

# Carlos Alonso Maya Lastra

## *Curriculum Vitae*

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### PROFESSIONAL EDUCATION

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*Institute of Ecology A.C. (Mexico)*

**Ph.D.** in Science [In progress, end date August 2018]

Dissertation title: Untouchables: taxonomy and evolutionary history of *Cnidoscolus* (Euphorbiaceae).

Advisor: Ph.D. Victor W. Steinmann

*Institute of Ecology A.C. (Mexico)*

**Master** in Science (August 2014)

Thesis title: Evolutionary history and taxonomy of the *Euphorbia polycarpa* complex (Euphorbiaceae).

Advisor: Ph.D. Victor W. Steinmann

*University of Quindío (Colombia)*

**Bachelor** in Biology and Environmental Education (September 2007)

Thesis title: Taxonomic inventory of the family Euphorbiaceae in the Quindío department (Colombia). **Laureate thesis.**

Advisor: Ph. D. Carlos Alberto Agudelo Henao

### PUBLICATIONS

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**Maya-Lastra, C. A.**, Porter, J. Mark & Steinmann, V. W., 2017. A Nomenclator of *Cnidoscolus* (Euphorbiaceae). Submitted to *Phytotaxa*.

**Maya-Lastra, C. A.**, Porter, J. Mark & Steinmann, V. W., 2017. Evolutionary History and Taxonomy of the *Euphorbia polycarpa* Complex (*Euphorbia* subg. *Chamaesyce* sect. *Anisophyllum*, Euphorbiaceae). *Systematic Botany*, 42 (2): 257–270. doi:10.1600/036364417X695565.

**Maya-Lastra, C. A.** 2016. ColectoR, a Digital Field Notebook for Voucher Specimen Collection for Smartphones. *Applications in Plant Sciences*, 4(7):1600035. doi:10.3732/apps.1600035.

The Brazil Flora Group (BFG). 2015. Growing Knowledge: An Overview Of Seed Plant Diversity In Brazil. *Rodriguésia* 66(4): 1085–1113. doi: 10.1590/2175-7860201566411.

**Maya-Lastra, C. A.** & Steinmann, V. W. 2015. Two new species of *Euphorbia* subg. *Chamaesyce* (Euphorbiaceae) from Baja California Sur, Mexico and their phylogenetic relationships. *Phytotaxa*, 221 (3): 265–278. doi:10.11646/phytotaxa.221.3.4

Cordeiro, I., Caruzo, M. B. R., Pscheidt, A. C. & **Maya-Lastra, C. A.** 2011. Euphorbiaceae. In: Wanderley, M. G. L. et al. (eds.) Checklist of spermatophyta of the são paulo state, brazil. *Biota neotrop.* 11(1a): 259-263.

**Maya-Lastra, C. A.** & Agudelo H., C. A. 2011. Euphorbiaceae del Quindío. Ed. Universidad del Quindío. ISBN 978-958-8593-17-3. 80 pp.

**Maya-Lastra, C. A.** & Agudelo H., C. A. 2010. Lista anotada de las especies de Euphorbiaceae para el Quindío. *Rev. Invest. Univ. Quindío* (20): 126-136.

**Maya-Lastra, C. A.** & Secco, R. 2010. *Dalechampia* (Euphorbiaceae). In: Campostrini, R. et al. (eds.) 2010. *Catálogo de Plantas e Fungos do Brasil*. Instituto de Pesquisas Jardim Botânico do Rio de Janeiro. 2: 976-978. ISBN 978-85-88742-43-7.

Cordeiro, I., Secco, R. & **Maya-Lastra, C. A.** 2010. *Tragia* (Euphorbiaceae). In: Campostrini, R. et al. (eds.) 2010. *Catálogo de Plantas e Fungos do Brasil*. Instituto de Pesquisas Jardim Botânico do Rio de Janeiro. 2: 989. ISBN 978-85-88742-43-7.

**Maya-Lastra, C. A.** & Agudelo H., C. A. 2009. Estudio taxonómico de la familia Euphorbiaceae en el Quindío (Extenso). *Revista De La Asociación Colombiana De Ciencias Biológicas* 21: 156 - 173. ISSN 0120-4173

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## SOFTWARE AND SCRIPTS FOR BIOLOGICAL USES

**Maya-Lastra, C. A.** 2014 – 2017. ColectoR. Digital Field Notebook for Voucher Specimen Collection for Smartphones. Coded in *Javascript*. <http://camayal.info/colector.htm>

**Maya-Lastra, C. A.** 2017. ConvertFileUsingAlterAPI. Script to convert easily sequences files using ALTER API. Coded in *Python*. <http://camayal.info/scripts.htm>

**Maya-Lastra, C. A.** 2017. FastChangeNames. Provides an alternative for non-familiar users of terminal or console to change names in files like phylogenetic trees, matrixes and others. Coded in *AutoIt*. <http://camayal.info/scripts.htm>

**Maya-Lastra, C. A.** 2016. MIC (Manual Image Classify). Small application to facilitate the classification or taking data (notes) from images. Coded in *AutoIt*. <http://camayal.info/scripts.htm>

**Maya-Lastra, C. A.** 2016. HerbivoryScript for ImageJ. Macro to conduct an assisted herbivory area analysis in leaves using images and color threshold functions on ImageJ. Coded in: *ImageJ Macro Language*. <http://camayal.info/scripts.htm>

**Maya-Lastra, C. A.** 2014. ChangeNames for Notepad++. Change names, codes or accession numbers in files like .tre, .xml, .nexus or others, using Notepad++. Coded in AutoIt. Unmaintained.

**Maya-Lastra, C. A.** 2007. SinóptiK. Key for identification of Euphorbiaceae species found in Department of Quindío (Colombia). Coded in Neobook script. <http://camayal.info/sinoptik.htm>

## PROFESSIONAL APPOINTMENTS

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*Administrative Department of Science, Technology and Innovation (Colombia) and University of Quindío (Colombia)*

March 2010 – March 2011 Young researcher. Main researcher of the project titled “Evaluación Palinológica de tres especies Forestales Amenazadas de la Flora Andina Colombiana”.

*The United Nations Development Programme (UNDP) and National Federation of Coffee Growers of Colombia*

November – December 2009 Contract. In charge of fast characterization of vegetation in the Quindío coffee, included in the project “Incorporación de biodiversidad en las zonas cafeteras de Colombia”

*University of Quindío (Colombia)*

August – December 2006 Herbarium assistant in HUQ, involved as student.

January 2005 – July 2006 Student researcher in the project “Creation of a seed bank of native species from Quindío department”.

## AWARDS

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December 2014 *Premio a la Excelencia Creativa y Espiritu Innovador 2014*, with the software: **ColectoR: field notebook for easy collection of plant specimen data using smartphones**. By Institute of Ecology A.C., Mexico.

June 2010 *Cuatrecasas Fellowship Award 2010*, awarding a trip to US herbarium to study Euphorbiaceae collection. By Smithsonian Institution.

October 2009 *Premio Nacional Hernando Patiño* as **best undergraduate work presented** in XLIV Congreso Nacional de la Asociación Colombiana de Ciencias Biológicas.

## TEACHING EXPERIENCE

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April 2015 Teaching assistant of **Techniques of phylogenetic reconstructions**. Institute of Ecology A.C., Mexico.

January – December 2004 Teaching assistant of **Plant morphology**. University of Quindío, Colombia.

August – December 2003 Teaching assistant of **Biology**. University of Quindío, Colombia.

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#### SCHOLARSHIPS AND FELLOWSHIPS FOR PROFESSIONAL FORMATION

September 2014. **National scholarship for postgraduate studies CONACYT** (N° 391982, registry 280328) for a period of 48 months, given by The National Council on Science and Technology, Mexico, to course the Doctorate. (~ \$ 47.000 USD)

September 2012. **National scholarship for postgraduate studies CONACYT** (N° 345304, registry 280328) for a period of 23 months, given by The National Council on Science and Technology, Mexico, to course the Master degree. (~ \$ 15.600 USD)

December 2009. **Fellowship Virginia Gutierrez de Pineda**, as Young researcher and innovator , given by Administrative Department of Science, Technology and Innovation, founding 12 months for research work to study the pollen of three species of Quindío (Colombia). (~ \$ 8.400 USD)

January 2007. **Academic Excellence Scholarship** of the Program of Bachelor in Biology and Environmental Education, due to the best academic score of the program, given by the University of Quindío (Colombia).

August 2006. **Academic Excellence Scholarship** of the Program of Bachelor in Biology and Environmental Education, due to the best academic score of the program, given by the University of Quindío (Colombia).

January 2006. **Academic Excellence Scholarship** of the Program of Bachelor in Biology and Environmental Education, due to the best academic score of the program, given by the University of Quindío (Colombia).

August 2005. **Academic Excellence Scholarship** of the Program of Bachelor in Biology and Environmental Education, due to the best academic score of the program, given by the University of Quindío (Colombia).

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January 2004. **Academic Excellence Scholarship** of the Program of Bachelor in Biology and Environmental Education, due to the best academic score of the program, given by the University of Quindío (Colombia).

January 2003. **Academic Excellence Scholarship** of the Program of Bachelor in Biology and Environmental Education, due to the best academic score of the program, given by the University of Quindío (Colombia).

#### ADDITIONAL COURSES AND FORMATION

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October 2017 *High-Throughput sequencing, assembly and analysis for phylogenetic and evolutionary studies*. Offered by Universidad Michoacana de San Nicolás Hidalgo. Professor Ph.D. J. Mark Porter from Rancho Santa Ana Botanic Garden. (120 hours)

April 2013 *Temperate ecology for tropical students: Ecology of North Temperate Forests, Habitat Assessment and Sustainability*. Offered by Powdermill Nature Reserve and Institute of Ecology A.C. Main professor Ph.D. John W. Wenzel. (120 hours)

February 2010 *Electronic microscopy course 2010*. Offered by Centro de Excelencia en Nuevos Materiales - University of Valle. (16 hours)

August 2007 *Application of software BRAHMS 6.0 to manage herbaria*. Offered by Post-graduate office of Science-Biology and Biology department of University of Valle. Professor Ph.D. Michael Hopkins from INPA (Instituto Nacional de Pesquisas da Amazônia). (35 hours)

July 2005 *Bromeliaceae and Heliconiaceae workshop*. Offered by ACH (Asociación Colombiana de Herbarios). Professor Ph.D. Julio Betancourt from Instituto de Ciencias Naturales of National University of Colombia. (10 hours)

#### SHORT RESEARCH STANCES AND VISITS

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*Rancho Santa Ana Botanic Garden (Claremont, California, U. S. A.)*

September 2017, May 2016, September, March, and January 2013. Learning of molecular techniques for extraction, amplification and preparation of DNA for Sanger and High-throughput sequencing for phylogenetic studies. Under supervision of Ph.D. Victor W. Steinmann and Ph.D. J. Mark Porter.

*Institute of Botany of São Paulo – SP Herbarium (São Paulo, SP – Brazil)*

March 2008 – July 2008. Scientific early career improvement. Thanks to the Scholarship RLB08-P04, given by The Latin American Plant Sciences Network to conduct the research “Revisão dos gêneros *Bia*, *Dalechampia*, *Plukenetia*, *Romanoa* e *Tragia* (Euphorbiaceae s.s.) para o Estado de São Paulo (SP-Brasil)”. Under supervision of Ph.D. Inês Cordeiro.

*Smithsonian Institution – US Herbarium (Washington D.C., U. S. A.)*

November 2010 – December 2010. Short visit to study botanical collection of Euphorbiaceae, especially Plukenetieae tribu. Under supervision of Ph.D. Kenneth Wurdack.

## MEETING PRESENTATIONS

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- October 2013 Poster in XIX Congreso Mexicano de Botánica. Tuxtla Gutiérrez (Mexico).  
*Estudio filogenético del complejo Euphorbia polycarpa (Euphorbiaceae) basado en marcadores de núcleo y cloroplasto.*
- October 2010 Poster of two works in X Latin American Botanical Congress. La Serena (Chile).  
*Revisão dos gêneros de lianas da família Euphorbiaceae s.s. para o Estado de São Paulo – Brasil.*  
*Estado preliminar de Dalechampia Plum. ex L. (Euphorbiaceae) para Colombia.*
- October 2009 Oral presentation in XLIV Congreso Nacional de la Asociación Colombiana de Ciencias Biológicas. Popayán (Colombia). **Awarded** with the National award Hernando Patiño.  
*Revisión taxonómica de la familia Euphorbiaceae Juss. para el departamento del Quindío - Colombia.*
- Abril 2007 Poster in IV Congreso Colombiano de Botánica. Medellín (Colombia).  
*Inventario de la familia Euphorbiaceae Juss. para el departamento del Quindío – Colombia.*

## FUNDING FOR SHORT STANCES

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- February 2017. Student mobility fund of postgraduate office of Institute of Ecology A. C. to prepare libraries for RADSeq in the molecular laboratory of Rancho Santa Ana Botanic Garden. (~ \$ 630 USD)
- January 2016. Student mobility fund of postgraduate office of Institute of Ecology A. C. to spend one semester in Rancho Santa Ana Botanic Garden. (~ \$ 1650 USD)
- February 2014. Student mobility fund of postgraduate office of Institute of Ecology A. C. to visit Rancho Santa Ana Botanic Garden. (~ \$ 673 USD)
- August 2013. Student mobility fund of postgraduate office of Institute of Ecology A. C. to CAS, UC and RSA herbaria. (~ \$ 747 USD)
- December 2012. Extra support (Beca Mixta) given by CONACYT (Mexico), to learn DNA sequencing techniques in Rancho Santa Ana Botanic Garden. (~ \$ 1.275 USD)
- June 2010. Cuatrecasas Fellowship Award to visit US herbarium: (\$ 2.200 USD)
- Julio 2010. Funding for assistance X Latin American Botanical Congress given by The Latin American Plant Sciences Network. (~ \$ 1.000 USD)

February 2008. Scientific early career improvement (RLB08-P04) given by The Latin American Plant Sciences Network to visit the Institute of Botany of São Paulo for four months, Brazil. (\$ 2.571 USD)

## SKILLS

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**Languages:** Spanish, Portuguese and English.

**Programming languages:** *Autoit, C#, HTML and CSS, Javascript, Neobook script, Python*, other minor languages or macro scripting.

**Software:** *Operative systems* (Windows, multiple distributions of Linux (e.g. Ubuntu, Mint), Android). **Databases:** (BRAHMS; Access, Excel (professional level and scripting). **Phylogenetic analysis:** (WinClada, PAUP, MrBayes, JModelTest, MEGA, PhyML, ASTRAL). **Sequence analysis:** ipyRAD, MarkerMiner, Codon Code Aligner, Sequencher).

**Molecular biology:** DNA extraction, PCR amplification, Sanger sequencing, High-throughput sequencing samples and library preparations.