Data citation for humans and machines: the perspective from Dryad and DataCite

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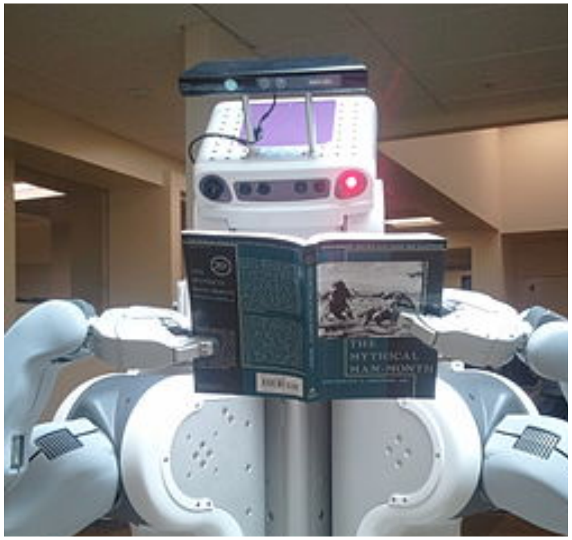
Patricia Cruse

Executive Director, DataCite, http://orcid.org/0000-0002-9300-5278



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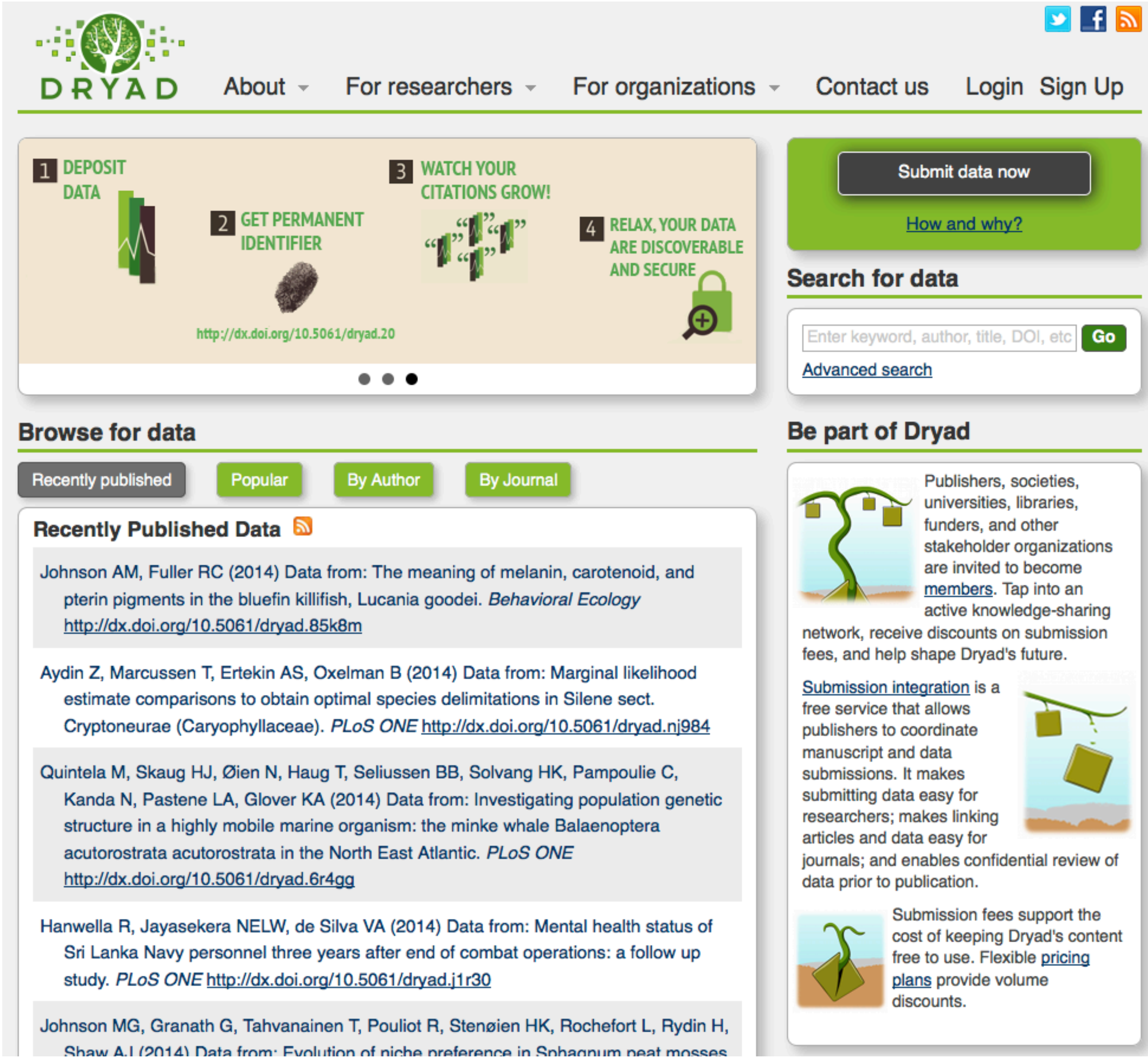
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Aydin Z, Marcussen T, Ertekin AS, Oxelman B (2014) Data from: Marginal likelihood estimate comparisons to obtain optimal species delimitations in Silene sect. Cryptoneurae (Caryophyllaceae). PLoS ONE http://dx.doi.org/10.5061/dryad.nj984
Quintela M, Skaug HJ, Øien N, Haug T, Seliussen BB, Solvang HK, Pampoulie C, Kanda N, Pastene LA, Glover KA (2014) Data from: Investigating population genetic structure in a highly mobile marine organism: the minke whale Balaenoptera acutorostrata acutorostrata in the North East Atlantic. PLoS ONE http://dx.doi.org/10.5061/dryad.6r4gg
Hanwella R, Jayasekera NELW, de Silva VA (2014) Data from: Mental health status of Sri Lanka Navy personnel three years after end of combat operations: a follow up study. PLoS ONE http://dx.doi.org/10.5061/dryad.j1r30
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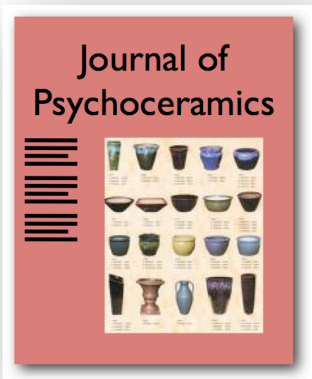
Types of publication-data links

Original publication



Data

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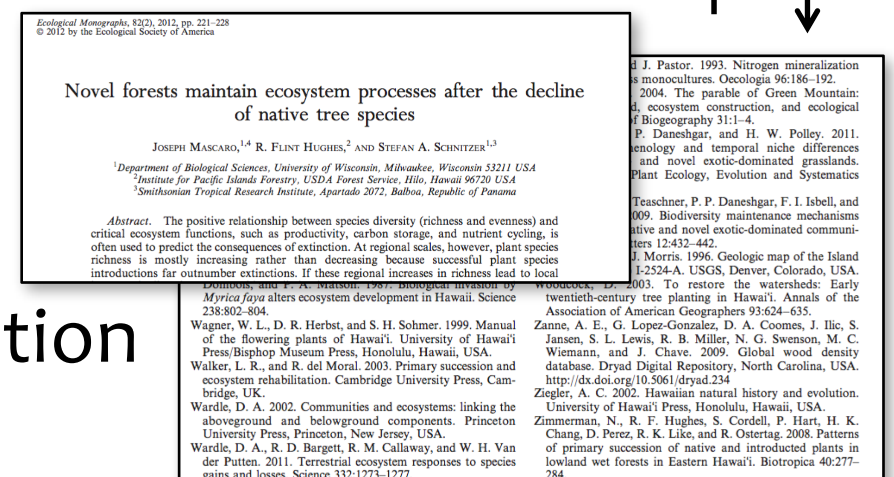
Ecological Monographs, 82(2), 2012, pp. 221–228

Novel forests maintain ecosystem processes after the decline of native tree species

Joseph Mascaro,[1,4] R. Flint Hughes,[2] and Stefan A. Schnitzer[1,3]

[1]*Department of Biological Sciences, University of Wisconsin, Milwaukee, Wisconsin 53211 USA*
[2]*Institute for Pacific Islands Forestry, USDA Forest Service, Hilo, Hawaii 96720 USA*
[3]*Smithsonian Tropical Research Institute, Apartado 2072, Balboa, Republic of Panama*

Abstract. The positive relationship between species diversity (richness and evenness) and critical ecosystem functions, such as productivity, carbon storage, and nutrient cycling, is often used to predict the consequences of extinction. At regional scales, however, plant species richness is mostly increasing rather than decreasing because successful plant species introductions far outnumber extinctions. If these regional increases in richness lead to local

Myrica faya alters ecosystem development in Hawaii. Science 238:802–804.
Wagner, W. L., D. R. Herbst, and S. H. Sohmer. 1999. Manual of the flowering plants of Hawai'i. University of Hawai'i Press/Bisphop Museum Press, Honolulu, Hawaii, USA.
Walker, L. R., and R. del Moral. 2003. Primary succession and ecosystem rehabilitation. Cambridge University Press, Cambridge, UK.
Wardle, D. A. 2002. Communities and ecosystems: linking the aboveground and belowground components. Princeton University Press, Princeton, New Jersey, USA.
Wardle, D. A., R. D. Bargett, R. M. Callaway, and W. H. Van der Putten. 2011. Terrestrial ecosystem responses to species gains and losses. Science 332:1273–1277.
d J. Pastor. 1993. Nitrogen mineralization
s monocultures. Oecologia 96:186–192.
2004. The parable of Green Mountain:
d, ecosystem construction, and ecological
f Biogeography 31:1–4.
P. Daneshgar, and H. W. Polley. 2011.
enology and temporal niche differences
and novel exotic-dominated grasslands.
Plant Ecology, Evolution and Systematics
Teaschner, P. P. Daneshgar, F. I. Isbell, and
009. Biodiversity maintenance mechanisms
ative and novel exotic-dominated communi-
tters 12:432–442.
J. Morris. 1996. Geologic map of the Island
I-2524-A. USGS, Denver, Colorado, USA.
2003. To restore the watersheds: Early twentieth-century tree planting in Hawai'i. Annals of the Association of American Geographers 93:624–635.
Zanne, A. E., G. Lopez-Gonzalez, D. A. Coomes, J. Ilic, S. Jansen, S. L. Lewis, R. B. Miller, N. G. Swenson, M. C. Wiemann, and J. Chave. 2009. Global wood density database. Dryad Digital Repository, North Carolina, USA. http://dx.doi.org/10.5061/dryad.234
Ziegler, A. C. 2002. Hawaiian natural history and evolution. University of Hawai'i Press, Honolulu, Hawaii, USA.
Zimmerman, N., R. F. Hughes, S. Cordell, P. Hart, H. K. Chang, D. Perez, R. K. Like, and R. Ostertag. 2008. Patterns of primary succession of native and introducted plants in lowland wet forests in Eastern Hawai'i. Biotropica 40:277–284.

Reuse publication

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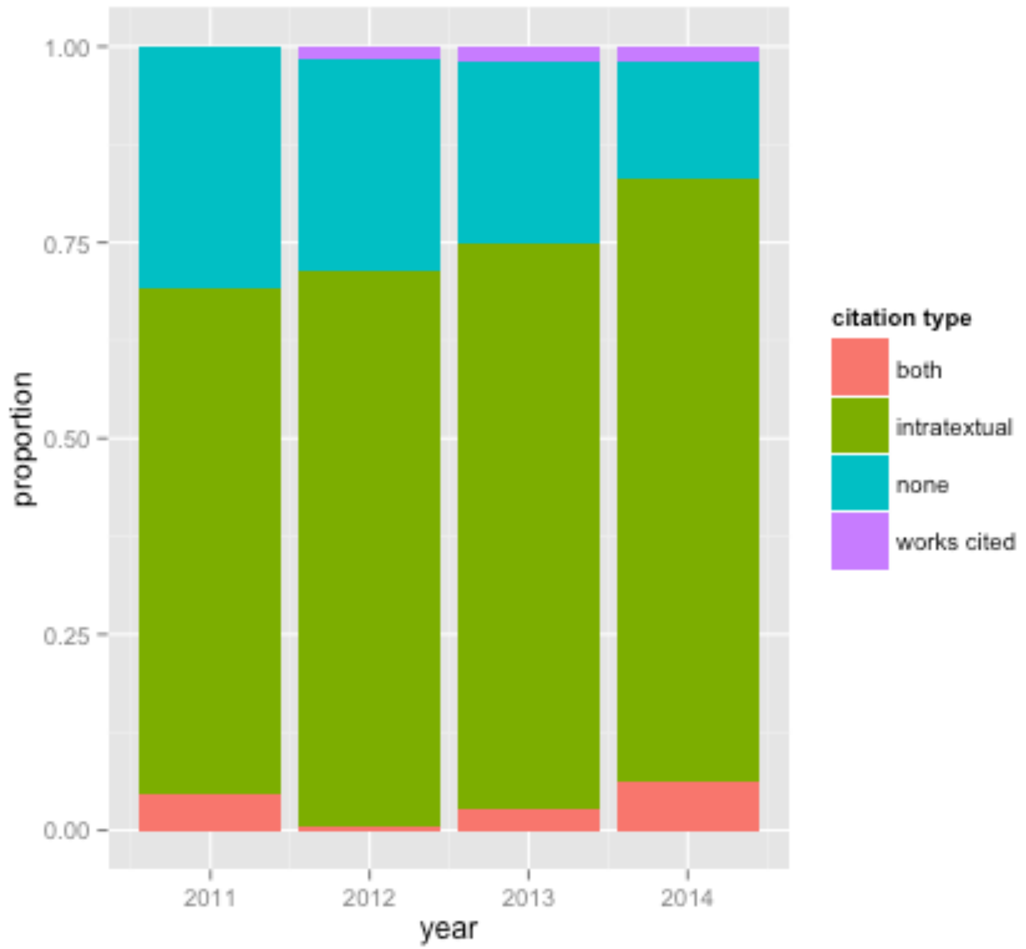

Mayo, Hull and Vision (2016) Proc. of the 11th International Digital Curation Conference
http://doi.org/10.5281/zenodo.32412

Data referenced in *reuse* articles:
human readable when present, but even more rare

Ecological Monographs, 82(2), 2012, pp. 221–228

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d J. Morris. 1996. Geologic map of the Island p I-2524-A. USGS, Denver, Colorado, USA.

Dombois, and P. A. Matson. 1987. Biological invasion by *Myrica faya* alters ecosystem development in Hawaii. Science 238:802–804.

Wagner, W. L., D. R. Herbst, and S. H. Sohmer. 1999. Manual of the flowering plants of Hawai'i. University of Hawai'i Press/Bisphop Museum Press, Honolulu, Hawaii, USA.

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Woodcock, D. 2003. To restore the watersheds: Early twentieth-century tree planting in Hawai'i. Annals of the Association of American Geographers 93:624–635.

Zanne, A. E., G. Lopez-Gonzalez, D. A. Coomes, J. Ilic, S. Jansen, S. L. Lewis, R. B. Miller, N. G. Swenson, M. C. Wiemann, and J. Chave. 2009. Global wood density database. Dryad Digital Repository, North Carolina, USA. http://dx.doi.org/10.5061/dryad.234

Ziegler, A. C. 2002. Hawaiian natural history and evolution. University of Hawai'i Press, Honolulu, Hawaii, USA.

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doi:10.5061/DRYAD.2B65B

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Citation	da Silva, Luis; Pereira Coutinho, António Xavier; Heleno, Ruben; Tenreiro, Paulo; Ramos, Jaime; (2015): Data from: Dispersal of fungi spores by non-specialized flower-visiting birds; Dryad Digital Repository. http://dx.doi.org/10.5061/DRYAD.2B65B RIS BibTeX
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Dataset	DataPackage
Subjects	Fungi dispersal
	Directed dispersal
	Flower visitation
Rights	http://creativecommons.org/publicdomain/zero/1.0/
Related identifiers	
HasPart	doi:10.5061/DRYAD.2B65B/1
IsReferencedBy	doi:10.1111/JAV.00806

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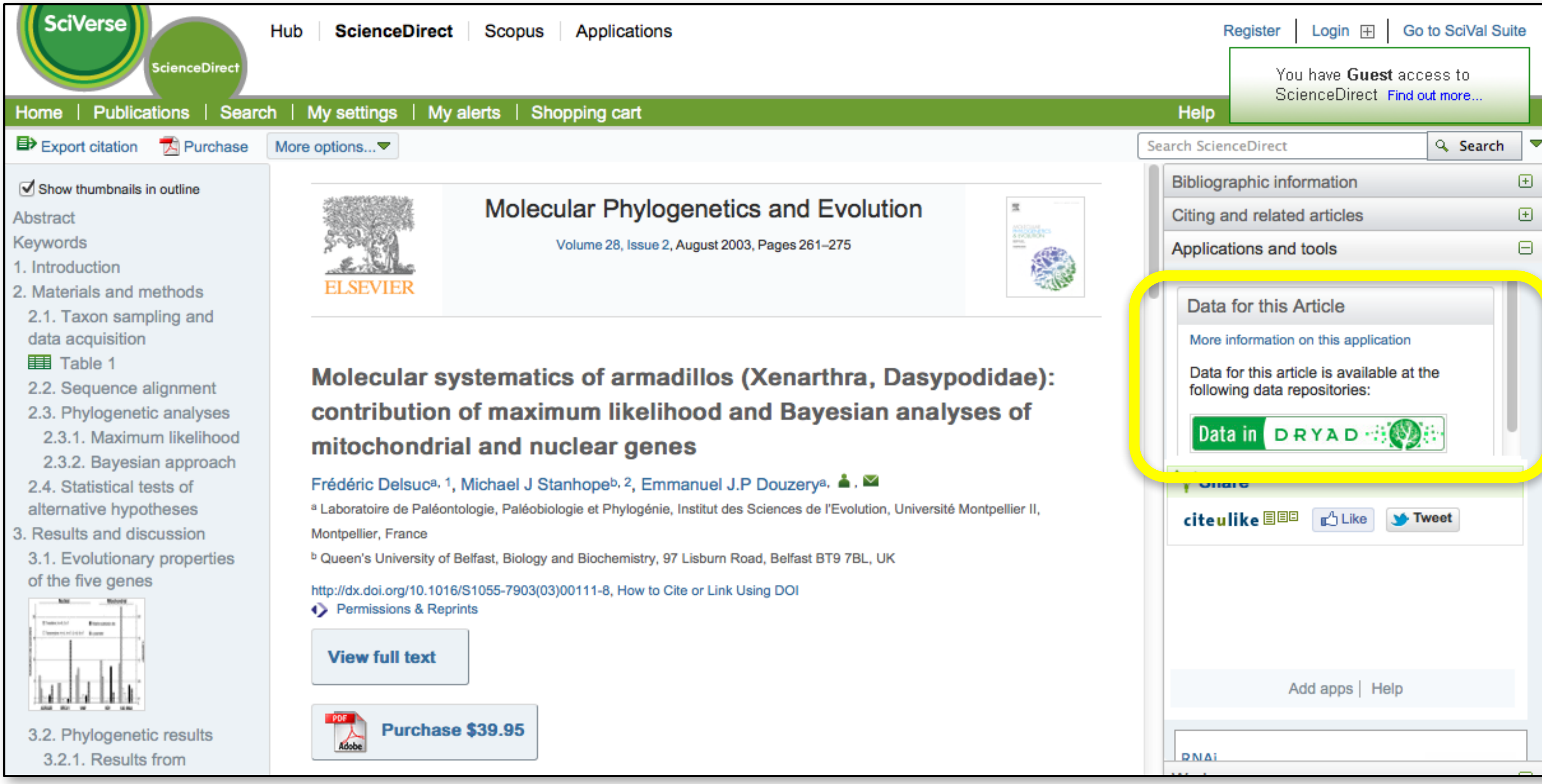

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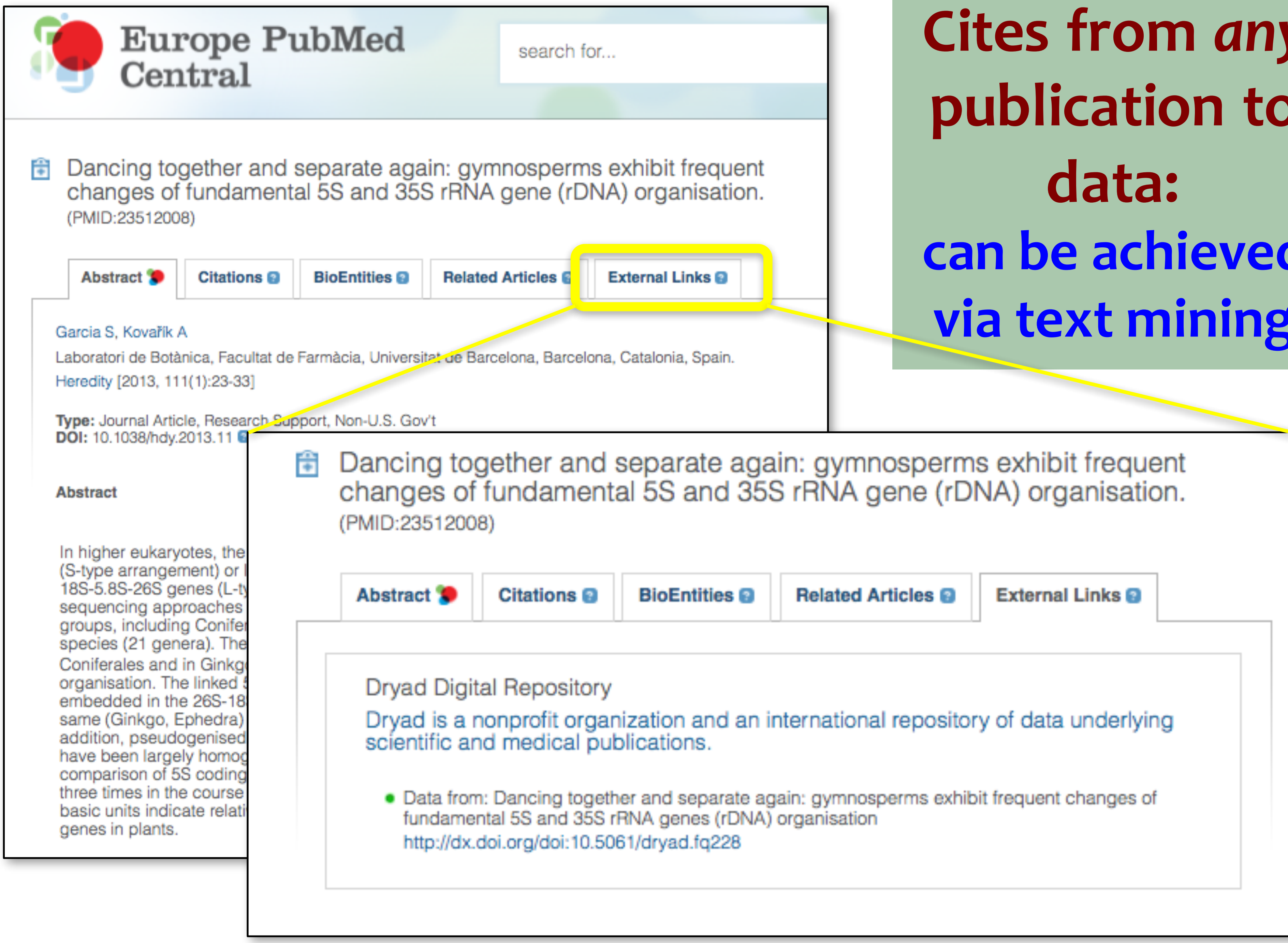

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Jenny Tung, Luis B. Barriero, Michael B. Burns, J. C. Grenier, Josh Lynch, L. E. Grieneisen … & E. A. Archie

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Social networks predict gut microbiome composition in wild baboons

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0000-0002-6133-2581

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Keywords: plant biology, genome evolution, bioinformatics, scholarly communication

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Other IDs:
Scopus Author ID: 6603368605

Genome-scale phylogenetics: Inferring the plant tree of life from 18,896 gene trees: Systematic Biology 2011

DOI: 10.1093/sysbio/syq072

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Burleigh, J.G. and Bansal, M.S. and Eulenstein, O. and Hartmann, S. and Wehe, A. and Vision, T.J., (2011). "Genome-scale phylogenetics: Inferring the plant tree of life from 18,896 gene trees", Systematic Biology, vol. 60, no. 2, pp. 117-125

Data from: Genome-scale phylogenetics: inferring the plant tree of life from 18,896 gene trees 2010

DOI: 10.5061/DRYAD.7881

Burleigh, J. Gordon; Bansal, Mukul S.; Eulenstein, Oliver; Hartmann, Stefanie; Wehe, André; Vision, Todd J.; , (2010). "Data from: Genome-scale phylogenetics: inferring the plant tree of life from 18,896 gene trees"

DataCite

A structured citation from a *reuse* article to data: are we meeting the needs of both humans and machines?

Methods

Analysis of patterns of sex chromosome-autosome fusions in vertebrates

We compiled lists of species with multiple sex chromosome systems (X_1X_2Y, XY_1Y_2, ZW_1W_2, and Z_1Z_2W systems) from the Tree of Sex database [17]. Although X_1X_2Y systems (or ZW_1W_2 systems) can also arise from species with XO (or ZO) systems through a reciprocal translocation between an X (or a Z) and an autosome [2,20], XO or ZO systems are rare in vertebrates [17] (Table 1). In addition, although fission of sex chromosomes can also create multiple sex chromosome systems [2,20], such fissions are also rare in vertebrates [18,20,21]. We therefore focus this discussion on fusions, although the data analysis allowed fissions as well as fusions (S1 Text).

16. Devlin RH, Nagahama Y (2002) Sex determination and sex differentiation in fish: an overview of genetic, physiological, and environmental influences. Aquaculture 208: 191–364.

17. The Tree of Sex Consortium (2014) Tree of Sex: a datbase of sexual systems. Sci Data 1: 140015.

18. Ohno S (1967) Sex chromosomes and sex-linked genes. New York: Springer.

Data Availability Statement: Sex chromosome data are available from the Dryad (http://dx.doi.org/10.5061/dryad.v1908). Analytical tools and code are available in the Supporting Information file (S2 Text) or at https://github.com/mwpennell/fuse.

Pennell MW et al. (2015) Y Fuse? Sex Chromosome Fusions in Fishes and Reptiles. PLoS Genet doi:10.1371/journal.pgen.1005237

THOR

- Sustainable services
  - Building upon trusted identifier services
  - ORCID-DataCite claiming service
  - DataCite Event Data: http://eventdatacite.datacite.org
  - DataCite Search (by ORCID, funder, etc): http://search.datacite.org/
- Research
  - On gaps in workflows, metadata interoperability
  - Example: Funding metadata
  - Another example: organizational identifiers: https://project-thor.eu/2016/06/06/
- Community building
  - Knowledge Hub
    - https://project-thor.readme.io
  - Ambassador program
    - http://project-thor.eu/become-an-ambassador/

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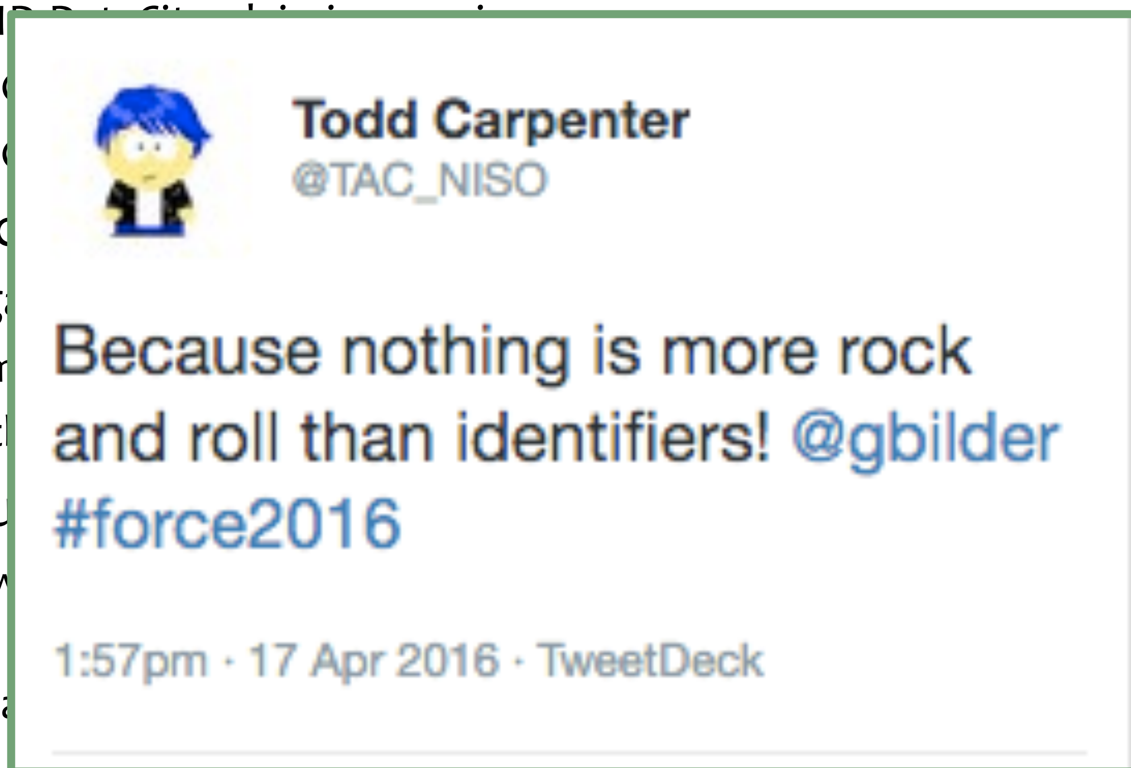

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- Government, e.g., Data Portal India
- Research center, e.g., NASA GES DISC
- Instrument, e.g., CHANDRA
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