



◀ **PLAQUE** that could be attached to natural monuments.

Red water lilies and other natural monuments

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In May 1905, the Academy of Sciences' nature conservation committee proposed that managing director Carl Sahlin (1861–1943) should be awarded the Academy's large silver J. A. Wahlberg commemorative medal for his “distinguished striving to protect the red water lilies in Lake Fagertärn”. Earlier that year, Sahlin had established protected status for Fagertärn to preserve the lake's water lilies, among them the rare red variety that was particularly sought after by both botanists and gardeners. According to Sahlin, one consequence of the great interest in the red water lily, “one of our country's very strangest natural monuments”, was that it risked extinction. He therefore regarded a protected status and a relatively high fine as the only way to protect this desirable plant. The price of a red water lily was 15–25 kronor in gardening catalogues, and a parent plant from Fagertärn was worth several times as much. Pressed specimens could also be sold to collectors, usually for five kronor each.

The red water lilies in Lake Fagertärn in Tiveden had been discovered in the summer of 1856 by a student, Bernhard Agaton Kjellmark. Information about the find was published in *Botaniska Notiser* [Botanical Notices] the same year and spread to botanists, both in Sweden and abroad. Many people wanted their own specimen of this plant, “the biggest and most beautiful flower in Europe”, according to the botanist Elias Fries. This unusual colour variety of the water lily was also sought after by many botanical gardens, including the one in Lund, where the red water lily came to be one of the most valuable

RED WATER LILY, drawn by Axel and Therese Ekblom ▶
for Veit Wittrock at the Bergius Botanic Garden.



Al. & Th. Ekblom pinx.

7-11 *Nymphaea alba* (L.) Presl var.
purpurea Fr.



12-20 *Nymphaea candida* Peesl var.
magnifica Wettl.

exchange plants in the system established for obtaining plants and seeds from botanical gardens around the world. Nurseries were also interested in getting rootstocks from the red water lily, which became a popular garden plant.

Among botanists, there was interest in colour variation in the flowers of the water lily genus. In 1894, botanist Rutger Sernander identified another species of water lily in Lake Fagertärn, one with both white and red varieties. According to Sernander, this was even rarer than the previously known red water lily. Hybridisation between the primary forms also gave rise to several different colour varieties in the water lilies, from white to red. However, it was unclear whether these forms represented separate species or just morphological variations of the flower colour within one species, something that apparently aroused the interest of Veit Wittrock, curator of the Swedish Museum of Natural History's botany department and director of the Bergius Botanic Garden. Wittrock was particularly interested in descriptive studies of genera with continuous morphological characters. Studying such genera and trying to characterise different species and varieties was a strong tradition in taxonomy in Sweden around 1900.

According to Wittrock, there were no less than seven different types of water lily in Fagertärn, leading him to claim that this lake was the richest site for water lilies anywhere in Europe. However, his detailed survey of the water lily genus was never published. A coloured plate remains in the Bergius Foundation's archive, which was planned as an illustration for the intended publication (see previous spread). It shows two different varieties of the red water lily, each with the relevant morphological details carefully reproduced and numbered, according to the time's conventions for botanical illustrations.

Distinctive, rare and critically endangered – the red water lily fulfilled several criteria for a natural monument at the start of the 20th century. It was probably the first species to be protected with reference to the concept of a natural monument. However, this occurred several years before Sweden had any nature conservation legislation and, according to Sahlin, the legal procedure was far from uncomplicated. Protecting the red water lily can be seen as an early expression of the striving for nature conservation that had then begun to blossom in Sweden, and which related to the preservation of both contiguous areas of land and single natural objects. It was primarily these single objects that came to be called natural monuments, even if the boundary between these and areas of land was somewhat unclear – these could also sometimes be defined as natural monuments.

Natural monument was an important concept in the early nature conservation movement. This was a direct translation of the German concept of *Naturdenkmal* and a clear expression of the influence that German conservation ideas had on their Swedish equivalent. In turn, *Naturdenkmal* is derived

from the German term *Denkmal*, monument, which was a name for the relics and objects that were part of the country's cultural heritage. While cultural monuments were a reminder of the nation's past, natural monuments were believed to testify to the country's original nature and its development.

The primary person to bring the concept of a natural monument into the Swedish context in the early 20th century was botanist and museum director Hugo Conwentz, one of Germany's leading advocates for nature conservation. He had close contacts with some of the early leaders in Swedish nature conservation, among them Alfred G. Nathorst, director of the paleobotany department at the Swedish Museum of Natural History and subsequently a member of the abovementioned nature conservation committee. In 1904, Conwentz visited Sweden on the invitation of Nathorst, to lecture about the idea of nature conservation. A couple of months later, the botanist Karl Starbäck put forward a motion in the Riksdag on the need for measures to protect "our country's nature and natural monuments". The motion, which was printed as a special supplement and supported by several members of the Academy of Sciences, eventually resulted in the nature conservation legislation of 1909. This entailed the Riksdag passing one act on national parks and one on the protection of natural monuments. Shortly afterwards, the Riksdag decided to establish ten national parks.

For the Academy of Sciences, the legislation meant that they were tasked with managing the national parks, producing descriptions and maps of them and publishing the results of the investigations that were conducted in them. It should also be an advisory body for natural monuments and have responsibility for drawing up a national register. The decision to protect a natural monument was taken by the relevant county administrative board (unless it was on state-owned land, in which case it was the government's decision), but the Academy of Sciences was the consultation body that decided whether a proposed natural monument was worth protecting or not. Thus, the Academy of Sciences had overarching responsibility as the expert body for early nature conservation. In addition to the tasks mentioned above, there was also an ambition to disseminate knowledge and to educate the public about conservation issues. In the introduction to the first national register of national parks and natural monuments, which was published in 1919, the Academy's secretary Christopher Aurivillius hoped that it would spread knowledge of what was being done to protect and preserve the uniqueness of Sweden's nature. This was not least the protected flora and fauna, where he appealed particularly to all biology teachers to instil youngsters with a love of nature, so that these regulations were not breached "in ignorance or unwise enthusiasm for collecting".

So, what were awarded protected status as natural monuments? According to the law, natural monuments were areas or natural objects "that are of

special interest for knowledge of the country's nature or, due to peculiar natural properties, should otherwise be protected for the future". In the reports and investigations prior to the legislation, its significance was described in more detail, but without real precision. It is apparent that it relates to rare and special natural objects such as endangered flora and fauna, unusual and peculiar geological formations, but also ancient trees and natural objects that are part of folk tales and legends. The motivation for protecting these natural monuments was thus scientific, aesthetic and cultural. The scientific reasons were strongly linked to the ongoing surveys of Sweden's nature and the research into evolution that was established at this time. It was important to save something of the pristine nature that was otherwise at risk of disappearing due to industrialisation and changing methods in silviculture and agriculture or, in some cases, trade and human exploitation. The scientific motivation thus had a strong preservation element, similar to that of German nature conservation. The objects and areas that were protected were often relics or rare incidences of species and objects in the natural world that were considered testimony to natural evolution.

The protection of various natural monuments can be followed in the registers of Sweden's national parks and natural monuments that were published about every ten years by the Academy of Sciences. In the first compilation (1919), distinctive trees and rare plants are the two biggest groups, but also included a handful of geological monuments and some animal species – primarily birds – where the number of individuals were considered to have dramatically declined. Among the plants is the red water lily, which had been found in some lakes in Tiveden and which could now be protected according to legislation on natural monuments.

Subsequent registers included increasing numbers of plant species, while the animals were primarily protected through other legislation. However, in some cases, plants, animals and geological formations such as erratic blocks and giant's kettles could be protected along with the smaller areas that were also given natural monument status. But the most striking increase was in protected trees – both huge ancient trees and peculiarly shaped trees such as umbrella pines and obelisk spruce. This category then became the dominant type of natural monument, which shows that the cultural motivations for protection were increasingly important.

Until 1952, the Academy of Sciences – in practice its nature conservation committee – was the dominant actor in nature conservation with the responsibility for collecting, compiling, evaluating and disseminating knowledge of nature worth protecting. At this time, several of the committee's tasks were taken over by other public authorities, to then entirely cease when the National Swedish Environment Protection Board (later the Swedish Environmental Protection Agency) was established in 1963. New legislation and

protective institutions had also been instigated to preserve of individual species and areas of landscape. However, numerous old giant trees remain in the landscape from the time when the Academy's nature conservation committee decided what was worthy of protection. They are protected as natural monuments and not only considered to be of great cultural value, but also of great biological significance because they are valuable habitats for many rare species of plants and animals. These natural monuments have thus gained new meaning – in addition to the peculiar and distinctive – which also reflects a changed view on nature conservation.

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The discovery of the red water lily was published as a short item by K. J. Lönnroth below the heading “En röd Neckros” in *Botaniska Notiser*, vol. 18:7–8, 1856. Rutger Sernander described additional finds in “Om våra röda näckrosor”, *Botaniska Notiser*, vol. 56:2, 1894. The water lily's significance as a garden plants is in Thore M. Fries, “Den svenska röda näckrosen”, *Svenska Trädgårdsföreningens Tidskrift*, vol. 11:6, 1879. Documents relating to the preservation of the red water lily from 20 April 1905 are in Landskansliet, Örebro (Regional State Archives in Uppsala). See also the letter from Carl Sahlin to A. G. Nathorst dated 20 May 1905 (Nathorst letter collection, Academy of Sciences' archive). The protection of the red water lily is described in Carl Sahlin, “De röda näckrosorna på Tiveden och deras skyddande”, *Örebro läns naturskyddsförenings årskrift*, 1932. Regarding the red water lily's distribution, see Maud Wallsten, Jan Thorson & Gun Werlemark, “Härstammar Claude Monets röda näckrosor från Fagertärn i Närke?”, *Svensk Botanisk Tidskrift*, vol. 99, 2005. The design of plant plates in the early 20th century is described by Gunilla Törnvall in *Botaniska bilder till allmänheten: Om utgivningen av Carl Lidmans bilder ur Nordens flora* (Stockholm, 2013). Documents about the nature conservation committee's work, as well as minutes from 29 May 1905, are in the committee's archive at the Academy of Sciences (the latter in B1:1). Registers of natural monuments are in the series *Kungl. Svenska Vetenskapsakademiens skrifter i naturskyddsärenden*. Hugo Conwentz' lecture “Om skydd åt det naturliga landskapet jämte dess växt- och djurvärld, särskilt i Sverige” is published in *Ymer*, vol. 24, 1904. Starbäck's motion in the Riksdag relating to nature conservation is in *Andra Kammaren: Motioner*, 1904:194. The progress of nature conservation legislation has been covered in many works; a detailed description is found in Lars Lundgren, *Staten och naturen: Naturskyddspolitik i Sverige 1869–1935* (Brottby, 2009). See also Ella Ödman, Eivor Bucht & Maria Nordström, *Vildmarken och välfärden: Om naturskyddslagstiftningens tillkomst* (Lund, 1982). The concept of the natural monument and its role in nature conservation in Germany and Sweden is dealt with by Björn-Ola Linnér in “Naturen som minnesmärke”, in Annika Alzén & Johan Hedrén (eds.), *Kulturarvets natur* (Stockholm/Stehag, 1998).