



**Sveriges virtuella herbarium**  
**Virtual Herbarium of Sweden**

Stefan Ekman



## Virtual Herbarium of Sweden



- ❑ Started in 2005 by Håkan Wittzell, Lund University, and Roland Moberg, Uppsala University
- ❑ Cooperation between major public herbaria in Sweden
- ❑ Digitisation of Swedish/Nordic herbarium specimens according to priority + joint database and website
- ❑ Support from Swedish Taxonomy Initiative (Svenska artprojektet)
- ❑ Priorities governed by the STI
- ❑ Poorly known groups, basically cryptogams, with higher priority
- ❑ Vascular plants only recently being digitised

# Virtual Herbarium of Sweden

- ❑ 5.5 million herbarium specimens
- ❑ 2.3 million are Swedish
- ❑ 1.2 million vascular plants as of Feb 2024

	UPS	LD	GB	S	UME	OHN
<i>Hieracium, Pilosella</i>	100%	100%	5%	75%	25%	100%
<i>Rubus</i>	100%	100%	5%	75%	10%	100%
<i>Alchemilla</i>	100%	100%	100%	75%	100%	100%
<i>Taraxacum</i>	100%	100%	5%	75%	40%	100%
<i>Salix</i>	100%	100%	5%	60%	10%	100%
Monocotyledons	80%	95%	15%	75%	15%	95%
<i>Rosa</i>	10%	100%	100%	30%	5%	100%
Ferns s. lat.	40%	100%	100%	75%	100%	100%
<i>R. auricomu s. lat.</i>	10%	100%	0%	25%	25%	100%

Status among vascular plants Feb 2024, Swedish specimens

# Coordinates

- ❑ Among the 2.3 million Swedish records, ca 20% have a coordinate from:
  - label data
  - manual geocoding from label data
  - locality database generated within the project (with low—high accuracy)
- ❑ 90-95% also have a parish centroid with (mostly) low accuracy
- ❑ 56% of Swedish records in UPS with a lat-long coordinate (excl. parish centroids) lack accuracy information
- ❑ Historically, low accuracy has often been represented with coordinate imprecision
- ❑ Proper coordinates should have high precision (say 5 decimals in DD) and specified accuracy
- ❑ Coordinates + accuracy remain an Achilles' heel in Swedish museum databases

# Virtual Herbarium of Sweden

<http://herbarium.emg.umu.se/>

**This is a joint search page for Sweden's six largest herbaria. 5.4 million specimens and 100,000 images can be searched from**

Göteborg <a href="#">GB</a> - Herbarium GB	(25% of the collection, updated 2023-03-07)
Lund <a href="#">LD</a> - Botaniska museet	(50% of the collection, updated 2024-12-04)
Oskarshamn <a href="#">OHN</a> - Biologiska museet	(100% of the collection, updated 2025-01-11)
Stockholm <a href="#">S</a> - Naturhistoriska riksmuseet	(54% of the collection, updated 2024-10-07)
Umeå <a href="#">UME</a> - Herbarium UME	(49% of the collection, updated 2024-05-20)
Uppsala <a href="#">UPS</a> - Evolutionsmuseet Botanik	(33% of the collection, updated 2023-02-22)

**Search alternatives**  
[Search specimens](#) – Easy-to-use search form using preset alternatives for taxonomy and geography.  
[Cross browser](#) – Enables listing of specimens filed under any combination of taxonomy and geography.  
[The locality database](#) - Enable searching and downloading of the locality database used for mapping specimens to coordinates.  
[Check Coordinate](#) Converting coordinate and look up Provinces/District.

**Maps (through Google maps)**  
Maps showing the location of collection sites can be made from any specimen list (click on “Map”), but they will only include specimens provided with coordinates or, for Sweden, with “district” [i Sverige socken/församling]. Please be aware of that records with erroneous coordinates are also plotted. Records that don't appear on the maps can be listed by clicking the figure showing the actual number of unmapped records..

**Precautions concerning reliability of data**  
**Determinations are not definitive.** Herbarium specimens are filed according to the most recent determinations, and these are by no means definitive. Parts of the material, e.g. certain families, genera [släkten] or species [arter], have been reviewed by specialists, but most of the specimens have never been checked critically, and new material may have been accessed after a certain taxon was under review. The entered determinations should thus not be regarded as completely trustworthy, and we strongly advise that the actual specimens should be checked before records based on our material is included in a publication. To secure this, all serious workers are welcome as visitors. Loans of specimens (limited numbers) can also be arranged to botanical institutions worldwide.  
**There will always be errors.** Errors occur, e.g. due to difficulties with the interpretation of labels, or to mistakes made by us during the entering process. We like feedback, and will be happy to receive reports on errors, and suggestions of improvements. Please notify us at [mossnisse@hotmail.com](mailto:mossnisse@hotmail.com), and include a copy of the URL of the page in concern into your message.

**The taxonomic classification**  
Bryophytes (families and higher) follows Bryophyte biology 2nd edition by Goffinet, B and Shaw, J.A. (2008).  
Ascomycetes uses Outline of Ascomycota – 2007 by Lumbsch et al. (2007). Myconet 13.  
Lycophytes and ferns (families and orders) follows A linear sequence of extant families and genera of lycophytes and ferns by Christenhusz, M.J.M., Zhang, X-C. & Scheider, H. 2011. Phytotaxa 19:7-54.  
Angiosperms (orders) follows An update of the Angiosperm Phylogeny Group classification for the orders and families of flowering plants: APG III by THE ANGIOSPERM PHYLOGENY GROUP. (2009). Botanical Journal of the Linnean Society, 161: 105–121.  
Gymnosperms (families and orders) follows A new classification and linear sequence of extant gymnosperms by Christenhusz, M.J.M., Reveal, J. L., Farjon, A., Gardner, M.F., Mill, R.R. & Chase, M.W. (2011). Phytotaxa 19: 55–70  
Smut Fungi follows Smut Fungi of the World by Vánky. K. (2012)

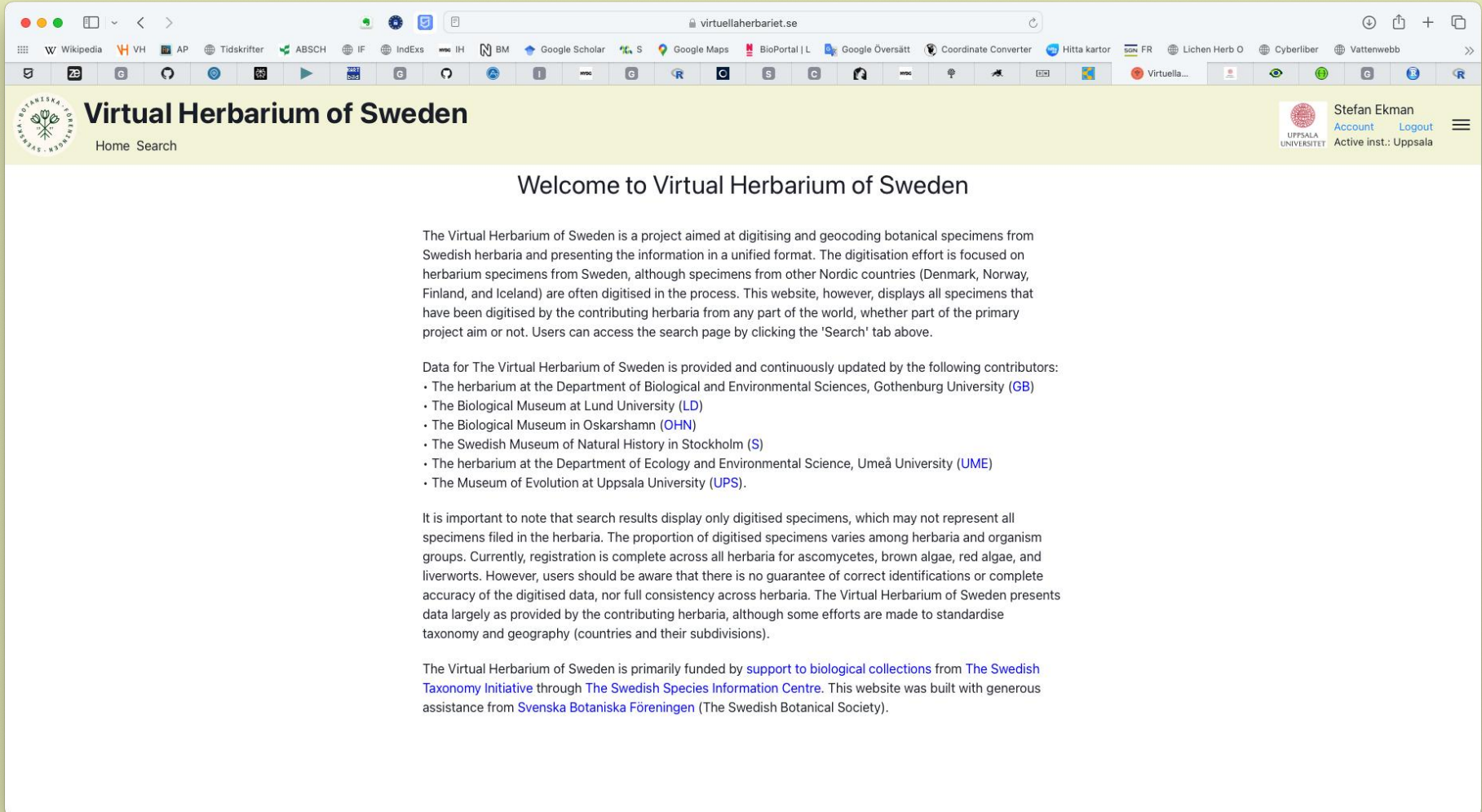
[List of Nordic herbaria](#)  
[Some databases relevant for botanists and Herbaria](#)

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Old database, now being outgrown

# Virtual Herbarium of Sweden

New database: <https://virtuellaherbariet.se>



The screenshot shows a web browser window displaying the homepage of the Virtual Herbarium of Sweden. The browser's address bar shows the URL [virtuellaherbariet.se](https://virtuellaherbariet.se). The page header includes the site logo on the left, the text "Virtual Herbarium of Sweden" with "Home Search" links, and a user profile for "Stefan Ekman" with "Account" and "Logout" links, and "Active inst.: Uppsala" on the right. The main content area features a "Welcome to Virtual Herbarium of Sweden" heading, followed by a paragraph explaining the project's goal of digitising and geocoding botanical specimens from Swedish herbaria. Below this is a list of contributors: Gothenburg University (GB), Lund University (LD), Oskarshamn (OHN), Stockholm (S), Umeå University (UME), and Uppsala University (UPS). A note states that search results only show digitised specimens. The footer mentions funding from the Swedish Taxonomy Initiative and Svenska Botaniska Föreningen.

**Virtual Herbarium of Sweden**  
Home Search

Stefan Ekman  
[Account](#) [Logout](#)  
Active inst.: Uppsala

## Welcome to Virtual Herbarium of Sweden

The Virtual Herbarium of Sweden is a project aimed at digitising and geocoding botanical specimens from Swedish herbaria and presenting the information in a unified format. The digitisation effort is focused on herbarium specimens from Sweden, although specimens from other Nordic countries (Denmark, Norway, Finland, and Iceland) are often digitised in the process. This website, however, displays all specimens that have been digitised by the contributing herbaria from any part of the world, whether part of the primary project aim or not. Users can access the search page by clicking the 'Search' tab above.

Data for The Virtual Herbarium of Sweden is provided and continuously updated by the following contributors:

- The herbarium at the Department of Biological and Environmental Sciences, Gothenburg University ([GB](#))
- The Biological Museum at Lund University ([LD](#))
- The Biological Museum in Oskarshamn ([OHN](#))
- The Swedish Museum of Natural History in Stockholm ([S](#))
- The herbarium at the Department of Ecology and Environmental Science, Umeå University ([UME](#))
- The Museum of Evolution at Uppsala University ([UPS](#)).

It is important to note that search results display only digitised specimens, which may not represent all specimens filed in the herbaria. The proportion of digitised specimens varies among herbaria and organism groups. Currently, registration is complete across all herbaria for ascomycetes, brown algae, red algae, and liverworts. However, users should be aware that there is no guarantee of correct identifications or complete accuracy of the digitised data, nor full consistency across herbaria. The Virtual Herbarium of Sweden presents data largely as provided by the contributing herbaria, although some efforts are made to standardise taxonomy and geography (countries and their subdivisions).

The Virtual Herbarium of Sweden is primarily funded by [support to biological collections](#) from [The Swedish Taxonomy Initiative](#) through [The Swedish Species Information Centre](#). This website was built with generous assistance from [Svenska Botaniska Föreningen](#) (The Swedish Botanical Society).

# Virtual Herbarium of Sweden

- ❑ New database at the outset with slightly reduced functionality, but:
  - Fast
  - Simpler to maintain and modify
  - Simpler to upload data
  - Less data postprocessing
- ❑ Responsibility for data quality moving to providers
- ❑ PostgreSQL; data sets kept in separate text files
- ❑ Developed by Nicklas Strömberg with support from SBF

# Virtual Herbarium of Sweden

The screenshot shows a web browser window displaying the Virtual Herbarium of Sweden website. The browser's address bar shows the URL `virtuellaherbariet.se/record/LD/2105937`. The website header includes the logo of the Botanical Society of Sweden, the text "Virtual Herbarium of Sweden", and navigation links for "Home" and "Search". On the right side of the header, there is a user profile for "Stefan Ekman" with links for "Account", "Logout", and "Active inst.: Uppsala".

A modal form titled "Rapportera fel" (Report error) is overlaid on the page. The form contains the following fields and options:

- A close button (X) in the top right corner.
- Text: "Har du hittat fel i innehållet så kan ni rapportera det här till berört herbarium" (Have you found an error in the content so you can report it here to the relevant herbarium).
- Form fields: "Herbarium:" with the value "LD" and "Belägg:" with the value "2105937".
- Text: "Beskriv vad som är fel:" (Describe what the error is) followed by a text input area.
- Text: "Dina kontaktuppgifter:" (Your contact information) followed by input fields for "Namn" (Name) and "E-postadress" (E-mail address).
- A reCAPTCHA widget with the text "reCAPTCHA Integritet - Villkor" (reCAPTCHA Privacy - Terms).
- A blue button at the bottom labeled "Skicka in rapporten" (Submit report).

Built-in function for reporting incorrect specimen data



*20 years and still  
going strong!*

*Thank you!  
Questions?*

