

Jury report

East-West Seed Thesis Award for Plant Sciences 2018

A. (Amber) Woutersen MSc, University of Amsterdam

The Origin and Evolution of the Nitrariaceae. An integrative study to the steppe-desert taxon Nitraria and its development at the Tibetan Plateau

Amber Woutersen was born in 1994 and defended her MSc thesis in Biological Sciences, in particular Ecosystem and Landscape Dynamics, at the University of Amsterdam in April 2018. Her thesis, entitled “The Origin and Evolution of the Nitrariaceae, an integrative study to the steppe-desert taxon Nitraria and its development at the Tibetan Plateau”, resulted in two manuscripts for publication in international peer reviewed journals. The research project was supervised by Dr. Carina Hoorn, and was carried out in collaboration with scientists from eight universities worldwide. However, Amber designed the project herself, collected a wide array of data, based on traditional and new palynological techniques, including chemical cell wall analysis by Fourier-transformed infrared spectroscopy, analysed the data using multivariate analyses, and wrote an excellent thesis and two manuscripts. Completing the whole research process, starting from the inception of the research to publishing papers is truly outstanding for an MSc student. Indeed, her supervisor mentioned that Amber was an ‘exceptional student’.

The jury members of the ‘East-West Seed afstudeerprijs voor Plantenwetenschappen’ read Amber’s thesis with much interest and admiration. The outline is logical and sufficiently detailed, the abstract is clear and concise, the introduction contains an excellent historical, botanical and taxonomic overview, a detailed description of the environment where the genus Nitraria is found, and a logical set of research aims. Unique aspects of the research are pointed out. The methodology section presents a clear overview of the origin of the data (with proper reference to collaborators), the pollen processing techniques, the light microscopic and scanning electron-microscopic observations, the FITR microspectroscopic methods, and the multivariate analyses used. The results are remarkable in that separate multivariate analyses of the morphological and chemical traits show very similar groupings of fossil and extant species. The geographic distribution of the species appears congruent with the outcomes of the multivariate analyses. Finally an excellent discussion is presented of the most important results and conclusions, in particular the convergence of morphological and chemical analyses and of the fossil and extant species. The novelty of the chemical palynological approach is pointed out, and the implications for evolution and species distribution are discussed. Throughout the thesis reference is made to all relevant literature. Thus, the jury members were unanimous in their judgement of this thesis: absolutely EXCELLENT.

The jury and members of the Koninklijke Hollandse Maatschappij der Wetenschappen (KHMW) congratulate Amber Woutersen with getting the ‘East-West Seed Afstudeerprijs voor Plantenwetenschappen’. This achievement is well-deserved! Congratulations!

Prof. dr. ir. A.H.C. (Ariena) van Bruggen, hoogleraar plantenziektkunde Universiteit van Florida in Gainesville

Prof. dr. E.F. (Erik) Smets, hoogleraar systematische botanie Universiteit Leiden, wetenschappelijk directeur Naturalis Biodiversity Center, buitengewoon hoogleraar Katholieke Universiteit Leuven

De jury vergaderde op 12 november 2018 onder leiding van Ir. B.M.Th. Dortland-Bier, oud-secretaris KHMW. Tevens was ter vergadering aanwezig Drs. S. van Manen, secretaris.