

# David C. Tank

College of Natural Resources & Stillinger Herbarium, University of Idaho, Moscow, ID

Tel: 208.885.7033 dtank@uidaho.edu <http://phylodiversity.net/dtank/>

## ACADEMIC EMPLOYMENT

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- Assistant Professor & Director, Stillinger Herbarium** July 2008-present  
College of Natural Resources  
Affiliated faculty, Environmental Sciences  
University of Idaho, Moscow, ID
- Postdoctoral Associate** 2006-2008  
Division of Botany, Peabody Museum of Natural History  
Yale University, New Haven, CT  
Supervisor: Dr. Michael Donoghue
- Interim Collections Manager** 2007  
Division of Botany, Peabody Museum of Natural History  
Yale University, New Haven, CT
- Lecturer** 2007  
Department of Ecology & Evolutionary Biology  
Yale University, New Haven, CT

## EDUCATION

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- Ph.D., Botany** 2006  
University of Washington, Seattle, WA  
Advisor: Dr. Richard Olmstead  
dissertation - Molecular phylogenetics of *Castilleja* and *Castillejinae* (Orobanchaceae)
- M.S., Botany & Plant Pathology; Specialization in Ecology, Evolutionary Biology & Behavior** 2000  
Michigan State University, East Lansing, MI  
Advisor: Dr. Tao Sang  
thesis - Evolution and phylogenetic utility of low-copy nuclear genes: examples from conifers and peonies
- B.S., Botany & Plant Pathology; with honors, summa cum laude** 1998  
Michigan State University, East Lansing, MI

## TEACHING EXPERIENCE

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- Assistant Professor, University of Idaho** 2008-present  
*Dendrology* (2008-2011; undergraduate lecture/lab), *Field Botany* (2011; undergraduate short course), *Conservation Genetics* (2010; graduate lecture/lab; team taught with L. Waits), *Phylogenetics Reading Group* (2009-2011; graduate seminar)
- Lecturer, Yale University** 2007  
*Diversity of Life* (undergraduate lecture; team taught with M. Wells)
- Workshop Leader, Yale University** 2007 & 2008  
*Phylogenetics & Bioinformatics* (undergraduate workshop; team taught with S. Smith)
- Predocctoral Lecturer, University of Washington** 2004 & 2005  
*Plant Identification & Classification* (undergraduate lecture/lab)
- Teaching Assistant, University of Washington** 2001-2006  
Departments of Botany, Zoology, & Biology (*Plant Identification & Classification*, *Anatomy & Morphology of Land Plants*, *Molecular Evolution*, *Foundations in Evolution and Systematics*, *Introductory Biology*)
- Teaching Assistant, Michigan State University** 1998-2000  
Departments of Botany and Plant Pathology & Zoology (*Plant Systematics*, *Evolution*, *Integrative Studies in Biology*)
- Undergraduate Teaching Assistant, Michigan State University** 1997  
Department of Botany and Plant Pathology (*Environmental Plant Physiology*)

**AWARDS & HONORS**


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<b>Hoffman Award in Teaching Excellence, <i>Nominee</i></b> University of Idaho, Moscow, ID	<b>2012</b>
<b>Excellence in Teaching Award, <i>Nominee</i></b> University of Washington, Seattle, WA	<b>2005 &amp; 2006</b>
<b>Melinda Denton Plant Systematics Dissertation Fellowship</b> Department of Biology, University of Washington, Seattle, WA.	<b>2005</b>
<b>Ingrith Deyrup-Olsen Distinguished Teaching Award</b> Department of Biology, University of Washington, Seattle, WA.	<b>2004</b>
<b>Outstanding Biology Teaching Assistant Award</b> Department of Biology, University of Washington, Seattle, WA.	<b>2004</b>
<b>Delzie Demaree Travel Award</b> 50th Annual Systematics Symposium, Missouri Botanical Garden, St. Louis, MO	<b>2004</b>
<b>Molecular Phylogenetics and Systematics Graduate Fellowship</b> Department of Botany, University of Washington, Seattle, WA.	<b>2000-2002</b>
<b>Valedictorian</b> College of Natural Science, Michigan State University, East Lansing, MI.	<b>1998</b>
<b>Bessey Memorial Award for Outstanding Undergraduate Student</b> Department of Botany & Plant Pathology, Michigan State University, East Lansing, MI.	<b>1998</b>
<b>Angell Foundation Biology Scholar</b> Department of Math & Science, Northwestern Michigan College, Traverse City, MI.	<b>1993</b>

**GRANTS**


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<b>NSF DBI, Biological Research Collections, \$301,351 (\$1,340,000 total)</b> "Collaborative Research: The Online Consortium of Pacific Northwest Herbaria Expanded to Include Taxonomically Diverse Specimens from Large and Small Regional Collections" Co-PIs Richard Olmstead (University of Washington), Aaron Liston (Oregon State University), Matt Lavin (Montana State University).	<b>2010-2013</b>
<b>University of Idaho, Research Office Seed Grant, \$11,996</b> "Next generation sequencing of a chloroplast genomes in the paintbrushes ( <i>Castilleja</i> ): species-level phylogenomics in a taxonomically difficult group"	<b>2010-2011</b>
<b>NSF OISE, International Research Experience for Students, \$144,883 (co-PI)</b> "An Interdisciplinary Team-Based International Research Experience in Biodiversity Conservation and Sustainable Community Development in the Ecuadorian Andes" PI Lisette Waits, Co-PIs Stephen Mulkety, Sandra Pinel, and Janet Rachlow.	<b>2010-2013</b>
<b>University of Idaho, Environmental Sciences FIT Grant, \$20,000 (co-PI)</b> "Establishing a long-term interdisciplinary research and education program focused on biodiversity conservation in the Ecuadorian Andes" PI Lisette Waits, Co-PIs Sandra Pinel and Janet Rachlow	<b>2009-2010</b>
<b>NSF DEB, Doctoral Dissertation Improvement Grant, \$14,462</b>	<b>2004-2006</b>
<b>Sigma-Xi Grants in Aid of Research, \$500</b> University of Washington Chapter, Seattle, WA.	<b>2003</b>
<b>Giles Graduate Student Award for Field Research, \$600 &amp; \$1200</b> Department of Botany, University of Washington, Seattle, WA.	<b>2001 &amp; 2003</b>
<b>Society of Systematic Biologists Graduate Student Research Award, \$1,000</b>	<b>2001</b>
<b>American Society of Plant Taxonomists Graduate Student Research Award, \$700</b>	<b>2001</b>
<b>Botanical Society of America Karling Award for Graduate Student Research, \$500</b>	<b>2001</b>
<b>Sigma-Xi Grants in Aid of Research, \$700</b>	<b>1999</b>
<b>Undergraduate Research Support Grant, \$1,000</b> College of Natural Science, Michigan State University, East Lansing, MI.	<b>1997</b>

**STUDENT GRANTS**


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<b>University of Idaho Student Grant Program, \$4,914</b> Simon Uribe-Convers, "Inferring patterns of biodiversity in a young Andean ecosystem; developing a novel high throughput sequencing approach for phylogenetic and phylogeographic studies in <i>Bartsia</i> (Orobanchaceae)"	<b>2011</b>
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- University of Idaho Stillinger Herbarium Collecting Expedition Funds , \$6,496** **2011**  
Simon Uribe-Convers, "Phylogenetic Analysis of the genus *Bartsia* L. (Orobanchaceae)"
- Botanical Society of America Graduate Student Research Award, \$500** **2011**  
Simon Uribe-Convers, "Inferring patterns of biodiversity in a young Andean ecosystem; developing a novel high throughput sequencing approach for phylogenetic and phylogeographic studies in *Bartsia* (Orobanchaceae)"
- American Society of Plant Taxonomists Graduate Student Research Award, \$750** **2010**  
Simon Uribe-Convers, "Phylogenetic Analysis of the Genus *Bartsia* L. (Orobanchaceae): Increasing Sampling of a Mostly Andean Genus"
- Society of Systematic Biologists Graduate Student Research Award, \$1,800** **2010**  
Simon Uribe-Convers, "Phylogenetic Analysis of the Genus *Bartsia* L. (Orobanchaceae): Increasing Sampling of a Mostly Andean Genus"

## ACTIVITIES

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### INVITED PRESENTATIONS:

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| Department of Biological Sciences, Washington State University, Pullman, WA        | March 2012     |
| The Field Museum, A. Watson Armour Research Seminar, Chicago, IL                   | March 2011     |
| Palouse Ecology, Evolution, and Systematics, Moscow, ID                            | April 2010     |
| Idaho Native Plant Society, Moscow, ID   | March 2010     |
| Universidad Tecnica Particular de Loja, Loja, Ecuador                              | January 2010   |
| Biodiversity Research Center, Ilia Chavchavadze State University, Tbilisi, Georgia | October 2009   |
| Department of Botany, University of Wyoming, Laramie, WY                           | September 2009 |
| Department of Biological Sciences, Boise State University, Boise, ID               | October 2008   |
| Yale Institute for Biospheric Studies, Yale University, New Haven, CT              | April 2008     |
| Department of Forest Resources, University of Idaho, Moscow, ID                    | November 2007  |
| Department of Biology, Linfield College, McMinnville, OR                           | November 2007  |
| Harvard University Herbaria, Harvard University, Cambridge, MA                     | October 2006   |
| Department of Ecology and Evolutionary Biology, Yale University, New Haven, CT     | September 2006 |

### PRESENTATIONS AT PROFESSIONAL MEETINGS (†INDICATES STUDENT COAUTHOR):

- Tank, DC**, and JM Eastman. Diversification rates, life history shifts, and chromosomal evolution in *Castilleja* and relatives (Castillejinae, Orobanchaceae). Botany meeting, St. Louis, Missouri, 2011.
- Kisha, TJ, B Hellier, **DC Tank**, and J Hu. Comparison of *matK* sequences and TRAP molecular markers for the taxonomic characterization of six species of the *Allium* section *Cepa* (Mill.) Prokh. complex. American Society for Horticultural Science meeting, Waikoloa, Hawaii, 2011. abstract published in supplement to HortScience 46: S205.
- Tank, DC**, J Duke<sup>†</sup>, and S Uribe-Convers<sup>†</sup>. Phylogeny and diversification of the species-rich perennial *Castilleja* (Orobanchaceae) clade: parallel radiations in western North America and montane Latin America. Botany meeting, Providence, Rhode Island, 2010.
- Uribe-Convers, S<sup>†</sup> and **DC Tank**. Phylogenetic analysis of the genus *Bartsia* L. (Orobanchaceae): a mostly South American genus wrapped in a European clade. Botany meeting, Providence, Rhode Island, 2010.
- Clay, D<sup>†</sup>, **DC Tank**, JM Egger, and JF Smith. Exploring interspecific hybridization in a rare endemic species of paintbrush (*Castilleja christii*, Orobanchaceae) using molecular and morphological techniques. Botany meeting, Providence, Rhode Island, 2010.
- Olmstead, RG, Y-W Yuan, HE Marx<sup>†</sup>, and **DC Tank**. The PPR gene family, one stop shopping for multiple, independent, nuclear gene loci for plant phylogenetics with examples from Lamiales. Botany meeting, Providence, Rhode Island, 2010.
- Soltis, DE, SA Smith, N Cellinese, M Moore, NF Refulio-Rodriguez, RG Olmstead, S Crawley, C Black, D Diouf, KW Hilu, Y-L Qiu, KJ Sytsma, K Wurdack, Z Xi, CC Davis, **DC Tank**, M Sanderson, MJ Donoghue, and PS Soltis. Inferring angiosperm phylogeny: 17-gene 642-taxon analyses. Botany meeting, Providence, Rhode Island, 2010.
- Tank, DC**. Using large trees to synthesize and direct phylogenetic research in Orobanchaceae. Botany meeting, Snowbird, Utah, 2009.

- Tank, DC** and MJ Donoghue. Phylogeny and phylogenetic nomenclature of the Campanulidae based on an expanded sample of genes and taxa. Botany meeting, Snowbird, Utah, 2009.
- Tank, DC.** Using large trees to synthesize and direct phylogenetic research in Orobanchaceae. Evolution meeting, Moscow, Idaho, 2009.
- Olmstead, RG and **DC Tank.** Over-precision in molecular dating. Botany meeting, Vancouver, British Columbia, 2008.
- Olmstead, RG and **DC Tank.** Over-precision in molecular dating. Evolution meeting, Minneapolis, Minnesota, 2008.
- Tank, DC,** RC Winkworth, J Lundberg, and MJ Donoghue. An update on Campanulid phylogeny. Botany meeting, Chicago, Illinois, 2007.
- Tank, DC** and RG Olmstead. Evolutionary history of perennial *Castilleja* (Castillejinae, Orobanchaceae): evidence from the nuclear gene *waxy*. Botany meeting, Chicago, Illinois, 2007.
- Angiosperm Tree of Life Group, DE Soltis. Progress in Assembling the Angiosperm Tree of Life. Botany meeting, Chicago, Illinois, 2007.
- Olmstead, RG, PM Beardsley, and **DC Tank.** Evolution of ploidy, perenniality, and pollination in Monkeyflowers and Paintbrushes. Evolution meeting, Christchurch, New Zealand, 2007.
- Tank, DC** and RG Olmstead. Geographic disjunction or morphological convergence? The evolutionary origin of a second radiation of annual *Castilleja* species in South America (subtribe Castillejinae: Orobanchaceae). Botany meeting, Austin, Texas, 2005.
- Tank, DC** and RG Olmstead. Systematics of subtribe Castillejinae (Orobanchaceae): the role of morphology in taxon delimitation. Evolution meeting, Fort Collins, Colorado, 2004.
- Tank, DC** and RG Olmstead. Phylogenetic analysis of subtribe Castillejinae (tribe Rhinanthaeae: Orobanchaceae). Botany meeting, Madison, Wisconsin, 2002.
- Tank, DC,** X-Q Wang, and T Sang. Recent transfers of cinnamyl alcohol dehydrogenase between conifers diverged 200 million years ago. Botany meeting, Albuquerque, New Mexico, 2001.
- Tank, DC** and T Sang. The glycerol-3-phosphate acyltransferase gene in *Paeonia* (Paeoniaceae): molecular evolution and phylogenetic utility. Botany meeting, Portland, Oregon, 2000.
- Wang, X-Q, **DC Tank,** and T Sang. Phylogeny and divergence times in Pinaceae: evidence from three genomes. Botany meeting, Portland, Oregon, 2000.
- Tank, DC** and T Sang. Evolution of the GPAT gene in *Paeonia* (Paeoniaceae). XVI International Botanical Congress, St. Louis, Missouri, 1999. Poster.

#### **SERVICE TO THE SCIENTIFIC COMMUNITY:**

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|---|---------------------|
| <b>Committee on Phylogenetic Nomenclature, Chairperson</b>  | <b>2011-present</b> |
| International Society for Phylogenetic Nomenclature   |                     |
| <b>National Science Foundation Panelist</b>   | <b>2010</b>         |
| Division of Biological Infrastructure, Biological Research Collections Panel  |                     |
| <b>Editorial Board</b>  | <b>2009-present</b> |
| Organisms, Diversity, and Evolution   |                     |
| <b>Committee on Phylogenetic Nomenclature</b>   | <b>2009-present</b> |
| International Society for Phylogenetic Nomenclature   |                     |
| <b>Symposium Co-Organizer (with CP Randle and JM Morawetz)</b>  | <b>2009</b>         |
| The Greatest Opportunists of All- Celebrating 40 years of Job Kuijt's <i>Biology of Parasitic Flowering Plants</i> . Botany meeting, Snowbird, Utah, 2009.  |                     |
| <b>Nominations Committee</b>  | <b>2007-2010</b>    |
| International Society for Phylogenetic Nomenclature   |                     |
| <b>Manuscript Reviews</b>   | <b>2002-present</b> |
| Acta Horticulturae (2006), American Journal of Botany (2007, 2008, 2009, 2010, 2011), BMC Evolutionary Biology (2009, 2010), Folia Geobotanica (2009), International Journal of Plant Sciences (2011), Journal of Systematics and Evolution (2010, 2011), Molecular Phylogenetics and Evolution (2002, 2004, 2006, 2007, 2008, 2009, 2011), National Geographic Society, grant review (2008), National Science Foundation, Systematic Biology and Biodiversity Inventories, ad hoc reviewer (2008, 2009), Phylonyms: A Companion to the Phylocode (2009, 2010, 2011), Plant Physiology (2007), Plant Systematics and Evolution (2007), Systematic Botany (2010, 2011), Taxon (2006, 2009) |                     |

**Memberships in Professional Associations (current)**

American Society of Plant Taxonomists, Botanical Society of America, Society for Systematic Biology, International Society for Phylogenetic Nomenclature, Sigma-Xi, Idaho Native Plant Society

**Advising**

Three current doctoral students: Simon Uribe-Convers (2009), Hannah E Marx (2011), and Diego Morales-Briones (2011)

Student committees: completed - Danielle Clay (Boise State University MSc, 2011); in progress - Mare Nazaire (Washington State University), Todd Ott (University of Idaho), Andre Sanfioezno (University of Idaho), Brice Sarver (University of Idaho), Maria Paulina Viteri (University of Idaho)

**PUBLICATIONS (†INDICATES STUDENT COAUTHOR)** 

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**IN REVIEW/REVISION:**

Beauileu, JM, **DC Tank**, and MJ Donoghue. in revision. A Southern Hemisphere origin for campanulid angiosperms and traces of the break-up of Gondwana. to be resubmitted to Systematic Biology.

**PEER REVIEWED PAPERS PUBLISHED OR IN PRESS:**

Goldberg, CS, **DC Tank**, S Uribe-Convers<sup>†</sup>, WR Bosworth, HE Marx<sup>†</sup>, and LP Waits. in press. Species designation of the Bruneau tiger beetle (*Cicindela waynei*) is supported by phylogenetic analysis of mitochondrial DNA sequence data. submitted to Conservation Genetics.

Soltis, DE, SA Smith, N Cellinese, KJ Wurdack, **DC Tank**, SF Brockington, NF Refulio-Rodriguez, JB Walker, MJ Moore, BS Carlswald, CD Bell, M Latvis, S Crawley, C Black, D Diouf, Z Xi, MA Gitzendanner, KJ Sytsma, Y-L Qiu, KW Hilu, CC Davis, MJ Sanderson, RG Olmstead, WS Judd, MJ Donoghue, PS Soltis. 2011. Angiosperm phylogeny: 17 genes, 640 taxa. American Journal of Botany 98: 704-730.

Marx, HE<sup>†</sup>, N O'Leary, Y-W Yuan, P Lu-Irving, **DC Tank**, ME Mulgura and RG Olmstead. 2010. A molecular phylogeny and classification of Verbenaceae. American Journal of Botany 97:1647-1663.

**Tank, DC** and MJ Donoghue. 2010. Phylogeny and phylogenetic nomenclature of the Campanulidae based on an expanded sample of genes and taxa. Systematic Botany 35: 425-441.

Angiosperm Phylogeny Group (B Bremer, K Bremer, MW Chase, MF Fay, JL Reveal, DE Soltis, PS Soltis, and PF Stevens, who were equally responsible and listed here in alphabetical order only, with contributions from AA Anderberg, MJ Moore, RG Olmstead, PJ Rudall, KJ Sytsma, **DC Tank**, K Wurdack, Q-Y Xiang, and S Zmarzty, in alphabetical order). 2009. An update of the Angiosperm Phylogeny Group classification for the orders and families of flowering plants: APG III. Botanical Journal of the Linnean Society 161: 105-121.

**Tank, DC** and RG Olmstead. 2009. The evolutionary origin of a second radiation of annual *Castilleja* species in South America: the role of long-distance dispersal and allopolyploidy. American Journal of Botany 96: 1907-1921.

**Tank, DC**, JM Egger, and RG Olmstead. 2009. Phylogenetic classification of subtribe Castillejiniae (Orobanchaceae). Systematic Botany 34: 182-197.

Smith SA, **DC Tank**, L-A Boulanger, CA Bascom-Slack, K Eisenman, et al. 2008. Bioactive endophytes warrant intensified exploration and conservation. PLoS ONE 3(8): e3052.

**Tank, DC** and RG Olmstead. 2008. From annuals to perennials: phylogeny of subtribe Castillejiniae (Orobanchaceae). American Journal of Botany 95: 608-625.

**Tank, DC**, PM Beardsley, SA Kelchner, and RG Olmstead. 2006. L.A.S. Johnson Review No. 7. Review of the systematics of Scrophulariaceae s.l. and its current disposition. Australian Systematic Botany 19: 289-307.

**Tank, DC** and T Sang. 2001. Phylogenetic utility of the glycerol-3-phosphate acyltransferase gene: evolution and implications in *Paeonia* (Paeoniaceae). Molecular Phylogenetics and Evolution 19: 421-429.

Wang, X-Q, **DC Tank** and T Sang. 2000. Phylogeny and divergence times in Pinaceae: evidence from three genomes. Molecular Biology and Evolution 17: 773-781.

**TAXONOMIC TREATMENTS:**

**Tank, DC**, AD Wolfe, S Mathews and RG Olmstead. in press. Orobanchaceae. In K de Queiroz, PD Cantino and J Gauthier (eds), Phylonyms: A Companion to the Phylocode. University of California Press, Berkeley.

Olmstead, RG and **DC Tank**. Lamiales. in press. In K de Queiroz, PD Cantino and J Gauthier (eds), Phylonyms: A Companion to the Phylocode. University of California Press, Berkeley.

Wetherwax, M and **DC Tank**. 2012. *Chloropyron*. In BG Baldwin et al. (eds), The Jepson Manual: Vascular Plants of California. University of California Press, Berkeley.

Wetherwax, M and **DC Tank**. 2012. *Cordylanthus*. In BG Baldwin et al. (eds), The Jepson Manual: Vascular Plants of California. University of California Press, Berkeley.

Wetherwax, M and **DC Tank**. 2012. *Dicranostegia*. In BG Baldwin et al. (eds), The Jepson Manual: Vascular Plants of California. University of California Press, Berkeley.

**OTHER:**

**Tank, DC**. 2002. Subtribe Castillejinae revisited (tribe Rhinanthaeae: Orobanchaceae): a molecular phylogenetic analysis. Botanical Electronic News 300: <http://www.ou.edu/cas/botany-micro/ben/ben300.html>.

**MANUSCRIPTS IN PREP (MANUSCRIPT AVAILABLE):**

Uribe-Covers, S<sup>†</sup> and **DC Tank**. in review. Shifts in diversification rates linked to biogeographic movements into new areas: an example of disparate continental distributions and a recent radiation in the Andes. to be submitted to Systematic Biology.

Nürk, NM<sup>†</sup>, S Uribe-Convers<sup>†</sup>, S, Madriñán, **DC Tank\*** and FR Blattner\*. Diversification and biogeography of the Northern Hemisphere genus *Hypericum* (Hypericaceae): diversification rate shifts and high species turnover are correlated with movements into the temperate region. submitted to PNAS. \*order of authorship is arbitrary.

Beaulieu, JM, RH Ree, JM Cavender-Bares, **DC Tank** and MJ Donoghue. The role of literature-based trees in an era of 'mega-phylogenies': lessons from campanulid angiosperms. to be submitted to Systematic Biology.

**Tank, DC**. Using large trees to synthesize and direct phylogenetic research in Orobanchaceae. to be submitted to Systematic Botany.

**Tank, DC** and RG Olmstead. The phylogenetic position of the enigmatic genus *Hydrostachys*. to be submitted to PLoS Currents: Tree of Life.

**Tank, DC**. *Chloropyron*. In Flora of North America Editorial Committee (eds), Flora of North America North of Mexico. Vol. 17. Oxford University Press, New York.

**Tank, DC**. *Cordylanthus*. In Flora of North America Editorial Committee (eds), Flora of North America North of Mexico. Vol. 17. Oxford University Press, New York.

**Tank, DC**. *Dicranostegia*. In Flora of North America Editorial Committee (eds), Flora of North America North of Mexico. Vol. 17. Oxford University Press, New York.

Egger, JM, **DC Tank**, and GL Nesom. *Castilleja*. In Flora of North America Editorial Committee (eds), Flora of North America North of Mexico. Vol. 17. Oxford University Press, New York.