

# OMERO and GigaScience for reproducible research

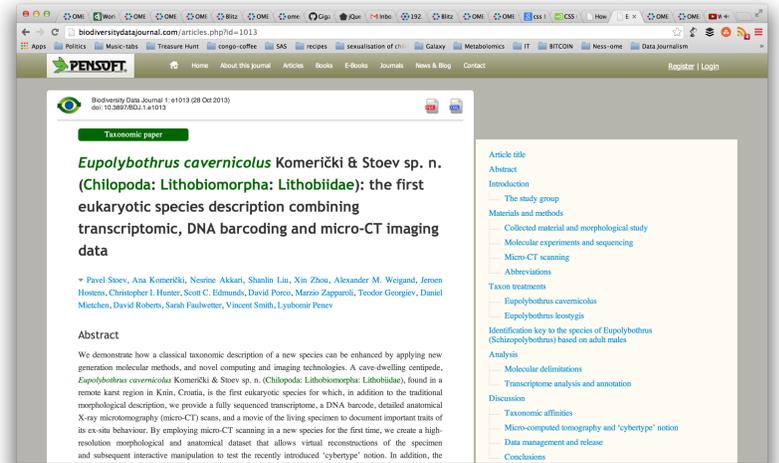
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## Introduction

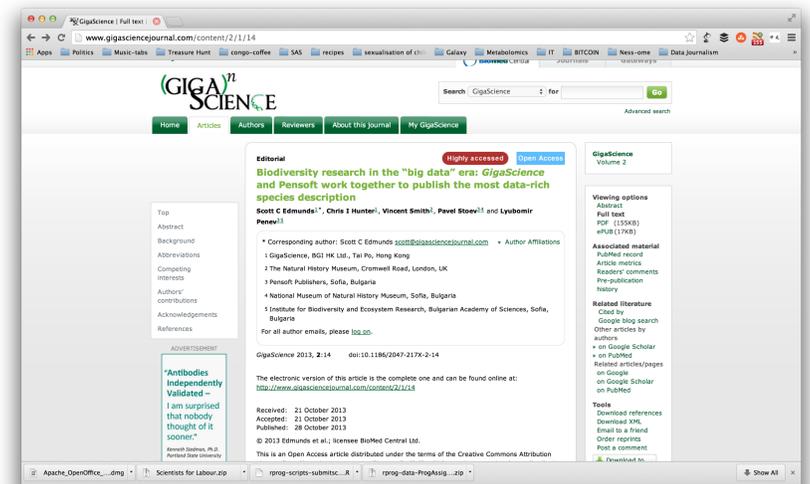
- GigaScience<sup>1</sup> was set up as a partnership between BGI, the world's largest producer of genomic data, and BioMed Central, the world's primary Open Access biosciences publisher.
- Their combined aim: to promote and advance Open Access publication, including Data and Software.
- To this end, GigaScience publishes Open Access research articles, technical notes and data notes; GigaDB<sup>2</sup> hosts Open Access datasets, GigaGalaxy<sup>3</sup> hosts Open Source software pipelines.
- More and more imaging data is being submitted e.g. Optical Mapping images to support genome data.
- OMERO is now being implemented to provide instant viewing of image data, removing the reader's need for special software and allowing improved searching of image meta data.

2. Data is hosted in GigaDB, DOI is minted for the data alone so it can be cited and citations tracked<sup>5</sup>. Data is linked to original publication DOI and all accession numbers for species libraries etc.

1. Stoev et al.<sup>4</sup> publish genomic data alongside micro-CT imaging to provide 'the most data rich species description'. There is no community repository for this data

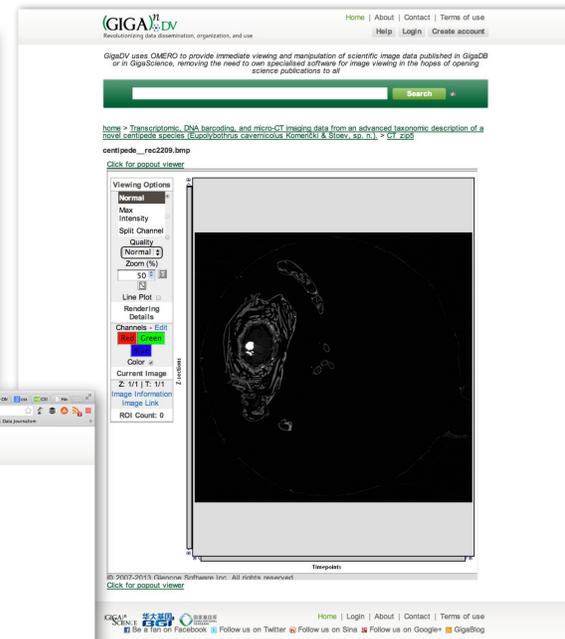
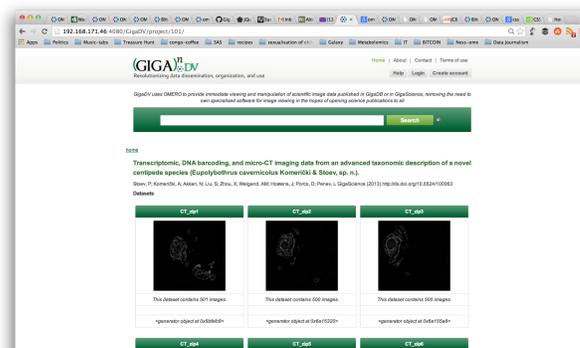
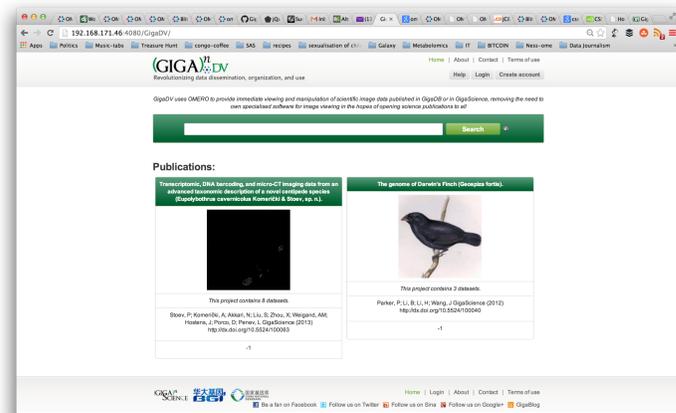


3. GigaScience team offers guidance and collaboration on data curation, meta data standards, searching, citing, publicising.



4. GigaDV is an OMERO.web implementation designed to provide viewing function to image data stored in GigaDB. The DOI acts as a unique key, linking images to repositories to articles. OMERO.search allows enhanced searching of image meta data

5. Image data is viewable by publication, dataset or image. Reader can manipulate image to alter zoom, contrast, colour channels etc to improve visualisation. CT slices can be viewed as layers in one image to allow 3D understanding of data.



## Conclusion

- OMERO is a useful tool for enhancing Open Access science publishing.
- It improves searching/tagging of metadata
- BioFormats interface provides access to an ever increasing array of image formats.
- GigaScience data is now more open and easy to access.