



## Weeding the nettles III: Named nonsense versus named morphotypes in European *Urtica dioica* L. (Urticaceae)

BERNADETTE GROSSE-VELDMANN<sup>1</sup> & MAXIMILIAN WEIGEND<sup>1</sup>

<sup>1</sup>Nees-Institut für Biodiversität der Pflanzen, Rheinische Friedrich-Wilhelms-Universität Bonn, Meckenheimer Allee 170, D-53115 Bonn, Germany.

E-mail: [mweigend@uni-bonn.de](mailto:mweigend@uni-bonn.de)

### Abstract

*Urtica dioica* L. in its wider sense is reported from nearly all temperate zones of the world, from throughout Eurasia, from North America and South America, from S Africa and New Zealand. In Europe, over 70 infrasubspecific names referable to the widespread and often weedy *U. dioica* subsp. *dioica* have been used in one form or another; over 40 of them are formally described. Many of these names are invalid and/or superfluous. However, several identifiable morphotypes can be found, which are stable in cultivation and usually occur in several different regions of Europe and/or are characterized by some type of habitat preference. These morphotypes in their most characteristic expression are quite well differentiated, but are connected by a continuous series of intermediates in nature. As a working hypothesis we here propose the tentative recognition of the following five morphotypes: *U. dioica* subsp. *dioica* var. *dioica*, -var. *hispida*, -var. *sarmatica*, -var. *holosericea*, and -var. *glabrata*. A characterization of each morphotype and corresponding synonyms are presented here based on extensive field studies, literature and herbarium studies and cultivation of material. Lecto- and neotypes are designated where necessary for some of the more important names.

**Key words:** *infraspecific taxa*, *stinging nettle*, *taxonomy*

### Introduction

The genus *Urtica* is taxonomically difficult and the bulk of the problems are centred around the perennial, rhizomatous taxa which are loosely associated with the name *Urtica dioica* Linnaeus (1753: 984) and its plethora of named infraspecific entities (Weddell 1856, 1869, Schreiber 1981). The past years have brought considerable progress in the taxonomical re-definition of individual components of this complex (Weigend 2005, 2006, Weigend & Luebert 2009, Henning *et al.* 2014). Especially the molecular studies in Farag *et al.* (2013) and Henning *et al.* (2014) for the first time permitted the identification of a monophyletic entity around *Urtica dioica* in the strict sense and the exclusion of numerous, superficially similar taxa from Australasia, E Asia, and the Americas from a more narrowly re-defined *Urtica dioica* s.l. This *Urtica dioica* s.l. is thus re-defined as a complex largely restricted to central and western Eurasia and Africa. As circumscribed by the phylogeny of Henning *et al.* (2014), these taxa are characterized by perennial, rhizomatous habit, ovate achenes and polygamy: The bulk of a clone is unisexual, but up to 10% of the clone can have both male and female flowers on the same plant (Heemskerk *et al.* 1998). The vast majority of other taxa in *Urtica* are strictly monoecious, including the American taxa that until recently were included in *U. dioica* (Henning *et al.* 2014).

Molecular and morphological analysis permitted the removal of several taxa from *U. dioica*, somewhat simplifying taxonomy: *Urtica dioica* subsp. *gracilis*, *U. dioica* subsp. *holosericea* and closely allied *U. mollis* and *U. aquatica* have all been removed as subspecies to *U. gracilis* (Henning *et al.* 2014). Similarly, New Zealand specimens of *U. dioica* have been shown to belong to *U. incisa* Poir. (1816: 224) and Chinese material previously assigned to *U. dioica* has been shown to actually belong to an entirely unrelated complex around *U. cannabina* L. (1753: 984). Also, several morphologically well-characterized western Eurasian taxa were elevated to subspecies rank: *Urtica dioica* subsp. *afghanica* and *U. dioica* subsp. *kurdistanica*, both from Iran, Iraq and Afghanistan; *U. dioica* subsp. *pubescens* from southern and eastern Europe; *U. dioica* subsp. *cypria* from Cyprus, *U. dioica* subsp. *subinermis* from western European riparian habitats; and *U. dioica* subsp. *sondenii* from Scandinavia. These infraspecific entities are morphologically, ecologically and geographically defined and capture a considerable part of the morphological diversity in western Eurasian *Urtica dioica*.