Unraveling the cold response in Draba

von Meijenfeldt, N.

Citation for published version (APA):
von Meijenfeldt, N. (2010). Unraveling the cold response in Draba
Born in 1978 in a political and socially engaged family, Noemi spent her first four years in the secure surroundings of the old inner city of Wijk-bij-Duurstede, at the border of the Rhine in the central province of Utrecht in The Netherlands. Wijk-bij-Duurstede was called Dorestad in the past, the foremost international trading center between the 7th and 9th century and the meeting place between Christianity of the Frankish empire and the pagans of northern Europe. Fertile ground for a future cosmopolitan woman to grow up in.

A child of working parents, Noemi enjoyed her first formative education at a new innovative school established at the initiative of parents in Wijk-bij-Duurstede, a school based on Jenaplan educational principles. This type of education put much emphasis on sharing experience in groups and on developing the autonomy of the child.

Holidays were spent along the beaches of precious Vlieland, an island in the world heritage protected Wadden Sea. Wherever the journeys through the world were going to bring Noemi, her footprints lie in the sand of Vlieland.

At the age of five, the Dutch setting changed with the decision of her parents to take up professional assignments in southern Africa, with the family moving in 1984 to for them unknown Harare, the capital of newly independent Zimbabwe. Noemi and her brother entered the Lewisam primary school in Lewisam, Harare, a school based on the traditional English schooling system. No more innovation but classical education including funny school uniforms and merit reward systems. From one day to the next, all communication took place in the English language. Noemi coped well with this transfer, mastered her English and established a new network of school friends in a matter of weeks.

Although Zimbabwe and southern Africa were in turmoil at the time because of the destabilization of the South African apartheid regime, the four years spent in Zimbabwe between 1984-1988, allowed the family to visit and discover all corners of that beautiful country with its remarkable flora, fauna and geology. During holidays, Noemi went on bush camps, an experience that may well have triggered her interest in nature and biology.
Returning to Europe in 1988, the family settled in Leuven, Belgium, where Noemi was to spend the longest period of her formative years until 1996. She entered the Flemish Catholic educational system and spent most of her Belgium years at the Heilige Hart School, a big educational center of over 3000 students, in Heverlee, Leuven. When she entered, it was an all girl school, by the time she left boys were also allowed. At this school, she followed a curriculum dominated by science subjects. Her biology teacher would once, now famously, remark, that: ‘Noemi was not suitable to pursue biology’.

When the family moved to Stockholm, Sweden in 1996, Noemi chose to return to the British educational system to pursue an International Baccalaureate at the Kungsholmens Gymnasium in Kungsholmen, Stockholm. She received her A-levels in 1998. One of her subjects was Biology for which she wrote an interesting thesis about: ‘The effect of eutrophication on Fucus vesiculosus in the Baltic Sea’. Her interest in the Baltic Sea and Gulf of Bothnia was certainly influenced by the interest and skills in sailing which she enthusiastically developed living at the waterfront of Stockholm’s archipelago.

Amsterdam became the next destination and the University of Amsterdam Noemi’s ‘alma mater’ for pursuing her academic faculties. It meant home-coming to The Netherlands after 14 years living and studying in other countries and cultures. In her first year she took up Economics, but returned to her favorite subject of Biology in her second year, to complete her Masters cum laude in 2005 and to continue with her PhD research project completed in 2010.

One of her Master thesis’ projects on ‘Differences in seed influx, seedling survival and microclimate between forest interiors, forest edges, and solitary trees in a fragmented tropical, wet premontane forest, Costa Rica’ brought her for half a year to Cloud Forests of Monteverde in the Central American cordilleras of Costa Rica. Recognizing that tropical forests are with alarming speed replaced for various forms of commercial land use, efforts have to be undertaken to protect these forests and promote the regeneration of disturbed ecosystems. Abseiling skills learned in Zimbabwe as a child came to scientific use when Noemi had to climb 72 trees of heights up to 24 meters to place traps to capture seeds and instruments to measure weather conditions. She survived and enjoyed this field work, sharing a modest wooden tools shack with her fellow Master student Hanneke de Leeuw, two other fieldworkers and numerous rodents and insects. Apart from the fieldwork experience, she added Spanish to the modern languages she had already acquired in her journey through life.

Her second Master thesis was on the ‘Cold response in Arabidopsis and Draba’, which became an introduction to her subsequent PhD research. This time, her fieldwork brought her to the high-altitude cold and wet Andean Páramo of Ecuador in search for this somewhat elusive plant. The environmental hardships, a nasty mugging and bureaucratic obstacles, did not stop Noemi in ‘harvesting’ the seeds of the species where she had come for. Back at the Universiteit van Amsterdam, a climate cabinet was bought to imitate the cold climatic conditions of the habitat in the high Andes, the biotope of some of the Draba species, the object of her research. Endless hours (including during the night) were spent in the university’s greenhouse and laboratory nurturing the plants and harvesting DNA at various time points during the cold treatment. Laboratory tests on the DNA material had to establish the specifics of the cold response of Draba, the outcome of which is the subject of this thesis.

The researcher herself proved stress resistant with the completion of the research project under often challenging conditions and with the writing of the thesis.

Photographic representation of research methods and instruments used →