The Beetle Heritage of the Triplehorn Insect Collection: Cataloguing the Primary Types of Coleoptera

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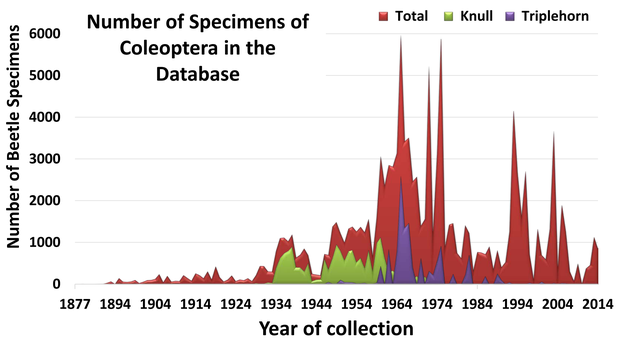
INTRODUCTION

The C.A. Triplehorn Insect Collection holds over 1 million Coleoptera specimens. Data associated with these specimens are currently being databased **1)** as part of an NSF-sponsored project concentrated on the families Carabidae and Tenebrionidae; and **2)** for all specimens involved in loan transactions. The data presented here are for 159,149 specimens and must be understood to be only a **current snapshot**. The details can be expected to develop further in the future.

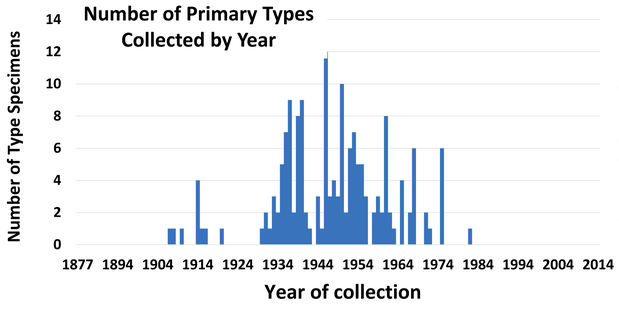
Pleocoma australis Fall. Syntype deposited at the Triplehorn Insect Collection. OSUC 320096. Head in dorsal view. Images available at *hol.osu.edu*

BEETLE COLLECTION PROFILE

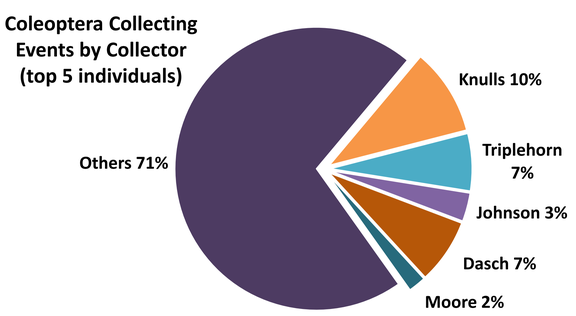
The first two curators of the collection were coleopterists: **Josef N. Knull** (curator from 1934-1962) and **Charles A. Triplehorn** (curator from 1962-1992). We have highlighted their contributions as collectors in the expectation that they had an overwhelming influence on the development of the beetle collection.



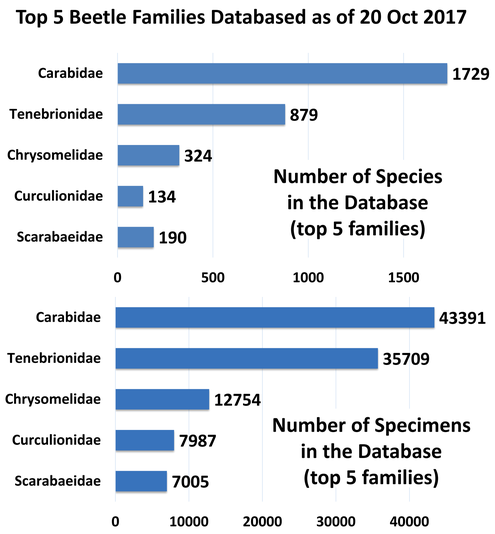
Timeline of collection of all databased beetle specimens to date with the contributions by Knull and Triplehorn highlighted.



Timeline of collection of primary types. Knull collected **110 of the 203** beetle primary types in the collection.



A collecting event is the combination of place, time, collector and method. To our surprise, the contributions from Knull and Triplehorn do not appear to dominate the holdings.



Recording specimen information in a database adds time and effort to the curation process. The benefits of the investment are far-reaching and outweigh the costs.

Databasing allows **users** of the collection to **1)** quickly determine the existence of material relevant to their research, **2)** access the related published literature, and, with images, **3)** make preliminary examination of the specimens. All via the Internet.

For the **collection**, the database is an invaluable administrative tool to document the holdings (as in this poster) and to facilitate access to the specimens. This in turn increases the relevance of the collection.

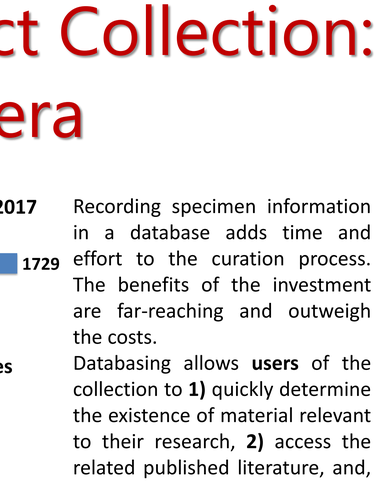
BEETLE PRIMARY TYPES

Natural history collections document biodiversity and serve as a critical resource for scientific research, education, and policy decisions. Type specimens anchor the application of names to taxonomic concepts and are essential for stable nomenclature and taxonomy. Catalogs summarize vital taxonomic information on species and names.

Steps in the production of the catalogue:

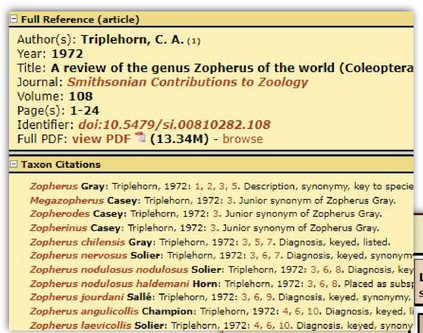
- Segregation of types from main collection
- Find & identify the original description
- Upload & annotate PDFs of publications containing original descriptions
- Database specimen information
- Compare publication & label information
- Verify type status with specialists
- Determine current status of the names
- Photograph type specimens and labels

All specimen label data are stored in the collection's **xBio:D database** including a verbatim transcription. This allows collection staff and outside users to extract, summarize, analyze, and present the information to answer a wide range of questions.



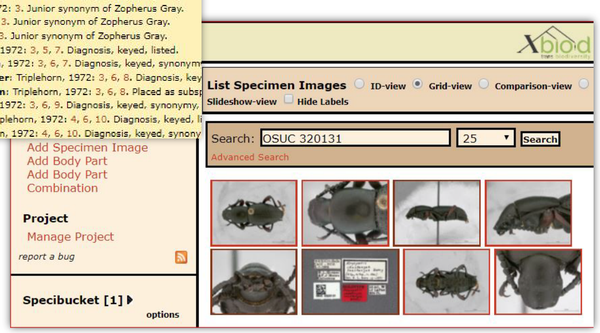
Psiloptera cupricollis Kerremans. Syntype deposited at the Triplehorn Insect Collection. OSUC 319932. Dorsal view with labels. Image available at *hol.osu.edu*

Publications with original descriptions are annotated and placed online. The full document is available when allowed, otherwise snippets are provided for the relevant page.

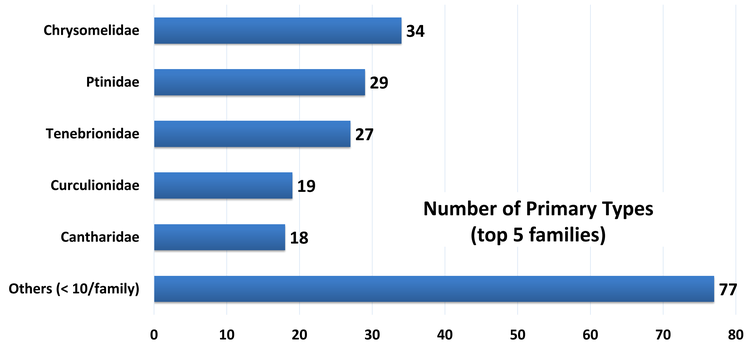


Images stored as thumbnail, JPG, and TIFF formats.

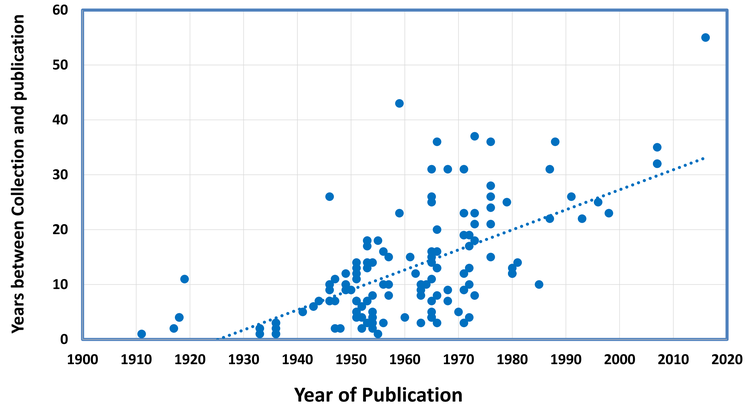
Data & images are available online at: *hol.osu.edu*



The Triplehorn Insect Collection holds **203 Coleoptera primary types**. Unexpected discoveries during the cataloguing of the beetle types include validly published neotypes for taxa originally described by Fabricius and Say. The top 5 families in terms of the number of primary types are presented in the graph below.



Some have suggested that the best places to collect new species are in the collections themselves. How long does a new species mutely sit in a collection before someone recognizes it for what it is? The database provides the answer:



For our beetle primary types, there is an average of 12.7 years between the date of collection and the date of publication of the new taxon. The maximum was 55 years.

This demonstrates that the investment in building and maintaining a collection has long-term scientific value. The publication delay appears to be increasing over time. Is this a general phenomenon? If so, what might be the causes? With more collections making their type information available online the community will be able to ask and answer these and other important questions.

CHALLENGES

Specimens labeled as "types" may not have that status because of labeling error, publication in theses and dissertations, or work never published. Ascertaining that these specimens are not types involves proving a negative, often a difficult proposition. Although most collections request reprints of publications based on their specimens, if authors fail to comply, publications can be very difficult to discover. The problem is exacerbated when authors do not employ the name and coden of the collection in the form requested.

ACKNOWLEDGMENTS

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