**What?**

TaxonWorks (http://taxonworks.org) is a web-application workbench focused on enabling the data curation process that underlies biodiversity science. It is presently used by natural history collection curators, taxonomists, evolutionary biologists, and their collaborators. A majority of the web-application is built on an internal API that serves JSON. We’re exposing that internal API outside of TaxonWorks’ web-based interfaces so that users can query and share the efforts of their curation via programmatic access by themselves or others. This poster is meant to be an introduction to API use in general and to TaxonWorks’ API specifically, then it illustrates just a few possible uses. This poster will evolve to become part of the growing help documentation for TaxonWorks.

**How?**

- **Companion code** to this poster is in the corresponding presentation at https://github.com/mjy/presentations
- **All figures** were derived from data exclusively drawn from existing projects in TaxonWorks via external API calls
- **Data from API calls** was fed to graphing libraries or HTML wrappers of those libraries to produce SVG graphs
- To demonstrate how you might use the API and what you might see when you do, we can execute a simple plan find out what we know about Tommy McElrath, curator of the Illinois Natural History Survey Insect Collection (Illinois, USA), and a major contributor to the TaxonWorks community. We start with the simplest of queries, to the people endpoint (below left). This returns a list of results, in this case a single one (zero beers!)

**A simple start**

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**Basics**

People are data in TaxonWorks. They’re linked to other data via roles. We can query Tommy’s roles (below left). He’s been identifying specimens (TaxonDetermination), creating Media and assigning Attribution (knowing Tommy it’s (http://taxonworks.org)).

**Who collects with?**

Starting with Tommy, we can recursively query CollectingEvent data with a simple script to see who he collected with, and who the collectors he collected with collected with, and so on. The result is remarkable, demonstrating the close connectedness of, in this case, the entomological community. Tommy is connected to a minimum of 160 other collectors.

**What’s next?**

We’ve only touched the surface of what you can query from a TaxonWorks API. With well over 100 parameters now available many opportunities exist for exploring data curated in TaxonWorks in novel ways. We’ll be exposing more data classes, including Images, Markdown marked-up text-content, and Observations (data matrices) in the weeks to come. We’ll also be further curating code examples, and ways to integrate the API, that demonstrate how to map, graph, and visualize data from a TaxonWorks API. Ultimately our goal is to provide external tools to build full blown taxon pages via API calls.

**Nomenclature catalogs**

Tommy and his collaborators are editors of the World Catalog of Curculioidea (aka one of many other little brown beetles) in TaxonWorks. Basic data like year published, and name validity are straightforward queries and data summaries. Below, a plot of species-group protonyms published per-year for the Curculioidea. It’s remarkable how few years contain no species-descriptions or synonymy.

**A request to a TaxonWorks API**

API requests often follow a pattern like that below. You can find a full description of the TaxonWorks API, its resources and parameters at https://api.taxonworks.org.

https://sandbox.taxonworks.org/api/v1

<table>
<thead>
<tr>
<th>A base URL</th>
<th>The API version</th>
<th>A resource, or “endpoint”</th>
<th>Some parameters</th>
<th>Authentication (one or both tokens, depending on the endpoint)</th>
</tr>
</thead>
<tbody>
<tr>
<td>/people?first_name=Thomas&amp;last_name=McElrath</td>
<td>/people</td>
<td>/people?token=abc&amp;project_token=123</td>
<td>/people?first_name=Thomas&amp;last_name=McElrath</td>
<td></td>
</tr>
</tbody>
</table>