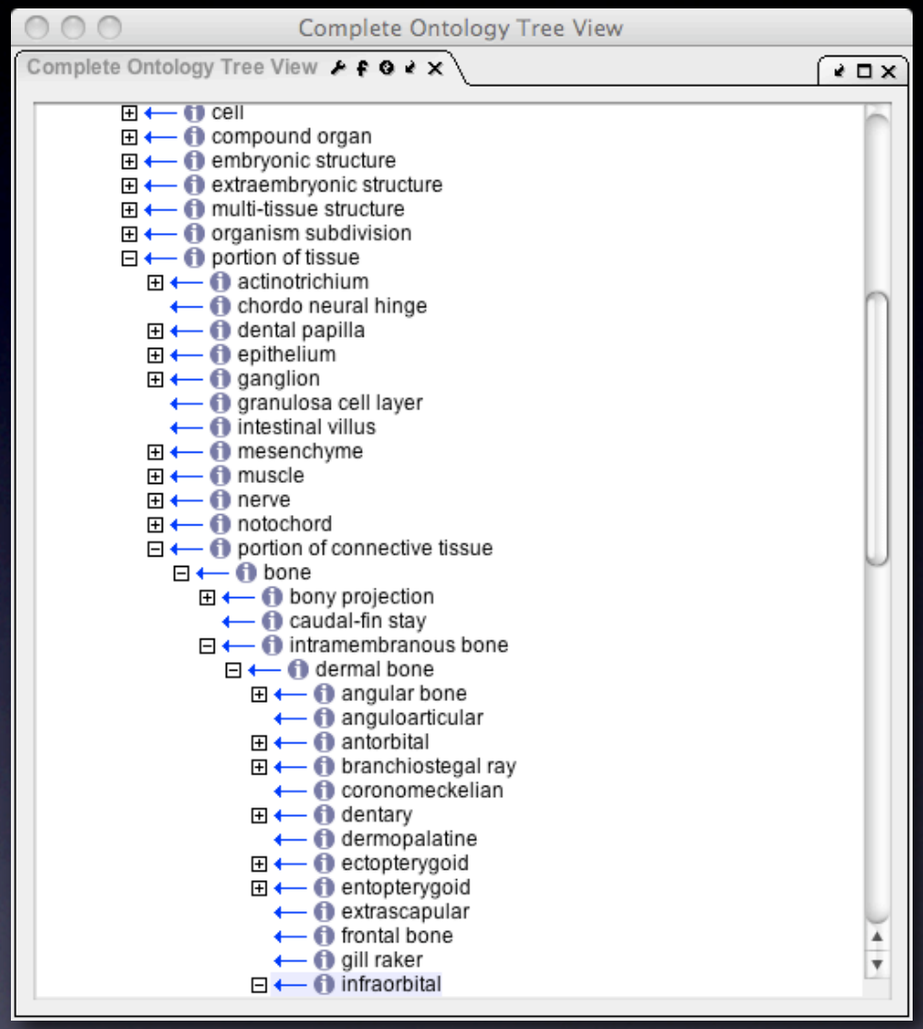
Type-ahead can match name, synonyms, definition

Post-composition

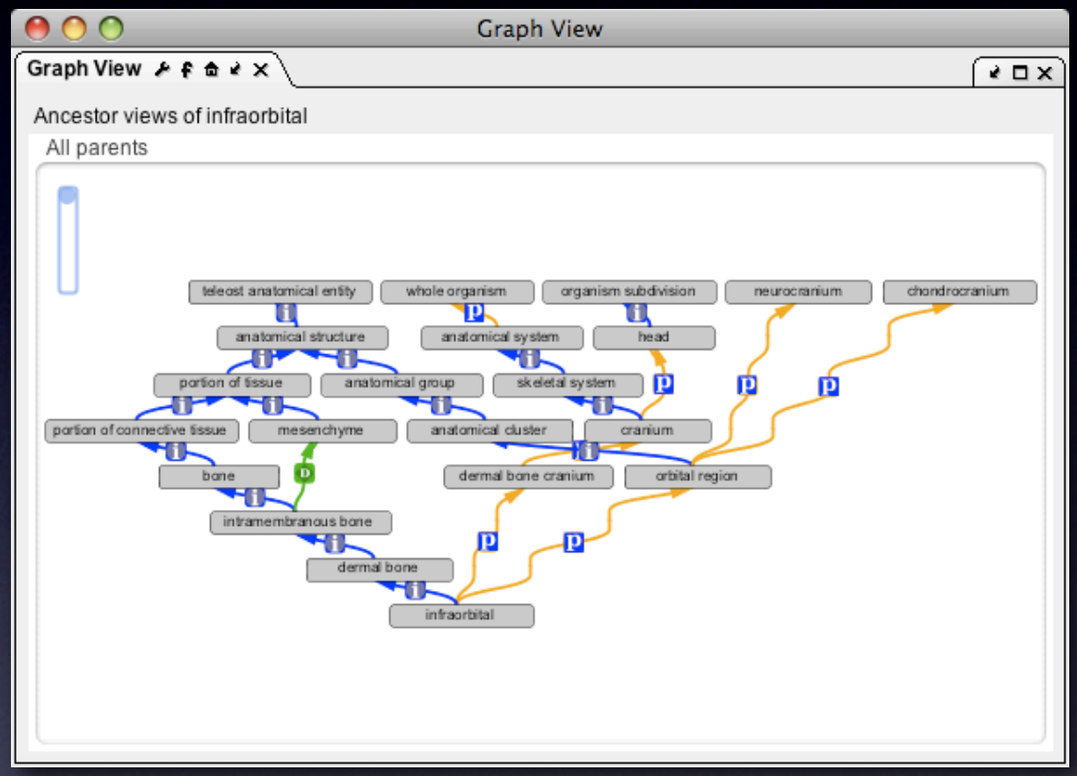
Create more specific terms as cross-products of existing terms



Panels from OBO-Edit



Browse entire ontology (can drag and drop onto input fields)



Quickly see inheritance neighborhood of selected term

Phenoscape interface

- Modeled on components of character matrix file (instead of flat table interface)
- Panels for Taxa & Specimens, Characters, Character states
- Attach EQ phenotype annotations to character states
- Attach taxonomy ontology IDs to taxa

Phenote

Taxa

Valid Taxon	Publication Tax
Polypterus senegalus	Polypterus sene
Amia calva	Amia calva
Hiodon alosoides	Hiodon alosoide
Osteoglossum bicirrhosum	Osteoglossum b
Scleropages formosus	Scleropages for
Elops saurus	Elops saurus
Megalops atlanticus	Melalops atlanti
Alosa pseudoharengus	Alosa pseudoha
Harengula jaguana	Harengula pens
Barbus callensis	Barbus setivine

Characters

...	Character Description
1	supraorbital ventral margin
2	supraorbital orientation along longitudinal ...
3	Infraorbital series
4	Infraorbital 1 shape
5	Anteromedial mesethmoid process

States

Sym...	State Description
0	rectangular, thickened bone
1	enlarged, thin bone with wide posterior ma...

Term Info: infraorbital 1

infraorbital 1

Basic Info

Term: **infraorbital 1**

ID: TAO:0000223

Ontology: teleost_anatomy

Definition: Dermal bone that covers the region between the anterior margin of the eye and the upper jaw. Infraorbital 1 (the lachrymal)

Synonyms (3)

RELATED lachrymal bone
lacrimal bone
lacrymal bone

Links (1)

Parents

is_a infraorbital

Children

DBxrefs (2)

ZFA:0000223

Specimens

Collection	Catalog ID
MCZ	12424
CAS	5678

Phenotypes

Entity	Quality	Related Entity	Count	Measurement	Unit	Notes
infraorbital 1	rectangular					
infraorbital 1	increased thickness					

Phenote

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Phenote + NeXML

- NeXML - next generation XML form of NEXUS (led by Rutger Vos)
- EQ annotations can be embedded in State elements as PhenoXML
- Attach taxonomy ontology identifiers to Taxon elements
- Free-text data and character matrix can be edited in Mesquite - without destroying attached ontology info
- In progress for both Phenote & Mesquite

Acknowledgments

- Phenote/BBOP: Mark Gibson, Nicole Washington, Chris Mungall
- NeXML: Rutger Vos
- Phenoscape: Wasila Dahdul and everyone else
- NESCent & NSF