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Conference Abstract

Supplying the Missing Links: Providing immediate access to the taxonomic literature from our taxonomic databases

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Abstract

A fundamental limitation of existing taxonomic databases is that they don't explicitly link to the primary literature (Page 2016).

The taxonomic literature is the foundation of our understanding of biodiversity and tracks how that understanding has changed over time. It is the authoritative source of taxonomic names, descriptions, nomenclatural changes and taxonomic revisions and, as such, is an essential reference for taxonomists describing new species, undertaking taxonomic revisions and conducting threatened species assessments.

The taxonomic literature is the source of truth for the publicly accessible taxonomic databases that provide the backbone for the names index in the Global Biodiversity Information Facility (GBIF) and other large scale data aggregators. However, the citations in these databases vary enormously in their format and completeness, and the vast majority are unlinked text strings. Our inability to link directly from taxonomic databases to the source literature is not just a serious impediment to taxonomic and conservation research, it is archaic and annoying.

Taxonomists need these links. Specifically, they need links in the form of persistent identifiers to both publications (journal articles, books, etc) and (particularly for botanists) to the specific pages in publications where taxonomic treatments begin. Efforts to extract treatments and present them in isolation, while invaluable when the work itself is behind a paywall, remove the treatment from valuable contextual information. It is of greater value to provide links to specific pages within the entire work, enabling scrolling to previous and subsequent pages.

Mapping unlinked citations to modern publications is straightforward; they are generally published online, they usually have complete, machine-readable metadata, and, most importantly, they have DOIs (Digital Object Identifiers). Despite this, citations of modern publications in taxonomic databases still frequently appear as dead strings.

Linking to historic publications was difficult in the past, but this is no longer the case. Digitisation efforts, particularly by the Biodiversity Heritage Library (BHL), mean that much of the legacy taxonomic literature is now freely available online. Discoverability of the content on BHL has been dramatically improved by the retrospective addition of article level metadata. Over 325,000 articles have now been "defined" within the BHL (73% by the BioStor project). These articles now have article landing pages and (as of March 2022) pre-generated PDFs (Richard 2022), bringing them in line with modern publishing standards.

Since 2020, the BHL's Persistent Identifier Working Group (Team #RetroPIDs) has been assigning DOIs to these articles, bringing them into the linked network of scholarly research and making them as discoverable and citable as contemporary literature (Kearney 2021). These retrospectively assigned DOIs are now appearing in the reference lists of new publications, as well as in Wikipedia articles, social media posts and Open Researcher and Contributor ID (ORCID) profiles. We know this because, now they have DOIs, we can track their impact and reach (Kearney et al. 2021).

The BHL is most appreciated for the access it provides to historic literature, but the BHL community is increasingly uploading recent publications. For example, BHL Australia spent much of 2021 uploading contemporary orchid journals in response to an urgent request from researchers studying the impact of Australia's devastating 2020 bushfires on native orchid species. These journals contain vital information about past distribution and abundance. If taxonomic efforts, such as Taxonomy Australia's mission to discover and document all remaining Australian species in a generation, are to have any chance of success, we need to make it as easy as possible for taxonomists to access the taxonomic literature (Thiele et al. 2022).

This presentation will detail Team #RetroPIDs' newest project: to replace the unlinked citations in taxonomic databases with links that will provide immediate access to the taxonomic literature.

Keywords

RetroPIDs, DOIs, BHL, Biodiversity Heritage Library, persistent identifiers, biodiversity, conservation, taxonomic treatments, bibliographic metadata, citations

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