



SWEDISH TAXONOMY INITIATIVE PROJECT REPORT

Project period: 2002–2007

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VASCULAR PLANTS:

The Hawkweeds (*Hieracium* L. s. str., Astera- ceae, Tracheophyta) of Sweden

The genus *Hieracium* with more than 2000 species is by far the most species-rich plant genus in Sweden.

However, prior to this project there was no living botanist in Scandinavia who could identify any *Hieracium* species, and the vast literature, mainly from the period 1880–1935 was difficult to access and overview. In addition, there was no accepted taxonomy above the level of individual species and hardly anything was known about the structure and evolution of the perplexing variation observed.

The aims of this project thus became to 1) establish the correct nomenclature for the species, 2) revise and describe all species from each Swedish province in a standardized and comparable way, 3) to map the distribution of all species and analyse their conservation status, 4) to study the general structure of both morphological and molecular variation within the genus and, 5) to encourage an interest in *Hieracium* among Swedish botanists such that the knowledge of these plants will not be forgotten once more.

During the project the nomenclature of all 931 species referable to the sections *Hieracium*, *Vulgata* and *Bifida* has been investigated and 545 names have been lectotypified. All 714 species of these sections known from approximately the southern half of Sweden have been revised and presented with standardized descriptions in regional monographs with illustrations and identification keys, and 22 species have been described anew.

Virtually all known records of the treated species within the southern half of Sweden have been databased so that distribution maps may be produced and the conservation status may be assessed. Apart from all old records, several thousand new observations have been obtained during field trips to various parts of the country and from all those local botanists that have been encouraged to study and collect Hieracia, and all these records have been included in a database that now holds 28 362 entries.

The general pattern of morphological variation has been studied by means of multivariate analyses based on all treated species and 43 independent characters resulting in the erection of the new section *Bifida* and the proposition of 38 informal species-groups.

Ploidy level analysis has been performed on 242 species showing that, contrary to previous suppositions, triploids and tetraploids are approximately equally common in Sweden.

Nuclear microsatellite markers have been developed and the chloroplast genome has been screened for variation. Both kinds of markers have been applied to ca 600 representatives of the genus but the data thus obtained has yet not been fully analyzed.

More than 50 Swedish botanists have become interested and involved in the project and some of them have undertaken independent investigations ensuring that the knowledge about Swedish *Hieracia* will be passed on to the future.

The project has concentrated on the most species-rich and widely distributed sections *Hieracium*, *Vulgata* and *Bifida*, but information about nomenclature, and from molecular markers has been obtained also from the sections *Oreadea*, *Alpestris*, *Foliosa*, *Prenanthoidea* and *Tridentata*.

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