

Cross-reference system between museum specimens and the outcomes based on those specimens promotes open science in the natural history museums.

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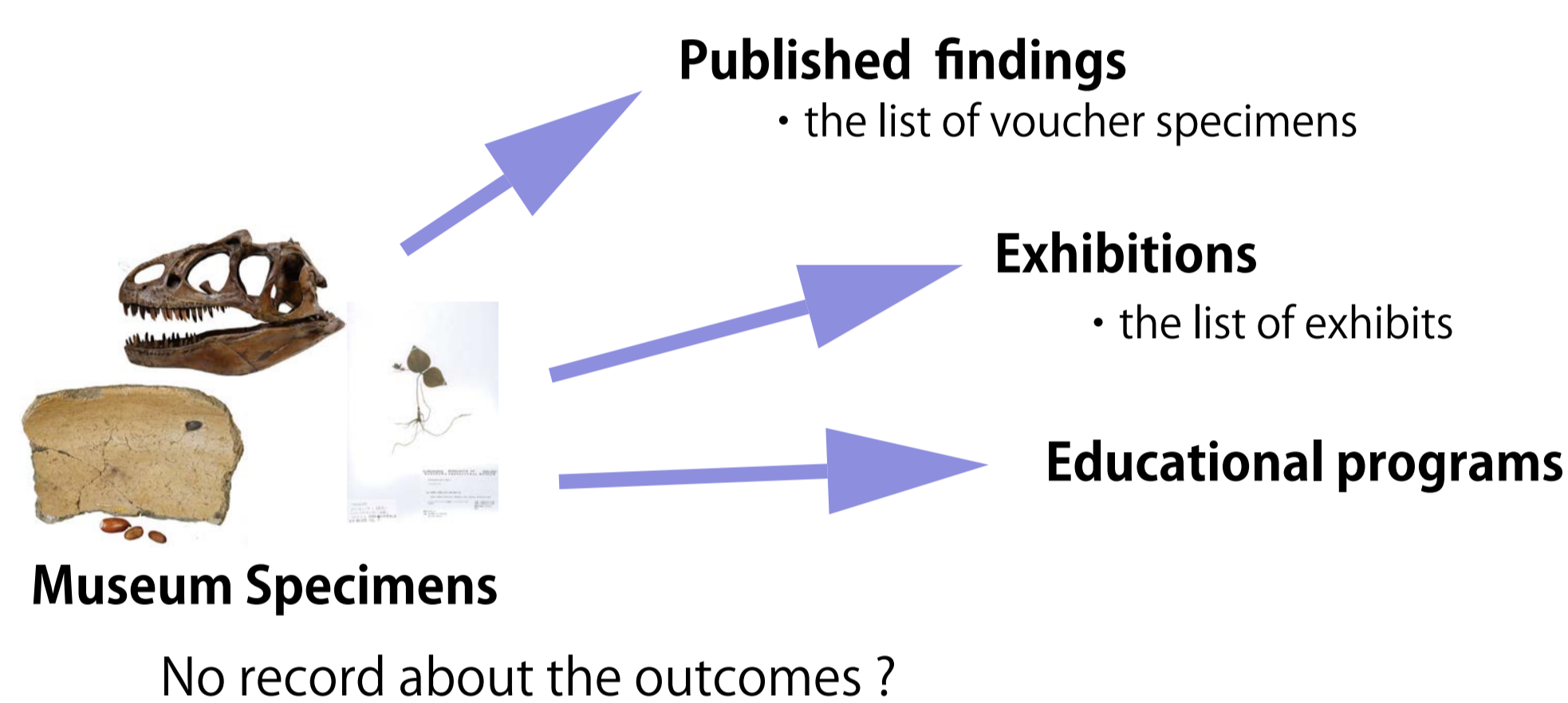


Abstract

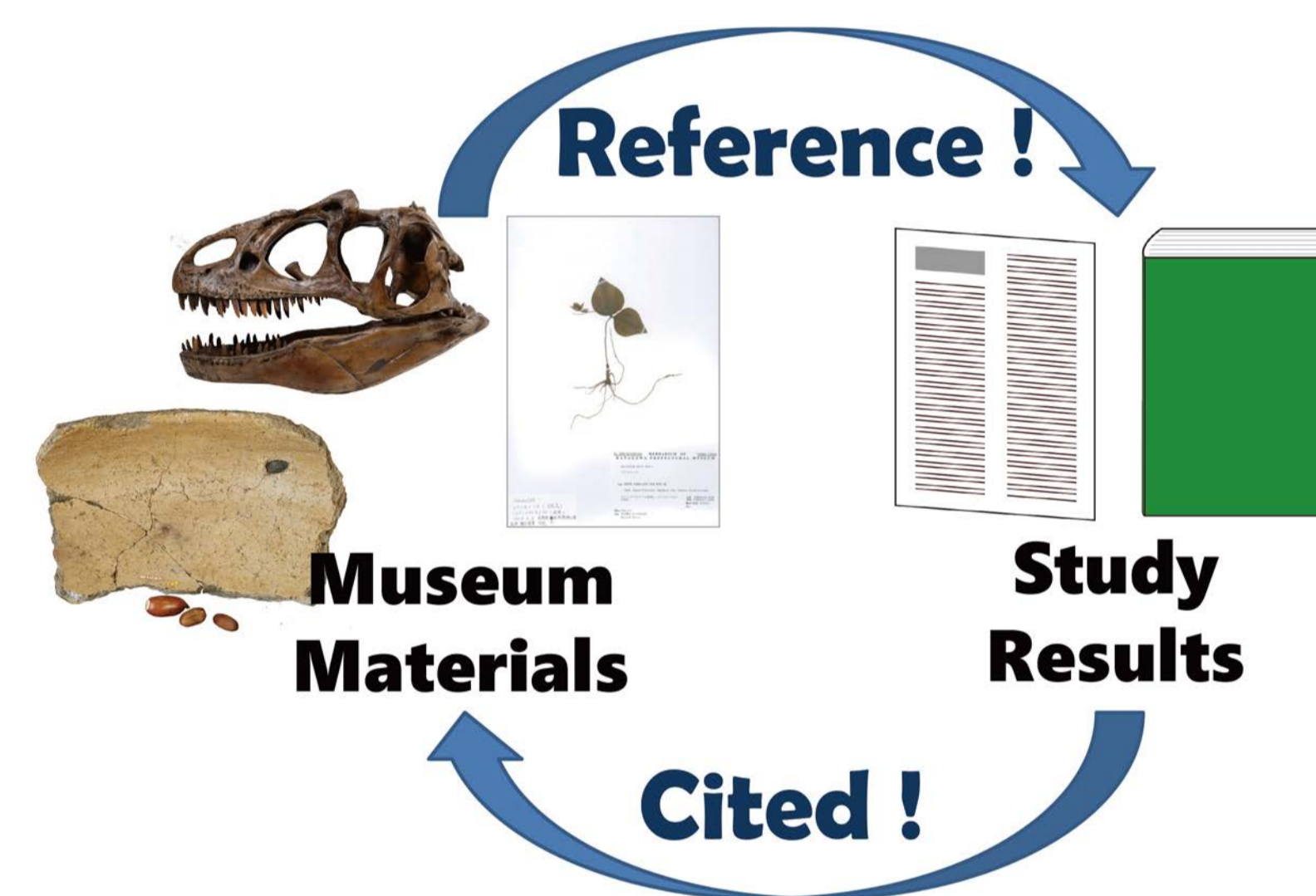
Collections in the natural history museums are supporting various outputs. These outputs are brought many outcomes like exhibitions, published findings, educational programs, ...etc. These outcomes are based on museum specimens, the list of exhibits or the list of voucher specimens are usually provided in the exhibitions or the published findings. In contrast, original voucher specimens or their databases are without the list of the outcomes (ex. exhibitions, published findings) based on its specimens. Here, I propose the cross-reference database system between museum specimens and the outcomes based on those specimens. The cross-reference database system reveal the use of the specimens and its circulation. By revealing the use and circulation of the specimen and making this information available for public, scientists (not only professional researcher, but also non-professional citizens) are available to their own scientific use. The most important thing is there is a possibility to be widely visible to anyone, that specimens and those outcomes that were previously only known by experts collected in a particular context. Museum specimens available to study in multiple contexts are expected to promote open science. There are multiple challenges for introducing this system, basal and most important one is the understanding for curators.

Background

- Museum specimens are supporting various outputs and the outputs brought many outcomes.



Concept of the cross-reference database system



- Specimen • referred at the literature
- Literature • cited reference about the specimen

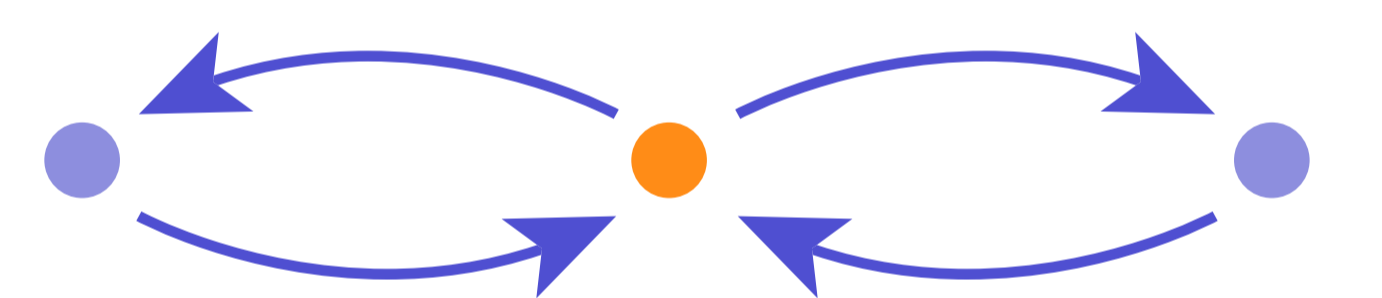
1. Only at the literature



2-a. Cross-reference



2-b. Multi cross-reference



Tasks & Solutions

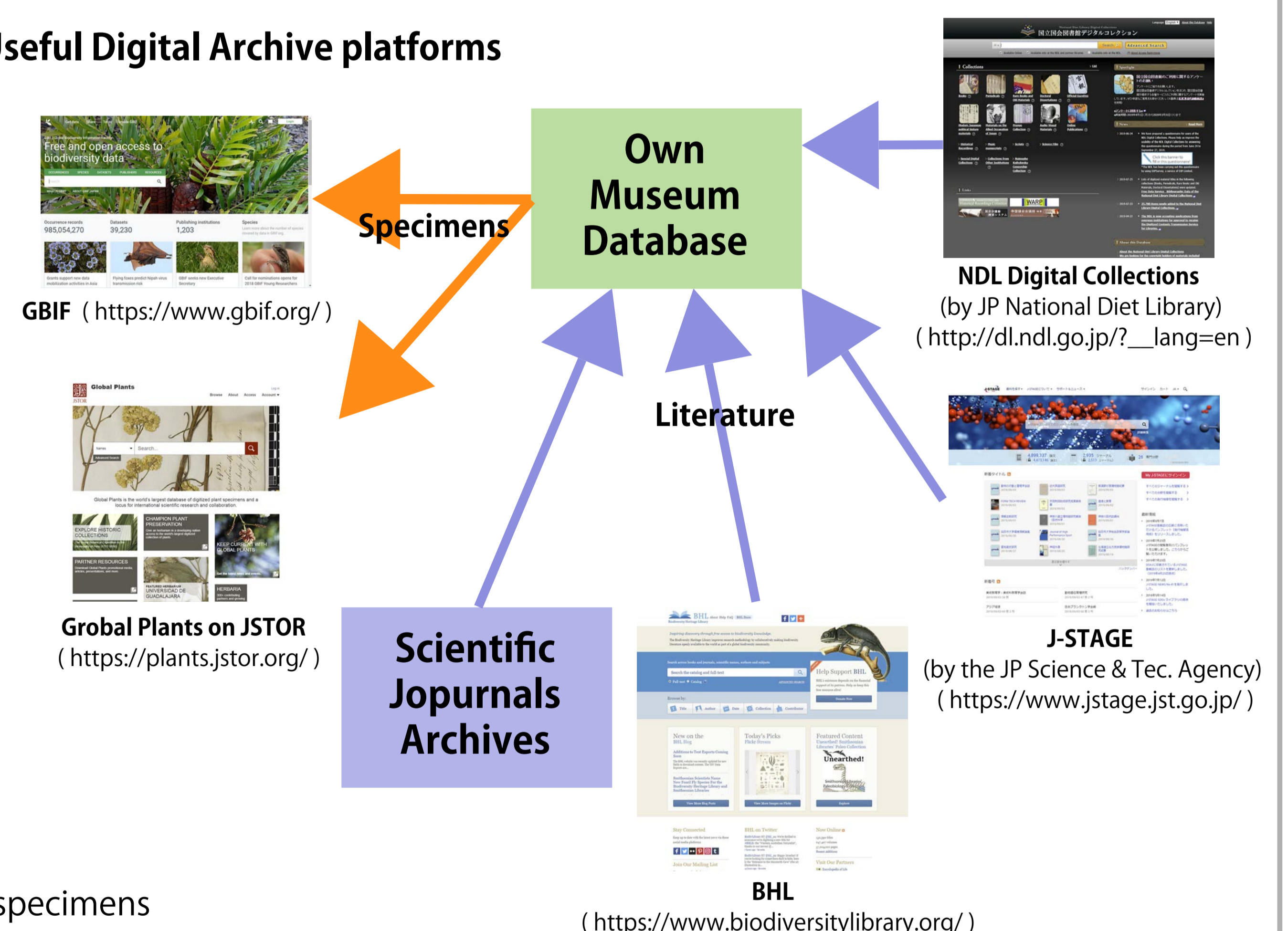
Tasks about referenceability

- Cataloging of the museum specimens with **global unique IDs** (catalog Nos.)
⇒ Regist & publish own museum database or GBIF or other specimen DBs.
- Cataloging of the **literature** about published finding
⇒ Logging the cited references
Request notification about **referred specimens' catalog Nos.** and the **publication**, from the scientist who referred to the specimens
- Confirm identity between **voucher specimens** exist in the museums and **referred specimens** in the past published findings.
⇒ In some cases, needs taxonomic treatment (e.g. lectotypification)

Prospects

- Cross-reference database system visualizes the scientist's work through referenced specimens
!! Scientists and their research may be visualized beyond academic field

Useful Digital Archive platforms



Japanese Summary

自然史博物館のコレクションは、さまざまな出力をサポートしている。これらの出力には、展示会、公開された調査結果、教育プログラムなど、多くの成果がもたらされる。これらの成果は博物館の標本に基づいており、博物館展示や論文等の研究成果においては、展示のリストや証拠標本の一覧として示されることが一般的である。対照的に、証拠標本そのものやそのデータベースには、その標本に基づく成果（例：博物館展示、論文等の研究成果）のリストが備えられていないことが一般的である。ここでは、博物館標本とそれらの標本に基づく成果との間の相互参照データベースシステムを提案する。相互参照データベースシステムは、標本の使用とその循環を明らかにするこ

とが期待される。標本の使用と流通を明らかにし、この情報を一般に公開することにより、科学者（専門の研究者だけでなく、非専門の市民も）自身の科学的利用が可能となる。最も重要なことは、コレクションの収集は一般的に特定の学問上の文脈に沿って実施されるため、専門家だけが知ることができた標本や結果が誰にでも広く見える可能性がある。博物館標本が複数の学術的な文脈（＝学問分野）での研究に利用できることは、オープンサイエンスを促進することが期待される。このシステムの導入には複数の課題があるが、キュレーターの理解が最も重要なカギと考えられる。