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Conference Abstract

Extending Recognition for Taxonomic Curation Beyond the Traditional Authorities

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Abstract

Taxonomy is at the center of modern biodiversity science, since it defines the dual name and meaning of species that jointly allows biologists to study and classify organisms while linking observations from multiple sources. With the accelerating digitization of biodiversity data has come the increased need for readily available taxonomic products, as is reflected in the number of initiatives dedicated to curating and publishing digital lists of accepted names, checklists of taxa occurring in different regions, and systematic classifications of species in different groups. Taxonomic curation can be described as a collage effort, whereby contributors work to assemble a diverse range of evidence and scientific resources into a harmonious understanding of biodiversity. However, traditionally, who receives recognition and credit for taxonomic curation has been based primarily on those holding official academic positions and credentials. Similarly, the results have generally been provided to end-users as only a list of valid accepted or synonymous species names without explicit evidence regarding how those decisions were made.

In contrast, we propose a functional view of who should be recognized as a Taxonomic Curator (TC), casting a broad net to capture contributions made by individuals and organizations that might not self-identify as scientific authorities about which taxa exist in a group or region. While academic credentials are useful indicators of quality training and knowledge, expertise can be acquired through other pathways such as field experience or self-schooling. Similarly, authoring new information is essential to being a TC, but is not

limited to publishing full-length articles or edited volumes. In light of the rapid pace of science, the qualities of trustworthiness, accountability, and responsiveness are ultimately more important. A person's authoritativeness as a TC should therefore be tied to their participation in a social process of self-correction and engagement rather than academic expertise at one point in time. Similarly, this extended view of taxonomic curation makes it inherent to any project where information is validated according to an internally coherent set of taxonomic units (e.g., 'cleaning' data from the Global Biodiversity Information Facility prior to analysis, or vetting iNaturalist records).

We argue that this view better represents the importance of the services TCs provide for innovative collections-based biological research; e.g., the Extended Specimen approach (Lendemer et al. 2019). The digitization of biodiversity data has been possible in large part due to the development of content management software and tools for natural history collections (e.g., Arctos, Symbiota). In general, these tools enable effective taxonomic curation through the linking between species names, observational data, and scientific literature. In this way, digitizing specimen information directly involves the work of TCs (usually many) to clean, validate, interpret, and annotate the taxonomic labels for the species identified. Although not generally published as formal academic scholarship, these efforts functionally *author* new species lists in which the related occurrences (specimens or observations) form the body of evidence for each taxonomic concept established in the research group or institution responsible for publishing the data. While contributors to biodiversity data portals or citizen science projects such as iNaturalist may not identify as traditional taxonomic authorities, they often exhibit exactly the qualities of iterative social accountability and improvement needed for progress in biodiversity data science today. Therefore, innovative credit models such as nanopublications that mint Digital Object Identifiers should be tested to encourage the continued valuable work of TCs in formal and informal networks.

Keywords

biodiversity aggregators, taxonomic concepts, taxonomic intelligence, biodiversity informatics

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