Update: Profiling the Illinois Natural History Survey Annelida Collection – a case study in assessing the health of stored biological specimens

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Abstract

Natural history collections holding one or more groups in the Phylum Annelida are deposited in museums and other public as well as private research collections. Natural history collections document biological diversity, highlight historical changes, monitor current trends of species, model population changes, and provide the basis for development of protocols and legislation to protect endangered and threatened species and the uniqueness of the habitat in which they occur. Critical issues facing natural history collections include governmental regulations, permits, and repatriation of critical knowledge; loss of taxonomists, systematists, curators, and collections managers; and long-term funding to support the physical and digital maintenance and security of specimen holdings. Our current profiling protocol quantitatively assesses the "health" of the oligochaete specimens in the Illinois Natural History Survey Annelida Collection. Assessment categories for both dry (slide-mounted) and wet (fluid storage) specimens include conservation status, processing state, storage container, condition of labels, identification, arrangement, data quality, and computerization. The status of this profiling exercise was presented during ISAO14 in Hirosaki, Japan, in September 2018. This presentation updates the current status of this multi-year project – including the discovery of widespread stopper failure throughout the ethanol-preserved specimens in the Annelida Collection and in several other INHS biological collections. We outline our mitigation plan recently implemented to rescue specimens that otherwise would have soon been 'lost' through desiccation.

Keywords: natural history collections, curation, collection management, profiling, archiving, digitization, storage container failures, Annelida, oligochaetes, leeches, branchiobdellidans

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