

Swedish provincial Floras – a survey of their history and present status

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ABSTRACT

Swedish provincial floras have a history dating back to the 17th century. During the Linnaean era very few were written, but there was an upgrowth in the early 19th Century with Göran Wahlenberg. Towards the middle and end of the 19th Century many provincial Floras were written because of the needs of the secondary schools. A new upgrowth took place in the 1920s to 1940s largely by academic botanists in Uppsala. From the 1970s provincial Floras have been published or are under work for most of the 24 Swedish provinces, now largely based upon a broad amateur floristic interest.

PRE-LINNAEAN FLORAS

The history of Flora writing in Sweden starts before Linnaeus. In the 17th Century the great polymath Olof Rudbeck the elder was the dominant figure at Uppsala university. Amongst many other things, he was the founder of the botanic garden and the author of the massively ambitious botanical work *Campus Elysii*, most of which was destroyed in the Uppsala fire in 1702. Rudbeck fostered a particular interest and knowledge in botany in a number of medical students, which subsequently led to some botanical activity in the Swedish provinces. After Rudbeck the elder died in 1702, the botanical interest he stimulated lived on with his son Olof Rudbeck the younger and the medical professor Lars Roberg. This was an essential precondition for Linnaeus' botanical development. The younger Rudbeck had reported on and illustrated the flora of Lapland in 1695, and Roberg made observations on the flora of parts of Uppland, the province in which Uppsala is centrally placed.

The earliest example, however, of what can be called a provincial Flora is from 1694, *Chloris gothica* by Olof Bromelius (1694), an enumeration of the plants Bromelius knew from his home town of Gothenburgh and its nearest surroundings.

Another fine example of a pre-Linnaean Flora is the "Flora wiksbergensis" by a physician Johan Linder from 1716. It is, in fact, of a very restricted area, but unusually complete and accurate. A modern edition with detailed annotations has been produced by Clemedson (1972).

LINNAEUS AND HIS DISCIPLES

During the first decades of the 18th Century the dean of Uppsala Cathedral, Olof Celsius, took a profound interest in the flora of the province of Uppland. He collected a large herbarium, two sets of which still exist, but he did not bring all his knowledge together in published form, except for a brief catalogue (Celsius 1732). He is, however, known as the man who "discovered" Linnaeus in Uppsala. Freshly arrived as a student, Linnaeus encountered Celsius in the Botanic Garden and made such an impression that he was immediately taken under Celsius' wing. They made trips together and collected in Uppland, and Linnaeus prepared a small manuscript with a provincial theme, "Adonis uplandicus", which, however, was not printed in his lifetime (Linnaeus 1888).

There is among all Linnaeus' works only one that may be reckoned as a provincial Flora, *Flora lapponica* (Linnaeus 1737). This is, however, not restricted to Lapland but includes the plants Linnaeus found along his whole journey from Uppsala to the north and back. But plants from northern Sweden dominate by far and the mountain flora is well represented, thanks to the lucky circumstance that the areas Linnaeus visited are, as it later appeared, among the richest that we have. The geographical information given in the Flora is scarce, and the specimens collected,

forming the Lapland herbarium (now in Institut de France, Paris), lack locality annotations. You have to compare the book with his diary to try to locate his findings. Besides that Flora from his young days – during the Lapland tour in 1732 he was just 25 – his works are on a national or mostly a general scale. Among the many theses defended by Linnaeus' disciples, but usually written by the professor himself, there are but a few floristic pieces, which just enumerate the plants from a place. Linnaeus did not directly inspire floristics, though within the Linnaean botanical tradition, which grew strong during the 19th Century, local and provincial Floras obtained a prominent place.

It is with Göran Wahlenberg, first demonstrator and then professor of botany in Uppsala from 1828 to his death in 1850, that provincial Floras in a proper sense were produced. Wahlenberg was an ardent Linnaean for whom the Linnaean system was nearly sacrosanct and for him only Latin was imaginable as the language of botany, even in Floras of Sweden which others decades before had written in Swedish. But Wahlenberg was an innovator in his understanding of plant geography and the inclusion of locality information in Floras. A masterpiece in that respect is his *Flora upsaliensis* (Wahlenberg 1820), covering the area within approximately 20 km of the city of Uppsala. This Flora is detailed enough to allow a fruitful comparison with present conditions and an estimation of the environmental and floristic changes. Like Linnaeus, Wahlenberg (1812) wrote a *Flora lapponica*, very unlike his master's except for the sexual system and the Latin language used. Wahlenberg was the leading expert on the Scandinavian mountain flora of his time and gives rich and exact information on plant localities and habitats, founded upon his experience from four journeys to various parts of northern Scandinavia.

Flora Nordica provinces in Sweden (S)

BhG	Göteborg and Bohuslän
Bl	Blekinge
Dlr	Dalarna
Dls	Dalsland
Gst	Gästrikland
Gtl	Gotland
Hl	Halland
Hls	Hälsingland
Hrj	Härjedalen
Jmt	Jämtland
Klm	Östra Småland
LL	Lule lappmark
LyL	Lycksele lappmark
Mpd	Medelpad
Nb	Norrbottnen
Nrk	Närke
PL	Pite lappmark
Sk	Skåne
SmI	Inre Småland
Srm	Södermanland
TL	Torne lappmark
Upl	Uppland
Vb	Västerbotten
Vg	Västergötland
Vrm	Värmland
Vsm	Västmanland
Ång	Ångermanland
ÅsL	Åsele lappmark
Ög	Östergötland
Öl	Öland

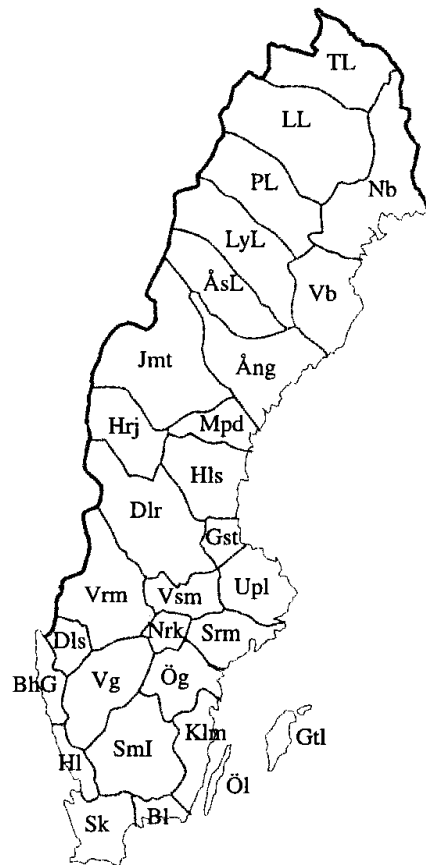


FIGURE 1. Map of the Swedish floristic provinces, corresponding to the historical provinces, "landskap", with few exceptions. The most important are that "SmI and Klm" form the historical province of Småland, and that "ÅsL, LyL, PL, LL, TL" form that of Lapland.

NINETEENTH CENTURY 'SCHOOL FLORAS'

After Wahlenberg, who can be said still to represent the Linnaean period, there were few more ambitious provincial Floras published until the middle of the century. When they did reappear, they were no longer academic pieces of work, but grew up from the needs of the reform of secondary schools which took place about 1850. Now natural sciences and not least natural history obtained a comparatively prominent place in the teaching plan. Botany became in many places particularly favoured owing to teachers inspired by the Linnaean tradition. The pupils had to collect an admittedly modest number of plants during the summer holidays, as was still the case in the 1940s, but quite a few brought together imposing collections and maintained a lifelong botanical interest (Jonsell & Hultgård 1999). For those activities a number of provincial Floras were written, with the emphasis on keys and short descriptions rather than detailed locality information. The authors were, as a rule, teachers who had their education from the universities in Uppsala or Lund, often ending in a doctoral degree and the acquisition of a position in one of the provincial "gymnasia". The need for such Floras became much reduced when in 1883 a national Swedish school Flora appeared (Krok & Almquist 1883), the 28th edition of which was published in 2001. In Sweden there is no parallel to the Victorian heyday of county Flora writing we hear about from Britain (Preston 2003).

Floristic interest remained high, however, resulting in intense plant collecting during the decades around 1900. The leading amateurs were often physicians, apothecaries, priests and teachers with varying academic backgrounds. On the whole the flora was considered as static and inexhaustible as concerns plant collecting, which was regarded as an innocent occupation in the sunny countryside. Numerous reports on new finds and compilations about the flora of a parish were published, but no major provincial works were seen for many years.

TWENTIETH CENTURY REVIVAL AND TWENTY FIRST CENTURY PROSPECTS

A revival of interest took place in the 1920s, and again arose from the academic sphere. The Swedish Phytogeographical Society was founded in Uppsala in the 1920s, and reflected amongst other things an ambition to analyse the floristic elements and floristic history of Sweden, which gave rise to some academic theses. The earliest one is a monumental work about the flora and vegetation of Uppland (Almquist 1929), not really esteemed as an academic work in its day but the more appreciated today for its wealth of accurate information which, unusually enough, makes possible quite detailed comparisons with our time. The Baltic island of Öland (Sterner 1938), so famous for its rich and peculiar flora, and parts of Lapland (Arwidsson 1943, Selander 1950) also received detailed and scholarly presentations. For a few other provinces Floras were written without the academic connection. Those for Jämtland (Lange 1938), Bohuslän (Fries 1945, 1971) and Dalarna (Almquist 1949) are good examples.

The modern time for provincial Floras does not start, however, until about 1970, and initiatives came from people in the provinces, no longer from university institutions. A forerunner is a Flora of the southernmost and botanically very rich province of Skåne (Weimarck 1963), which is, however, focused on keys and descriptions and has only short pieces of locality information. The geographical units for this kind of Flora have in Sweden with few exceptions been the historical provinces (in Swedish "landskap"; Fig. 1), the folk lands rooted in early mediaeval times but for more than 350 years of no official standing. In tradition and in spirit they are in high degree alive, and have their well defined borders which have the great advantage of being stable in contrast to those of the administrative counties. In contrast to the British vice-counties our old provinces are well known to everybody – people regard themselves as coming from, say, Uppland, Öland or Småland, which are only historical entities today. There are 24 of those provinces, which means that most of them are of considerable size, many times larger than an average vice-county. In Figure 2 a few provinces are superimposed upon a map of Britain. The northern province of Norrbotten covers in length the most of Scotland, Småland, Linnaeus' birth province, the whole of the Midlands and a part of Wales, and Uppland corresponds to Yorkshire. The smallest Swedish province, Närke, covers a little more than the Greater London area.

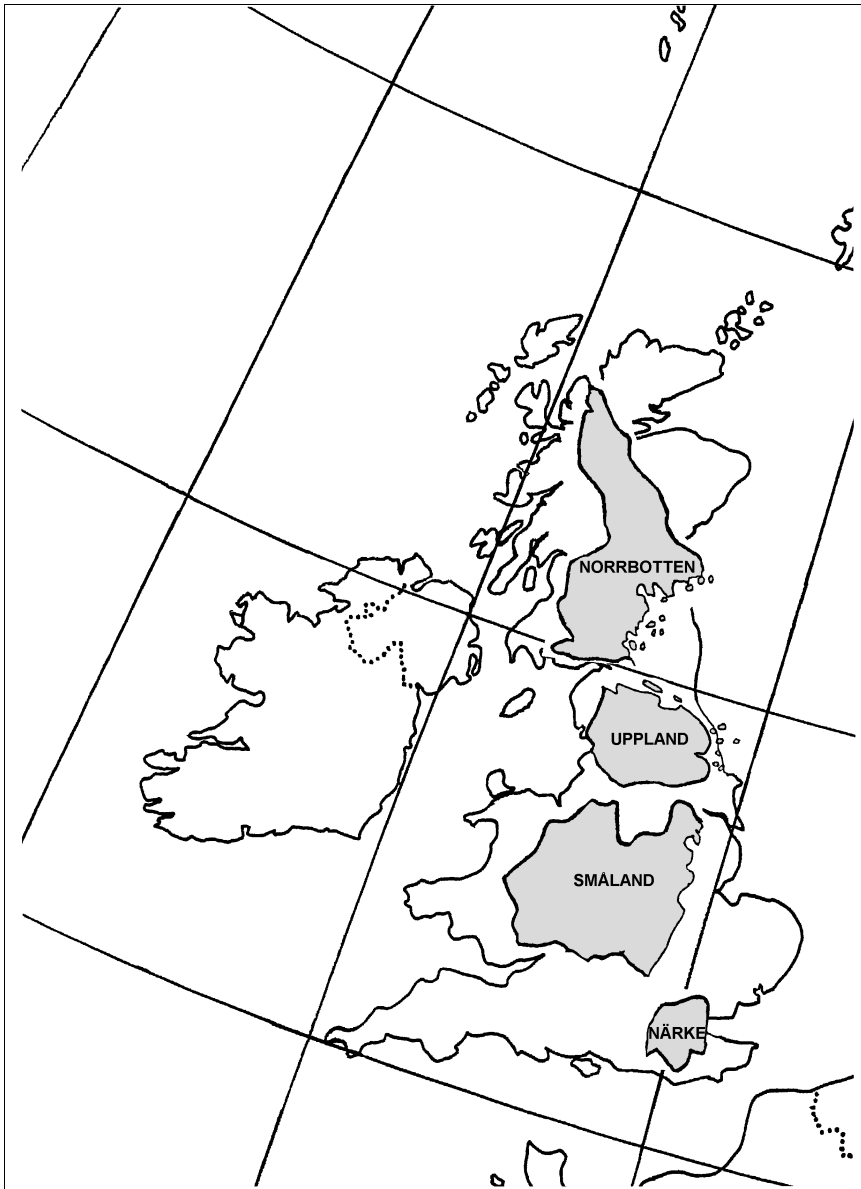


FIGURE 2. Map of Britain with four Swedish provinces superimposed.

At present, practically all the Swedish provinces have their Flora projects, some of them completed during the last 10-15 years, some of them close to completion within a few years time, others still in the inventory phase. There is no central initiative behind this series of Flora projects. The earliest ones, now all completed, were one-man projects with limited assistance from others even in the inventory phase and with no formal organization behind them – examples are the Floras of Östergötland (Genberg 1977, new ed. 1992), Dalsland (Andersson 1981) Västmanland (Malmgren 1982), Öland (Sternér & Lundqvist 1986), Ångermanland (Mascher 1990), Härjedalen (Danielsson 1994). Two of them were in fact accepted as academic theses, and the one for Öland is a thoroughly revised and amended edition of Sternér (1938). These enterprises of course

challenged other provinces to launch Flora projects, usually starting with the formation of a provincial botanical society to take responsibility for the work. A very important stimulus for these initiatives was and is the growing concern for conservation of the flora, alongside the profound transformation of the agricultural landscape, in particular, but also of forests, lakes, coasts, etc. This concern has made many more interested in and prepared to learn about the flora, and floristic activities are now much more widespread in society, far outside the academically educated to which they used to be restricted. In the current projects a few people are still the driving forces, of course, and there are still only marginal grants available, some obtained by selling information to nature conservancy authorities and the like. The inventory builds, however, upon a large team of amateurs and includes as a rule a measure of training in floristics on inventory camps. Some professional botanists are usually involved as well, and there are also links to the university institutions and botanical museums. Some of these team-work Floras have recently appeared: Halland (Georgson *et al.* 1997), Södermanland (Rydberg & Wanntorp 2001) and Västergötland (Bertilsson *et al.* 2002).

The Floras published in this “generation” have generally a high typographical standard, with colour plates of habitats and selected species. The “species part” indicating localities and often with maps takes the major share of the pages, but there are usually comprehensive chapters about the history of exploration, geology and climate, vegetation and habitats, and often a guide to places where visitors can get acquainted with the flora of the province.

Traditionally the church parish, which used to be the smallest unit in the Swedish administrative hierarchy, was also the unit under which localities were sorted in the Floras. It had the advantage of stable borders and historical continuity, so that all older records in herbaria and literature could be properly included. The earlier among the Floras mentioned above still use that system. Now a 5 × 5 km square, corresponding to the sheets of the “Economic map of Sweden”, is almost universally accepted as the base. This grid system, combined with coordinates for localities, of course allows storing and handling in databases in a way not possible before. The number of squares in a province amounts to 1350 in a large one such as Norrbotten in the very north, to more than 750 in the medium-sized central Swedish province of Uppland, and to c. 300 in a small south Swedish one such as Blekinge. The square is usually the main unit for records, but in more densely populated provinces and where the number of recorders is high the four “subsquares” of 2.5 × 2.5 km are in many cases taken as the record unit.

The conditions for the projects vary considerably. In a northern province like Norrbotten most squares were not previously visited by any botanist, and at the same time many of them are difficult to reach and the number of field workers is low. The eastern floristic element is well represented and may cause surprises, not only as to species found but also in the way in which familiar species vary. There are many habitats practically unknown in Sweden outside this province and there are some unregulated major rivers, which is now very rare. In such a province the research for the Flora entails a kind of basic exploration, which may well change the distributional picture for a number of species, not to mention the known frequency.

By contrast stand the provinces of Uppland and Skåne, with the old university cities of Uppsala and Lund, for which there were Floras of a sort by the 18th Century and where detailed works have appeared repeatedly into the 20th century. For Uppland Celsius (1732), Wahlenberg (1820) and Almquist (1929) have been mentioned. An extremely detailed new *Flora upsaliensis* (Almquist 1965) covers exactly the same area as that of Wahlenberg. For Skåne an early small Flora is Leche (1744), bigger and more detailed are Lilja (1838) and Areschoug (1882). There is also an atlas (Weimarck & Weimarck 1985) largely building upon numerous parish inventories during the preceding 60 or more years. All this makes it possible to present for many species documented comparisons of floristic changes, to which in addition a wealth of historical information from herbaria and literature contributes considerably. A good share of the project labour has to be devoted to compiling this kind of information.

The time needed for a provincial Flora project, from the start of inventories to the publication of a book, is generally 10–20 years, and that if no period of dormancy comes in between. It is a challenge for project leaders to keep up the spirits of a team for such long periods. The publication of provincial floristic journals reporting news and finds, and *ad hoc* reports of progress, are measures undertaken to achieve this. The Swedish botanical society arranges a yearly gathering for project leaders to discuss chosen topics and exchange their experiences. The prospects are promising that in about 10–15 years nearly every Swedish province will have its modern Flora.

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